Mr. WATSON. Well, that is just what our plan is, to reduce it to about 100,000.

Senator O'MAHONEY. I say, can we not do more than that? Your applications are coming in approximately at the rate on the average, I would say, of about between 70,000 and 75,000 a year?

Mr. WATSON. Well, right now, closer to 80,000.

Senator O'MAHONEY. The latest is closer to 80,000?

Mr. WATSON. Yes.

Senator O'MAHONEY. So I was just giving an average for about 10 years, say.

Mr. WATSON. Yes.

Senator O'MAHONEY. So that if you cut the backlog only by about 122,000, out of the 222,567 that you now have, there would still be an accumulating backlog.

What you are aiming at, I assume, is to take care of at least the number of new applications that come in, and an additional number of those which are on file and not yet acted upon?

Mr. WATSON. That is right. For instance, our calculation is based upon the continued receipt of applications at the rate of about 80,000.

Senator O'MAHONEY. And where would you begin on handling the backlog—first in first out or last in first out?

Mr. WATSON. Last in first out. That is, we take ordinarily the applications up in the order in which they are received in the Patent Office.

Senator O'MAHONEY. Then that would be first in and first out.

Mr. WATSON. First in and first out—that is right; yes.

Senator O'MAHONEY. We do not want to adopt that accounting system of handling inventories in the Patent Office.

Mr. WATSON. Well, the 8-year plan involves a considerable expansion in our examining corps. In addition to the assumption that we will receive applications at the rate of approximately 80,000 a year, we assume that each examiner will be able to dispose of them at the average rate of 95 per year. And we make other assumptions.

The plan, we believe, involves the building up of the examining corps at a possible rate, despite the extreme difficulty of recruiting examiners at this time. Industry, as everyone knows, is competing for young engineers who are the group from whom we must draw our examiners, and makes it very difficult, indeed, for us to secure the services of an adequate number. However, with the aid of the bar associations—and I want to acknowledge at this time that the bar associations, including the American Patent Law Association, the patent section of the American Bar Association, the local State and city associations—have been extremely cooperative and many of the young men whom we have already succeeded in employing have been directed to the Patent Office by those associations, obtaining the first information which they receive as to the needs of the Patent Office from the activities of members of the bar.

It involves the expansion of the examining corps at a rate which we believe to be feasible. We have represented to the Congress that during the first year we can increase the corps by 300 examiners, and are engaged in the effort to do that. On the strength of that representation we were given an appropriation of 2 million in addition to that

recommended by the Bureau of the Budget. And we are going to strive very, very mightily to fulfill our undertaking in that respect.

Senator O'MAHONEY. This raises the question that I put to you on the first day, Mr. Commissioner. What were your representations to the Bureau of the Budget with respect to the number of employees by which he bureau should be expanded?

Mr. WATSON. Well, we presented facts which indicated that we should receive larger appropirations than those recommended.

Senator O'MAHONEY. You asked for more than the Bureau of the Budget gave you?

Mr. WATSON. No, but we explained the need for several million dollars more than we were given.

Senator O'MAHONEY. You are not before the Bureau of the Budget now. You are before a committee of the Senate. So I advise you that this is the time to speak out—let the Bureau of the Budget and the Congress both have equal knowledge at the same time of what you actually believe the needs of the Patent Office are.

Mr. WATSON. Yes. Well, you wish to ask specifically how much we asked for, within the Department it was $15 million, and the recommendation to the Bureau of the Budget and to the Congress was for $12 million.

Senator O'MAHONEY. What did the Congress do?

Mr. WATSON. The Congress gave us $14 million, treating us generously. Actually, after making a careful calculation and an evaluation of our ability to recruit examiners I thought that it would be advisable to suggest that we be given only $14 million, because it looked to be impossible for us to spend more than that amount.

Senator O'MAHONEY. I understand that you are going before the Bureau of the Budget tomorrow.

Mr. WATSON. That is true.

Senator O'MAHONEY. I suggest that one of the arguments that you might make is this, that if patents increase the production of the United States, that increased production by the issuance of more patents in the Patent Office, by reason of an increased staff, will do more to balance the budget than cutting back the number of employees that you may have.

Mr. WATSON. May I quote you precisely?

Senator O'MAHONEY. Precisely.

Mr. WATSON. Thank you.

However, may I add that the presentation, for instance, of this 8-year plan to the Department of Commerce officials, whose duty it is to supervise the activities of the Patent Office, has created in my mind the impression and, in fact, the assurance this year that they are very receptive to our recommendation and may suggest to the Bureau of the Budget that we be given sufficient funds to initiate the plan.

The plan does contemplate the expenditure by the Patent Office of more money than the Patent Office has ever received. It is based on a number of assumptions. Those assumptions may not be correct over the long pull, but I think that for the first year or two our plan of recruitment, our plan to increase the staff to a certain number, and our plan to maintain the operation of the Patent Office as we have operated it recently will be feasible, and that should it be necessary,

upon the ascertainment of additional facts or changes in conditions, we shall be able to change the plan without inconveniencing anyone, as, for instance, by causing the separation of valuable employees because suddenly we have no work for them to do, or suddenly asking for more employees than we now think we need.

So at the present moment we present this plan to you for your consideration. It calls for the reduction of the backlog the first year, the year 1957, by an amount of 10,000 applications; in 1958, by 20,000 in addition; and for the next 3 years, 20,000 per year. Finally terminating in a tapering-off period in which the examining corps is reduced by attrition, and not by involuntary separations, until we have an examining corps of about 850 men.

We will then probably receive about 80,000 applications per year, and will dispose of 80,000 applications a year, and we will have a backlog of 100,000, which is necessary to enable the workload in the 63 examining divisions to be properly distributed.

With a lower backlog we would probably have to reduce the number of divisions and effect further separations and it would make management much more difficult, but with that backlog we believe that we shall be able to do what I first outlined, promptly advise applicants of their rights and properly determine what the scope of their patents shall eventually be.

The second thought is the improvement in classification mentioned frequently yesterday as a necessity and generally regarded as the sharpest tool with which the patent examiner can work in the processing of patent applications.

Our 8-year plan contemplates the building up of the classification division of the Patent Office in such a manner that within about 6 years the large problem of classification will have been accomplished, so that is part of the 8-year plan.

It involves, I believe, the expansion of the classification examiners from a present low figure of theoretically around 30, and actually I believe somewhere around 17, to a total of 141, and then a tapering off to a number which will be able to receive patents weekly as they are published, and to classify them and to maintain the classification current.

Now another step that we are taking to reduce the mounting backlog is to permit those examiners who are well trained and thoroughly qualified to act upon their own without supervision, to work overtime.

We had some money last year made available by reason of the fact that we could not secure recruits, and therefore could not spend in paying salaries our entire $11,500,000 appropriation, so that we adopted an overtime program, which I may say was welcomed heartily by the examining staff, the GS–12 grade examiners particularly. Those examiners who came in on Saturdays voluntarily found that they could work so much more efficiently on Saturdays because of the lack of interruptions by attorneys, that their productive rates were increased. And the overtime work did not result in penalty costs to the Government, I may say, because they received no extra money such as time and a half—they received their normal rate of remuneration almost exactly. It resulted in a great increase in our production. And that program will be continued and even enlarged with the appropriation that we have now available.

So that Saturday work will be continued on a regular, definite schedule throughout the winter months. It is not carried through

the heat of the summer, but will be continued as a regular, definite program during the winter.

Then we have endeavored to simplify our practice as much as it can be simplified without sacrificing the quality of the work. Under the leadership of our executive examiner, Mr. Rosa, who is seated in this room, and with the close collaboration of the supervisory group, we evolved a number of expedients which would encourage production by making it unnecessary for the examiners to give their time and attention to trivialities. A number of expedients were adopted to that end. And I believe that this simplification has proven to be very effective.

I have here with me a copy of the order of our executive examiner, which outlined to the examining corps in definite terms all of the procedures which they were to follow in order to dispose of applications with greater expedition than had been customary in the Patent Office for some time back. I will offer that for the record without going into it in detail.

Senator O'MAHONEY. It will be received.

(The information referred to is as follows:)

UNITED STATES DEPARTMENT OF COMMERCE,
PATENT OFFICE,
February 23, 1955.

Memorandum

To: All Patent Examiners.
From: M. C. Rosa, Executive Examiner.
Subject: Changes in practice and suggestions to expedite examination of applications.

The several changes in practice and the suggestions presented herein are for the purpose of expediting the examination of applications by saving examiners' time and reaching an early disposal. A careful consideration will make it obvious that these changes and suggestions should be used with discretion.

CONTENTS

A. PROOFREADING OF SPECIFICATION

Object

To save time in checking lengthy disclosures.

Practice

If the case is presented by an attorney or agent who has a reputation for filing carefully prepared applications, the examiner may read the specification and check the drawings to a degree necessary to gain a sufficient understanding and appreciation of the invention claimed. While major errors should be noted, the examiner need not check for the presence of all minor errors.

Where the application has not been proofread, and the examiner feels that there is a need for proofreading in order to detect minor errors, the examiner should include a paragraph similar to the following in his action:

"This application has not been checked to the extent necessary to determine the presence of all minor errors. It is the responsibility of applicant to correct any errors which may appear in the specification or drawings."

B. STATEMENT OF GROUNDS OF REJECTION IN FINAL REJECTION

Object

To save time in making final rejections.

Practice

Section 706.07 of the Manual requires that in the final rejection any grounds of rejection should be reiterated and clearly developed. As only a small percentage of final rejections are appealed, it is deemed expedient to relax this requirement in the following circumstances.

Where a previous Office action contains a complete statement of a ground of rejection, the final rejection may refer to such a statement and also should include a rebuttal of any arguments raised in the applicant's response. If appeal is taken in such a case, the examiner's answer should contain a complete statement of the examiner's position.

C. FINAL REJECTIONS ON REFERENCES NOT PREVIOUSLY APPLIED

Object

To permit making an earlier final rejection.

Practice

When the examiner cites references showing "further state of the art," the pertinency of each such reference should be stated briefly in the Office action. If in a subsequent Office action any such reference is relied upon for its previously stated pertinency in the rejection of any claim, the mere fact that such reference has not been previously relied upon will not preclude the rejection being made final.

D. SPECIAL APPLICATION OF EX PARTE QUAYLE PRACTICE

Object

To avoid entry of minor technical grounds of rejection in a case wherein all claims are patentable in substance, and where such grounds of rejection have not been previously raised.

Practice

In such a case instead of rejecting the claims, and thereby possibly precluding a final disposal, the examiner should object to the claims and at the same time offer constructive suggestions for overcoming the criticisms. Such an action is to be made in accordance with the *Ex parte Quayle* practice and a shortened statutory period should be set.

E. MERIT REJECTION OF CLAIMS TO PLURAL SPECIES

Object

To reduce the number of actions in some applications claiming plural species.

Practice

Where an application contains generic claims and claims to a plurality of species and the search of the generic claims develops prior art which is pertinent to all the claims, the examiner should treat all the claims on the merits. An election of species may also be required.

F. LATITUDE IN DEFINITION OF INVENTION

Object

Allowance of claims which sufficiently define the invention.

Practice

When the examiner is satisfied that patentable novelty is disclosed and it is apparent to the examiner that the claims are directed to such patentable subject matter, he should allow claims which define the patentable novelty with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.

G. TECHNICAL REJECTIONS

Object

To minimize or avoid rejections which do not advance the prosecution.

Practice

The primary object of the examination of an application is to determine whether or not the claims define a patentable advance over the prior art. In too many instances this consideration is relegated to a secondary position, while undue emphasis is given to technical rejections. Where a major technical rejection is proper (e. g., aggregation, lack of proper disclosure, undue breadth), such rejection should be stated with a full development of the reasons rather than by a mere conclusion coupled with some stereotyped expression.

Certain technical rejections (e. g., negative limitations, indefiniteness) should not be made where the examiner recognizing the limitations of the English language, is not aware of an improved mode of definition.

Particular attention is directed to 707.07 (g) MPEP which states: "when there exists a sound rejection on the basis of prior art which discloses the 'heart' of the alleged invention (as distinguished from prior art which merely meets the terms of the claim), secondary rejections on technical grounds ordinarily should not be made."

H. EARLY ALLOWANCE OF CLAIMS

Object

To expedite reaching an early issue.

Practice

Where the examiner is satisfied that the prior art has been fully developed and some of the claims are clearly allowable, he should not delay the allowance of such claims. The practice of some examiners of never allowing a claim in the early actions, when the aforementioned conditions exist, is a handicap to attorneys or agents. An early allowance of some claims is more conducive to a compromise or cancellation of rejected claims. Such practice is also a hardship on the inventor in his attempts to negotiate for the exploitation of his invention.

I. CONSTRUCTIVE CRITICISM

Object

To assist applicant in presenting claims which may be allowed.

Practice

When an application discloses patentable subject matter and it is apparent from the claims and the applicant's arguments that the claims are intended to be directed to such patentable subject matter, but the claims in their present form cannot be allowed because of defects in form or omission of a limitation, the examiner should not stop with a bare objection or rejection of the claims. The examiner's action should be constructive in nature and when possible he should offer a definite suggestion for correction.

If the examiner is satisfied after the search has been completed that patentable subject matter has been disclosed and the record indicates that the applicant intends to claim such subject matter, he may note in the Office action that certain aspects or features of the patentable invention have not been claimed and that if properly claimed such claims may be given favorable consideration.

J. PREVIOUS ACTION BY ANOTHER EXAMINER

Object

To save time when an examiner acts on an application previously examined by another.

Practice

When an examiner is assigned to act on an application which has received one or more actions by some other examiner, full faith and credit should be given to the search and action of the previous examiner unless there is a clear error in the previous action or knowledge of other prior art. In general the second examiner should not take an entirely new approach to the case or attempt to reorient the point of view of the previous examiner, or make a new search in the mere hope of finding something.

Mr. WATSON. Then more recently, we issued a Commissioner's order which places those applications which have been twice acted upon by the examiner in a special status, so that they will be taken up ahead of others, out of turn, and the prosecution terminated as rapidly as possible.

DEPARTMENT OF COMMERCE, UNITED STATES PATENT OFFICE

MANUAL OF PATENT EXAMINING PROCEDURE

Second Edition

NOTICE

ORDER OF EXAMINATION OF AMENDED APPLICATIONS

Effective July 11, 1955, and until further notice, applications which have received at least two actions on the merits and which have been submitted for further consideration and action, shall be treated as "special" cases and acted upon forthwith. Such applications shall retain "special" status throughout their prosecution before the examiner. This action is intended to reduce the periods during which applications remain pending before the Office.

Examiners are reminded that first consideration should be given to maintaining the new case date within 9 months in accordance with the notice of December 10, 1954.

ROBERT C. WATSON,
Commissioner of Patents.

Finally we have taken a lesson from the experience gained by Saturday overtime work and are now placing in effect an order which will eliminate interviews on Fridays of each week. Much of the business of the Patent Office, as you all know, is done by the interview method, which is the best way of accomplishing the public business, in my opinion. But it is nevertheless the fact that the interview is a disturbing influence to many examiners who are not concerned in that interview at all. We had the testimony yesterday of one man from the examining corps to the effect that he works in a room with several others, and that when someone came in to interview one of the others, he was disturbed. That condition obtains largely throughout the Patent Office examining divisions because of the fact that they have no privacy.

We expect without inconvenience to our clients, you might say our patrons, the inventors of the country, to eliminate the interview on Friday, and expect that to have a material effect in increasing our production. Interviews will be freely granted for the remaining days of the workweek and will be granted on Friday in the case of emergency.

DEPARTMENT OF COMMERCE,
UNITED STATES PATENT OFFICE,
Washington, October 11, 1955.

NOTICE

RESTRICTION ON INTERVIEWS

Effective November 18, 1955, and until further notice, the patent examining divisions will be closed on Fridays to attorneys, agents, and the general public. This action has been taken to provide the examining corps with at least 1 day per week on which to work without interruptions and has been found necessary in view of the critical condition of the backlog.

In particular cases where undue hardship to the applicant can be shown, exceptions to this order may be made by the Executive Examiner.

It is urged that interviews with examiners on other days be kept to a minimum both as to number and duration.

ROBERT C. WATSON,
Commissioner of Patents.

Senator O'MAHONEY. May I call your attention, Mr. Commissioner, to the testimony which was given to us yesterday with respect to the handling of problems or cases of interference by deposition only and not by the appearance before the examiners of the individuals who are giving the testimony.

What is your opinion of the effect of that method upon the proper handling of patent applications?

Mr. WATSON. Very few applications are involved in interferences. If we were to require that the testimony be taken in the Patent Office, it would involve a small increase in the staff, no doubt. It is a rather small matter, when you take into consideration the huge volume of applications which we have at hand. The operation of the interference procedure is best as it is now, I believe, and the rules now provide that our Solicitor or a member of the legal staff can go out where the testimony is being taken and can sit with the counsel for the contesting parties and make rulings, and that has been done in 1 or 2 instances by our recently resigned Solicitor. It is a practice which might be enlarged.

Senator O'MAHONEY. The thought came to my mind, because of your statement just now that the practice of holding interviews is the best way of conducting the public business. So I will request the staff to check with your staff on the application of that rule to the handling of interferences.

Mr. WATSON. I will be very glad to furnish any information which the staff might wish to have.

I think I should make reference to the effort which we are engaged in to mechanize our searching operations and pass over that rather rapidly by saying that we are making the effort, but that the solution of that problem is not immediately at hand. It is a long-term proposition.

Within the space of 8 years, I would doubt that we will have a substantial benefit resulting from that effort. I may be mistaken, but I attended a conference a short time ago between manufacturers of equipment, wire recorders, the manufacturers of the large machines, brain machines, et cetera, and the group of examiners who are attempting to devise codes and classification data which might be stored in the mechanical device, upon a magnetized wire. When they were explaining their needs to the manufacturers I asked them, that is, the manufacturers, how soon they might expect to build a machine to accomplish the functions which were laid down at the interview, and they said that it would take a long time.

So that is the way we stand at the moment. But someday, there being a tremendous need throughout all Government for machines of that character—the need is present—the problem will be licked someday, but in devising the 8-year plan I place no reliance upon help to be obtained from mechanization, although counting upon considerable help resulting from our program of reclassification.

The reclassification of United States patents, when partially completed, will be helpful. And as the reclassification effort proceeds, those classes which have been reclassified will be much more useful to the examiners working in the various arts.

Then we come to an item, the preservation of experienced examiners, and on page 20 of the pamphlet, there is a section which applies. And on the following page there is a chart which indicates those grades into

which patent examiners are placed from the time of entry until they retire, varying from grade 5 to grade 15.

In the blocks you will see the numbers of examiners in each grade, and the average ages in those grades in the column immediately to the right, and then again at the extreme right the number of examiners who have left each of those grades between January 1, 1953, and September 16, 1955.

You will observe that 41 of our GS–12 examiners left during that period, and also 80 of our grade 11 examiners. Those are the examiners who are well qualified by training and experience and maturity to do the work of the Patent Office.

Senator O'MAHONEY. Mr. Commissioner, looking at this chart, I am reminded of the material which we gathered from your Office. GS–15 is not a classification of examiners; is it? That is the $12,060 grade. That salary is not paid to examiners. That is a supervisory position.

Mr. WATSON. Yes; that is right.

Senator O'MAHONEY. And is that not true, also, of GS–14?

Mr. WATSON. Yes.

Senator O'MAHONEY. So that actually the highest salary available to examiners is $9,205 of grade 13?

Mr. WATSON. That is right. And the examiners there are partially supervisory. The grade 13 examiners are the assistant chiefs of the Patent Office, 1 in each examining division.

We have recently established a grade of "specialist" into which certain examiners are moved from grade 12 to grade 13.

Senator O'MAHONEY. May I ask an embarrassing question?

Mr. WATSON. You can always ask it. [Laughter.]

As the judge said yesterday, maybe he can answer it and maybe he cannot.

Senator O'MAHONEY. Is it not a fact that Congress, in passing the Reclassification Act, did not include the Commissioner of Patents with other heads of bureaus and agencies who were to be advanced in grade and salary?

Mr. WATSON. Are you talking about the recently discussed Executive pay bill?

Senator O'MAHONEY. That is right.

Mr. WATSON. That was an unfortunate occurrence. That is perfectly true. Many heads of bureaus in the several departments of Government were mentioned favorably, but the Commissioner of Patents and his assistants were not mentioned.

Senator O'MAHONEY. Well, somebody fell down, Mr. Commissioner.

Mr. WATSON. I think that was a very serious matter, and I trust that you will look into it.

It is difficult. I honestly do not know what the answer to this is. I have had young men come into my office who were leaving to go into industry, and they say, "We see a bottleneck ahead. We cannot get into grade 13. We are now GS–12. We have come into that grade fairly rapidly." That is true.

"But it looks as though it would be 15 or 20 years." One of them even said 20 years before he could see a possibility of advancing to another grade.

It gives them the idea that they had better seek employment elsewhere. It discourages those in lower grades.

For instance, we lost 80 competent men from grade 11 in that period of time; and that is contrary to the experience of the past, in large part, too.

It used to be that the young man would come into the Patent Office, take his law degree while he was working in the Office, and then he would leave. And the losses experienced were largely from the lower grades.

But now, in order to compete with industry, we have made progress through the lower grades rather rapid until grade 12 is reached.

So the young men will stay, and the older men are leaving, with all of their accumulated experience. That is a serious handicap.

Just how that is to be taken care of, I really do not know. We have not made a Governmentwide survey, but that definitely is a Patent Office problem.

I notice that in one of your letters you proposed the question, how to improve examining procedures in order to reduce the number of patents subsequently held invalid by the courts, with a view to imparting more certainty to the rights granted inventors.

That, in part, has been already answered, but we could, of course, extend the time which we allot to examination, although we do not allot any particular time to an examiner on a case; he is supposed to make a thorough examination of the prior art in every instance; but, as brought out yesterday by some witness whose name I do not immediately remember, we have this enormous load, we must make some showing of production, and we must, without saying so, limit the time which an examiner can spend in his examination of the cases placed on his desk.

We cannot do what industry does, and which, in my younger years I did on many occasions, namely, take a patent or take an application and spend perhaps a week, perhaps 2 weeks, perhaps 3 weeks, or maybe as long as 3 months, in examining every bit of literature wherever it might be found which had been published on that general subject matter. And, as those who have gone through that procedure in this room know, the validity search is a costly thing involving an examination of all published literature that can be found anywhere.

I have spent time in the stacks of the Congressional Library, going through it book by book, and in the Bureau of Standards Library, and through remote classes of patents in the Patent Office, in the hope of finding evidence which would tend to limit or invalidate a patent.

We cannot, in the ordinary course of business in the Patent Office, permit the examiners to spend that much time on any case, but if we had perhaps larger appropriations we could then permit the examiners to do more of that type of work, and particularly in examining those applications which were of vital importance.

Senator O'MAHONEY. I am sure you will agree, Mr. Commissioner, that the strongest possible argument in favor of the classification system, that is, improvement of the system which will reduce the backlog of patents, was made by Judge Hand yesterday when he told about the judge sitting on the patent case, who finally interrupted the attorneys to ask for a definition of the phrase that had been used upon several occasions, saying, "I am not quite clear as to what you mean by this phrase, the prior—what is it you say?"

And the attorneys said, "The prior art."

"Oh," he said, "I thought you meant the prior rot." [Laughter.]

So let us get that out of the way, shall we?

Mr. WATSON. The prior art. That is what we deal with and, as you say, if we had it well classified, we could do our searching much more expeditiously.

Now, then, in addition to the possibility of enlarging the amount of time made available to examiners in their consideration of applications, there is a possibility of increasing the efficiency of the individual examiners in other ways.

They are engaged at the present time, you might say, in a production-line operation. On each examiner's desk there is placed quite a few applications. And he, with an eye to promotion, sticks to his task because his promotion is in part dependent upon the rate at which he accomplishes his task. He does not have much opportunity between the hours of 8:30 and 5 o'clock—practically no opportunity—to do research on his own behalf with the end in view of improving his own effectiveness.

We have done certain things in the Patent Office. We have initiated seminars in which the primary examiners, the heads of the various divisions, have engaged for a period of perhaps 2 years. They meet in groups at intervals and discuss their mutual problems, which is a way of self-education.

And then we permit examiners, with the funds which we have at our disposal for that purpose, to go outside of the Patent Office, to visit exhibitions of note, where many things can be learned rather quickly by observation.

We send examiners on occasion out to examine inventions, where the nature of the invention requires physical inspection for full understanding. But by and large we have no program which, if followed, would bring up the level of effectiveness of the examining corps by increasing the effectiveness of the individual, by educating him further.

The examiners, I think, have been good in doing what they can toward their self-education, but I offer, as a matter to be considered by the committee, a proposal that this aspect of the situation be examined. And it is to be determined whether or not some funds should be made available for the increased education of examiners, particularly in the arts in which they are engaged.

I noted this further question which, I assume is really directed to the Patent Office, about the wisdom of dual appeals from the rejection of applications.

Of course, the Patent Office has over it two courts which review its decisions. There is the Court of Customs and Patent Appeals, which receives the direct appeal upon the record established in the Patent Office, and the District Court of the United States for the District of Columbia, with the Court of Appeals above that court. The district court entertains suits brought against the Commissioner of Patents, seeking to direct the court to authorize him to issue patents in cases in which he has refused to do so.

The information which I have acquired since reaching the Patent Office is not full and complete, but I will give you what I have and you can then determine the wisdom of the dual appeals.

From the standpoint of the affirmances, i. e., percentage of affirmances of the rulings of the Patent Office, the Court of Customs and Patent Appeals is about on the same level as the district court.

In other words, the dissatisfied applicants going either way have about the same chance of overturning the decision of the Patent Office. Over a 10-year period the Court of Customs and Patent Appeals in ex parte cases has affirmed the Patent Office in 79.9 percent of the appeals and the district court of the United States in ex parte cases has affirmed the Patent Office in 78.3 percent of the cases. From the standpoint of the time which elapses from appeal to decision, about 1 year in the Court of Customs and Patent Appeals and about 2 years in the district court, the time cost to the Patent Office, that is the solicitor's time, is about the same. In the Court of Customs and Patent Appeals, the solicitor must prepare a brief which must be printed but ordinarily the briefs are short and the expense is not great.

There is the advantage in favor of the Court of Customs and Patent Appeals, that its decisions are published and comprise precedents which guide the Patent Office officials in their work. The district court decisions are unfortunately ordinarily not published.

Again, all of the judges of the Court of Customs and Patent Appeals participate in each decision. The court follows its own decisions as precedents, so that there are clear guidelines to the Patent Office resulting from the rather consistent decisions of that court. Whereas the position of the district court is not so clearly revealed to the Patent Office.

There are a number of judges in the district court and as their decisions are not published ordinarily it is more difficult for the Patent Office to ascertain just what the district court really means to say.

However, the Court of Appeals of the District of Columbia does publish its decisions and those decisions are largely consistent with one another over the years. So that there can be a determination of a question of law by the Patent Office based upon the decisions of that court.

However, the Patent Office very seldom ever appeals any decisions of the district court to the Court of Appeals of the District of Columbia. The appeals are taken by applicants who have been unsuccessful in the district court.

By and large the Court of Customs and Patent Appeals decides about two-thirds of the cases which are taken out of the hands of the Patent Office on appeal or by suit against the Commissioner, so that it is most authoritative in our work in the Patent Office. It provides the better guideline.

Those are facts gleaned by me from conversations with our solicitors and by memorandums which they have submitted to me.

I believe that I should now conclude my statement. There are many additional matters set forth in the pamphlet, which I have placed in the record, which I have not called to your attention, but which are nontheless important.

Senator O'MAHONEY. I observed, Mr. Commissioner, that you reported a large percentage, over 70 percent of affirmances in the Court of Customs and Patent and Appeals, and in the district court of the ex parte decisions of the Patent Office.

The testimony through these 2 days of hearing has been that in the Supreme Court the record in infringement litigation seems to be the reverse because patents are there frequently held invalid. Have you any statistics on that?

(Discussion off the record.)

Senator O'MAHONEY. Mr. Commissioner, you may proceed.

Mr. WATSON. I have just about finished.

Senator O'MAHONEY. I know that Mr. Caplan and the staff have been in conference with you and your staff and perhaps he has one or two questions that he would like to ask.

Mr. CAPLAN. Mr. Commissioner, possibly this question should be addressed to Mr. Federico rather than to yourself, but at the request of the subcommittee a study was made of the number of patents which were adjudicated in the various courts and the holding of validity or invalidity or noninfringement in those cases.

I wonder if you had some comments as to the progress made in compiling the statistics in that regard?

Mr. FEDERICO. I was requested by the committee to compile some data on the record of patent suits in court and preliminary tables were made up giving the summations over the past 7 years and that is being refined into further tables and distributions of counting in different ways and the addition of further data. These tables show that during the 7 years, 1948 to 1954, there were a total of about a thousand patents adjudicated by the courts.

There were about a thousand patents in the district court and over 400 in the court of appeals. Of course every court of appeals decision has a corresponding district court decision so that does not add to the total number of patents. The total number adjudicated is in the neighborhood of a thousand. According to the rate of issuance of patents during the same period that means that a little less than 1 in 250 patents have been adjudicated by either court. During the same period there were only seven patents involved in suits in the Supreme Court of the United States.

Going to the results of the decisions, in the court of appeals where there were 439 decisions, in these preliminary tables we did not eliminate duplication of cases that might be up in different years, and there is a little further data to be added.

There were 85, or 19 percent, where the patent or the claims involved were held valid and infringed. There were 269 or 61 percent where the claims involved were held invalid. The remainder, about 19 percent, were simply held not infringed, usually valid and not infringed. So we have 61 percent of the patents in the court of appeals held invalid.

There were only seven cases in the Supreme Court during this period most of which are well known. Two of them involved holdings of validity and infringement and the others were held invalid.

Senator O'MAHONEY. Do you have any figures on the incidence as to time of these decisions? I asked that question because it was indicated by Judge Hand for example, that the courts are tending to follow the Supreme Court in these few cases about the invalidity of patents and therefore it would seem that there is a possibility that the district court and other courts in recent years—in the last 2 years perhaps—have been holding more patents invalid than before.

Do you have any figures on that?

Mr. FEDERICO. They could be obtained. You can't cut it down as fine as 2 years. It can be shown that say, over the preceding 10 or 15 years, the percentage of holdings of invalidity have been higher than over the preceding period.

Senator O'MAHONEY. The holdings of validity?

Mr. FEDERICO. The holdings of invalidity—the percentages would be greater than during the preceding period.

Senator O'MAHONEY. It is your opinion based upon the facts before you that more patents are now being held invalid than previously?

Mr. FEDERICO. No. All I said was and all I could say from the figures would be this: The percentage of patents litigated, that are held invalid is higher in recent times than it has been in times previous to that.

Senator O'MAHONEY. I asked the question improperly. That is what I meant.

Mr. FEDERICO. The actual numbers vary from year to year.

Senator O'MAHONEY. The ratio of invalidity is growing.

Mr. FEDERICO. Not necessarily growing. It has been higher during the recent years than in the preceding years. They fluctuate from year to year because the numbers annually are fairly small.

Senator O'MAHONEY. Thank you.

Mr. FEDERICO. In addition to that the counsel requested that I take the last 50 patents that were held invalid by the court of appeals and look into the reasons and tabulate the causes for the holding of invalidity. But I won't go into detail at this time.

Senator O'MAHONEY. That can be filed.

Mr. FEDERICO. That will be filed.

(The material referred to was subsequently supplied and appears as follows:)

ADJUDICATED PATENTS, 1948–54

The following is purely a statistical report on the number of patents adjudicated in the United States courts, and the nature of the adjudications, during the 7 calendar years 1948 to 1954, inclusive.

A. NUMBER OF PATENTS ADJUDICATED

The number of patents adjudicated during this 7-year period in each of the 3 categories of United States courts is given in the following table:

TABLE 1.—*Number of adjudicated patents, 1948–54*

District courts (estimated)	1,000
Courts of appeals	429
Supreme Court	7

The number adjudicated in the district courts has been estimated in the manner which will be explained below.

During this same 7-year period the number of patents (including designs but excluding reissues) issued was 290,120, and hence the proportion of all patents which were adjudicated in the district courts was 1 in 290. The proportion of patents adjudicated in the courts of appeals was 1 in 677. The total number of patents adjudicated in all the courts during this period would be only slightly greater than the number adjudicated in the district courts, since for each decision of a court of appeals during this period there is a corresponding decision of a district court during the same period except for those appeal decisions occurring so early in the period that the district court decision was before 1948.

Court of Claims decisions have not been included in this study.

B. SOURCE OF INFORMATION AND MANNER OF TABULATING

All patent decisions of the courts which are published are published in the United States Patents Quarterly and hence this publication is the major source of the information concerning adjudicated patents. The pages of volumes 76 (January to March 1948) to 106 (July to September 1955) were gone over and a slip made for each patent which was adjudicated in any court in a decision dated during the 7 years of the study. Only those decisions which involved a question of validity or infringement of a patent were included.

The court in a patent infringement suit may make any one of several holdings in connection with the patent; first, the patent may be held valid and infringed; second, the patent may be held invalid, the question of infringement in this situation being then of no consequence; and third, the patent may be held valid but not infringed. These are the major types of holdings. However, any one of these three holdings may be made in connection with only some of the claims of the patent involved since only some of the claims of the patent may be in issue; also, the court may make different holdings with respect to different claims of the same patent. The result is a variety of different types of decisions which may be made with respect to a patent, but in order to avoid complications the holdings have been divided into three categories for the purpose of the tables given here.

In the tables given in this report the heading "Valid and infringed" includes the following: (*a*) The patent or the claims in suit were held valid and infringed, this includes the majority of the patents under this heading; (*b*) some of the claims of the patent were held valid and infringed and other claims were not infringed. In a few cases, only the question of infringement was in issue and these are also included in this category if the patent or the claims involved were held infringed. In a few instances, about a dozen, some claims were held valid and infringed and other claims of the same patent were held invalid. This group is also tabulated under the heading "Valid and infringed."

The heading "Invalid" in the tables include (*a*) those cases in which the patent or the claims in suit were held invalid and (*b*) those cases in which some claims of the patent were held invalid and other claims were held not infringed; those cases in which some claims were held invalid but other claims of the same patent were held valid and infringed are included under the first category.

The heading "Not infringed" in the tables includes (*a*) those cases in which the claims in suit were held valid but not infringed and (*b*) those cases in which the claims in suit were held not infringed with the question of validity not determined; a very small proportion of cases in which the suit was dismissed because of misuse or some other equitable defense are also included under the heading "Not infringed."

C. UNITED STATES SUPREME COURT

During the 7-year period involved there were only 7 patents adjudicated in the United States Supreme Court, 2 in 1948, 3 in 1949, and 1 each in 1950 and 1951. Of these 7, 5 were held invalid and 2 valid and infringed, although in 1 of these 2 certain claims were also held invalid.

D. UNITED STATES COURTS OF APPEALS

Practically all of the decisions of the United States courts of appeals in patent cases are published and hence substantially complete data concerning the adjudications by the courts of appeals can be obtained. Two tables are presented; in one the data is arranged by years and in the other the data is arranged by circuits. The unit in these tables, as well as in all the others, is the patent, not the suit, unless otherwise stated. Many suits involve more than one patent and a patent might also be involved in several different suits at different times and in different courts. The first table includes the number of suits for each year, to indicate the relationship between the number of patents and the number of suits. The first table gives 2 lines of totals, the first totals are merely the sums of the numbers in each column and the second totals are reduced by allowing for patents which appear 2 or more times, in different years. In the table for the circuits a patent is counted just once even though it may have been adjudicated twice in the same circuit, and the 2 lines of totals are, first, the sum of the numbers in the columns, and, second, the total after an

adjustment has been made to account for patents which appeared in more than 1 circuit.

TABLE 2.—*United States courts of appeals, 1948–54*

Year	Number of suits	Number of patents	Valid and infringed		Invalid		Not infringed	
			Number	Percent	Number	Percent	Number	Percent
1948	40	51	13	25.5	31	60.8	7	13.7
1949	39	62	12	19.4	40	64.5	10	16.1
1950	50	78	23	29.5	38	48.7	17	21.8
1951	36	69	10	14.5	40	58.0	19	27.5
1952	47	58	4	6.9	40	69.0	14	24.1
1953	58	77	17	22.1	49	63.6	11	14.3
1954	40	54	7	13.0	37	68.5	10	18.5
Total	310	449	86	19.2	275	61.2	88	19.6
Total [1]		429	77	18.0	269	62.7	83	19.3

[1] Excluding patents counted more than once.

TABLE 3.—*United States courts of appeals, circuits*

Circuit	Number of patents	Valid and infringed		Invalid		Not infringed	
		Number	Percent	Number	Percent	Number	Percent
1	26	3	11.5	19	73.1	4	15.4
2	39	1	2.6	29	74.3	9	23.1
3	40	3	7.5	34	85.0	3	7.5
4	46	17	37.0	23	50.0	6	13.0
5	30	11	36.7	15	50.0	4	13.3
6	65	10	15.4	41	63.1	14	21.5
7	95	18	19.0	63	66.3	14	14.7
8	24	2	8.4	17	70.8	5	20.8
9	45	11	24.5	23	51.1	11	24.4
10	32	7	21.9	11	34.4	14	43.7
District of Columbia	1					1	
Total	443	83	18.7	275	62.1	85	19.2
Total [1]	429	77	18.0	269	62.7	83	19.3

[1] Excluding patents counted more than once.

E. UNITED STATES DISTRICT COURTS—PUBLISHED DECISIONS

Complete data concerning the adjudications in the United States district courts cannot be given from the sources immediately available since not all these decisions are published. This section is limited to published district court decisions and in the next section some remarks are made and data given concerning unpublished district court decisions.

It is estimated that about half of the decisions of the district courts in patent cases are published, data for an additional number, about one-sixth of the total decisions, in which the district court decision was not published but in which there was an appeal and a decision on the appeal published, can be obtained from the decisions on appeal. The table of district court decisions given here includes these two sources and is estimated as including about two-thirds of all the district courts decisions. The incompleteness is not necessarily the same in each year and the percentages are not necessarily the same as they would be if all decisions were included. The total number of patents listed were involved in 461 suits, the district courts decisions averaging 1.5 patents per suit.

TABLE 4.—*United States district courts—Published decisions 1948–54*

Year	Number of patents	Valid and infringed		Invalid		Not infringed	
		Number	Percent	Number	Percent	Number	Percent
1948	99	41	41.4	36	36.4	22	22.2
1949	112	33	29.5	59	52.7	20	17.8
1950	100	43	43.0	33	33.0	24	24.0
1951	105	28	26.7	65	61.9	12	11.4
1952	112	31	27.7	70	62.5	11	9.8
1953	87	15	17.3	57	65.5	15	17.2
1954	78	25	32.1	43	55.1	10	12.8
Total	693	216	31.2	363	52.4	114	16.4
Total [1]	664	201	30.3	355	53.5	108	16.2

[1] Excluding patents counted more than once.

F. UNITED STATES DISTRICT COURTS—UNPUBLISHED DECISIONS

The annual reports of the Administrative Director of the United States Courts gives some data concerning suits terminated by the district courts, arranged in various categories, including a category of patent suits. The following table give some data concerning suits terminated by the district courts, arranged in These reports give the data by fiscal years and the table is by fiscal years.

TABLE 5.—*United States district courts, patent suits terminated, 1949–54*

Fiscal year ending June 30	Patent suits terminated	By consent, stipulation, default, etc.	By contested judgment	Decisions published
1949	374	253	121	71
1950	519	418	101	70
1951	549	444	105	75
1952	608	483	125	77
1953	529	424	105	82
1954	532	422	110	67
Total	3,111	2,444	667	442

The second column gives the number of patent suits terminated. The third column gives the number of suits which were terminated by consent, by stipulation of the parties, by default, or in some other manner not involving an actual adjudication by the court. The next column gives the number of suits which were terminated by a judgment of the court after contest. It is noted from this table that the proportion of patent suits terminated by a contested judgment is only 21.4 percent of the total number of patent suits terminated. This phenomenon is not unique in patent suits; from the same reports of the Administrative Director for the same period it can be calculated that the percentage of private civil actions involving a Federal question which were terminated by judgment after contest was 22.9 percent, and the total of all private civil actions so terminated was 18.9 percent.

From the number of suits terminated by judgment it is possible to obtain an estimate of the proportion of district court decisions which are published. The last column of the table gives the number of patent suits for 6 years, which are accounted for by published decisions of the district courts, the results of which have been incorporated in the table in the preceding section. The unit in this column is the suit, not the patent, and it is noted by comparing the last column giving the published decisions with the preceding column that only two-thirds of the decisions of the district courts are accounted for by the published decisions. As was stated in the preceding section this two-thirds is made up of half in which the decision itself of the district court was published and a further one-sixth in which the decision of the district court was not published but a decision in an appeal on the same case has been published.

A total of 664 adjudicated patents were tabulated from the published district court decisions for the years 1948 to 1954; since only two-thirds of the decisions

are published it may be taken that approximately 996 patents were adjudicated in the district courts during the 7-year period. The round number 1,000 is taken as the estimate.

By statute the clerks of the United States district courts are required to transmit to the Patent Office a report of the filing of each patent suit and a further report when the suit has been terminated. These reports are sent by the clerks of district courts on printed forms and give the names of the parties, the patent numbers of the patents involved, and certain other information. When the suit is terminated the report gives a brief statement of the nature of the termination. These notices are published in the Official Gazette of the United States Patent Office and should give another and more complete source of statistics on adjudicated patents in the district courts. However, it has been found that the data as reported is not sufficient to compile reliable tables of adjudicated patents.

The volumes of the Official Gazette from January 1948 to the current one were gone through and a slip made for each suit terminated during the years 1948–54 which was not indicated as terminated by consent, stipulation, default, or some similar manner. These slips were correlated with the published decisions to remove those which represented published decisions. The residue should then represent the unpublished district-court decisions. From the last two columns of table 5, it is seen that the unpublished decisions during the 6 fiscal years 1949–54 amounted to 223. However, the notices of unpublished decisions collected during the same period amounted to 381. It follows that a substantial proportion of these, over 40 percent, do not represent actual decisions of the courts, but must have been terminated by consent, stipulation, or some similar manner without the reports of the clerks of the courts to the Patent Office so indicating. However, a tabulation is made of these notices of unpublished district-court decisions to show further limitations.

TABLE 6.—*Notices of unpublished district court decisions, 1948–54*

Nature of holding reported	Number of patents	Percent of total
1. Valid and infringed, judgment for plaintiff, injunction, etc	262	41.0
2. Invalid	55	8.6
3. Valid and not infringed, not infringed	43	6.7
4. Judgment for defendant, dismissed, dismissed with prejudice, etc	279	43.7
Total	639	100.0

As indicated by the preceding discussion, about 270 of the patents listed in this table do not represent adjudicated patents at all and need to be eliminated. The holdings listed in the fourth group were not complete enough to place them in either the second or third. Probably a large part of the fourth group and a smaller part of the first group represent the excess which should be eliminated.

G. COMPARISON OF DISTRICT COURTS AND COURTS OF APPEALS

The totals data from sections D and E of this report are listed here together for a direct comparison of the decisions of the district courts and of the courts of appeals.

TABLE 7.—*District courts and courts of appeals*

	Number of patents	Valid and infringed		Invalid		Not infringed	
		Number	Percent	Number	Percent	Number	Percent
District courts	664	201	30.3	363	53.5	114	16.2
Courts of appeals	429	77	18.0	269	62.7	83	19.3

However, the district courts decisions are not complete as has been explained. Indications are that complete district courts data would show a higher percentage valid and infringed and a lower percentage invalid.

A separate tabulation is made of only those district courts decisions which have been appealed and in which a decision on the appeal has been published. The

following table gives in the first line the patents adjudicated by the district courts during the 7 years 1948–54 which have been appealed, and the second line gives the decisions of the courts of appeals on these same patents. The court of appeals figures given in tables 8 and 9 are not the same as the figures in tables 2, 3, and 7 since tables 8 and 9 do not include court of appeals decisions in which the corresponding decisions of the district courts are dated before 1948 and include some court of appeals decisions rendered in 1955 in connection with district court decisions dated in 1954 or earlier.

TABLE 8.—*District courts and courts of appeals*

	Number of patents	Valid and infringed		Invalid		Not infringed	
		Number	Percent	Number	Percent	Number	Percent
District courts	428	145	33.9	219	51.1	64	15.0
Courts of appeals	428	76	17.8	268	62.6	84	19.6

Another table is given indicating the relationship of the district court holdings and the court of appeals holdings.

TABLE 9.—*District courts and courts of appeals*

Holdings in district court		Holdings in courts of appeals		
Holding	Number of patents	Valid and infringed	Invalid	Not infringed
Valid and infringed	145	70	57	18
Invalid	219	5	206	8
Not infringed	64	1	5	58
Total	428	76	268	84

The first line, "Valid and infringed," indicates that 145 patents held valid and infringed in the district courts were appealed, in the Courts of Appeals the holdings on these same patents were 70 valid and infringed, 57 invalid, and 18 not infringed, etc. Considered in another manner, of the 145 patents held valid and infringed by the district courts and appealed, the courts of appeals held 70 valid and infringed and reversed the district courts in connection with 75 patents, holding them invalid or not infringed; the district court was reversed in 51.7 percent of the appealed cases in which the decision of the district court was for the patentee. On the other hand the 283 patents in which the district court had held against the patentee there were reversals in only 6 instances, the other 277 instances being still against the patentee; the courts of appeals reversed the district courts in only 2.1 percent of the instances of holdings against the patentee.

H. LONG TERM TABLES

Following are presented 3 tables to give statistics over a longer period of time than the 7 recent years considered in the preceding sections.

The first table gives merely the number of patent suits, obtained from the annual reports of the Administrative Director of the United States Courts and preceding reports of the Attorney General. This table goes as far back as such data is available and is for fiscal years, the other tables being for calendar years.

The second long-term table is a table of patents adjudicated in the courts of appeals, beginning with 1925. This table was obtained by joining the 7-year table presented in section D with some corresponding tabulations which had been made some time ago. The third table is a table of patents adjudicated in the Supreme Court, also beginning with 1925.

TABLE 10.—*Patent suits filed and terminated in the United States district courts*

Year	Suits filed	Suits terminated	Suits terminated after contest	Year	Suits filed	Suits terminated	Suits terminated after contest
1938	1,031	1,338	226	1947	370	333	83
1939	953	1,293	208	1948	476	346	72
1940	1,084	1,140	263	1949	560	374	121
1941	953	1,104	265	1950	689	519	101
1942	543			1951	584	549	105
1943	318			1952	519	608	125
1944	225			1953	557	529	105
1945	226	279	81	1954	578	532	110
1946	299	252	72				

TABLE 11.—*United States courts of appeal, 1925–54*

Year	Number of patents	Valid and infringed		Invalid		Not infringed	
		Number	Percent	Number	Percent	Number	Percent
1925	99	31	31.3	37	37.4	31	31.3
1926	120	44	36.7	43	38.3	33	27.5
1927	142	56	39.4	41	30.3	45	31.7
1928	170	73	42.9	56	34.7	41	24.1
1929	118	41	34.8	41	38.1	38	32.2
1925–29	649	245	37.7	218	33.4	188	28.9
1930	167	61	36.5	55	35.3	51	30.5
1931	133	50	37.6	52	40.6	31	23.3
1932	137	41	29.9	55	43.8	41	29.9
1933	140	23	16.4	63	45.0	54	38.6
1934	142	48	33.8	49	36.6	45	31.7
1930–34	719	223	31.1	274	38.0	222	30.9
1935	131	38	29.0	70	55.3	23	17.6
1936	105	28	26.7	52	51.4	25	23.8
1937	165	53	32.1	67	40.6	45	27.3
1938	209	40	19.1	111	55.0	58	27.3
1939	193	40	20.8	109	57.5	44	22.8
1935–39	803	199	24.8	409	50.9	195	24.3
1940	159	26	18.4	93	59.2	42	26.4
1941	141	22	15.6	88	63.1	31	22.0
1942	138	14	10.1	92	68.2	32	23.2
1943	77	16	20.7	50	67.5	9	11.8
1944	87	14	16.1	41	47.1	32	36.8
1940–44	602	92	15.3	364	60.5	146	24.2
1945	68	8	11.8	46	67.6	14	20.6
1946	43	10	23.3	26	65.1	7	16.3
1947	38	10	26.3	26	71.1	2	5.3
1948	51	13	25.5	31	60.8	7	13.7
1949	62	12	19.4	40	64.5	10	16.1
1945–49	262	53	20.2	169	64.5	40	15.3
1950	78	23	29.5	38	48.7	17	21.8
1951	69	10	14.5	40	58.0	19	27.5
1952	58	4	6.9	40	69.0	14	24.1
1953	77	17	22.1	49	63.6	11	14.3
1954	54	7	13.0	37	68.5	10	18.5
1950–54	336	61	18.2	204	60.7	71	21.1

TABLE 12.—*United States Supreme Court, 1925–54*

Year	Number of patents	Valid and infringed	Invalid	Not infringed	Remanded
1925	1		1		
1926	2		1	1	
1927	0				
1928	3	1	2		
1929	1	1			
1925–29	7	2	4	1	
1930	3		2	1	
1931	9		8	1	
1932	0				
1933	3		3		
1934	3	2	1		
1930–34	18	2	14	2	
1935	7	[1] 1	5	1	
1936	4		2		2
1937	2		[1] 2		
1938	11	4	3	1	3
1939	10		8	1	1
1935–39	33	4	20	3	6
1940	2		1	1	
1941	2		2		
1942	8	2	4	2	
1943	2		2		
1944	6	1	1	4	
1940–44	20	3	10	7	
1945	7		3	4	
1946	1		1		
1947	0				
1948	2		2		
1949	3	[2] 2	1		
1945–49	13	2	7	4	
1950	1		1		
1951	1		1		
1952	0				
1953	0				
1954	0				
1950–54	2		2		

[1] 1 patent held infringed in 1935, and invalid in 1937, counted only once, as invalid, in totals.
[2] Some claims also held invalid in 1 patent.

FIFTY INVALID PATENTS

The committee requested that a short survey be made of the last 50 patents which had been held invalid by a United States court of appeals and the following is a brief report of the study. It was requested that the grounds for the various invalidity holdings be listed and that the prior-art references used by the courts be compared with those used by the Patent Office examiner to determine when the courts used new evidence.

The patents were selected by going through the United States Patents Quarterly volumes of patent decisions, beginning with the volume for July–September 1955, and going backward until 50 patents (omitting design patents) held invalid by a court of appeals were accumulated. This number ended in the volume for January–March 1954, and hence there were 50 patents held invalid by a court of appeals over a period of about a year and three-quarters. During this same period the Patent Office issued nearly 60,000 patents.

Some of the decisions of the court involved more than one patent. There were 39 decisions, 33 involved 1 patent each, 4 involved 2 patents each, 1 involved 4 patents, and 1 involved 5 patents.

The decisions of the courts of appeals invalidating these 50 patents, the corresponding decisions of the district courts (in those cases in which the district court decision had been published), and the files showing the prosecution in the Patent Office, were gone over to determine information relative to the

questions asked. Before discussing the grounds of invalidation some data will first be given concerning the patents themselves.

None of the 50 patents had been adjudicated by a court of appeals in another suit prior to the one involved here. In fact in most of the cases the suit involved was the only one which had been filed on the patent. A few of the patents had been involved in other suits in district courts. The average time from the grant of the patent to the decision of the court of appeals was 10 years 7.5 months.

Six of the 50 patents had been involved in an interference in the Patent Office. This is an unusually high proportion since normally only about 1 to 2 percent of applications are involved in interference. In two instances there had been an appeal in the interference.

Five of the 50 patents were involved in an appeal to the Board of Appeals in the Patent Office from rejections by the examiner. Again this is an abormally high proportion. In 2 cases the Board had affirmed a rejection by the examiner of claims not appearing in the patent and in 3 instances the Board allowed claims which had been rejected by the examiner but the references later used by the court were not before the Board.

It is inferred from the decisions of the courts that the subject matter of the 50 patents was in commercial use by the patentees in the majority of instances, and that in less than 10 the subject matter was not in use by the patentee. In some instances commercial success was even shown.

In 28 of the patents the patent as a whole or all of the claims of the patents were held invalid. In the other 22 patents the holding of invalidity went to only part of the claims of the patents; in most of these only some of the claims of the patents were in suit, but in 2 instances other claims of the patents were found valid and infringed. The claims of the 50 patents averaged 10.2 per patent, but ranged from 5 patents with 2 claims each to 3 patents with more than 20 claims each.

In six instances the lower court had held the patent or the claims involved valid and infringed, which decisions were reversed on appeal (in 1 case 1 judge dissented from the reversal), and in 1 instance the lower court held the patent valid but not infringed while the court of appeals held the patent invalid. In the remaining 43 patents the court of appeals affirmed the lower court.

As to the grounds which the courts of appeals used for invalidating the patents or the particular claims involved, the following tabulation lists the specific grounds used:

Ground	Alone	With others	Total
1. Lack of invention or anticipation	34	9	43
2. Prior public use		7	7
3. Inoperativeness	1	2	3
4. Lack of disclosure	3		3
5. Double patenting	1		1
6. Lack of inadvertence and departure from original invention in reissue	1		1
7. Failure to define invention	1		1
Total			59
Counted twice			9

The most common ground was lack of invention or anticipation. Prior public use as a separate and distinct ground for holding the patent invalid was used in 7 patents although in each of these 7 the first ground was also used. Inoperativeness of the invention disclosed was used in the case of 3 patents, in 1 instance as the sole ground and in 2 instances with the first ground. Lack of disclosure in the specifications, i. e., failure to comply with the statutory requirement to give a complete disclosure, was used as a sole ground in 3 instances, in 1 of which the ground went to only some of the claims of the patent, the other claims being held valid and infringed. Double patenting, i. e., unpatentability over a prior patent of the same inventor, was used as the sole ground in one case, this ground however going only to a few claims of the patent (the prior patent of the same inventor in this instance had expired before the time of the decision and the patent involved had been pending a long time). In the case of one reissue, the claims were held invalid for lack of inadvertence (similar claims had been canceled during the prosecution of the original patent) and departure from the invention claimed in the original patent, this ground would go only to the new claims of the reissue. In one instance the court of appeals stated the ground for the invalidation of the claims as failure to define the

invention; the court of appeals reversed the district court's holding that no invention was present but held the claims invalid nevertheless for failure to define the invention. The claims could be considered as lacking invention or being anticipated by the prior art.

The ground of lack of invention or anticipation was used in 43 of the 50 patents, in 34 of these cases it was the sole ground, and in 9, other grounds were also used. In practically all of these 43 cases, except 2 or 3, the ground was lack of invention over the prior art. In a few cases the court uses the word "anticipation" where the former is in fact meant, the cases of actual anticipation being very few.

It was ascertained in each case, as far as possible, whether the prior art references used by the court were the same as or different from the references which had been cited by the examiner and over which the patent was allowed. In three cases the decisions of the court do not mention the references used and this fact could not be determined. This leaves 40 patents. These 40 may be divided as follows. In six cases the patent was held invalid over the same prior patents which had been cited by the examiner and over which the claims were allowed by the examiner. In 34 cases new references, which had not been cited by the examiner in the Patent Office, were used or referred to by the court.

In the 34 cases in which new references were used or referred to by the court, there is considerable variation in the nature of the new references and the use made by the court. These range from a great mass of prior patents, publications, and uses on the one hand to the citation of only 1 or 2 new patent references on the other; and from the citation of new references directly in point and of considerable importance to the citation of new references of only subordinate value and of not much importance. In 6 instances of the 34 the court made a specific point of the fact that references it used were not considered by the Patent Office. In 11 others all the references used by the court were new. Thus in 17 of the 34 cases in which new references were used, the decision is directly due to this fact. In the remaining 17 cases the holding of invalidity may or may not have been caused by the new references, in some the new reference or references do not seem to have been of much consequence while in others they seem to have been of major importance, an exact division could only be made by studying the references and would involve questions of opinion.

(See pp. 287–293 of appendix for résumé of recent Supreme Court decisions on patents prepared by Mr. P. J. Federico.)

THE UNITED STATES PATENT OFFICE

What It Is—How It Functions—What It Needs

(October 3, 1955—For official distribution)

Basis in Law for the Organization and Function of the United States Patent Office

I. The United States Patent Office was established by an act of Congress under the provision of article I, section 8, paragraph 8, of the Constitution which empowers Congress "to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

II. In accordance with title 35, section 1 of the United States Code the Patent Office comprises an office in the Department of Commerce.

III. The following personnel and functions are specifically prescribed for the Patent Office by title 35 of the United States Code.

A. A Commissioner of Patents who, in addition to many permissive authorities, has the following mandatory duties:

1. He shall superintend or perform all duties required by law respecting the granting and issuing of patents and the registration of trademarks (35 U. S. C. 6).

2. He shall maintain a library (35 U. S. C. 8).

3. He shall make an annual report to Congress (35 U. S. C. 14).

4. He shall charge specified fees and deposit the money so received in the Treasury of the United States (35 U. S. C. 41, 42).

5. He shall cause examination to be made of the applications, notify the applicants thereof, issue patents when applicants are found to be entitled thereto, and reissue patents when prescribed conditions are complied with (35 U. S. C. 131, 132, 251).

6. He shall declare interferences when in his opinion conflict is found to exist between applications or between applications and patents (35 U. S. C. 135).

7. He shall transmit to the Court of Customs and Patent Appeals copies of the necessary papers in appeals to that court and shall furnish the court with the grounds of the Patent Office decision in writing (35 U. S. C. 143).

8. He shall order certain inventions kept secret when so advised by the Atomic Energy Commission or other specified officers (35 U. S. C. 181).

B. One First Assistant Commissioner and two Assistant Commissioners who shall perform such duties pertaining to the Office of the Commissioner as may be assigned to them by the Commissioner (35 U. S. C. 3).

C. Nine Examiners-in-Chief who with the Commissioner and Assistant Commissioners shall constitute a Board of Appeals (35 U. S. C. 3, 7).

D. All other positions, both professional and nonprofessional, are established by the Commissioner pursuant to authority provided by the statutes.

The officials designated under items A, B, and C are Presidential appointees, all other positions are in the classified service.

Organization

The Patent Office is organized in conformance with law to carry out its statutory duties as shown in the accompanying chart.

Four levels of authority are evident. The positions in the top line of the organization chart represent the highest level of responsibility in the Patent Office. The Commissioner of Patents is responsible for directing all operations of the Patent Office and the Assistant Commissioners perform such duties as may be assigned them by the Commissioner. By statute, the Commissioner and Assistant Commissioners are members of the Board of Appeals. One of the Assistant Commissioners acts for the Commissioner in trademark appellate proceedings.

Positions in the next lower level constitute (1) the first line of direction of the operational components of the Patent Office organization; (2) members of the patent tribunals provided by law; (3) the chief law officer; and (4) the directorate of the research and planning staff. Further details about the organization of each of these major components are considered below.

The Patent Examining Operation comprises 66 Patent Examining Divisions, devoted to mechanical, electrical, or chemical arts, organized so that 9 or more divisions of related art are grouped together under a supervisory examiner. Each Patent Examining Division is made up of a primary examiner, who is in charge of the Division, an assistant chief, and an average of 10 assistant examiners. The primary examiner's time is devoted almost entirely to supervisory duties and the assistant chief normally spends part of his time supervising and training junior examiners. The remaining examiners spend all of their time examining applications. The degree of independence of their work and the quantity of their work vary with the experience of the examiners. A new examiner (in the GS–5 grade) has little or no experience, requires considerable instruction and supervision, and produces a relatively small amount of effective work. An examiner who has had, on the other hand, a background of years of experience, requires practically no instruction or supervision, and produces a relatively large amount of the effective work performed in the examining divisions. The Patent Examining Operation also includes the Classification Group of five Classification Divisions and a Classification Service Branch, all under a classification supervisor.

The Trademark Examining Operation consists of three Trademark Examining Divisions, organized similarly to the Patent Examining Divisions, a Trademark Classification and Search Division, and a Trademark Service Branch.

The executive office is headed by an executive officer and comprises three Divisions, namely, Budget and Finance, Personnel, and General Services, each of which, in turn, is organized in branches along functional lines as indicated on the chart. The head of each of these Divisions is responsible to the executive officer and, in turn, carries out his assigned function through the branch heads who, together, constitute the major supervisory force in conducting the functions of the Executive Office. The head of the Budget and Finance Division is also the budget officer of the Patent Office.

The Board of Appeals consists of the Commissioner, the Assistant Commissioners, nine examiners-in-chief, and such pro tempore members as may be assigned. The Board hears and decides appeals from final rejections by the patent examiners denying the patentability of claims to invention.

The Office of Interferences consists of the Board of Patent Interferences and the examiners of trademark interferences. They function under the direction of the Chief Examiner of Interferences to determine the respective rights of rival claimants for patents and certificates of registration of trademarks, respectively.

The Office of the Solicitor. This Office which includes the Solicitor and the law examiners, constitutes the legal staff of the Commissioner and has charge of Patent Office litigation and investigates and prepares opinions on legal and legislative matters.

The Office of Research and Planning. This Office was established to give continuous study to applications of machines to Patent Office operations, particularly in connection with mechanization of search, and to give consideration to other methods of improving operations. This organization is headed by a committee consisting of three officials, one of whom is the chairman, and operates through a number of task groups each of which consists of several employees who are temporarily assigned to engage in specific projects.

It is possible also, to analyze the organization of the Patent Office in terms of its division of functional responsibilities. By the simplest distinction on this basis, there is the examining function, on the one hand, and the nonexamining functions on the other. The latter are organized in the executive office. They consist, in part, of administrative activities such as relate to budgeting, accounting, personnel, procurement and supply, printing, and other staff and housekeeping matters, and, in part, to activities which supported the examining system and afford necessary services to the public ancillary to examination.

The Examination System

The examining functions, which are the primary functions of the Patent Office, are performed with the end in view of determining whether or not a patent should be granted on a patent application or a certificate of registration should be issued on a trademark application. The requirement, that examinations be conducted, is embodied in law and constitutes a fundamental characteristic of the operation of the Patent Office. Examination of patent applications involves examining printed publications for disclosures of similar inventions which may have been made in the past, evaluating the similarities and differences between the inventions of the past (all prior art) and the invention for which a patent is sought, and, scrutinizing the language in which the invention is being claimed.

These primary functions of the Patent Office are carried out by the examining corps which is divided for the consideration of patent and trademark applications, respectively, into the patent examining and the trademark examining groups.

PATENT EXAMINING OPERATION

The soliciting of a patent is initiated by the filing of an application in the Patent Office by or on behalf of the inventor. The application includes a complete description of the invention, claims defining the invention, a drawing in each case admitting of a drawing, an oath, and a filing fee, and must comply with various formal requirements.

The general course of examination of a patent application is shown in the following simplified diagram.

In brief, the application papers, after formal preliminary processing, reach the examiner for action. After one or more actions by the examiner, requiring response by the applicant, and including possibly appellate procedure, a patent is ultimately granted or refused on the application.

In greater detail, application papers are first received in the Correspondence and Mail Branch. The fee accompanying the application is forwarded to the Finance Branch. The application papers are then transmitted to the Application Branch where they are examined for formal compliance with statutory requirements for an application and a file wrapper and the necessary index cards are prepared. The drawings are examined by the Drafting Branch for quality of execution and any assignments are made of record by the Assignment Branch. The Manuscript and Lithographic Branch makes photoprints of the drawings for use in the examination procedure and the entire application is microfilmed. The application then passes through a classification operation which results in its assignment to the appropriate one of the 66 Examining Divisions.

In the Examining Division, the application is assigned to a particular assistant examiner and awaits its turn for consideration. When the application is taken up for action the examiner, after a study of the application and its claims,

searches the prior art, including United States and foreign patents and literature, in an attempt to locate disclosures of identical or similar inventions of earlier date. The first action may result in a ruling that all of the claims define in proper terms inventions over the prior art, in which case all the claims are allowed. At the other extreme, it may be held that none of the claims defines an invention over the prior art, in which case all the claims are rejected. Between these two extremes, some of the claims in an application may be allowed and other claims in the same application may be rejected.

If some or all of the claims in an application are rejected, and the applicant continues to believe that he is entitled to receive a patent, he must respond to the letter of rejection within a definite period of time, usually 6 months from the date of the Office action. The response may be an argument traversing the correctness of the rejection; an amendment changing the language of the claims or presenting new claims to avoid the rejection; a cancellation of the rejected claims; or a combination of 2 or all 3 of these types of response. If no response is made within the statutory period, the applications becomes abandoned by operation of law.

An application in which a response has been made by an applicant is called an amended application and awaits further action by the examiner. In his second action, the examiner considers the response, searches again for prior art if necessary, and then finds all the claims acceptable or allowable; all the claims unacceptable or rejectable; or some claims allowable and other claims rejectable. If some or all of the claims are rejected, the application again requires a response from the applicant within the statutory period if it is to remain in good standing before the Patent Office.

The interchange between the examiner and the applicant continues until the applicant decides to cease his efforts to obtain a patent and permits the application to become abandoned; or the examiner finds all the claims in the application to be allowable; or the examiner finally rejects the application.

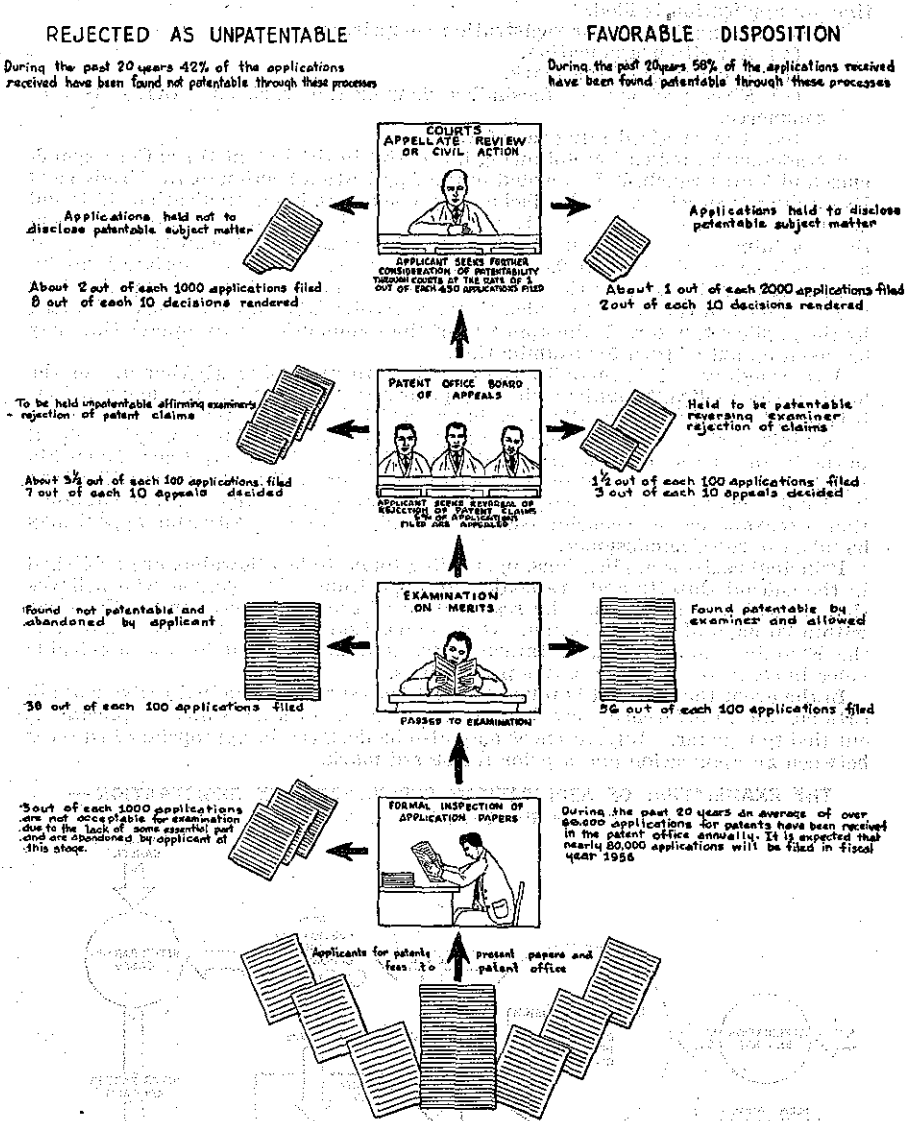
The applicant has the right to appeal to the Board of Appeals from a final rejection and, in the event that the decision of the Board of Appeals is unfavorable to him, he has the option of either appealing to the Court of Customs and Patent Appeals under 35 United States Code 141 or filing a civil action against the Commissioner in the United States District Court for District of Columbia under 35 United States Code 145. The decision of the district court in the civil action may be appealed to the United States Court of Appeals, District of Columbia Circuit.

When all the claims present in an application are held to be allowable as the result of the regular examination or appellate procedure, the application is "passed to issue" by the issuance of a "notice of allowance." The applicant must then pay a final fee within the statutory period of 6 months following the date of issuance of the notice of allowance in order to obtain his patent. The Commissioner may also accept the final fee if paid within 1 year after the termination of the normal 6-month period, under 35 United States Code 151. Upon payment of the final fee, the patent is printed and the formal grant of the patent is made to the inventor. Nonpayment of the final fee or nonacceptance of a belated final fee paid within the additional 1-year period results in forfeiture of the application.

In addition to the process just briefly described, the prosecution of the application may involve other procedures. The applicant may have occasion to file a petition to the Commissioner for any one of a variety of reasons, including a request that the Commissioner review the formal requirement imposed by the examiner, that he consider the appropriateness of an examiner's action, or that he revive an abandoned application. An application may also become involved in an interference with one or more other applications or an issued patent so that it becomes necessary to determine the question of priority of invention.

TRADEMARK EXAMINING OPERATION

The procedure involved in the registration of a trademark is initiated by the filing of an application for registration in the Patent Office. The application papers, if found to conform to certain formal requirements, are forwarded to the examiner for consideration. Principal register applications, if found to be allowable, are published in the Official Gazette subject to opposition. Supplemental register applications are passed directly to issue and may be subject to cancellation. If registration is refused by the examiner, appeal may be taken to the Commis-



THE EXAMINATION OF APPLICATIONS FOR PATENT-MAJOR PROCEDURES INVOLVED

sioner. The attached chart shows the flow of applications and major procedures in the examination of applications for trademark registration.

To be eligible for registration, it is necessary that a mark be in use in commerce which may lawfully be regulated by Congress, such as interstate commerce, at the time an application is filed.

A complete application for registration comprises:

(*a*) A written application.

(*b*) A drawing of the mark.

(*c*) Five specimens or facsimiles showing the mark as actually used in commerce.

(*d*) The required filing fee of $25.

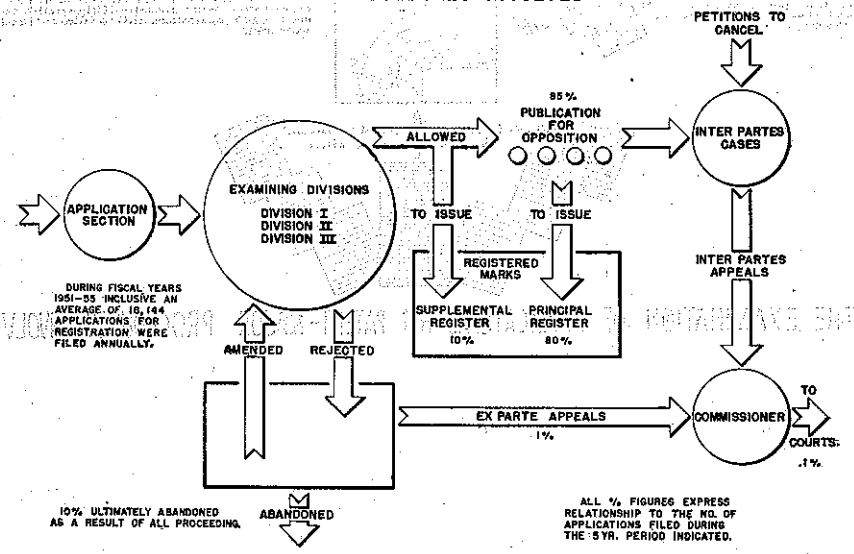
A trade-mark application, following its receipt in the Patent Office Correspondence and Mail Branch, is forwarded to the Application Section of the Trademark Examining Operations. A file jacket is prepared and the application, if found acceptable for examination, is given a serial number for purposes of identification. A filing receipt is mailed to the applicant or to the applicant's attorney, if one has been appointed, and the application assigned to the appropriate Examining Division and placed on the examiner's docket for examination. Applications are examined in the order in which they are received, but upon a proper showing by the applicant, and with the approval of the Commissioner, an application may be taken up out of turn for examination.

A thorough search is made by the examiner to determine whether or not the mark of the applicant conflicts with any prior registered mark. In the event that it is found that the applicant's mark is not entitled to registraion for any reason, he is advised of the reasons therefor and given such information as may be helpful in the further prosecution of the application. The applicant has 6 months within which to respond to any action by the examiner, and failure to do so will result in abandonment of the application. After response by the applicant, the application is reexamined or reconsidered, and if finally refused registration appeal may be taken to the Commissioner.

Principal register applications, upon being found to be allowable, are published in the Official Gazette and are subject to opposition. Any person who believes that he will be damaged by the registration of the mark may oppose the same within 30 days after publication. If an opposition is filed, it is transmitted to the Examiner of Trademark Interferences and is governed by the applicable rules in contested or inter partes proceedings.

In the event that conflict is found to exist between two principal register applications, an interference may be instituted to determine which applicant is entitled to register. Interferences may also be declared in appropriate instances between an application and a prior registered mark.

THE EXAMINATION OF APPLICATIONS FOR TRADEMARK REGISTRATION—MAJOR PROCEDURES INVOLVED



If no notice of opposition is filed and no conflict found with other pending applications, the application is passed to issue and the certificate of registration issued in due course of business. Certificates are usually issued on the fourth Tuesday following allowance of the application.

Supplemental register marks are not subject to opposition, and upon being found to be allowable are passed directly to registration.

Registrations are issued for a term of 20 years and may be renewed for a like term every 20 years provided the mark is still in use in commerce which may lawfully be regulated by Congress.

Provision is made in the Trademark Act of 1946 for the cancellation of registrations under certain circumstances. This proceeding is initiated by the filing of a petition under section 14 and is governed by the applicable rules in inter partes proceedings. Petitions to cancel supplemental register registrations may be filed at any time, but petitions to cancel principal register registrations must be filed within 5 years of the date of issuance of the registration, unless it is asserted that the registration sought to be canceled was obtained fraudulently or was issued contrary to the provisions of subsection (a), (b), or (c) of section 2, or section 4; or has been abandoned; or that the registered mark has become the common descriptive name of the goods to which the mark is applied. Petitions for cancellation of principal register registrations which are based on one or more of these enumerated grounds may be filed after the 5 year statutory period has elapsed.

Registrations issued under the acts of 1881 and 1905 are entitled to the benefits of the Trademark Act of 1946 with the exception of eligibility for incontestable status. An opportunity to secure the latter advantage is available to owners of such registrations by publication of the mark under the provisions of section 12 (c). The affidavit requesting publication must specify the goods recited in the registration on which the mark is in use in commerce, and claim the benefits of the 1946 act for the mark.

A mark which has been registered on the principal register for 5 years may become eligible for "incontestable" status provided the conditions prescribed by section 15 are satisfied and the owner of the registration files the affidavit required by that section.

The owner of a registration issued under the provisions of the 1946 act, or of a registration which has been published under section 12 (c), is required to file within the sixth year following the date of registration or publication, as the case may be, an affidavit showing that the mark is still in use, or, if not in use, an acceptable excuse for nonuse. If the affidavit is not filed within the time specified by statute, the registration will be canceled by the Commissioner.

Provisions are also made for the surrender of registrations by the owners; for the correction of registration certificates where the error occurred through the fault of the office or the applicant; and for the amendment of registrations under certain circumstances.

THE PATENT APPLICATION EXAMINING OPERATION

The condition of work in the Patent Office, referring particularly to the number of pending patent applications, depends upon the combined effect of a number of influences. These influencing factors, in the main, are as follows:

(1) the rate at which new applications are received;
(2) the size of the examining force;
(3) the experience and capability of the examiners; and
(4) the complexity of the inventions disclosed in the applications submitted.

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RECEIPTS

The rate at which new applications are filed is generally referred to as the rate of receipts. This rate may be expressed on a daily, weekly, monthly, or annual basis, but the last is the basis usually chosen.

The receipts are uncontrollable and unpredictable. They are affected by war and peace, prosperity and recession, but there is no accurate manner of predicting future receipts. Any person may file an application and there are relatively few limitations and requirements as to when and how they may be filed.

Within the past 20 years the number of patent applications received yearly ranged from a low of less than 44,000 in fiscal year 1943, to a high of almost 79,000 in fiscal year 1955. From the previously indicated 44,000 level of 1943, receipts rose to almost 78,000 in 1946, only 3 years later, and then fell off to 60,000 during fiscal year 1952. In each year since then, successively larger number of applications have been received.

A tabulation of the applications filed during the past 20 years follows:

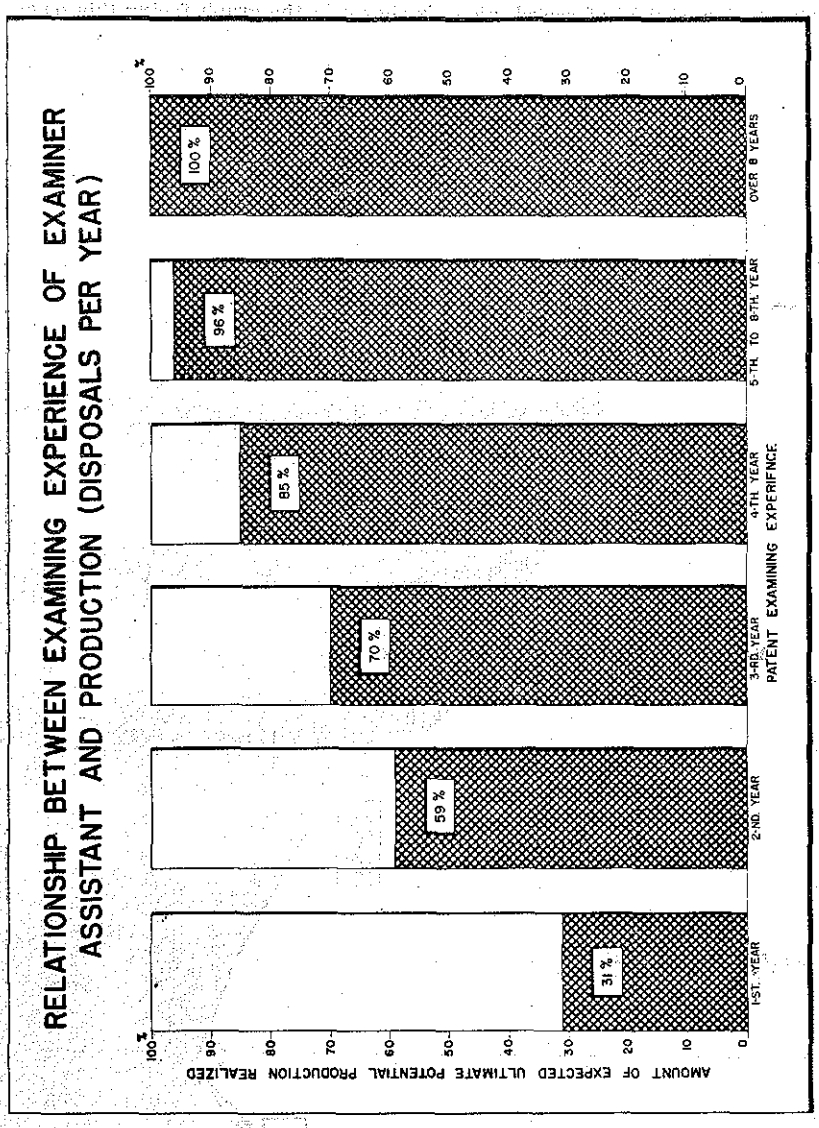
Applications for patents filed, fiscal years

Year:	*Inventions*	Year—Continued	*Inventions*
1936	60,140	1946	77,940
1937	64,161	1947	77,779
1938	66,536	1948	73,256
1939	66,561	1949	66,172
1940	61,809	1950	69,117
1941	57,121	1951	63,077
1942	48,469	1952	60,200
1943	43,655	1953	70,124
1944	50,073	1954	75,077
1945	59,661	1955	78,480

DISPOSALS

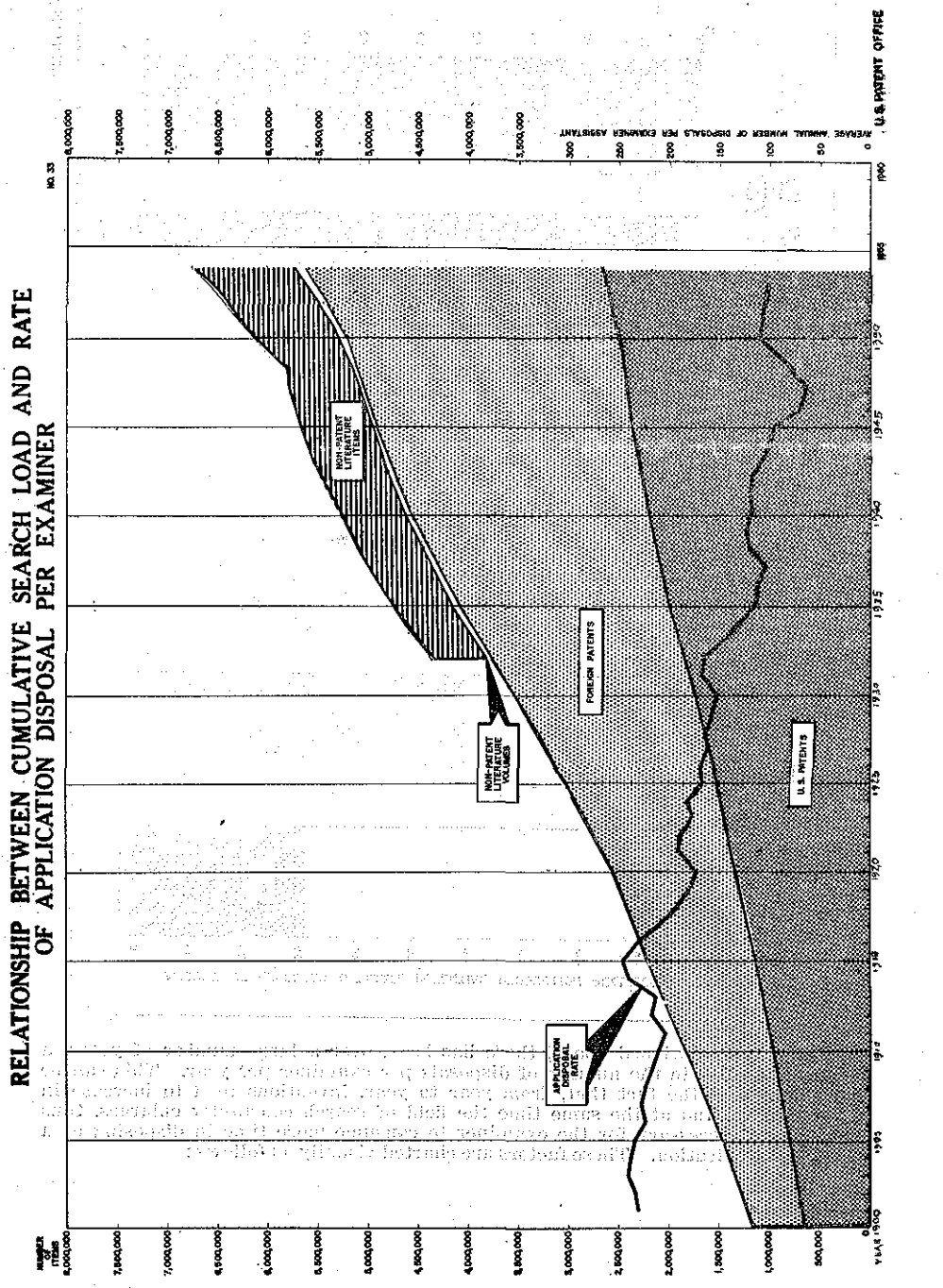
Every application received in the Patent Office is ultimately disposed of in one of two ways. If it is found that the invention disclosed in the application satisfies the requirements of the law and is patentable subject matter, the application results in the issuance of a patent. If it is found that the application does not merit the issuance of a patent, or for some other reason the applicant ceases his efforts to obtain a patent, the application becomes abandoned. The prosecution of every application is finally concluded by patenting or abandonment. The termination of the prosecution of an application is designated as a disposal, irrespective of the manner of termination, because the Patent Office will no longer have to be concerned with the examination of that application.

The amount of time required to dispose of an application varies with the nature of the invention, the skill and experience of the examiner, and the vigor of the prosecution. An application which discloses a simple invention can be disposed of in less time than one which discloses a complex invention; a skilled and experienced examiner takes less time to dispose of an application than an inexperienced examiner; a persistent inventor consumes more time in the prosecution of his application than an inventor who readily accepts claims of reasonable scope or readily drops the prosecution and abandons his application when no patentable subject matter is presented. The relationship between the experience of the examiner and his disposals is graphically shown below. In addition to



the factors mentioned above, there has been, over a large number of years, a steady decline in the number of disposals per examiner per year. This can be attributed to the fact that, from year to year, inventions tend to increase in complexity, and at the same time the field of search constantly enlarges, thus making it necessary for the examiner to consume more time in disposing of a typical application. These factors are charted visually as follows:

The factor of field of search alone is shown in the graph facing this page.



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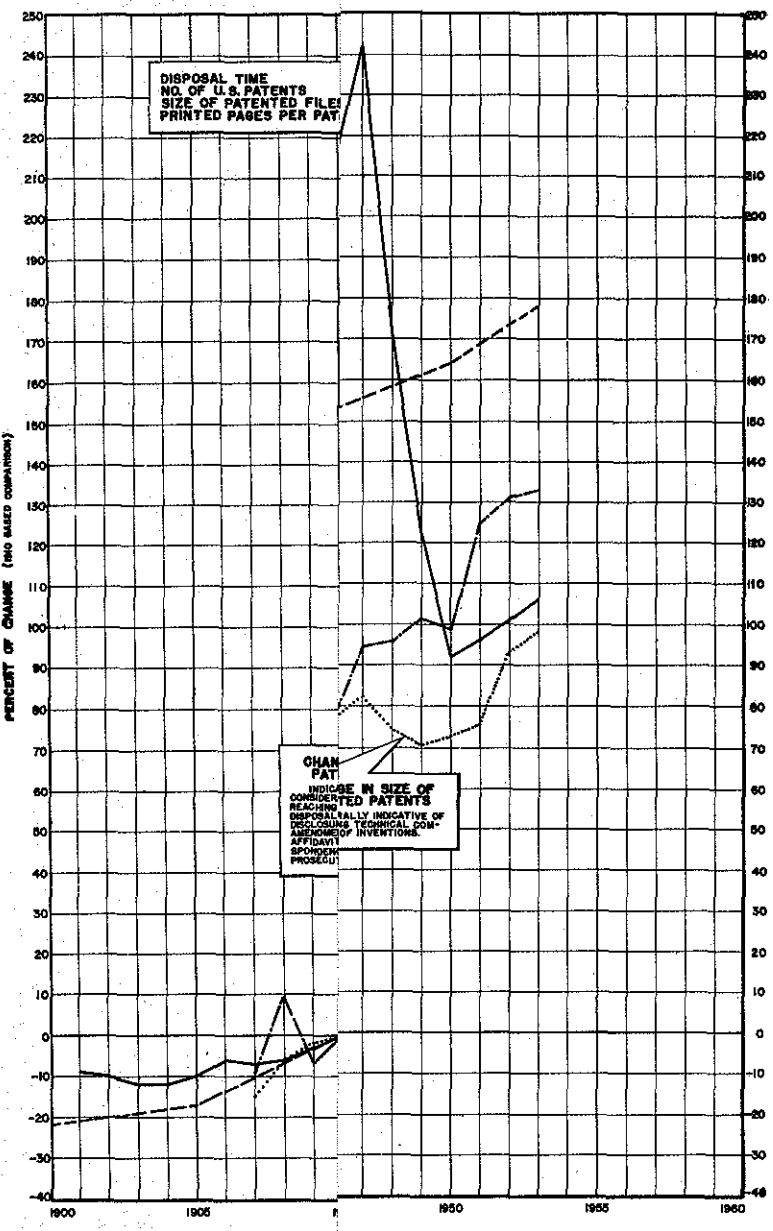

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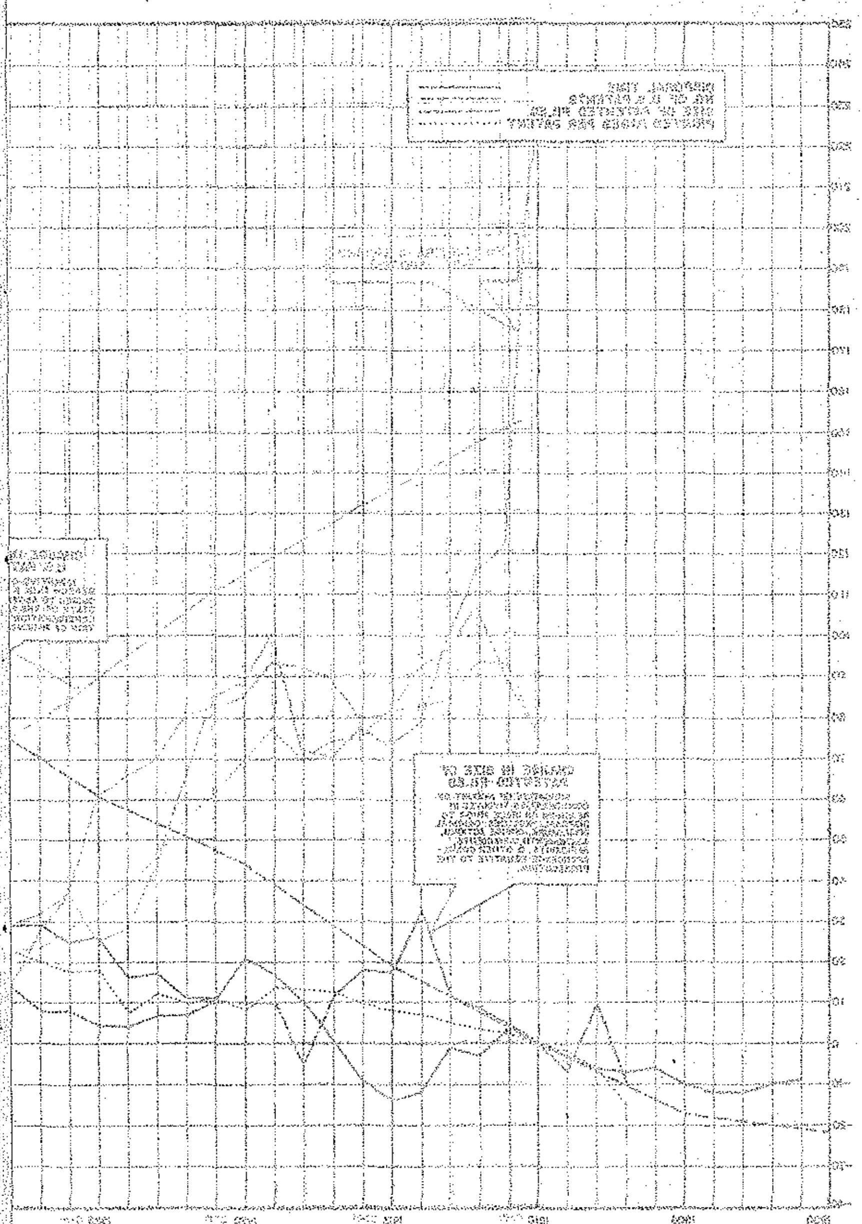
RELATIONSHIP BETWEEN FACTORS EXAMINATION AND RATE OF A



BACKLOG

The term "backlog" means the total number of applications pending in the Patent Office. This total includes those applications which are awaiting action by examiners and those which await action by the applicant. The term "examiners' backlog" is sometimes used to indicate the number of applications which are awaiting action by the Patent Office.

The size of the backlog is directly affected by the two items of receipts and disposals discussed above. As the Office obviously cannot control the number of applications received, the only practical solution for the large backlog lies in increasing the number of disposals.

The relationship among receipts, disposals, and backlog is pictorially represented in the following flowsheet, based upon the figures for the month of April 1955. The total backlog of applications consists of the sum of the contents of both tanks, those awaiting action by the Office and those awaiting response by the applicant. The total backlog is increased by the input of new applications and is decreased by the output of disposals. The examiners' actions are the prime mover in the entire operation since they produce the disposals, either directly by allowing an application or indirectly by rejecting an application which later become abandoned. The number of examiners' actions is, of course directly related to the size of the examining corps.

THE IDEAL CONDITION OF WORK

The Patent Office should be in position to act promptly upon patent applications submitted to it and this objective can obviously only be realized when the examining staff is sufficiently large to maintain the backlog relatively small. It is necessary that there should be a backlog and it should not be negligible in size. A reservoir of work for the examiners should be maintained in order to provide opportunity to equalize their respective workloads. In as much as each applicant has 6 months within which to reply to an Office action, it is inevitable that the backlog will include a sizable group of applications awaiting response by the applicant.

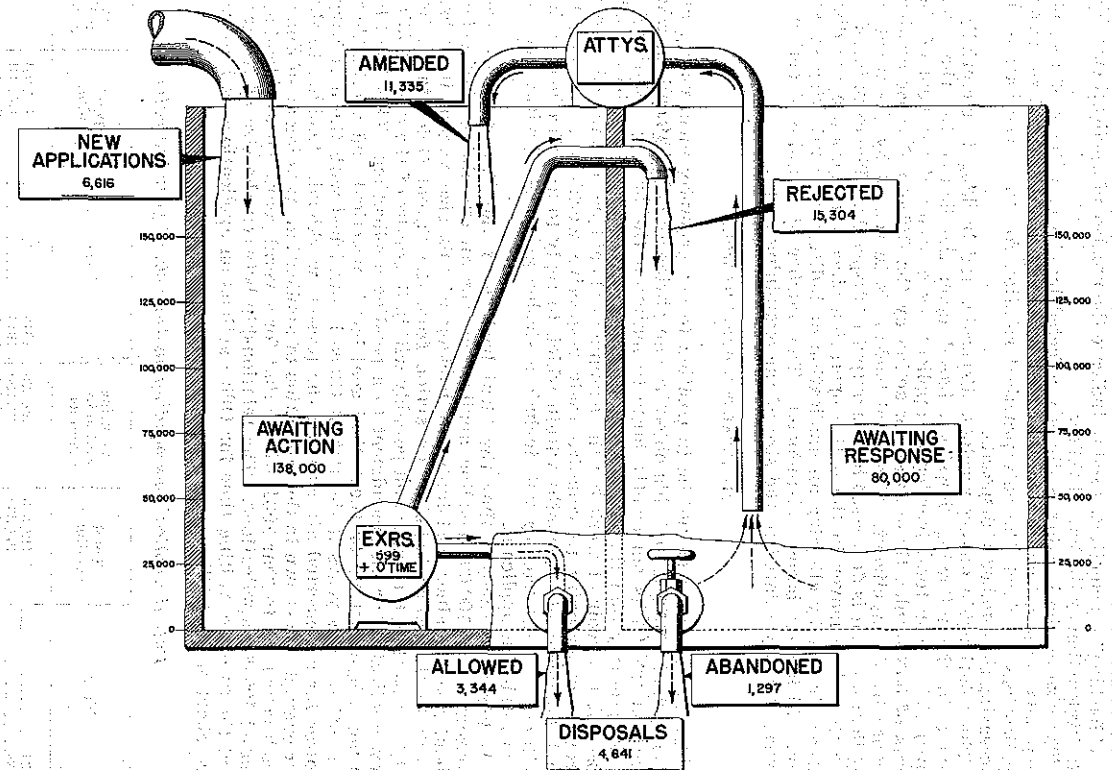
It has been thought that the ideal backlog of the Patent Office would be approximately 100,000 pending applications for an examining staff comprising about 850 examiner assistants. A backlog of this size would, it is believed, result in the transmission of an action from the Patent Office to an inventor within less than 6 months and possibly within 3 months of the date of filing of a new application or an amendment to a pending application. This ideal backlog is not a hypothetical or theoretical goal but is practical and attainable within a relatively few years if the Patent Office is furnished with the necessary manpower for a concerted attack upon the present workload. Looking to the past, for example, as shown in the tabulation of applications pending as of June 30 for each year back to year 1934, we see that for several years the workload approximated 100,000 applications. The relationship between the size of the workload and the average waiting time for Office actions on applications is illustrated in the chart on page 197.

Patent applications pending on June 30, of year indicated [1]

Year	Total pending [2]	Awaiting action by examiner [3]	Year	Total pending [2]	Awaiting action by examiner [3]
1934	112,576	39,226	1945	116,981	61,891
1935	106,335	31,920	1946	157,861	110,386
1936	104,095	33,540	1947	202,923	130,116
1937	109,735	38,121	1948	233,174	148,184
1938	116,041	45,723	1949	232,171	140,711
1939	113,277	42,215	1950	219,334	124,823
1940	110,743	44,902	1951	201,382	108,996
1941	104,957	42,112	1952	185,084	96,836
1942	95,265	46,239	1953	182,650	98,878
1943	91,429	39,052	1954	194,620	116,392
1944	99,157	46,208	1955	221,872	139,931

[1] Does not include allowed applications and design applications.
[2] Beginning with 1948 includes applications in preexamining processes.
[3] Includes cases in which office actions were suspended under rule 103.

FLOW OF PATENT APPLICATIONS DURING EXAMINATION PROCESS



U. S. PATENT OFFICE

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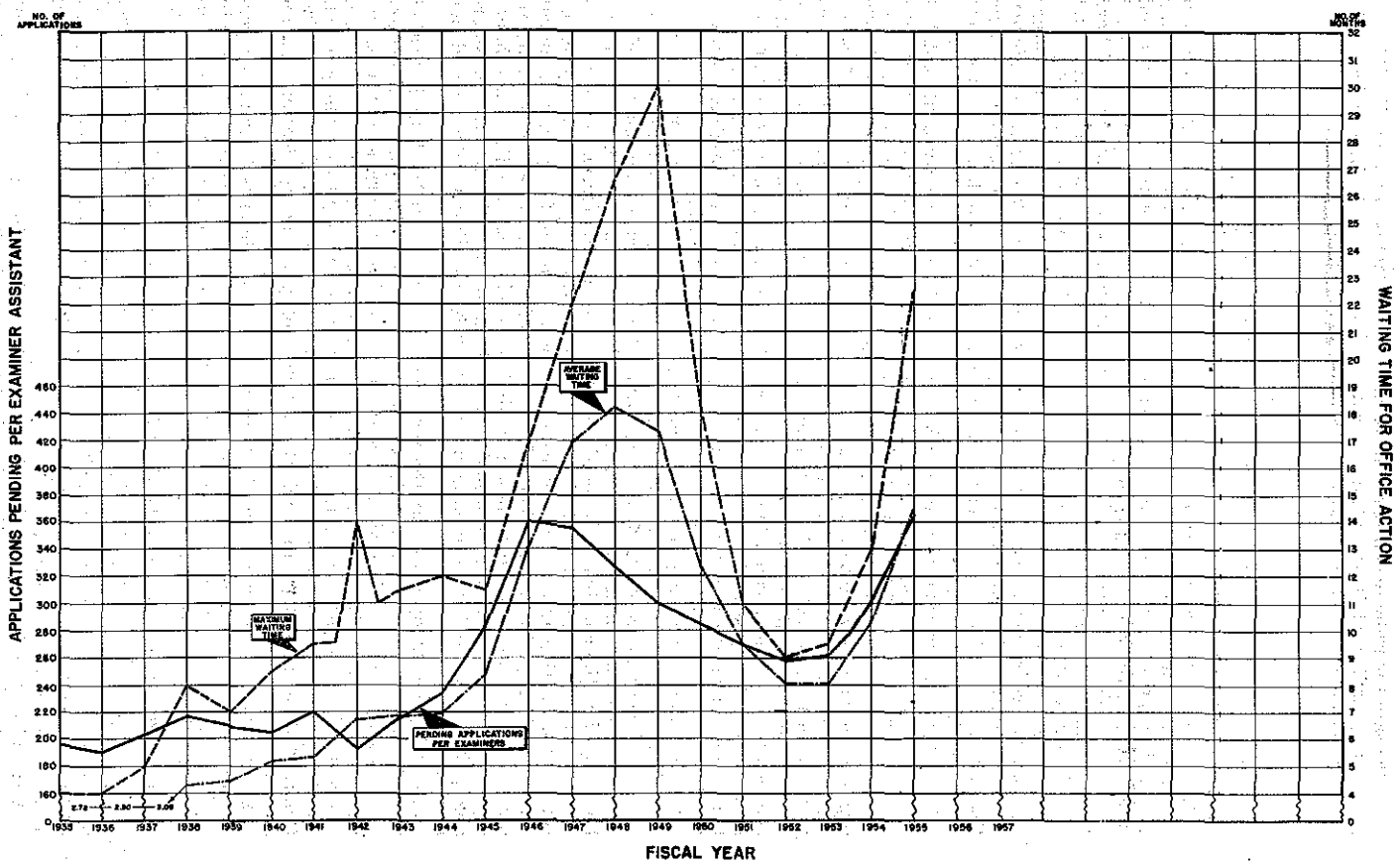
RELATIONSHIP BETWEEN BACKLOG OF PENDING APPLICATIONS, NUMBER OF EXAMINER ASSISTANTS AND WAITING TIME FOR OFFICE ACTION



A program for reducing the present backlog to 100,000 pending applications is graphically indicated in the attached chart, which chart will be considered in the discussion of personnel requirements which is to follow.

Needs of the Patent Examining Operation

Patent examining division needs

The need for more examiners

Reduction of the backlog cannot be accomplished by an immediate operation of mere mechanical routine. Skilled examiners only can be employed in this work. Except in very rare instances however, as when an examiner resigns and later returns, the Patent Office does not hire examiners. It employs qualified men and women and, over a period of years, trains them to be examiners. There is no training school or training course where a student can be taught to be an examiner so that he can enter the Patent Office as a fully effective employee.

It has already been shown that some time is required to train a new examiner and several years elapse before he reaches his maximum effectiveness. Hence, even if it is possible to employ many additional prospective examiners—some time must pass before the capacity of the examining corps to dispose of its work is materially increased.

The program for reduction of the backlog which is presently contemplated takes into account not only the problem of training but the difficulties of recruitment under present-day conditions. It will be noted that a buildup of the examining corps in 3 years from an average of 610 examiner assistants to 1,050 examiner assistants in 1958 is planned. This is an increase of 440 in the average number of examiner assistants. While such an enlargement indubitably requires many adjustments, this scale of change in size of the examining force is not likely, under present conditions, to present insuperable problems. Under the comparatively adverse conditions which prevailed during the last period of personnel expansion (fiscal years 1946–49, inclusive), the Office was able to recruit, train, and integrate into the examining operation 606 new examiners with a resulting increase of 356 in the average size of the examining corps.

The backlog-reduction program is planned to span an 8-year period. Theoretically, assuming the availability of more qualified manpower and a commensurately larger appropriation, the objective of attaining an optimum backlog of about 100,000 pending applications could be achieved sooner. We believe, however, that the charted plan for the enlargement of the examining staff contemplates a rate of increase which is about the maximum posible under present conditions, particularly when the extraordinary demand for young technical graduates is kept in mind. Also a faster rate of staff increase would tend to disrupt operations and create new and difficult problems. On the other hand, a program of lesser magnitude would seem to be unrealistic in that the considerable public demand for more expeditious action by the Patent Office would not be met.

About 5 years of operation at the planned maximum staff level, as indicated in the attached chart, would put the Patent Office in a condition where reduction of personnel would be in order. Instead of mass involuntary separations, as would be necessary if a faster and greater enlargement of staff were experienced, the reduction could be accomplished through attrition without disturbing effect. By this process, the staff could be reasonably permitted to adjust to the size thought to be necessary to hold the number of pending applications at an optimum volume.

The fundamental assumptions in planning the aforedescribed examiner personnel requirements are that new applications would be received at the rate of 80,000 a year and that the average number of application disposals per examiner could be sustained at 95.

The need for an improved job classification and salary structure

The Patent Office salaries are, of course, not those which are paid by industry, especially in the higher grades. If this situation could be improved, it would have a considerable effect in inducing examiners to become career employees of the Patent Office and not merely to regard the Patent Office as a stepping stone to better opportunities.

A recent survey has shown that the average examiner does not reach his full potential in work output until he has had 8 years of experience in the Patent Office. A newly appointed examiner, during his first year, turns out only 31 per-

cent as much work as the experienced examiner in terms of application disposals. (See chart on p. 12.) This difference in production capability, from the standpoint of cost per disposal (1954 salary rates), is represented by $62 per application disposal by the experienced examiner as against approximately $107 per application disposal by the first-year examiner. This does not take into consideration the appreciable costs involved in the replacement process, such as the cost of recruiting the new examiner, training costs, the additional supervisory time required, the cost in terms of the time of others who interrupt their own work to help the new man with his searches and other technical problems, and the intangible cost in terms of work of poorer quality.

All this means that the loss of experienced examiners through turnover is extremely costly to the Patent Office from a work production and monetary standpoint. Yet the record shows a tendency for more and more experienced examiners to leave the Office for other employment.

During fiscal year 1953, 47.5 percent of the patent examiner turnover occurred in grades GS–11 and GS–12, while during the fiscal year 1954, 60.8 percent occurred in these grades, in comparison with only 9.7 percent in 1948. When an experienced examiner is replaced with a new man, the loss in production (i. e., disposals) amounts to 69 percent during the first year. In other words, the separation of 100 experienced examiners results in the loss of 69 man-years of production during the following year, if replacements are secured. During the 8-year period required for the new examiners to reach their ultimate potential, the total production loss amounts to 171 man-years for every 100 examiners.

The existing grade structure of the Patent Office offers little in the way of promotional incentive for the examiner who has reached GS–12, due to the extremely limited number of GS–13 positions available. Under present conditions, few examiners can expect to advance beyond grade GS–12, and those who do are, on the average, nearly 49 years old by the time they reach GS–13. (See attached graph showing the distribution of examiners by age and grade.) Thus, many examiners find themselves stymied from a promotional and salary standpoint during the very period that their family financial responsibilities are at their peak.

One factor which substantially limits promotional opportunity in the upper grade levels of the examining corps is the low salary rate presently authorized for the Commissioner of Patents, the Assistant Commissioners, and the head of the patent examining operation. If it were possible to provide executive salaries for the Commissioners, as recommended on page 207, the way would be open for appropriate adjustments in the examiner position grade structure correcting the above-described condition.

The need for improved physical facilities

Additional space.—Before the Patent Office was moved to Richmond in 1942, the area per employee in the Examining Divisions was approximately 150 square feet. This space was so arranged that each assistant examiner had his own window for purposes of light and ventilation, and the Chief of the Examining Division, with proportionally greater space assigned, usually had 2 windows. As the Commerce Building is constructed, this meant that each assistant examiner used office space equivalent to approximately 7 feet of outside wall length and the Chief used twice that amount. In addition, partial partitions afforded each examiner a degree of semiprivacy. With this arrangement, each examiner was free to place his own desk in a position to meet his own needs or desires and there was some measure of semiprivacy. This was found to be satisfactory and provided each division with proper surroundings in which to work as well as the space needed for search files.

Within the Commerce Building, additional space should be provided so that the Patent Office might attain substantially the same working conditions as obtained prior to 1942, and all of the Patent Office units should be located in the north portion of the building. Most of the formerly continuous space which the Patent Office occupied before its transfer to Richmond was broken up into offices of various sizes during World War II. All space assigned to the examining operation should be subdivided in such a manner that it would afford each examiner assistant a semiprivate room. Each such room should be at least 7 feet wide along the outside wall and should include a window. The room assigned to each primary examiner should be approximately twice this size.

The condition of several examiners working in large rooms is not conducive to the most satisfactory work because of frequent disturbances and distractions. In doing their work it is frequently necessary for examiners to confer with each

DISTRIBUTION OF EXAMINERS
GRADE, SALARY, AGE, AND TURNOVER

GRADE	AVERAGE SALARY	NUMBER IN GRADE SEPT. 16, 1955	AVERAGE AGE (YEARS)	AVERAGE AGE UPON ENTERING GRADE (YEARS)	NUMBER LEAVING FROM JULY 1, 1953 TO SEPT. 16, 1955
GS-15	$12,060	17	56	52.3	1
GS-14	$10,632	77	55.5	52.4	5
GS-13	$ 9,205	79	50.8	48.7	2
GS-12	$ 8,166	370	45.8	40.3	41
GS-11	$ 6,605	115	36.3	34.0	80
GS-9	$ 5,589	37	33.3	31.2	40
GS-7	$ 4,930	96	29	27.9	14
GS-5	$ 4,345	72	24.5	24.2	20

other or with the applicants or their attorneys. Suitable quarters should be provided for conducting these conferences and interviews so as to avoid disturbing other examiners.

Furniture and equipment.—There is an outstanding need to refurnish the examining divisions. Their present furniture and equipment consists of a conglomeration of pieces accumulated over a number of years and is predominated by shoddy items of wartime construction and castoffs and discards of reduced or liquidated agencies which the Office was permitted to obtain through the surplus property distribution system. The newest and most modern items in use comprise special types of filing equipment which have been obtained through new procurement under the search-file modernization program. On the other hand, many items in use date back many years and were already old when brought with the Patent Office to the Commerce Building in 1932.

New furnishings are needed to give the Examining Divisions an appearance commensurate with the importance of the work carried on there; to provide an

atmosphere in which public business may be conducted which does not engender disdain for the Government representative; to engender pride rather than embarrassment by the employees in the condition of their working environment and thereby add to the stability of employment and obtain the other benefits of this human factor affecting productivity; to provide a greater degree of functional utility and flexibility in use of property than is now possible; and to achieve the higher standard of outfitting comparable with what appears to prevail in many other less venerable bureaus of this and other departments.

The most important need is for air-conditioning, preferably a centralized system but, in the alternative, individual room air-conditioners of modern design and adequate capacity. Very few Examining Divisions have been provided with air-conditioners and some of these are old, noisy, and of inadequate capacity. When working they do not properly cool the air and they are so overloaded that breakdowns are frequent. The Commerce Building was the last large building to be erected without air-conditioning and, in recent years, much older buildings, such as the Treasury Building, have been air-conditioned. By present-day standards, air-conditioning is essential not only for comfort but to sustain the efficiency of the worker, which otherwise is materially reduced because of the discomfort of summer temperatures. Finally, it is a source of irritation to inventors and attorneys who come to Washington for a full day's work in the Patent Office to find that working in the Office is almost unbearable because of high temperature and humidity.

DESIGN EXAMINING NEEDS

Introduction

Design examining presents unique problems of its own. Designs are generally more highly seasonal in nature than most inventions and, unless prompt action can be given on applications filed, their usefulness to inventors and to the industries represented is quite frequently lost. Thus, protection for many meritorious design inventions is not sought, as the inventors feel that if they must wait an unduly great length of time for patents to issue, they are are of no value to them and the very basic purpose of the patent statutes, to promote the useful arts, is defeated. This is particularly true in the case of highly seasonal arts such as costume jewelery, dresses, fabrics, and the like. In such arts prompt action encourages filing of applications in greater numbers.

The need for more design examiners

At the present time, the design divisions have a staff of 14 examiner assistants, a backlog of 6,700 applications and the oldest dates for both new and amended applications awaiting action are over 7 months behind. The waiting period for Office actions should not exceed 3 months on new and 2 months on amended applications in order to give the inventor and the public proper service. On this basis of requirements, the design divisions need enough manpower to keep even with receipts and to reduce the backlog within 1 or 2 years to such an extent as to thereby reduce the waiting time for actions to no more than 3 months.

For the past 3 years, new design applications have been filed at the rate of 5,500 per year. The average disposal per examiner is now 310 applications per year, so that it will require approximately 18 examiner assistants to dispose of applications as fast as they come in, an increase of 4 examiners over the present force. It can be computed that a backlog of 5,100 applications distributed among 18 examiners, will result in an average waiting time of 3 months. In order to keep even with receipts and reduce the backlog to 5,100, a further but temporary increase in the number of examiners is required. If the backlog is to be reduced over a period of 2 years, a temporary increase in force of 3, in addition to the permanent increase of 4, would be needed.

These computations are based on production rates of examiners of average ability and experience. A new design examiner, during the first year of his employment, can be expected to produce about 50 percent as much as the average experienced examiner. In order to offset this differential in productivity without unnecessarily enlarging the examining staff to achieve the backlog reduction, it would be necessary to utilize the services of experienced examiners on an overtime basis. This, in effect, would augment the productive effort without overexpanding the examiner force.

The need for improved physical facilities

Additional space.—At present, the design divisions are located in the south end of the Commerce Building at a considerable distance from most patent ex-

amining divisions and in quarters which are, for the most part, not partitioned into rooms. This is undesirable and inefficient. The design division should be located within a reasonable distance from other divisions and units of the Office with which they have to deal frequently and they should have regular rooms to properly isolate examiners from each other and from the clerical and typing section.

With the present force in the present quarters, two of the examiners are not provided with individual window space and the clerical section is somewhat crowded. If the examining force were enlarged a corresponding increase in floor space and windows would be required to provide adequate working conditions.

At present, the typing and clerical section is located between the two design examining divisions and such a central location of the clerical unit, with respect to the total design examining force, should be preserved.

Furniture and equipment.—The furniture and equipment needs of the design divisions are, in general, the same as the needs of the patent examining divisions and reference is made to the discussion of this subject on page 200.

CLASSIFICATION NEEDS

Introduction

Classification is the system of organizing printed disclosures of inventions, particularly in issued patents into search class, each class being complete as to some restricted phase of the technical arts. The classification system may be called the "finding" system for prior art, and the ease and perfection with which the prior art may be uncovered is dependent upon the quality of the classification. Since the Patent Office has about 7 million copies of United States and foreign patents and other reference material, the subdivision between the various files must be exceedingly fine otherwise the examiner would lose much time examining patents the disclosures of which are only generally pertinent to the invention being searched.

The emphasis on classification may give the impression that some patents are unclassified. There is no such thing as an unclassified United State patent. The problem is how to improve and render more adequate our classification so that each patent will be included in a relatively small and clearly defined group so that valuable time will not be needlessly consumed in reading of patents the disclosures of which are not closely relevant to the invention under consideration. At the present time the more than 2,700,000 United States patents are classified in 307 main classes and over 50,000 subclasses. A class, particularly one not recently revised may consist of only a few subclasses or, in the case of each of two thoroughly revised classes, may comprise more than a thousand subclasses. One examining division may have assigned to it a portion only of a single class. On the other hand another examining division of the same size may examine applications disclosing inventions which are classified in more than a dozen complete classes.

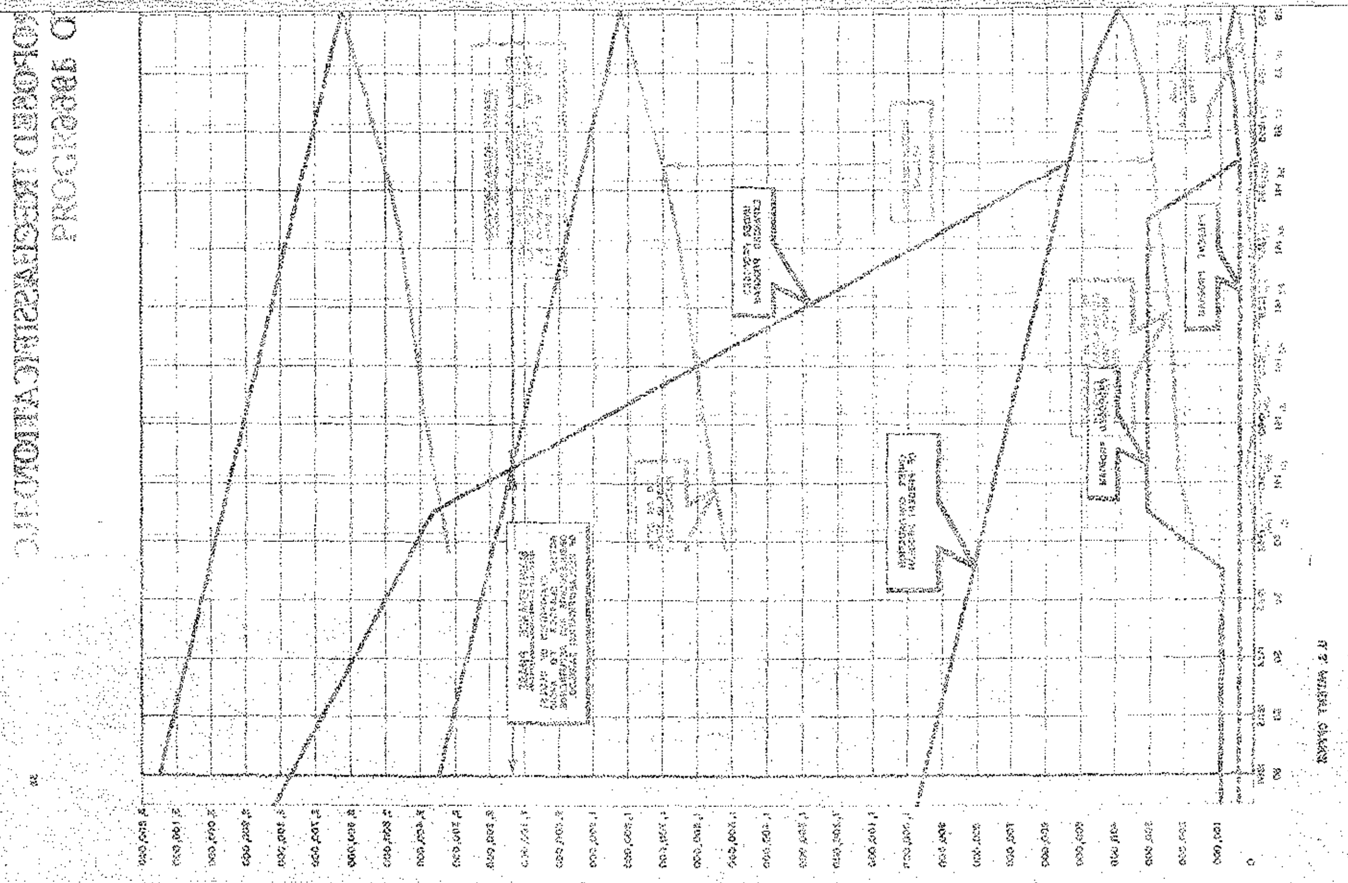
With the growth of the various arts, classifications at one time adequate become obsolete both by increase in the number of patents in each subclass as well as by the appearance of patents disclosing innovations unknown when the classifications were originally set up. A moderately active class should be reclassified at least every 15 years while an active class such as carbon chemistry should be almost continuously worked upon.

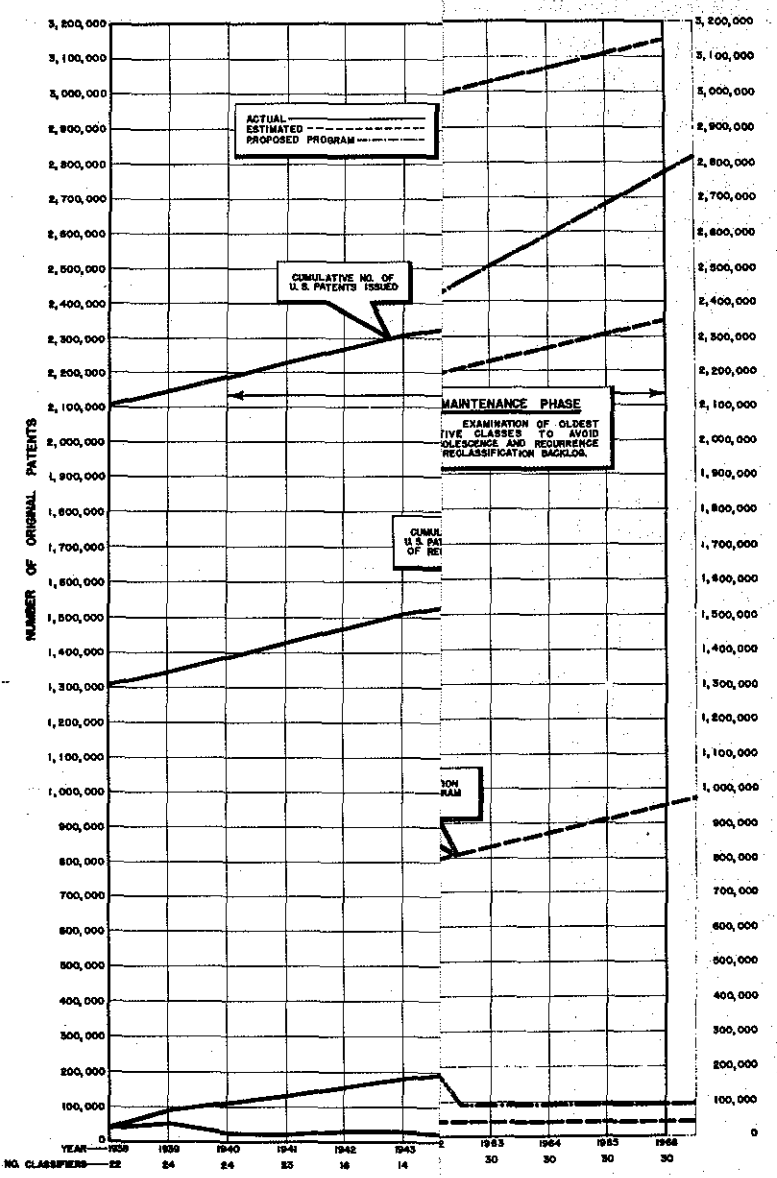
Unfortunately, the Patent Office due to its backlog of patent applications has never been able to spare a sufficient number of patent examiners to adequately accomplish the task of reclassification so that today most classifications reflect the state of the art of several decades ago. For example, radio receivers and transmitters were last classified officially in 1912.

The result of this obsolescence in classification has been a major factor in the steady drop in the productivity of examiners as revealed by the production records over many years. The Wallace Clark report on the Patent Office (1948, p. 30 (a)), concludes:

"We believe that reclassification of prior art is the most important need in the Patent Office in that it affects both the quality and quantity of the patent examining operation. No effort should be spared to find and place in this work the best talent in the Office."

The possibility of perfecting some method of searching with the aid of machines cannot justify postponement of an accelerated program of reclassification since the patents which disclose any given subject matter must first be divided





U. S. PATENT OFFICE

into groups as a preliminary step in any mechanized searching plan. Classification is a long step in this direction. This conclusion was also reached by the Bush committee's report to the Secretary of Commerce (1954) which concluded (p. 11):

"It might be thought, offhand, that mechanizing would decrease the need for reclassification. On the other hand, the introduction of machinery involves coding, and a basis for this is found in the system of classification. The committee hence conclude that the reclassification program should be accelerated."

The report of the Committee on Patent Office Procedure made to Secretary Herbert Hoover in 1926 sums up the need for classification in these words (p. 44):

"The fundamental tool of the patent examiner is an accurate and comprehensive classification of all domestic and foreign patents and scientific literature. Without this tool, the work of the examiner is needlessly prolonged, insufficiently and inaccurately done, and litigation increased.

"The lack of proper classification of patents is one of the most serious obstacles to the work of the technical divisions."

The Wallace Clark Co. consultants estimated that 65 percent of the then 2,467,000 United States patents required reclassification. Updating these figures to reflect reclassifications now completed indicates that 62 percent of the 2,700,000 patents now require reclassification.

Experience indicates that foreign patents can be grouped into newly created subclasses in about 10 percent of the time required to create subclasses of United States patents.

The present classification of design patents is more or less of a hodgepodge, with numerous overlaps and misassignments and is sorely in need of reclassification on a sound basis. Delay in this matter will only further aggravate the already bad condition and make for increased difficulty in conducting searches in the design arts.

The need for more classification examiners

The need for additional classification examiners to complete the reclassification of all patents requiring revision in classification is best shown graphically in the chart facing this page.

The foregoing chart is based upon the estimate that 141 classification examiners would be required to modernize the classification of patents within a period of 6 years. An additional 5 examiners would be required for about 3½ years to accomplish the needed complete reclassification of design patents.

More personnel is needed, also, to enable the classification group to carry on other activities which are now conducted on a very limited scale relative to Office needs and to provide for certain activities recommended to be carried on by the classification group. It is estimated that 20 examiners would be needed to provide adequately for such current duties as resolving jurisdictional disputes concerning the assignment of applications for examination, reviewing issues of patents for the propriety and adequacy of cross-references, maintaining an alphabetic index to the classification of patents, and answering inquiries regarding classification, fields of search and related matters. Further personnel requirements would exist if the classification group were to be responsible for and in a condition to classify foreign patents and periodical literature as received. This activity would require 13 additional examiners, 6 translators, and 10 readers. Enlargement of the staff of classification examiners in the number indicated above for all activities presently conducted and proposed would necessitate the employment of additional clerks for the Service Branch of the classification group. About 35 more employees would be needed for this Branch.

The need for an improved salary structure

The salary structure of the classification examiners is generally comparable to the salary structure of the patent examiners and the need for readjustment is just as great in the former as in the latter. The need for an improved salary structure in the patent examining operation has been covered above and reference is made to the discussion of this subject on page 199 which is equally applicable to the classification operation.

The need for improved physical facilities

Additional space.—Reclassification work requires a high level of concentration, good light, and freedom from interruptions. This is further complicated by the bulkiness of storage files for patents required to be at hand. Unless an examiner has an area of at least 100 square feet and an area of 50 square feet of imme-

diately accessible storage space, his production will be adversely affected. Similarly, a clerk doing reclassification work needs at least 80 square feet of space plus 40 square feet of storage space to handle the large volume of patent copies being worked on.

If an expanded reclassification program of the magnitude discussed above were embarked upon, the area necessary to house the classification examiners and their assistants and supervisors would be 27,750 square feet and to house the clerical staff would be 8,500 square feet, for a total of 36,250 square feet.

Needs of Trademark Examining Operation

PERSONNEL NEEDS

The trademark examining operation presently consists of 46 examiner positions of which 39 are examiner assistants assigned in 3 examining divisions and 2 are classification examiners. This total force, which is less than the number employed 2 years ago, is considered adequate, in view of recent simplification of examining procedures, to cope with the pending backlog of applications. With the present force, it should be possible to reduce the number of applications awaiting consideration by the examiner to the point where action can be taken in about 2 to 3 months of receipt in the Office.

Requirements in connection with inter partes practice, however, must be considered as a separate matter. Marks sought to be registered on the Principal Register, established under the Trademark Act of 1946, are published on allowance by the examiner to give anyone who believes he would be damaged by the registration of the mark an opportunity to oppose its registration. Over 7 percent of the published marks are opposed. During the past year 1,182 oppositions were filed. Proceedings in such cases and in other types of contested cases (including interferences between pending applications, proceedings to cancel a registration, and concurrent-use proceedings) entail consideration by trademark examiners of interferences. In the past year over 1,500 inter partes proceedings were instituted and the backlog increased by more than 100 to a total of 1,474 cases pending June 30, 1955. In order to keep abreast of this work and reduce the time to dispose of contested cases, one additional examiner of interferences is required.

SPACE AND EQUIPMENT NEEDS

The requirement for additional space and need for improving the physical working environment previously expressed (p. 200) in connection with the patent examining operation apply with equal cogency to trademark examiners. Particular needs exist for expansion of the present search room and increasing the amount of space available to the Trademark Service Branch. Enlargement of the search room by 5,000 square feet would relieve the present congestion of this important area, which is used both by examiners and the public for searching trademarks; would contribute to increased examiner efficiency; and would provide space needs for quite a few years in the future to accommodiate about 16,000 new registrations annually.

More nearly adequate space in the Service Branch would permit the arrangement of constituent operating units to facilitate the flow and improve the handling of work. Because this space is also used in part by the public for inspection of applications and other files and records, crowding is a materially disturbing and adverse condition. A desirable layout of the clerical operations, with appropriate consideration given to the volume of public traffic and expansion in the years to come in the volume of records and files, is estimated to require an additional 7,000 square feet, as a minimum.

More space would be needed to accommodate an additional examiner of interferences, if action is taken to meet this previously indicated personnel requirement, and more nearly adequate space should be provided the present examiners and clerical staff.

The condition of furniture and equipment and needs of the trademark-examining operation are also, in general, the same as those expressed for the patent examining operation (see p. 200).

NEEDS OF OTHER ORGANIZATION COMPONENTS OF THE PATENT OFFICE

The preceding portions of this paper cover the patent and trademark examining operations comprising all the ordinary examining functions of the Patent Office. The needs of the other components of the Office will be covered below

under the general categories of manpower needs, need for an improved salary structure, the need for additional space, and furniture and equipment needs.

MANPOWER NEEDS

Office of the Solicitor

A major program to reduce the backlog of pending applications to 100,000 cases would necessarily add to the workload of the legal staff of the Patent Office so that 1 additional law examiner would probably be needed.

Board of Appeals

The Patent Act provides that when a patent examiner rejects an application for patent the applicant may appeal to a Board of Appeals (35 U. S. C. 134). The number of appeals filed, hence, is related to the number of applications in which claims are finally rejected by the patent examiners. With enlargement of the examining corps and intensification of effort to dispose of applications and reduce the backlog, it is inevitable that the workload of the Board of Appeals will increase. In view of this and the large workload now confronting the Board, it will be necessary to provide additional manpower on the Board of Appeals.

The Board of Appeals now comprises nine examiners in chief (the Commissioner and Assistant Commissioners are also members of the Board of Appeals but in practice their other duties prevent them from acting regularly in deciding appeals). In view of the large volume of appeals, Congress authorized the Commissioner of Patents (Public Law 452, 81st Cong.) to augment the Board of Appeals:

"Whenever the Commissioner considers it necessary to maintain the work of the Board of Appeals current, he may designate any patent examiner of the primary examiner grade or higher, having the requisite ability, to serve as examiner in chief for periods not exceeding 6 months each. An examiner so designated shall be qualified to act as a member of the Board of Appeals. Not more than one such primary examiner shall be a member of the Board of Appeals hearing an appeal (35 U. S. C. 7; Public Law 452, 81st Cong.)."

Experience during the last 5 years has shown that numerous and repeated temporary designations must be made in order to even approach maintaining the number of appeals on hand at a reasonable figure. The following tabulation shows the number of patent appeals which were filed each calendar year during the last 5 years, the number of appeals disposed of, the number of appeals on hand at the beginning of each year, and the number of persons working on such appeal work.

Year	On hand at beginning of year	Appeals filed	Appeals disposed of			Number of men
			Dismissed	Decided	Total	
1950	3,705	3,687	2,177	1,929	4,106	14.0
1951	3,286	4,552	2,088	3,345	4,433	15.0
1952	3,405	5,352	2,457	2,778	5,235	16.0
1953	3,522	4,735	2,258	2,259	4,517	13.5
1954	3,740	4,354	2,284	1,777	4,061	11.0
1955	4,033					

As will be seen from the table the appeals filed during this period averaged 4,536 per year and the appeals disposed of averaged 4,470 per year. The number of men serving on patent-appeal work during this period averaged 14 per year.

With all indications being that the volume of appeals filed will increase, it will be necessary to continue the practice of designating examiners to serve temporary tours of duty on the Board of Appeals. While this measure is highly desirable as a means of adjusting manpower to take care of peak periods in fluctuating workload, it is felt that there should not be such a large number of temporary members. One reason is that these men are removed from their other duties, which disadvantageously affects the work of examination in the division from which they are drawn. It is, accordingly, proposed that the permanent members of the Board of Appeals be increased by 3, raising the number from 9 to 12.

While the data submitted above shows that 12 members are not sufficient to carry on the work of the Board of Appeals a membership of 12 permanent members will reduce considerably the number of temporary members and will allow for the possibility that when the task of reducing the backlog of applications pending before the examiners is accomplished, the number of appeals filed may

decrease to such extent that 12 permanent members can carry the load. Since the size of the Board of Appeals is fixed by statute, legislation will be necessary to change the number as proposed. The relationship of such legislation to the program of the President has not been ascertained. An increase in the Board to 12 members would also necessitate some increase in the number of employees in the Service Branch of the Board.

Board of Patent Interferences

Although the Board of Patent Interferences has been falling somewhat behind in its work, it appears that the presently officially designated staff of 8 examiners of interferences and 1 patent interference examiner whose duties are principally concerned with interlocutory matters might be sufficient to handle the workload if all 9 spent full time on patent interferences. This has not been the case within the past several years because of temporary detailing of members to trademark interference work, Board of Appeals and other special duties.

Office of Research and Planning

This is a new component of Patent Office organization, set up to consolidate functions relating to methods development and planning for improvement of operations and to carry on research relative to the use of machines in making patent searches. Personnel requirements for conducting these functions, so far as can be determined on the basis of preliminary operations to date, call for a planning group of 3 and an ultimate staff of 28 of which 15 would be assigned among 4 or 5 task groups engaged in specific studies; 3 would have relatively fixed and continuing assignments in specialized management advisory fields; 5 would be technicians employed in operating and maintaining data processing and other complex equipment; and 5 would make up the secretarial and clerical staff serving the planning group and technical staff.

The space requirement of the Office of Research and Planning associated with the full complement of personnel discussed would total 5,000 square feet. Of this, 1,500 square feet would be used to accommodate mechanical and electronic equipment found suitable to utilize in patent searching. As equipment of this type generates considerable heat, this space should be equipped with refrigeration. About 25 tons capacity is estimated to be required.

Administrative staff, auxiliary patent services and clerical operations

A considerable number of activities are essential to support the examining operations which are the statutory functions of the Patent Office. These activities comprise the staff and housekeeping services, on the one hand, and the ancillary patent services on the other. The latter would be particularly affected by enlargement of the examiner staff and intensification of examining effort to dispose of pending applications. These influences would be manifest in workload increase in such matters as the number of pieces of outgoing mail to handle; corrections to drawings to be made; abandoned files to remove from examining divisions; final fees to receive, account for and deposit; patent grants to prepare; files to prepare for the printer; patent copies to receive, distribute, and place in storage for sale; search copies of patents to be placed in examiners' files and in the search room for public reference; the number of copies of patents to withdraw from stock and mail to customers or furnish to other users; the volume of photographic prints of documents prepared on orders from attorneys and others; the number of assignments of patents to record, etc. Additional personnel would be required to handle these increases in work which would have an impact on all of the services branches. It is estimated that 64 more employees would be needed in this connection. The staff and administrative services would also have additional personnel needs to cope with the greater workloads generated by new employment and enlarged organization. Probably another 40 or so more would be required in these activities.

THE NEED FOR AN IMPROVED SALARY STRUCTURE

The salary of the Commissioner of Patents, which is currently $14,800 is thought to be inadequate in view of his many responsibilities. A considerably higher salary is thought to be justified. From the standpoint of their vested responsibilities, the First Assistant Commissioner and the assistant commissioners rank just below the Commissioner and their salaries should be fixed in proper relationship with the salaries of the Commissioner.

Except for the position of Solicitor which is classified in grade GS–16, the highest grade that a career employee can hope to attain within the competitive

service in the Patent Office is GS–15, paying $11,610 a year. There are 12 positions in this grade. A proper salary structure for the following key positions in the Patent Office, recognizing the relative degrees of technical and administrative responsibilities of such positions should be provided:

Commissioner of Patents.
First Assistant Commissioner of Patents.
Assistant commissioners of patents (2).
Head, patent examining operation.
Members, Board of Appeals (9 at present, 12 proposed).

In view of the statutory limit on the number of supergrade positions, congressional action would be necessary to accomplish these grade changes.

THE NEED FOR ADDITIONAL SPACE

Solicitor

The space requirements of the Solicitor's Office, including an additional law examiner, would be 6 rooms, 1 for each member of the legal staff, plus 3 rooms for the 5 or possibly 6 members of the secretarial staff. These rooms should all be located adjacent to each other and should also be adjacent to the law library of the Patent Office. In order to provide for the expansion reasonably to be expected within a period of 10 or 15 years, the law library should have approximately 50 percent more space than at present. The Solicitor's Office should be located convenient to the Commissioner's offices.

Board of Appeals

All the rooms assigned to the Board of Appeals, including private offices, hearing rooms, waiting rooms, Service Branch, and secretarial offices should be located together for most efficient operation. The private offices of the Board members should be located in pairs with a connecting room occupied by two secretary-stenographers. The two hearing rooms should be located together with a common waiting room. Suitably arranged space for the Board of Appeals would require a total of about 13,000 square feet.

Board of Patent Interferences

At the present time, 6 examiners of interference work 2 in a room and 1 works in the hearing room when hearings are not being conducted. In view of the technical work performed and concentration required, the interference examiners should be provided private offices. Other facilities are needed to carry out the duties of the Board properly. These include a room of suitable size for conducting final hearings; a room of similar size for the use of the primary examiners in conducting interlocutory hearings; a reception room for attorneys waiting for a hearing or interview; a library; and, finally, a conference room and a general-purpose room for files, exhibits, etc.

Service functions for the Board are performed by the Docket Branch of the General Services Division. In view of this close relationship, the space requirements of the Docket Branch are expressed here. Space for 20 employees should be provided in order to prepare the Docket Branch for a moderate increase in work. The head and assistant head of this Branch should each have a private office; a room should be set aside for use by attorneys who have frequent occasion to study files which are in the custody of the Docket Branch; a file room is needed for current files, exhibits, etc.

These rooms should be located close to each other for most efficient and convenient operation and be in close proximity to the Board of Patent Interferences. The total space requirement expressed here amounts to nearly 10,000 square feet.

Administrative and Service Divisions

A need for more space for administrative, staff, and service activities would parallel the necessary increases in personnel for these activities generated by expansion of the examining operations. Most of the added requirements would be necessitated by expansion of the 11 branches comprising the General Services Division, which provides the supporting material and auxiliary patent services. The total space required by the Division, except for the scientific library and public search room, amounts to 166,415 square feet. This is 40,000 square feet more than the presently available space and would provide not only office room for additional employees, but needs for conference rooms, files and records, equipment layouts, etc., as well, and remedy the existing deficiencies in individual working-space conditions.

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Enlarged space is needed for the scientific library and public search room due to a continuous increase in United States and foreign patents and accessions of books and periodicals, and greatly enlarged public use of these collections. Important programs such as the translation and distribution of foreign patents and on-site binding of patents and periodicals cannot be fully developed without the availability of necessary space. Rotation of abandoned and patented files within available space will obviate the need for any increase for this purpose.

An increase of space needed to cover requirements of the scientific library and public search room for the next 20 years is shown as follows, in comparison with present conditions:

[Square feet]

Use	1955	1975
Stacks	59,400	75,000
Public space	11,700	19,000
Staff (work space including equipment)	8,200	15,600
Total	79,300	109,600

A total of 10,000 square feet of additional space would provide for the relatively small increase in personnel of the administrative and staff activities that would accompany substantial enlargement of the examining and related service operations. This space would also provide for long existing needs for conference, lecture, and training rooms to serve all divisions.

FURNITURE AND EQUIPMENT NEEDS

There is need for a comprehensive program of furniture replacement and need for adequate air conditioning at all levels. For example, there is no air conditioning of hearing rooms, the rooms of the Board of Appeals, the rooms of the Board of Patent Interferences, the supervisors' offices, the rooms occupied by the administrative divisions, General Services Division, scientfiic library, or search room. Moreover, in the Administrative and General Services Divisions there is need for new and improved mechanical equipment and replacement of obsolete and worn-out mechanical equipment. There is general need for improved lighting, both of the overhead type and of the desk type, and rugs should be placed on the floors of the rooms occupied by the higher officials of the Patent Office.

NEW BUILDING

The Patent Office expects to be housed in the Commerce Building in which it is now located and it is expected that, as the staff increases, additional space in this building will be allotted to the Office.

The history of the Patent Office has been one characterized by continued growth through the years. An expanding economy, growing population, and increasing research will require further expansion of the Patent Office. The demand for space will increase with the passing years and the demand may ultimately exceed the space limitations of the Commerce Building and the conflicting requirements of other agencies. If this situation should materialize, it would become necessary to formulate plans for a building to house the specialized functions and operations of the Patent Office. An architect designated to work closely with the Patent Office officials could design a building furnishing ideal working conditions. Such a building should provide for a moderate increase in operations and be so designed and constructed as to permit of horizontal and/or vertical expansion so as to take care of eventual growth over a period of many years. Such a building should provide space of 4,000 to 4,500 square feet for each patent examining division and, in addition to the required space for supervisory, administrative, and clerical operations, should include space for a health center, cafeteria, snack bars, information center, supply room, public building services (superintendent, guards, carpenters, electricians, elevator operators, engineers, laborers, painters, plumbers), telephone rooms, printing shop, carpenter shop, public stenographers, and credit union office. Some of these facilities are presently maintained by the Patent Office but most of them are now provided centrally as part of the common facilities of the Commerce Building.

In addition to the facilities mentioned above, a new building for the Patent Office should include the following special facilities:

(1) An auditorium with a seating capacity equal to not less than half the total number of employees of the Patent Office. This would permit all employees to be addressed in two meetings, and would also permit all examiners to meet together and all nonexaminers together. The auditorium should be equipped with film-projection facilities and a public-address system.

(2) An assembly room to accommodate meetings of 75 to 250 persons. Such a room would be useful for meetings requiring attendance of all primary examiners, meetings of a supervisor with all of his examiners, showing of motion pictures of interest to a limited number of examiners, meetings of Patent Office officials with outside representatives or groups, and lectures to new examiners. Such an assembly room should be equipped with film-projection facilities and public-address system.

(3) Seminar and conference rooms to accommodate small groups for training, discussions, and conferences.

(4) An exhibition hall so that the Patent Office may permanently display inventions of public interest, as well as exhibitions of a temporary nature that may be set up for some particular purpose. At present, the Patent Office has no facility of its own for presenting to its employees and to the public on a continuing or periodic basis those new developments which are of interest to all.

(5) A testing and demonstration laboratory would be a highly desirable addition to the Patent Office and is particularly needed by the chemical and electrical examiners. Such a laboratory would permit the running of routine tests on basic concepts presented in patent applications in the chemical composition field and in the field of electrical transmission circuits. In addition, this laboratory would provide space suitable for most demonstrations of inventions by applicants.

(6) A suite for visiting dignitaries would solve the problem of accommodating visitors from foreign countries while they are here to study our patent system. Also, periodically representatives of the General Accounting Office visit this Office in conjunction with an audit of the accounts and need space in which to work. There are also other visiting groups and individuals to whom working quarters must be assigned.

Senator O'MAHONEY. There are many questions that we would like to ask the Patent Office. I had hoped, for example, to have been able to go into the recent session at Berne in which you were present, Mr. Federico, and Commissioner Watson also, I think, in which you were trying to lay out an agenda for future consideration. The committee will be very much interested in the question of the relationship between this country and other countries. We want that problem clearly brought out, but it is impossible to do so now, so it will have to be postponed for a future date. But we shall desire to go into that very thoroughly.

Thank you very much.

Are there any other questions to be addressed to Commissioner Watson?

Mr. BRUNINGA. Has the Commissioner completed his statement?

Senator O'MAHONEY. Yes. The full statement from which he summarized has been filed with the committee. It will be part of our record. I am sure extra copies will be available from the Patent Office to anybody interested in asking for it.

Mr. BRUNINGA. You referred to the matter of taking testimony in the Patent Office in interference proceedings. Have there been any such cases?

Mr. WATSON. Not to my knowledge. In the instance to which I made reference, the testimony was taken elsewhere, but our Solicitor by special agreement of counsel for those parties, attended and facilitated the taking of testimony, agreement having been reached between the parties to the effect that, in the event of a dispute between them,

his rule would be effective. Our former Solicitor is here at this table, who attended those hearings, and if you wish to go further into it I will ask permission of the chairman to have him make a statement.

Mr. BRUNINGA. I think it would be a pretty good idea. Before he does it, there is just one other point.

Senator O'MAHONEY. Mr. Bruninga, I am going to say with respect to that, owing to the pressure of time and my desire to have some other witnesses who have come to be heard, I will ask you to have a private conference with the Solicitor and I will ask the Solicitor to file a statement with respect to this matter with the committee, Mr. Commissioner.

You had another question you wanted to ask?

Mr. BRUNINGA. No; that is all.

(See p. 328 of the appendix for statement of Edwin L. Reynolds, technical advisor, United States Court of Customs and Patent Appeals.)

Senator O'MAHONEY. I think we have a new witness here today, whose testimony will be of interest to all of us and will deal directly with the problem before us.

This is Mr. Thoger G. Jungersen who was the inventor and was the litigant in the famous case of *Jungersen* v. *Ostby and Barton Company* which was decided in the Supreme Court. It is cited at 335 United States at page 560.

Mr. Jungersen, accompanied by his attorney, Mr. Elliott L. Biskind, is here to tell us what the effect of that decision was upon the inventor and I will be very glad to ask these two gentlemen to come forward now if they will.

Let me say first since you have just come into the room, that our procedure here has been to ask the witnesses so far as possible briefly to summarize the statements they desire to make and then to amplify in prepared papers which are filed with the committee for future study.

We are particularly interested of course in the effect upon the individual inventor of the patent system and that, of course, includes the decisions which are made by the courts. We must understand what the effect is, if we are to find any remedy, if a remedy is necessary. So that if you will be good enough with your attorney to summarize the situation in which you find yourself and the facts as you have found them, we will be very much indebted to you.

Now you may proceed giving your name to the reporter.

STATEMENT OF THOGER G. JUNGERSEN, INVENTOR, ACCOMPANIED BY ELLIOTT L. BISKIND, HIS ATTORNEY

Mr. JUNGERSEN. My name is Thoger G. Jungersen. I came to this country because of the American patent laws. I believe they are the best in the world and those that have done more than anything else to advance what we consider the technical development of practically everything.

Senator O'MAHONEY. Where did you come from?

Mr. JUNGERSEN. I came from Denmark.

Senator O'MAHONEY. When did you come?

Mr. JUNGERSEN. I came over here in 1927.

Senator O'MAHONEY. Are you a citizen of the United States?

Mr. JUNGERSEN. I am a citizen now. At that time I was not, of course. I was made a citizen during the war.

Senator O'MAHONEY Very good.

Proceed.

Mr. JUNGERSEN. I have been an inventor all my life and have created many things that have made jobs for many thousands of other people. I believe the incentive promised in the American patent system has done more for United States development and industrial progress than any other thing in the world.

I believe that to assure continued progress we must encourage inventions and protect them, too. But the protection part of it, is the shortcoming of the courts here, in the United States. In the past the goal of inventors from all over the world was to patent and exploit their new inventions here in the United States. That was because of the incentive of a valid United States patent. But when we find this incentive is a one-way deal, it is just like a rubber check that is paid for good work that has already been done, then I believe the respect for the Government is deteriorating. We have on the one hand the laws guiding the Patent Office, the laws made by the Congress, and on the other hand the interpretation of the courts, courts quite often which do not know what constitutes invention. They might be great experts on legal matters, but in virtually every patent case I have ever had anything to do with, whether they were in my favor or against me, I have found that our courts generally make great errors. I think our judges should think twice before overruling the good work that is done by our patent examiners, who are outstanding experts in their special field and know a hundred times better than the courts what the state of the art is in the particular art being dealt with.

In my case, that is like many others, I created something new, precision casting of metal. That is an entirely new industry. There was not a single one in that industry before I started. Now it is a $200 million industry employing more than 50,000 Americans.

Senator O'MAHONEY. What was the industry?

Mr. JUNGERSEN. It did not exist.

Senator O'MAHONEY. What is the industry you are talking about?

Mr. JUNGERSEN. The industry is now known as precision casting or investment casting, producing an entirely new product, precision castings out of all kinds of alloys, many of which alloys we heretofore could not fabricate by any means.

Senator O'MAHONEY. And the issue before the court had to do with the patentability of the casting device that you invented?

Mr. JUNGERSEN. Yes.

Senator O'MAHONEY. I wanted to get this on the record so the unexpert person would know what it was all about.

Mr. JUNGERSEN. Yes.

Senator O'MAHONEY. My understanding is that yours is the case in which the court of appeals, with Judge Hand who testified here yesterday as the presiding judge, ruled in your favor, that the case was then appealed to the Supreme Court and the Supreme Court overruled Judge Hand and the court of appeals by a divided decision. In his dissent Justice Jackson made the rather caustic remark that the only valid patents were those which had not reached the Supreme Court of the United States.

Mr. BISKIND. Mr. Chairman, may I interject here? The court of appeals affirmed the district court judge's invalidating the patents but Judge Learned Hand dissented. But Mr. Justice Jackson, Mr. Justice Frankfurter and Mr. Justice Burton dissented, adopting Judge Hand's opinion as their own.

Mr. Justice Jackson also wrote the dissenting opinion you referred to.

Senator O'MAHONEY. Thank you for making the correct statement of the case.

Mr. JUNGERSEN. There were two cases joined as one in the Supreme Court. One was *Ostby Barton* v. *Jungersen* in the third circuit. The other was *Jungersen* v. *Baden* in the second circuit. Those two cases are now up before the Supreme Court again, because the entire defense was based on planned previous evidence as to prior use.

Senator O'MAHONEY. We would like to have you now tell us about the personal effects upon yourself of this decision and of the effect upon the industry.

Mr. JUNGERSEN. The personal effect upon myself would have been disastrous if I had no income from other countries.

Senator O'MAHONEY. You were speaking about income from other countries.

Mr. JUNGERSEN. Yes.

Senator O'MAHONEY. Was the patent regarded as valid abroad?

Mr. JUNGERSEN. Yes. It was regarded as valid in twenty-some other countries, but the effect of the American decision here in the Supreme Court has been so widely publicized by my opponents that it has practically destroyed my income from that invention all over the world. I have practically no income from this invention except a little from other countries where I am recognized as the original inventor, but oddly in countries where I had no patents. They are paying me a royalty just the same. Were it not for that recognition and income from foreign sources, I would be completely ruined.

Mr. CAPLAN. My recollection, Mr. Jungersen, is before the decision of the Supreme Court you were receiving a substantial income from a wide number of licenses?

Mr. JUNGERSEN. I don't think it was so very much. There were a large number of licenses, that is correct, and I was on the way to get quite a little.

Mr. CAPLAN. How many licenses did you have, do you happen to remember?

Mr. JUNGERSEN. A little short of a hundred.

Mr. CAPLAN. Were these substantial jewelry manufacturers?

Mr. JUNGERSEN. They were mostly jewelry manufacturers but also various foundries. This was not just a jewelry item. It was useful for every other industry. For example, our whole jet development depends on this. We had the jet engines before but we could not produce a practical and lasting jet engine because they were burned up in a short while when made from the alloys we could fabricate at that time. We also had some alloys we could use for gas turbines but we could not fabricate them because of their hardness and brittleness. But I could cast those alloys to finished dimensions, regardless of complexity, right down to thousands of an inch.

Mr. CAPLAN. In other words your patent was used not only for the manufacturer of jewelry but also used for aircraft manufacture.

Mr. JUNGERSEN. Yes; it is used very extensively in aircraft manufacturing as well as where small intricate metal parts are used in most other industries.

Mr. CAPLAN. And by reason of the decision of the Supreme Court, you are obtaining no income from that?

Mr. JUNGERSEN. I have taught a lot of people, I started to get royalty from it but then all of it stopped after the decision which was widely publicized by my opponents.

Mr. CAPLAN. Your invention is being used now.

Mr. JUNGERSEN. It is being used to the extent of $200 million a year. It gives employment to over 50,000 American people while I would starve to death if I had to live on this invention.

Senator O'MAHONEY. What particular activity do you measure by the $200 million a year?

Mr. JUNGERSEN. That is practically in every industry where when we make small——

Senator O'MAHONEY. Is it the value of the product or is it the income from the product? What does the $200 million measure?

Mr. JUNGERSEN. It is the net annual sale of castings from precision casting foundries excluding all jewelry casting which runs into many additional millions.

Senator O'MAHONEY. In other words your invention is now being used to produce at least $200 million worth of goods annually?

Mr. JUNGERSEN. Yes. Not to speak about the industries that have been fostered and have grown out of that invention. Like I said the jet developments, a lot of the radar work was done with this method here. We could do casting that they could not fabricate by any other means and the courts found that with their references they could do exactly the same thing but that is absolutely in error. There is no method or combination of methods that was known at the time I started that could produce similar products.

Senator O'MAHONEY. That is the story is it not, Mr. Jungersen?

Mr. JUNGERSEN. Yes, in short. Practically all of our larger concerns just take the use of the invention and you cannot do anything about it as long as the Government's own courts extend a willing hand to those who destroy patents.

Senator O'MAHONEY. Let me ask your attorney a question. Is it your opinion as a result of your participation in this case, that any legislation to affect cases of this kind should be adopted?

Mr. JUNGERSEN. Very much.

Senator O'MAHONEY. I am asking your attorney. I know you feel that way.

Mr. BISKIND. I have some very definite ideas. I would like to answer it and I am afraid at some length.

Senator O'MAHONEY. I had rather not have you go into great length because I must call this meeting to an adjournment early in the afternoon.

Mr. BISKIND. I will give you a very short answer. May I, however—I don't know if this is proper or not—offer in evidence an article in the Wall Street Journal of November 30, 1954, which discusses this new industry Mr. Jungersen developed, but does not mention his name but discloses the extent to which the industry has grown, $200 million. I think it might be useful to the committee.

Senator O'MAHONEY. Hand it to the reporter. It will be received and printed in the record.

(The document referred to is as follows:)

[From the Wall Street Journal, Tuesday, November 30, 1954]

COSTS AND OLD CATHAY: ANCIENT WAX-PATTERN CASTING REVIVES, CUTS PEN, RAZOR PART COSTS

SALES MAY HIT $200 MILLION IN 1954, COMPARED WITH $25 MILLION A DECADE AGO BUT APPLICATIONS ARE LIMITED

(By Ray Vicker, staff reported of the Wall Street Journal)

CHICAGO.—During the Shang Dynasty in China (1766–1122 B. C.), craftsmen were making ornate jewel boxes and sword handles by packing wax patterns tightly into sand, then melting the wax away to leave a mold for metal.

Today this ancient art, known as investment casting, is experiencing a revival. Investment castings are being used as a cost cutter in making everything from of top of the new Waterman pen to parts for Sunbeam's electric razors and from New Holland hay baler gears to Zenith record changer spindles. The process is also being used to accomplish some difficult jobs with the extra-tough metals used in jet engines and in atomic energy.

Modern foundrymen use plastic or mercury as well as wax in the mold-making process. But the technique is the same. Hot, liquid wax or plastic is poured into a die, or form, then cooled. (Mercury is frozen.) The resulting pattern is then buried, or invested, in ceramic. Next, it is melted out, leaving a cavity in the ceramic which conforms precisely to the object to be cast. Molten metal is poured into the cavity to make the casting. When it has cooled, the mold is broken to leave the part, which usually needs little further machining.

A RAPID GROWTH

Castings made with this process are finding new markets at such a fast clip that the Investment Casting Institute, a trade group headquartered here, predicts a five-time expansion in the industry's sales over the next decade. This year's estimated $200 million sales compares with $75 million in 1948 and a slim $25 million 10 years ago. Harry P. Dolan, executive secretary of the institute, says 70 percent of the 100 firms that now make up the industry have started making these castings since 1945.

Investment casters emphasize, however, that investment casting isn't a cheap process compared with conventional casting methods. Fifty cents worth of metal may sell for $50 when cast into a highly complex shape. So machining and assembly costs must be taken into consideration to arrive at any conclusion as to what an investment casting can do.

The best application, they say, is in the intricate parts of complex design, or in a special alloy part used at critical wear points of an assembly.

Says one caster: "Wherever you have a part which requires a considerable amount of machining, investment casting probably could do the job better at lower cost."

A limitation of the process: It takes a lot of know-how to properly make investment castings with close tolerances.

A PROBLEM A DAY

"This isn't a process that just anybody can handle with very little experience," says Jack Bean, president, Michigan Steel Casting Co., Detroit. "When you get into it you find there is a new technical problem every day which must be overcome."

But there are plenty of stories of rapid sales growth of the investment casting firms—concerns which average about 50 employees and annual sales of $2 million. An investment caster in Milford, N. H., Hitchiner Manufacturing Co., built a new plant 3 years ago. It has expanded its factory twice since to keep up with sales, D. W. B. Kelley, sales manager, says. The last expansion, completed in October, raised capacity by one-third.

A Chicago firm, Casting Engineers, Inc., started in the business in 1947. This year, sales will reach $1,250,000, according to V. S. Lazzara, president. The firm's backlog is so large it will take 4 to 6 months to fill all the orders.

Or take the case of a New York concern, Austenal Laboratories, Inc. It controls patent rights on some investment processes and, in its own Microcast

division, makes investment castings. That division has completed 9 expansion programs since 1948; sales have tripled during the same period. Yet, the firm's 2 investment casting plants are operating around the clock, 6 days a week. Fred L. Roberts, an Austenal official, says further plant expansion is being planned.

STRAPPING TOOL SAVINGS

A part for a strapping tool, used for industrial packaging, illustrates the savings investment castings make possible. This part formerly required 15 machining operations, at a cost of $3 per part. Casting Engineers now provides an investment casting so close to required tolerances that machining expense has been reduced 70 percent and the cost of the part decreased to $1.10.

A radar waveguard for military planes was costing $350 when processed through many machining operations. Arwood Precision Casting Corp., Brooklyn, N. Y., now is making a casting which sells for $25 and is finished for another $50 each. Another Arwood part going into a watchman's clock replaces 5 machined parts and eliminates 30 machining operations.

An indexing cam for a Varitype machine originally was fabricated by joining 17 stampings and a screw machine part into 1 piece. One investment casting now does the job with a weight reduction of 50 percent and a cost saving of over 90 percent. When Bell & Howell replaced a machined brass lens plate on a movie camera with an investment casting, officials report a "prohibitive" die maintenance cost was eliminated.

Other advantages besides reduced machining of parts are claimed by producers of these castings. For one, intricate parts with many angles and contortions can be cast in 1 operation and in 1 piece. It isn't unusual to find 1 investment casting doing the work of 2 dozen separate components.

Besides eliminating many machining and assembly tasks, this may result in more foolproof finished products since it is axiomatic in engineering that "the fewer the moving parts, the less chance there is of a breakdown."

Also, casters say they can make their castings so close to desired tolerances and with such smooth surfaces that little subsequent work is needed before the part goes into a product.

"Increased use of very hard alloys points up another advantage—that of being able to produce parts which can't be made in any other ways," says James A. Kearney, chief metallurgist at Crucible Steel Company of America's Spaulding works, Harrison, N. J. He notes that many of these new materials, which are being used in jet engine and atomic developments, are so hard they are almost impossible to machine. So parts can't be made by conventional methods.

The ability to produce the impossible part is resulting in a definite swing away from forgings to investment castings in the jet-engine field, casters claim. A forging is hammered into shape by giant hammers, working from a block of metal. Then machine tools cut and grind the rough forgings into finished parts. An investment casting comes out close enough to finished dimensions that machining costs are drastically cut, say foundrymen.

"Today the J–57 jet program is so dependent on investment castings that the entire program would collapse were it not for these castings," argues T. Operall, vice president and general manager, Misco Precision Casting Co., Detroit.

OUNCES TO POUNDS

"Most of the turbine blades used in jet aircraft now are made by investment castings," says R. L. Lerch, sales vice president of Haynes Stellite Co., of Kokomo, Ind., a Union Carbide division. Haynes Stellite got into the field in 1942.

Most investment castings range from a few ounces to about a pound each. Recent advances, however, have considerably increased the maximum.

"Castings of up to 300 pounds have been made with the mercury process," says Irvin R. Kramer, vice president of Mercast Corp. in New York.

The revival of lost-wax casting is of recent origin. From its beginnings in the dawn of history, the lost-wax casting technique migrated through ancient Egypt to Greece. Then Roman jewelers and manufacturers of surgical instruments picked up the process in their trade.

Through the Dark Ages it was almost unknown. Then Florentine artists of the Renaissance period briefly revived it for their bronze work. Cellini used the process for the head of Medusa in his work, Pericles with the Head of Medusa.

Around the turn of the century the dental trade began using the process of

casting dentures. After World War I Austenal pioneered use of the process for making surgical fittings. The firm developed an industrial application in World War II when the Air Force clamored for hard-to-make aircraft supercharger parts.

MATTER OF PRECISION

From this industrial beginning in 1941, the process found new markets in the jet-engine field. As it has moved into various commercial fields, there has been a rapid influx of new firms into the field—including some newcomers who promise much more for their castings than may actually be realized, according to one old-line investment caster. He notes that while investment castings can be made to close tolerances, no casting can take the place of all machining

Misco Precision is recommending that the industry adopt a code of tolerances which indicates to manufacturers just what they may expect when it comes to precision in these castings.

Their code: Plus or minus 0.003 of an inch for castings under a quarter of an inch thick; plus or minus 0.004 for those one-quarter to one-half inch thick; and plus or minus 0.005 for those of one-half inch to 1 inch thick. For each linear inch over 1 inch the additional tolerance would be plus or minus 0.005.

Mr. BISKIND. To answer your question, as a result of my experience in this case—I came into the case after the Supreme Court had affirmed the invalidity of his patent, we are now attempting to set aside that judgment on the ground that fraud had been practiced on the court in the trial of that infringement case.

As a result of my experience in this case and my study of patent cases—and incidentally of my reading of the *Lyon* v. *Bausch & Lomb* case, an opinion which Judge Learned Hand wrote quite recently for the unanimous Second Circuit Court of Appeals—I feel very strongly that our courts should not be empowered to pass upon the invalidity of a patent. I feel that our Patent Office should determine in the first instance as a matter of fact whether a patent is valid, sufficiently valid for the issuance of a patent and that determination, I feel, should be final.

After listening to Commissioner Watson this morning I realize that the time which a particular examiner can give to a case is so short that at this moment, or rather as of today that would be an impossible undertaking. However, to do that requires of course that the Patent Office be greatly expanded and that the examination of applications be much more thorough and it would require what I might call an international patent clearinghouse because one of the prior patents that operated to invalidate Mr. Jungersen's patent was an English patent even though the English courts upheld the validity of Mr. Jungersen's patent in litigation in London and that prior English patent was involved in that litigation and Mr. Jungersen was successful there, nevertheless coming over here that same English patent is used to help invalidate Mr. Jungersen's patent.

It seems to me with an international clearinghouse that the Patent Office would know what prior patents or publications exist all over the world, they could do a much more thorough job. The Patent Office being a Government agency, administrative agency, with some quasi-judicial powers, it seems to me that the same rule might apply that applies to other administrative agencies where the courts while not obligated to accept facts found by those agencies do as a matter of practice give the facts found great weight.

I think Mr. Jungersen has quite properly pointed out that the courts are not equipped to determine sometimes the highly technical nature of these patents. It is a situation today where the Govern-

ment gives you with one hand what it says is a valid 17-year patent or monopoly and then the Government comes along with the other hand, with the judicial branch and says, oh, no, we gave this to you, but it is no good, we are taking it away from you now.

As Mr. Jungersen has, a man has invested his life's saving. Mr. Jungersen has spent in protecting his patents more money than he ever received in royalties from that patent. The net result is he has no patent and everybody in the country is benefiting from it.

I would like at this time to read you an extract of a speech made by Mr. Joseph Robinson whom I saw in the room earlier this morning. I don't know whether he is here now. He delivered this speech before the International Chamber of Commerce in Tokyo.

Senator O'MAHONEY. Is Mr. Robinson in the room? He can speak for himself if he desires to.

Mr. ROBINSON. I am quite satisfied to yield.

Senator O'MAHONEY. We can't hear you, sir.

Mr. ROBINSON. Thank you, Mr. Chairman. I am quite satisfied to yield to Mr. Biskind unless you wish me to speak particularly.

Senator O'MAHONEY. Very well. You may read the quotation.

Mr. BISKIND. The quotation reads as follows:

> In view of the vast number of patents now issued and being issued throughout the world and the enormous quantities of technical and scientific writing that are constantly being published everywhere in these immense technological times, it is now very difficult to obtain a patent and know for sure that the patent is valid, that some court of the country which granted the patent will not later declare the patent invalid for lack of invention. Usually the invalidation is based upon a contention that the invention is not new, that it was disclosed in a patent previously issued or in an article previously published somewhere in the world. I rise to suggest that Patent Office practices especially in leading industrial nations catch up with one great aspect of real-estate law. If there is doubt as to the title to your home, you can elect either to live with that doubt or to banish it by having your title searched, cleared, and guaranteed. Would it not be well to establish a similar instrument of safety for the patent grant? In these highly advanced technological times is it not desirable that the procedures for obtaining a patent include steps within the patent that may also be taken if one wishes to do so whereby the patent when granted is made safe against attack of invalidity unless fraud in obtaining a patent can be shown? A patent is a contract between a government granting it and the inventor. The government promising consideration of monetary fees and a full and free dedication of the invention to the public upon expiration of the patent to allow the inventor the sole and exclusive right and privilege to make, use, and sell it for the number of years stated in the patent. Under existing intense conditions, the government entering into the patent contract with the inventor too often through some sections of its courts breaches the contract by throwing off the patent as a nullity from inception for lack of invention.
>
> In view of the prior art and so forth, the cost to the inventor of this breach is often enormous and sometimes it is disastrous. Frequently it ruins the inventor's company and bankrupts those who have backed him and the invention. Such a breach operates another unfortunate result. It discourages industrial development and the advancement of the arts, the very things the patent system is intended to promote.

I will stop there; the balance is not pertinent.

Senator O'MAHONEY. As I understand your statement, the patent of Mr. Jungersen was upheld by the British courts.

Mr. BISKIND. That is correct.

Senator O'MAHONEY. Although there had been a previous patent in the same field, issued to another inventor and this previous patent was cited in the Supreme Court of the United States as one of the reasons why the United States patent of Mr. Jungersen should be held invalid.

Mr. BISKIND. I don't know whether it was referred to in the briefs but it was referred to in the district court trial.

Senator O'MAHONEY. Wherever it was cited, this illustrates the vagueness of the definition of an invention which the courts must pass upon.

I want to make it clear that we are not at this table attempting to retry the case in the Supreme Court.

Mr. BISKIND. Of course not.

Senator O'MAHONEY. But merely developing facts, which have a bearing upon whether or not Congress should amend the law with respect to making the definition of an invention more definite and certain than it now is.

Mr. BISKIND. May I add one thing, Mr. Chairman?

Senator O'MAHONEY. All right.

Mr. BISKIND. Judge Hand discusses the history of the Supreme Court's feelings toward patents over the years. At one period it seems to have been one thing and then another thing. First the test was new and useful. Then it became a test whether it was merely mechanical skill or mechanical genius. Then the test was the flash of genius test. Now the test is: was it new and useful and was it obvious to people skilled in the art. It seems to me that a distinction between mechanical skill and inventive genius is a distinction without meaning and the distinction today if that be the distinction of was this obvious to people skilled in the art, while a lot more helpful than the previous interpretation, I think still leaves a great deal to be desired.

Senator O'MAHONEY. I think the issue that you and Mr. Jungersen raise has been clearly made and understandable to the committee.

Mr. JUNGERSEN. Is it possible that I could add something to my statement?

Senator O'MAHONEY. Yes. Please do it in writing.

Mr. JUNGERSEN. This is very short.

Senator O'MAHONEY. I know that, but time is short, too, at the moment.

Mr. ROBINSON. Mr. Chairman, may I ask whether you would care for identification at which these remarks were made?

Senator O'MAHONEY. Yes.

Mr. ROBINSON. The International Chamber of Commerce met in Tokyo last spring. It has members from all parts of the world. During the course of the convention there was a patent discussion—patents, trademarks, and copyrights—and I was asked to address the convention, which I did, and the summary Mr. Biskind read to you was a hurriedly prepared summary of what I stated at that time.

Senator O'MAHONEY. We will be very glad to receive an amplified statement from you if you will be good enough to submit it.

Mr. ROBINSON. I shall be very happy to do that, sir.

Senator O'MAHONEY. Judge Arnold, will you return to the stand, please? As I indicated last evening, it is essential that I leave this evening for Wyoming, and therefore I am trying to finish this hearing some time at this session.

I am quite willing to go through without lunch if you gentlemen are willing to do that, and I think that will facilitate the production of the testimony which most of you wish to give.

I have the names of the following witnesses whom I shall call upon after Judge Arnold has made his statement.

Mr. Woodward of the Bell Telephone or the A. T. & T. who has spoken before will be called upon for any further comments he wishes to make.

Mr. Elwin A. Andrus of Milwaukee who has been suggested by Senator Wiley, a member of this subcommittee. Mr. Karl B. Lutz of Pittsburgh, Pa. I understand he is associated with Mr. Brown.

Mr. BROWN. A partner.

Senator O'MAHONEY. Mr. E. L. Reynolds, chief technical adviser, United States Court of Customs and Patent Appeals. There may be others but we will proceed with these at the present time.

Judge Arnold, I regret very much that you were not here yesterday because during the testimony of one of the witnesses, Mr. Robertson, there were several references to the work of the TNEC on Patents. For example, Mr. Robertson testified—he is a patent attorney from Chicago—with respect to a survey that had been made of all Federal judges with respect to these general problems. He said—

* * * there were 15 significant replies. Of these, 12 mentioned or expressly attributed the trend * * * (p. 138)

that is, of the decisions—

to something that might be classed as dissatisfaction with the working of the patent system at that time. * * *

There were three main groupings of the complaints that these judges made. They can be classified, perhaps, roughly as (1) abuses of the patent system sometimes with specific reference to TNEC, this report having followed that by a few years; (2) unreasonable withholding of inventions from use; and (3) that not enough of the benefit goes to inventors (p. 138).

Then Mr. Robertson referring to the TNEC said,

I might say that it seems to me that the first item, the abuses have fairly well been taken care of by the activities and successes of the Department of Justice (p. 138).

At another point in the testimony he referred again to TNEC. This was in response to an inquiry by Mr. Caplan,

There could be a little bit of a breakdown as to what some of the things were, mentioned as abuses, but I think that they are well enough known, so it would not particularly add. As far as you could tell most of them were of the TNEC variety which I think have been largely overcome (p. 141).

Then later on, again in response to Mr. Caplan's question as follows,

As the result of the publicity given to the antitrust abuses of patents in TNEC and the Antitrust Division of the Department of Justice rather vigorous enforcement of the antitrust laws in the patent field, there has been an improvement in the antitrust position yet the tendency of the courts has not changed. How do you explain?

Mr. ROBERTSON. The lower courts of course still feel bound by the Supreme Court and the Supreme Court has not had very much chance to show what its current view is.

I suspect that the Justices quite likely have not realized the extent to which the patent system has been cleaned up (p. 141).

I recite that not to coach you in your statement, but merely to let you know that in your absence what I deem to be a compliment of the work of the TNEC on patents and the work of the Antitrust Division under your direction was paid to you yesterday afternoon.

Now we will be very glad to hear from you, Judge Arnold.

STATEMENT OF THURMAN ARNOLD—Resumed

Mr. THURMAN ARNOLD. The remarks I make I don't believe are going to be very helpful, because on most of the questions which I am now considering, having presented a paper elsewhere, I have a completely firm opinion.

I would state at the outset, however, that the reason for the American courts' changing attitude toward the patent system, toward the validity of the patents, though it perhaps may not be consciously formulated, is the industrial revolution of the 20th century.

It used to be that getting a patent is like finding a needle in a haystack. Only one man would find it and the rest would scatter the hay in all directions and he would get the reward. Today they cut the hay up into sections and each man examines his section, and the man who doesn't find the needle is doing exactly the same thing, making the same contribution as the man who does. That is an exaggeration, but I think something like that has occurred.

In other words, we have discovered how to make inventions, and industrialists of my acquaintance tell me that given the amount of money they can invent almost anything, any kind of a machine, or do the same thing that a team did in the atomic-energy field. I suppose the creative thinking in the discovery of the atomic energy was based on Mr. Einstein, people like that, who never got any reward whatever and could not very well get a reward.

Industrial research has supplanted the individual inventor as the predominant force in the progress of scientific arts. In this situation the protection of the individual inventor is impossible in basic research.

There are grave dangers in the power which can now be exercised by a patent portfolio. One of them is the fact that the laboratory is constantly patenting improvements so that while the life of one patent may run out the life of a patent portfolio is perpetual. The central problem in my view which should be considered in a patent investigation today is what limits should be put upon the use of patent portfolios by large corporations.

Senator O'MAHONEY. Judge, isn't that a general statement which does not come to grips with the individual situation which is portrayed by individual inventors, such as Mr. Jungersen, who testified just a few minutes ago?

Here is the case in which an existing law passed by Congress and signed by the President in accordance with the Constitution to carry out a constitutional power granted to Congress which, because that has not made a sufficiently definite test to determine inventiveness, has invited the courts to go all over the circumference, so to speak, changing tests from time to time. Has not the time come for Congress to enact the test which the courts must follow?

Mr. THURMAN ARNOLD. I think that is a completely impossible task. I think the evaluation—

Senator O'MAHONEY. If it is impossible for Congress it must be impossible for the courts.

Mr. THURMAN ARNOLD. It is not impossible for the courts to decide a question of speculative damages. It is not impossible for the courts to decide the full, just, reasonable compensation which they give.

Senator O'MAHONEY. But when the judges in 1954 apply a test of inventiveness which is completely different from the test that was ap-

plied in 1924, how can you say that the Congress can't do something? The decision of the court is going to affect validity and the court must interpret the law, not make the law.

Mr. THURMAN ARNOLD. The attitude of the court toward the antitrust laws shifts and has shifted in my time and it would be utterly impossible for the courts to make any better statement on the antitrust laws than the general one found in the statute. I say the same thing is true of the patent law.

I think what Congress could do is change some language around and that would be in effect a letter to the court saying you have been too tough on patents and let up a little bit, won't you? I think that might change the attitude of the courts. The reason why I would be opposed to that is the reason I have just been giving, the fact that the individual inventors has become part of a team, that it has become a question of protectiveness, something like a protective tariff for American industry.

Senator O'MAHONEY. Must Congress stand idly by while this development of the research lab come about and allow the individual inventor to come to the Patent Office and get his patent and then have it knocked out after the corporation which owns the research lab has litigated the thing from the Patent Office to the Supreme Court?

Mr. THURMAN ARNOLD. If the Supreme Court knocks it out, presumably it is right.

Senator O'MAHONEY. But the Supreme Court must act on the law and we are here to determine what we must do about the law.

Mr. THURMAN ARNOLD. If you are here to make a new definition of patentability I believe you will fail.

(Discussion off the record.)

Mr. THURMAN ARNOLD. I have no easy or ready solution for it, the problem of the patent portfolio and also the patent pool by process of cross licenses. On the one hand the patent gives a lot of advantages to the members who take advantage of it. On the other hand with 10,000 patents it would be too hard for a new person in the industry to pick up all those patents from different sources. I think the problem today is essentially the problem of reconciling our great corporate research and the power which the patent laws now give them with our ideas on monopoly and antitrust. And I am not going any further because you know how long I can talk on that, Senator.

And more specifically it seems to me that one of the significant things that have been brought before this meeting is the absence of adjudicated patents. People just don't adjudicate them. You get enough of them and you get the same power as if you had an adjudicated patent. A very weak patent in strong hands is pretty powerful.

A very strong patent in weak hands is not worth anything. I think there is a crying need for more adjudication of patents to clear up this enormous clutter. I think specifically some legislation ought to be passed making it easier to adjudicate them and my only suggestion which I might on discussion with somebody take back. I discussed with Mr. Woodward and I have not completely made up my mind—my only suggestion.

Senator O'MAHONEY. Won't you say that Congress ought to do something to throw a little weight in the balance on behalf of the good patent in weak hands so as to protect the inventor against the group with many patents?

Mr. THURMAN ARNOLD. I have a suggestion that. How good it is I don't know. I think that one of the reasons for the lack of adjudication and the power of patent in strong hands is the fact that patent litigation is so tremendously difficult. I am not talking so much about the expense.

But a man who goes into an industry and infringes a patent is taking an awful gamble. I would make it against public policy for a contract to provide that the licensee could not contest the validity of the patent. Previously he could contest it at any time without giving up his license and from the time it was declared adjudicated he would not pay any more money. He might not get back the money he already paid. So that he could with safety to his business risk the funds which are necessary to take on a patent license and it is my belief that we would get rid of an enormous amount of these weak patents in strong hands.

Now he takes an awful chance and when you say that the courts are too tough on patents, you should make a further study of the various circuits. I am engaged in litigation where we think we may win or lose the patent suit on the doctrine of forum non conveniens, that is, whether it is tried here or somewhere else. So the validity of that patent may depend upon the interpretation of the decision that the court makes on forum non conveniens. I would like to consider my suggestion further.

I have discussed with Mr. Watson and he disagrees with me, what I call the subpatent, the patent application with all these claims, the ones I have seen, the ones that have been before my court. The same generic claim will be stated in 25 sometimes 30 ways by which the attorney ingeniously tries to get more scope for his invention. It has always been my belief that the real problem there is how much power he is going to be given. The question should be asked and discussed, the precise question of how much power, how much control of the industry. It certainly is a factor in the decisions. I think the Supreme Court in the same term sustained a little bit of a patent on a pinball machine which seemed to me utterly insignificant and decided the Marconi case and invalidated that patent.

I think it was the power in the one patent and the inconsequential power in the other patent that decided them.

Senator O'MAHONEY. Is that in the law?

Mr. THURMAN ARNOLD. No; it is not in the law. It should be discussed. It should be put in the law.

Senator O'MAHONEY. How can the court put it into the law or the decision?

Mr. THURMAN ARNOLD. I would require the court to ask the attorneys what sort of control the patent would give if it were declared valid. And they would say it is irrelevant. I would like to ask the question and take it into consideration. It would take a lot more thought than I have given the matter to be able to draft you any kind of a statute on that. I suspect the patent bar might not be entirely enthusiastic.

Senator O'MAHONEY. I am inclined to believe from the little study I have been able to give to the question that there ought to be a power in the Patent Office and in the courts to grant a patent for less than the whole broad claim or multiplicity of claims that are made.

Mr. THURMAN ARNOLD. They do it and they don't do such a bad job, although the opinions aren't written in those terms.

I would like to have them written in those terms. I do not think that it is a matter that reflects on the Patent Office that 44 percent or whatever it is, being sustained by the court. The Patent Office has the first look at it and only experience is going to tell what is going to happen to that patent.

Senator O'MAHONEY. I think it is clear nobody can deny that Congress has not supported the Patent Office in its expansion as the art in which patents are issued has expanded in the 20th century.

Judge ARNOLD. You could give them all the help in the world and they nevertheless would not know whether this was going to be a very important patent or it was not.

It is just a pure prediction. I don't mind that the courts second-guess them.

Senator O'MAHONEY. It is better to give them the help than to have the backlog.

Mr. THURMAN ARNOLD. I thoroughly agree with that; yes.

The inventive picture and industrial picture has changed but we are still talking about the patent system in the old terms. I think these cases should be decided on what I think is the real economic basis for the decision.

Senator O'MAHONEY. Any questions?

Commissioner WATSON. The position of Judge Arnold on many of the points which he has just mentioned has long been known to me. I in the past have not been convinced that the judge is correct in his conclusions. As of now I have not changed any of my views, so I think perhaps we better go on to obtain the opinions of some other gentlemen. I particularly believe——

Senator O'MAHONEY. The irresistible force and the immovable object.

Commissioner WATSON. I am afraid it is such a case.

Mr. THURMAN ARNOLD. May I say this, Senator, whether this protection to investment is necessary, it is a good deal like the protective tariff argument. I don't think anybody can be completely opposed to any protective tariff. Complete free trade is utopian. But at the same time you get more or less of a set attitude and debate never seems to change anybody's opinion.

Commissioner WATSON. This question of the power that you mentioned yesterday and again today, whether or not the patent gives the inventor too much power, the Constitution requires that the inventor be rewarded. The Patent Office—and I particularly confine the debate to those matters for which I am responsible at the moment—proceeds on the theory that if the inventor has made an invention of a certain scope, or maybe a series of inventions which have all resulted from a common endeavor, he should be rewarded and that the only way of defining the scope of his invention is by properly describing it in the claims. He may have a simple invention of a type easily comprehended by one claim. He may have much more complicated inventions and may have a whole series of inventions and he needs a certain series of claims either in the same patent or in a series of different patents, to protect him.

Judge ARNOLD. I would agree.

Commissioner WATSON. We had a little discussion yesterday of the power which it gives a corporation or an inventor to hold patents covering things which are not being used.

And I think it is erroneous to say that those patents should not be issued even though the inventor does not use them. I think that it is necessary to encourage research money which is locked up in a safe, to come out and move us from here to there where we want to go, to say that the fruits of the research shall be covered by patent and if you develop three inventions, A, B, and C, or D, E, and F, and A is better than the others, nevertheless B, C, D, E, and F shall be protected and persons who own those patents shall not have them infringed.

I think if you say that gives the owner of the patents too much power, it is a mistake, it will be a discouragement to those who want to risk their capital.

Senator O'MAHONEY. But, Mr. Commissioner, should the patent owner, which frequently should be referred to by the impersonal pronoun "it" rather than the personal pronoun "he", if the owner of the patent uses these other patents, which he does not put into operation in his production, but uses them for the purpose of extending the period of limited monopoly, don't you think something ought to be done about that?

Commissioner WATSON. Absolutely not.

Senator O'MAHONEY. Then you think the limited period granted by Congress in the Patent Act may be extended by the action of the inventor in securing other patents which he does not use except for that purpose.

Commissioner WATSON. There is no such thing as extending a monopoly by the use of 2 patents instead of 1. Each patent covers a separate invention and if a series of six patents are issued simultaneously or in any succession that you may want to indicate, the monopoly of no one of those patents can be extended by any other.

Senator O'MAHONEY. My memory then is failing me, if there haven't been many instances in which by the clever use of claims and additional patents, the monopolistic field has been extended in time and extended in area.

Commissioner WATSON. I would disagree about extension in time and I would disagree about extension in area. The patent within its four corners determines the scope of the monopoly conferred upon the inventor for his contribution to the advancement of the arts and any other patent is a document which is entirely distinct and separate from the first one.

Senator O'MAHONEY. You are just disputing the existence of the fact. Assuming the existence of the fact, what would be your opinion?

Commissioner WATSON. Assuming the existence of what fact?

Senator O'MAHONEY. The fact that by various devices the holder of a patent extends the period of his monopoly.

Commissioner WATSON. I can't ever assume that fact.

Judge ARNOLD. Assume that A. T. & T.—and whether it is true or

Mr. THURMAN ARNOLD. Assume that A. T. & T.—and whether it is true or not I don't know—perfectly legitimately—we will leave out the word clever devices—with its various research scientists, with its constant ability to make improvements on old patents which it already has, assume that it has a perpetual monopoly on the art of communications—and I am not charging that as a state of the facts, which I

think is quite possible today—assuming that—would you think there should be any legislation?

Commissioner WATSON. Assuming that there were 1 telephone company and there were not the 5,000 additional independents that exist in this country.

Senator O'MAHONEY. Assume that the telephone research in any given field was protected by patents and as fast as they expire quite legitimately they were being improved on, so the net effect was to continue in perpetuity or indefinitely A. T. & T.'s control over the technical process of communications, would you think that would be a desirable situation?

Commissioner WATSON. I believe that a research corporation using its skill, obtaining the best advice it can and the highest quality of science, and scientists, employing a good patent staff, is entitled to a monopoly of those inventions which originate in its research department.

Senator O'MAHONEY. What force do you give to the words "limited time" in the constitutional provision granting authority of Congress to allow such a monopoly?

Commissioner WATSON. I give full force and effect to the words "limited time." Each patent is for 17 years in the absence of an extension granted specifically by Congress.

Senator O'MAHONEY. Then your position is merely this.

Commissioner WATSON. At the end of 17 years this patent is in the public domain and anyone can use it. So there is no extension of a patent. It may become obsolete, either at the end of 17 years or even at the end of 2 years and the patent may no longer become effective.

Mr. THURMAN ARNOLD. I think it is a very fair answer. Technically you are absolutely right. The difference between us is I am looking at the patent pool or the patent portfolio, as the res we are talking about. I get my answer that way. You look at the individual patents and you get your answer that way. I think we are both right and it gets down to an economic question.

As the protection of investors is a public policy question, is that promoted by that kind of protection of research and invention?

Mr. CAPLAN. With the deference of an employee to his former boss, I would like to suggest whether the answer to the portfolio or pool problem, which you raise, is the tendency of the courts to hold patents invalid—which touches men such as Mr. Jungersen in its force—or a direct and frontal attack on the problem of pools and portfolios from an antitrust standpoint, toward which your own efforts in the Antitrust Division were directed.

Judge ARNOLD. I think it should be approached from both angles. I don't want to take up too much time—stop me because I am liable to keep going—but I think that the question of the size of the corporation should be considered very closely with its power to sue for infringing and utilizing patents for more than its limited period.

I know corporations that feel that way. Coca-Cola feels that it should not limit the inventions it finances, vending machines and things of that kind, and Edsel Ford testified the same way. They were not interested in the use of the patents. Then Packard said all we want out of our patents is to pay the cost of the research and that is a real question of policy and that is the central policy.

As to the other angle, I think we should force patents into adjudication and as to the question of defining patents any more closely I give that one up.

Senator O'MAHONEY. Perhaps it all boils down to the central question of our times which is the relation of the individual to the organization of individuals. We have a Government which was founded upon the theory that the individual comes first. The Constitution was written for the benefit of the people as individuals. Because of the complexity of the modern world, forces have developed at a very rapid rate. It makes no difference whether they are corporate organizations, managed by employees or Government organizations managed by Government employees. The great issue of our time is how to protect the individual citizen from the activity of organizations which limit the field in which the individual may act.

The inventors who have come to us are complaining largely upon the ground that they cannot compete with the organizations, whether they be corporate research institutions or public research institutions.

And they feel that Congress should so write the law as to set down the individual citizen from the activity of organibations which limit monopoly.

Mr. THURMAN ARNOLD. I think that is the issue. All I say is if you are seeking a definite standard, instead of getting lawyers on your staff, I would get a crystal ball and astronomers and two Swedes.

Senator O'MAHONEY. You remind me of the apocryphal quotation attributed to a Patent Commissioner of some 75 years ago that the era of invention had come to an end and no more inventions could be adopted. I don't believe that the era of Congress passing laws which the courts must follow has yet come to an end.

Any questions?

I think you have both enlivened and illuminated the situation.

Mr. Woodward, do you care to come into the discussion at this point?

FURTHER STATEMENT OF WILLIAM R. WOODWARD, PATENT ATTORNEY, NEW YORK CITY

Mr. WOODWARD. Yes, I do. I would like to mention first, because I think it is the most important thing that has developed, that I was very much impressed with the explanation of the Patent Office of its need for the performance of its function. I think the Patent Office, too, has a key position in the entire patent system and we will never realize the full benefits of the way our patent system has been designed unless the Patent Office can function according to plan. I have not heard any dissent from that and therefore I will not discuss it any further except to point out that I am a member of one of the local patent law associations that is trying to help the Patent Office with a large committee of lawyers, some working for companies, some in private firms, to see what can be done to get promising men to join the Patent Office examining staff.

I was somewhat impressed with Judge Hand's desire for a further elucidation of facts. But I had the very distinct impression as I thought about his presentation that we cannot prove the worth of any of our major free institutions by purely statistical methods or inquiries designed at statistical compilations. I think most of us who try to

evaluate the patent system or the separation of powers in our Constitution under which we operate look to the judgment of history. I believe our representatives in Congress spend a great deal of attention on history. I know our President is a great reader of history. In this matter of the patent system we must look to industrial history. Last year, about Christmastime, there appeared a book called American Science and Invention. It is a very excellent book. I found a few minor errors in it and I don't want to vouch for every detail in it. It is an amazing presentation. Very informative to me although I have been——

Senator O'MAHONEY. Put the name of the author in the record.

Mr. WOODWARD. It is by Mitchell Wilson. It is full of illustrations that are designed to give an authentic flavor to them. There are patent drawings, old engravings reproduced, and it goes back to the early colonial days and carries on to the present time, including the development of nuclear energy. I would defy anyone to read the story of Eli Whitney in there or the career of George Westinghouse or some of the other people who have contributed to the development of our technology and not get respect for the patent system as it operates and not a feeling——

Senator O'MAHONEY. What did Eli Whitney get out of the patent system?

Mr. WOODWARD. I mean Elias Howe. Eli Whitney is another example of a case like Mr. Jungersen. In that case it wasn't adjudication of invalidity that caused his difficulties. We did not have the type of patent system at that time that we have had since 1836. But his inability to collect from the people who used the cotton gin invention is very much because of the consideration of a factor like Mr. Arnold had in mind that people did not want to give one man power over a very valuable invention.

Senator O'MAHONEY. Who was the other—let me ask you what Elias Howe invented? I know, but I want you to say.

Mr. WOODWARD. The sewing machine. You will see in that book another interesting thing. There is an explanation of the difference between Elias Howe's machine and the machine later improved by Singer.

Senator O'MAHONEY. Who got the reward, Howe or Singer?

Mr. WOODWARD. Howe received the principal rewards. His patents were sustained finally. Unfortunately it came after many more years of hardship than should have been necessary. But he was vindicated and he did get the reward even though it was somewhat late. Mr. Singer——

Senator O'MAHONEY. It was too late to enjoy it.

Mr. WOODWARD. No. What I have in mind is that his wife died for lack of adequate medical care before he got the fortune that he made later, but he lived quite a while after that.

Senator O'MAHONEY. That illustrates our problem. We don't want any wives of inventors dying for lack of medical care.

Mr. WOODWARD. I think you will find, though, that if you take this thing as a whole and you look at the story of Goodyear, you will find that we have the facts. We don't have them in statistical form. We have an impressive array of facts that can be evaluated. It is not easy—I don't think it will ever be easy for an inventor or a small

company or even a big company to bring an important and far-reaching invention into acceptance and there will be troubles and I don't think we can ever devise a patent system that will reward people fully and extremely quickly.

Senator O'MAHONEY. I take it your point is that the facts are here open to public inspection which demonstrate that the patent system has worked and has been in the public good.

Mr. WOODWARD. Yes. That is the point.

Senator O'MAHONEY. But our problem is how to improve that system.

Mr. WOODWARD. That is right.

Senator O'MAHONEY. And you agree that it should be improved?

Mr. WOODWARD. Yes. I said for one thing we are all agreed that the Patent Office itself has certain needs, important needs, immediate needs to perform its function as designed. I was somewhat interested in Mr. Robertson's proposal to deal with this question: do we need as many claims in patents to take care of all the eventualities that may come up after the patent is issued? I also agree very much with him that if you can make an improvement in the practice on that type of patent, which I understand is not the average patent but a fair number of them, that it is something that your main job to do is to persuade the profession that you have a good way of dealing with the problem and that that is something which will have to be worked out by the people who are most familiar with the problem of how patents should be obtained. It is a technical problem that I do not think is ready for any legislation for some time. You heard yesterday how Mr. Bailey, for example, said that type of complicated questions of practice is dealt with in the American Bar Association section and I think consideration by that group is very helpful for that type of a problem.

Mr. Mayers brought out the problem of long pendency in the Patent Office and I would like to state that I think eventually it would be desirable to cut down the time in which the applicant has to answer in order that patents may issue more promptly and not catch people unawares that something they started to do is now covered by a patent that they had no way of knowing about.

On the other hand we had someone earlier here who said in the interest of the individual inventor then it might be desirable for him to be able to keep the patent from issuing too soon. I think perhaps some compromise could be made that if we ever get to the point when patents can be issued very, very promptly, so that there might be a danger of prejudicing some person who if the patent issued right away would still have to wait 5 or 6 years to get the invention commercialized and the term of its patents would not cover enough period in the actual use of the invention, you might have some way of having the patent appear in the normal quick time, but permit a delay of the beginning of the 17-year term upon a showing that the invention is not yet in use and that it would be desirable to have the 17 years begin after a delay of 3 years or something like that. That is not an important question now because patents don't come out that fast, but I hope we see the day when we have to consider that type of a problem.

Senator O'MAHONEY. That would enable the research labs, both of private corporations and of the Government to put patents on the shelf.

Mr. WOODWARD. No. The invention would not necessarily go on the shelf of course. But there are many reasons, as Mr. Ballard said, why it is not possible to use inventions soon; sometimes the question of setting up necessary facilities. In that case I think you might even have a showing that you could not. I doubt very much whether very many people would use that.

I think it is much better to have the patent appear promptly anyway. Then if there is a need for delaying, it should take place after the patent has come out and I don't think in any event you should extend the term. You should only get 17 years. I have made that suggestion only as a way of not discouraging the speeding up of patent issuance because one or two people may find it desirable to delay issuance.

Senator O'MAHONEY. We must bear in mind, must we not, that the constitutional grant to Congress is one to promote and not to delay.

Mr. WOODWARD. That is right. I only raise that because there was some discussion by other people that it might be desirable to delay it. I have no feeling myself that it should be delayed in any case.

Senator O'MAHONEY. I understand.

Mr. WOODWARD. The discussion of adjudication that was proposed by Judge Arnold, which he said he discussed with me. I think one of the merits is that if it were adopted it would reveal that weak patents are not used to collect royalties as much as Mr. Arnold suspects. I have not had time to consider that particular proposal very carefully but I don't see a basic objection.

Senator O'MAHONEY. In your paper, which I hope you will submit to the committee, I hope you will give consideration to the problem of the strong patent in weak hands.

Mr. WOODWARD. That brings us really to the question of the trial courts and our judicial system works fairly well and that it is true you have to have some funds if you want to litigate a case, but I believe that with the type of professional assistance that is available and the arrangements in our judicial system as to costs and everything else, I don't believe that there is a very large number of strong patents that fail to get proper recognition because their owners do not have the strength to carry them through, to go through with them. I don't believe that our judicial system is that difficult to raise any problem there. I think there is probably more to be said for Mr. Bruninga's idea that there should be some roving judges with particular experience in patent cases and I would like to add the idea that perhaps those judges should not do only patent cases.

I think Judge Hand's idea that you should not have specialized judges should apply there. They should handle other cases at times. One of the benefits of that idea is that the judges are a special branch of our Government and a lot of things that judges ethically cannot discuss with attorneys who practice before them they can discuss among themselves.

The presence of a body or a number of people with experience in the type of subject matter that comes up in patent cases would act as a leaven in our Federal judiciary, and I would recommend it particularly

to the United States Senate to consider in its constitutional function of overseeing the appointment to the United States judiciary to see that that additional background would be available in our Federal courts in modest proportion.

One final thing I would like to mention if there is still time. I was impressed with Mr. Burns' discussion of the possible tax benefits of a depletion allowance in the case of patents. That is a little different than the rapid amortization matter which was discussed before. In the case of a patent just like the case of an oil well you don't know when your asset will start to produce. As I mentioned on this question of delay, it may be several years after the patent issues before it becomes commercially profitable.

Also the commercial profitability may be cut off quickly long before the patent expires, by obsolescence, a new thing coming along. it is like an oil well, you don't know when your drilling is going to hit something and it will produce and you don't know when suddenly there won't be any more oil, so that you can't give a definite term or particular period of years which you should allow for depletion. So you have a percentage depletion instead.

I am not against the principle of percentage depletion. One of the advantages of it from the encouragement point of view is that you can recover through percentage depletion more than your original investment in that particular asset and I think that is another point where patents are also analogous because in many cases your basis, your cost for a patent investment may be relatively small. It would be hard to improve very much of a basis particularly in the case of an individual inventor who has put a lot of his effort in it and you should recognize like in the oil case that the basis should be really a kind of a discovery value and there again the percentage depletion idea would be quite appropriate and I just point that out as to how different that is from the rapid amortization where you have a definite cash basis and you want to write it off in a particular group of years.

Senator O'MAHONEY. Thank you very much.

Mr. Lutz?

STATEMENT OF KARL B. LUTZ, PATENT ATTORNEY, PITTSBURGH, PA.

Mr. LUTZ. Mr. Chairman, for a patent lawyer to speak at this time and place is very much like Daniel in the lion's den when we sort of have to criticize some judges and we lawyers don't like to do that; we might have to appear before the judge someday.

Senator O'MAHONEY. The judges are not here. We have only had retired judges so you are perfectly safe.

Mr. LUTZ. However, you have asked for frank opinions, and I will state mine. Judge Arnold has indicated that the individual inventor is extinct. We patent lawyers don't believe that because we meet him every day, and we are certainly in sympathy with the purpose of this committee which is to help the individual inventor and small-business man. I believe that the best way we can do that is to make the patent grants as strong as possible, because the individual inventor and the small concern often can build up on a patent. The large concern may not need the patent nearly as much. We should keep that in mind all the time, that in strengthening the patent system

we are helping primarily the small man. So far as the problem of the patent portfolio and the pool, I think, Mr. Caplan has made a good suggestion—make a frontal attack on that from the antitrust angle or some other angle. If we don't like the big corporations building up their portfolios let's do something about that, but let's not weaken patents trying to get at the big fellow, because in doing so we are doing more harm to the little fellow.

Mr. Jungersen's attorney made the suggestion that perhaps we could make the examination in the Patent Office more final and conclusive. His remarks were very reminiscent of some hearings on the Patent Act of 1836, when that proposal was made. It was thought when the examination system was introduced in the Patent Office that that would solve the problem, but as the Commissioner has pointed out, the Patent Office does not have the time under modern conditions, and experience has shown you can't do it that way. You will still have to have a final screening by the courts.

To Judge Hand's suggestion about making patent procedure parallel to copyright procedure, I think that is opposite to what this committee is trying to do because that would be weakening the patent grant. He would give protection only for actual copying of almost the exact thing and anyone experienced in this field knows that would be of lesser value and therefore it would be a lesser incentive than a patent grant giving a reasonable scope of protection.

Incidentally that again would be turning the clock back because in the Patent Act of 1793 almost that same thing was done, patent procedure was quite parallel to copyright procedure and it was found it did not work. It got into a very great mess, there was a lot of discussion about it: and that led to the act of 1836, which introduced again the examination procedure.

Getting back to the attitude of the courts, I would like to say a word about that. That has been brought up several times. I think all patent lawyers agree that the TNEC did a lot of good. It exposed some bad situations from the antitrust angle that needed to be corrected but unfortunately the backwash of that proceeding seem to be just what I have said, the idea that we have to whittle down the patent grant in order to hit at these antitrust violations. Incidentally we patent lawyers hold the hands of the individual inventor and the small-business man and we can feel their pulse. We know that they were badly injured by the backwash of that TNEC proceeding.

They became very much discouraged. Some of them went out of business entirely.

So as I say we must have a proper attitude toward patents and give encouragement to inventors and their backers. Congress, I believe, intended to do that in this new patent code which was recently passed. I believe that Judge Hand has expressed the proper attitude toward that congressional enactment in his recent opinion in the Bausch & Lomb cases. I believe that if the courts are going to say that Congress did not mean what it said, then maybe Congress should say it again in more definite language.

I thank you.

Senator O'Mahoney. Thank you very much, Mr. Lutz.

Mr. Andrus?

STATEMENT OF ELWIN A. ANDRUS, MILWAUKEE, WIS.

Mr. ANDRUS. As I look at the patent laws, they must of necessity deal equally with all inventors whether they work in the attic by themselves or whether they work in a corporate research laboratory, whether they are poor in worldly goods or rich by worldly standards, or whether they are highly educated or not.

Senator O'MAHONEY. That is not the principle of the income tax.

Mr. ANDRUS. That is all right. But the patent law is not for a class as I look at it. It should be equal with respect to all inventors in order to encourage invention. If there is any inequality under the present patent law I am sure it is not from any intent or fault of Congress. The Patent Act does not create any inequality in it. If there is any, it is rather due to our own confusion or lack of understanding in the interpretation of the law by lawyers and courts.

It is my belief that "the million-dollar laboratory" that you referred to in your opening statement, Senator, is not "usurping the function of the garret inventor;" as queried by you, I have noted in my practice over a number of years a considerable increase in the number of small corporations being formed, to go into business, and it seems to me that a larger proportion of the business of the country that would be utilizing inventions is being conducted today by corporations than by individuals.

Senator O'MAHONEY. That, of course, raises the question of the small-business man which is constantly before Congress.

Mr. ANDRUS. That is correct.

Senator O'MAHONEY. We passed a reorganization act several years ago in which one of the provisions was to abolish special committees. One of the special committees that Congress used to establish was the Committee on Small Business.

Well, in spite of the adoption of the law and the abolition of small committees as a rule of Congress, Congress lost no time in suspending that rule and reestablishing the Small Business Committee in both Houses. And when this administration began, one of its first acts was to abolish the Small Business Administration, but it soon retraced its steps and established a new Small Business Administration. That I take it to be an illustration of the fact that there is an inherent demand in our society to protect the individual against organizations and help him in competing with organizations.

Mr. ANDRUS. I shall come to that to some extent in my further statement. But when you say that only about 47 percent, less than half——

Senator O'MAHONEY. Don't use you in the personal sense, because I didn't say that.

Mr. ANDRUS. All right. Well, when it is said that only about 47 percent or less than half of the patents are issuing today to individuals as distinguished from corporations, and that a larger percentage issued to individuals in the years past, why should we not ask if 47 percent of the Nation's commercial and manufacturing business that utilizes inventions is being done by individuals today?

If less than 47 percent of that is being done by individuals, then the ratio with respect to patent assignments is not out of hand.

Senator O'MAHONEY. Of course, we should ask that question and it is constantly being asked. Why there is such great concentration of

economic power in a few hands, management by employees who manage but do not own.

Mr. ANDRUS. I am not talking about the few hands, I am merely talking about the corporations as such. There may be thousands of small corporations, too.

Senator O'MAHONEY. There are.

Mr. ANDRUS. Many corporations in my experience are created by inventors and risk capital getting together in order to start a new business. Only by getting the patents into the hands of those doing the business of the Nation can it be expected that the inventions will be given an opportunity to become useful commercially and thereby to reward the inventors.

I for one, Senator, welcome the increase in percentage of patents issuing to corporations for that indicates a better functioning of our system in moving inventions to the market. I wish the individual inventors could all sell their inventions or get them to the market. Usually today, getting to the market means incorporating, and that is often done prior to the issuance of a patent. Then a patent is issued to the corporation. I suppose you could study the number that are new corporations, somehow or other, and those that are old. I do not have any figures. I do not know.

If there is any problem for the individual inventor in connecting with venture capital I guess our friend Donn Bennett who testified here yesterday is fast solving that problem to some extent.

I say, too, if we could command a better respect for patents, as has been suggested here, venture capital would be more willing to enter this field than it is today.

I think the problem of all inventors whether they be individual or corporate employees, lies in the lack of respect for their production. If inventions are not to be respected as property, there is no sense in the garret inventor starving himself to death to make one and furthermore the corporate laboratory inventor would soon be out of a job, too.

I consider the patent system as the only means we have today for compelling competition in inventing, in development and research. It does just that. Much of our progress is dependent upon that very competition that is enforced by our patent system.

Senator O'MAHONEY. In other words, if the patent system were abolished, then there would be a lack of stimulant for invention.

Mr. ANDRUS. That is my position, sir. If others are free to copy the developments of anyone, private investment in research will not be able to survive for long, except in those fields and for those business units that are large enough to adequately protect certain things by secrecy. Outside of that veil the investment in research would have to come down to a low level.

Senator O'MAHONEY. I take it you would not object to my inferring from your statement that if the patent is not respected not only in the field of industry and in the market but in the courts, that the result will be to increase the overall monopoly of those who may establish large research labs.

Mr. ANDRUS. I would rather think that a greater respect for patents would benefit the individual inventor to a larger extent than perhaps it benefits organized commercial units.

Senator O'MAHONEY. I thought that is what you were saying.

Mr. ANDRUS. I want to call attention, however, to the fact that in research labs the individual inventor is the all important man just the same as the individual inventor is on the outside and if you start curtailing by trying to say that because a research lab makes a basic invention it shall not have the right to make any improvements as I believe was suggested here, because of portfolio conditions, then you're curtailing the rights of the individual inventor in the lab with respect to his job too.

Senator O'MAHONEY. You are not encouraging the free enterpriser because the free enterpriser is the individual whereas the employee inventor in a research lab is merely an agent of the big organization?

Mr. ANDRUS. I regard the question of the field of invention to be the same, the question of the field of commercial endeavor may be different. If you talk about the individual inventor—

Senator O'MAHONEY. I agree with you, the field of invention is the same. I quite agree. But the duty of Congress under the Constitution is to maintain liberty and opportunity for the individual.

Mr. ANDRUS. That is correct. But one of the advantages or rather good sides of our patent law in a sense is that it applies equally to all inventors and it is not intended as a class legislation to assist antitrust laws or to assist other types of laws that relate to commerce and industry but it applies to the inventor and that is a very important item and it should apply equally to them at all times.

Senator O'MAHONEY. You would not deny that it ought to be written in such terms that it would be, if that were possible, an aid to those who would like to violate the antitrust laws.

Mr. ANDRUS. The antitrust laws can apply entirely by themselves to whatever is deemed best by Congress to have them apply to. I might get to a point there that I can answer a little later easier. I will jump ahead for a moment.

Senator O'MAHONEY. I am sorry to have interrupted the continuity of your statement, Mr. Andrus.

Mr. ANDRUS. I have that in there. As I look at the question of the courts—I would like to come to that subject and I think I will come to your position—if the courts fail to respect patents, it is the same as failing to respect a law.

A law that has failed of enforcement ultimately becomes disrespected by all. Patents give that same impression to the public if it is thought that the courts do not respect them. Then others, including corporate organizations and the public will not respect them.

The only way of getting a successful operation of the patent system is to have the courts follow the congressional intent and insist upon a high regard for the exclusive grant of the property right under the patent.

I am not concerned with those court decisions of course that find direct anticipation as under section 102. If direct anticipation of the invention occurs, if it is old, no patent should stand against that.

But I am concerned with two types of court holdings and I think something can be done about them. First, I take exception to those court holdings that fail to treat the property right of the patent grant with the same respect as other forms of property rights, such as those based upon the patent to a mining claim.

Instead some courts treat a patent grant for an invention pretty much as a monopoly of the odious character prohibited by the anti-

trust laws and even against public policy in some instances. Such confusion between a true property grant and a monopoly only serves to undermine the very framework of our American way of life.

It is an anomaly to me—and here I come to the point you asked a moment ago—that our antitrust laws are for the purpose of maintaining competition in the commercial world as I gather, to maintain competition in the commercial world in all of its fields, and yet that law is used to strike down in many instances, the patent grant and the patent system which is the only means of maintaining competition in the field of development and inventive effort.

The patent laws are parallel to the antitrust laws in their purpose and function of maintaining competition, the one in the field of invention, the other in the field of commerce. One should not conflict with the other, and I venture to suggest that perhaps the former is the more important to the survival of our Nation in this troubled world.

It is an anomaly also in my opinion that some of the courts have gone to the point of holding certain types of patent operation as against public policy.

For instance, if a manufacturer of a staple commodity happens to own a patent on a process of using the commodity and he tries to enforce that patent against an infringer, the courts have held that to enforce it would be against public policy because it would in effect tend to give him a monopoly on the commodity. That same patent, if it were in the hands of XYZ out here who does not do a thing for the public, who does not make anything or sell the public anything, which not have attached to it the so-called anti-public-policy stigma.

I say that Congress can and should do something about some of these things and they should very substantially strengthen section 271 (d) of the present law. I don't have the wording of what I would suggest at this moment but along the lines I have been discussing I think you can find room to strengthen section 271 (d).

Now the second type of court decision that I frequently take exception to is that invalidating patents for lack of invention under section 103.

Every time a court holds the property right of a patent to be invalid for lack of invention, let us say, it is in effect giving the public a free ride on somebody's investment. It may be the investment of years of work on the part of some so-called attic inventor. It may be the investment of hundreds of thousands of dollars of stockholders' money, paying for the time of expensive research personnel and facilities.

I would like to question just what is the issue of the lack of invention under section 103. I have often wondered whether it is not merely an expression as to quality of the novelty required for patentability. Regardless of how it should be considered, if the test of patentability is held to be so high as only to be met by that class of inventions of such technical character that are understandable only by a person with a doctor's degree in science and not by a layman such as we are, or by the court, then we can truthfully say that the patent system is merely for a class, merely for the genius or super-educated man.

I, for one, believe that our constitutional forefathers intended the patent system for the common man, to encourage the invention of simple devices sometimes called gadgets, if you please, for the useful arts. The simplicity of the invention, if it is actually novel, should not detract from its patentability.

We should not test the inventiveness of the simple device illustrated in Donn Bennett's TV show, the Big Idea, for instance by the skill of the scientific man but rather by the skill of the common man, the type of people who produce simple devices.

Our patent system was intended by Congress to function at all levels of education, all levels of economic effort and for all levels of use. The patent laws do not distinguish in that regard today.

We do not live by automation alone, but we live by simple things around us. I can conceive of patentable invention being possible in each level of civilization and in each level of life. There is no need of increasing the requirement of patentability with each advance of intelligence or of science as a whole. We still need the simple improvement in America and you will not get these from the genius or superintelligent researcher.

I think the patent system should be made to function in all levels of our economy, in all levels of our efforts and of our needs. It is just as important to have inventions in each one of those fields.

Senator O'MAHONEY. I think you have made a very clear and impressive statement, Mr. Andrus, and I hope that when you prepare an additional paper to submit to the committee, you will make specific recommendations with respect to the standard, the test which should be applied and with respect to the definition so that the courts may be guided as well. As to this problem of the gadgeteer, all levels of society, I think, must be benefited by the law and I think the common man is the principal objective of our system and of our legislation, as it is of our Constitution.

Mr. ANDRUS. I shall be glad to send that statement of some recommendations, specific recommendations for your study, they are not necessarily recommendations that are prepared for final action in that sense. I have some very definite ideas.

We have been working on some of them in Milwaukee in our Patent Law Association.

Senator O'MAHONEY. We will be very happy to receive them.

Mr. ANDRUS. I will say this, however, that I am inclined to agree with Thurman Arnold that by statute you cannot define invention much better than it is in section 103.

I am not inclined to change that definition.

Senator O'MAHONEY. See what you can do.

Mr. ANDRUS. Yes, sir.

Senator O'MAHONEY. Thank you very much, Mr. Andrus.

We are most appreciative.

Mr. Reynolds?

STATEMENT OF EDWIN L. REYNOLDS, CHIEF TECHNICAL ADVISER, UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Mr. REYNOLDS. I would just like to say a word on behalf of the technical advisers to the courts. Mr. Bruninga nominated them for

oblivion yesterday on the ground that they attempt to usurp the judicial function by deciding the cases.

I think any judge that wants someone else to decide his cases won't have any trouble in finding someone to do it and conceivably might even find someone worse than a technical adviser for that purpose.

I think there is a lot to be said for this idea that you get a refreshing approach to a case by a judge who is not steeped in the patent law.

But the approach would be more refreshing if he knows what he is approaching and it is possible that the technical adviser might help him with that.

Senator O'MAHONEY. I wonder if you would care to make any comment on the suggestion of Judge Hand that the Court of Patent Appeals should be a revolving court rather than a court of judges and experts who are devoted solely to that problem?

Mr. REYNOLDS. I think that is probably a good idea. I think you get into a position where you can't see the woods for the trees sometimes and it is advisable to get an outside approach. That is all I want to say.

Senator O'MAHONEY. I did not want to cut you off.

Mr. REYNOLDS. That is all I have to say. Thank you, Senator.

Mr. CAPLAN. Did you have any comment on the suggestion that interparty matters be heard by officials of the Patent Office who are going to decide the cases?

Mr. REYNOLDS. It is much more expensive to the parties to require them to come to Washington.

There is a provision in the rules now whereby if the parties agree to it, they can have someone from the Office attend the hearing and act as a hearing officer and that provision has only been invoked once or twice.

So it is generally satisfactory as it is.

Senator O'MAHONEY. Some tribunals with headquarters in Washington have examiners who travel to where the litigants are.

Mr. REYNOLDS. The practice is permissible now only where the parties request it. Up to now it has only been requested once or twice. So I think they get along pretty well without it.

Senator O'MAHONEY. We are all mentally hungry at this table and through this room but I am afraid that physical hunger is overcoming our mental hunger and that the time has come to call this session to a close.

I don't want to appear to be cutting off anybody who may wish to make any presentation. So if there are any persons in the audience who have hoped to say something to the committee at this session I can only say now that you will have the future opportunity.

File your names with the clerk of the committee, tell the subject upon which you wish to speak. If you can handle the subject by preparing a paper, we will be very glad to have it.

And I am sure it will be much more effective when our minds have been rested with a little of the physical relaxation that nature provides for us, and the food that we can get.

I think it is understood, is it not, that this was intended to be a perfectly open hearing for all to present their suggestions?

It was designed to develop ideas for the committee itself in the conduct of its investigation and the findings of its future agenda. The study is by no means over. We think we are getting a lot of very valuable material and I hope that everybody here and everybody who has contributed to this hearing will carefully review what has been said and make that review the basis of such further suggestions as may seem advisable.

We will announce the new hearings and the time for them when the staff and the members of the committee have had the opportunity to go over the material thus far produced.

I want to thank Commissioner Watson and Mr. Federico and all who have come here at our invitation; frankly many more came than we expected, when this open session was planned. I think that it has been productive and we are most grateful to all of you.

The committee is now adjourned at the call of the Chair.

(Whereupon, at 1:45 p. m., the hearing adjourned, subject to the call of the Chair.)

APPENDIX

STATEMENT OF FRANK AHERN, JR., PATENT ATTORNEY, LOS ANGELES, CALIF.

I would like to make a suggestion to your subcommittee in respect to improving the patent system. My suggestion is to have the Patent Office Board of Appeals responsible for the classification of patents. Invention, in my opinion, is purely a matter of classification. Thus, when considering the patentability of an invention, the principal question concerns whether the invention is like or unlike the prior art.

I think that I have read every article appearing in the Journal of the Patent Office Society regarding the classification of patents. I have found that patents are not classified according to rules of logic, as might be supposed, but that an attempt is made to classify them according to the various rules of law promulgated by the courts. It naturally follows, due to the confused and conflicting opinions of the courts, that the present patent "classification" is hopelessly confused. I know whereof I speak, because a little over a year ago I was doing search work in Washington. I found this type of work so futile (as a search is never over) that I finally refused to do any more of it; yet it could be very interesting.

If the Board of Appeals were made responsible for the classification of patents, then the question of invention could become a problem in logic. It is even possible, I believe, due to the development of symbolical logic, as distinguished from classical logic, that the question of invention could become a matter of mathematics. However this may be, if the question of invention is only made a problem in logic, a great deal of progress would be made. In such an event, the courts would follow the rules developed in the Patent Office, rather than vice versa as the situation is now. This, I think, would tend to provide for the patentee the greater degree of certainty in regard to his rights that is now desired.

In order to make the idea I expressed workable, i. e., the idea of having the Board of Appeals responsible for the classification of patents, so that the question of invention could be decided according to the rules of logic, it will be necessary to have the preamble or introductory clause of a claim definitely considered as a limitation thereof. As the law stands now, the preamble is sometimes considered a limitation, and sometimes it is not. This is one of the situations I had in mind when I mentioned the confused and conflicting opinions of the courts. (See *Doble Engineering Co.* v. *Leeds and Northrup Co.* (C. A. 1, 1943), 134 F. 2d 78, 56 U. S. P. Q. 426; *Kropa* v. *Robie* (C. C. P. A., 1951), 187 F. 2d 150, 88 U. S. P. Q. 478; and the comment by Simon Broder, Peripatetic Preamble, 33 J. P. O. S. 855.)

The two cases cited above mention the conflicting opinions rendered by the courts in respect to the meaning to be given the preamble of a claim. In the Doble case the Court of Appeals for the First Circuit decided that the preamble should be considered a limitation, and the opinion further states why it should be so considered. In the Kropa case the Court of Customs and Patent Appeals reviewed a number of prior cases, and then stated a rule as to when the preamble should be considered a limitation, and when it should not. The Board of Appeals, incidentally, has also expressly decided that the preamble is a limitation. (See *Ex parte Green* (1947), 74 U. S. P. Q. 272. See also the book by Ellis, Patent Claims, sec. 197.)

However, even though there is plenty of authority making the preamble a limitation, there are still many cases where this is not done, apparently following the theory that broad claims are best. I would recommend, therefore, that the matter be corrected by legislation, as by adding a sentence to the second paragraph of section 112 of the act of 1952. Such a sentence could read: "The introductory clause of a claim or claims shall be considered as a limitation thereof." The

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advantages of doing this were briefly stated by Mr. Broder in his comment on the Kropa case, cited above.

Two of the several advantages stated by Mr. Broder are very pertinent here: First, making the preamble a limitation of a claim will tend to make the rights of the patentee more certain, and second, it will greatly facilitate the classification of patents. I have the thought in mind that the Patent Office should require patent solicitors to make the preamble meaningful, so that these advantages will not be merely an abstraction, but an actual reality. I envison the scope of the preamble being determined by the scope of the class in which the invention belongs, and I envision the scope of the class being determined by decisions of the Board of Appeals. Thus the Board would be the group responsible for the classification of patents.

An excellent example of what I have in mind, that is, the use of the method of deciding the question of invention by means of classification, is given by the *Minerals Separation* case (242 U. S. 261, 61 L. Ed. 286). In this case 30 prior art patents were cited by the defendant in his attempt to anticipate the patent in suit. The Supreme Court distinguished the inventions disclosed by these patents from that disclosed by the patent in suit by, first, dividing the prior art patents into 2 classes, and then, distinguishing the patent in suit from the patents grouped within the closer of the 2 classes.

I think that the question of fact thus decided by the Court, that is, as to the distinction between the two classes, should be held controlling in regard to the classification of patents. Also, I think that this type of decision should be extended to all other types or classes of inventions, so that there would be a greater degree of certainty as to the class in which an invention belongs. This would not be doing any more than bringing patent decisions within the doctrine of stare decisis, and thus more in accordance with the recognized theory of Anglo-American jurisprudence.

If the foregoing meets with a favorable response, I would recommend that section 9 of the act of 1952 be revised by providing that "The Board of Appeals may revise and maintain the classification * * *, etc.," or better, that "The Board of Appeals shall maintain the classification * * *, etc."; and possibly also by adding a sentence to the effect that "Patents shall be classified according to the statement of the invention set forth in the introductory clause of the claim or claims therefor."

Another change I would recommend is in regard to section 100 (b). This section provides that a new use of a known process, machine, manufacture, etc., is patentable. Yet it has been construed to mean only that new uses of known processes are patentable, and that new uses of known machines and manufactures, etc., are not. It seems to me that a new use is in the nature of a discovery, and that as such it should be patentable, even though it relates to the new use of a known machine or manufacture. Insofar as I am aware, this is also the prevailing opinion of the majority of the patent profession. It also seems to be the opinion of the mythical man in the street who wants a patent.

Finally, in view of the fact that I think the courts should follow the rules governing the method for deciding the question of invention as these rules are to be developed by the Patent Office, I would recommend that some provision be made for the Office to furnish expert witnesses for the guidance of the courts in this respect. If this would be too expensive, two alternate possibilities would be: (1) To permit any party involved in patent litigation to take the deposition of an appropriate official in the Office for this purpose, or (2) to permit any party to obtain an affidavit from such an official, which affidavit would give information relating to the classification of the patent in suit, and distinguishing the class thereof from related classes. Any of these possibilities could easily be included in section 282 of the act.

The idea I have in mind in making the above recommendation is to bring the findings of fact made by the Patent Office more in line with such findings made by other administrative agencies when the same are made subject to judicial review. The question of invention is generally considered to be a question of fact. It seems to me that the courts should give just as much weight to the findings of fact by the Patent Office as they give to such findings by the other agencies. Thus I think that the courts, when considering the issue of validity, should treat the finding of patentability as conclusive when the same is supported by "substantial evidence" (within the meaning of this term as it is used in administrative law). The purpose of this recommendation is to provide such evidence for the use of the courts, and thus to make the presumption of validity of a patent really mean something.

The news reports describing the progress of your hearings report that Judge Learned Hand has suggested that a "basic reorientation" of the patent system may be in order; and that a study should be made to determine whether patents should be granted for only the more excellent inventions, or whether they should be granted merely upon registration. While I agree that a basic reorientation is in order, I do not think that either one of the two alternatives mentioned is satisfactory; both are extremes.

My experience in private practice has proved to me that the people want patents. They often want them for very simple things, and they often want them with a passion, and I think that they should get them. Very few of these people come up with anything that could be considered an excellent invention, yet they often do come up with something well worthwhile. If a very high standard of invention were required, very few of our clients would obtain patents. This would not only be unjust to them, and defeat the urge to do some original thinking on their part, but would also defeat the very purpose of the patent system, which is to promote economic competition by protecting the manufacturers of newly developed products.

If, on the other hand, a very low standard of invention were permitted, as by the use of a registration system, the purpose of the patent system would again be defeated. For in this case the rights of the patentee would be even less certain than they are now. Consequently, the value of a patent in business would drop. This opinion is, I think, borne out by the facts of the patent situation in Europe. France has a registration system, and Germany has a rigid examination system. Other things being equal, the value of a German patent is greater than the value of a French patent.

Thus I want to conclude with an argument in favor of my suggestion. I think that the above will not only provide the basic reorientation required, but it will not, like the two alternative proposals, upset our whole theory of patent law. It would only make use of certain features already in the law. It would do this by giving these features the authority of legislation. If they are enacted I think that our patent system will really be a system. The only trouble with it now is that it has grown too big and needs to be reorganized. What I have suggested is only one means by which this may possibly be done.

STATEMENT OF HARRY C. ALBERTS, PATENT ATTORNEY, CHICAGO, ILL.

THE PATENT STATUTES AND THEIR INIQUITOUS INTERPRETATIONS

The patent statutes and the constitutional provision from which they stem as a medium to promote the arts and sciences have just about run the gamut of their original objective. This is the inevitable result flowing from the highly technical and abstract interpretations which the courts have pursued in an unconscious tendency of finding patented inventions to be old or unimpressive based upon technical defenses. These technical defenses involve prior knowledge and uses, prior publications and prior art which contributed nothing to the defendant's appreciation except as an effective missile to wipe out the patent grant. Up to the time of suit by the patentee for the alleged infringement of his patent, the defendant in many instances exclusively utilized the knowledge disclosed by the patent in suit.

After a threat of suit or suit is actually filed, the defendant searches the prior art and scans the archives for an effective defense. This is usually effective in convincing a court that there is nothing new under the sun, and also that the Patent Office grievously erred in the issuance of the patent. The defense then and there deals a lethal blow to our patent system because the fundamental rule that a patent is prima facie valid amounts to little more than unrealistic abstractions. In fact, the courts' comparison of the patent in suit with old and uncommercialized prior art urged by a defendant constitutes nothing more than an abstraction because these prior art disclosures never contributed anything to the defendant's alleged infringing practices, except to serve as a belated technical defense. Nevertheless, the defendant undoubtedly received concrete suggestions from the patentee or his patented disclosure, and thus reaped benefits therefrom.

On one hand, the defendant derived an appreciable advantage from the patented disclosure and, therefore, the extent of such aid or contribution to the defendant should be the measure of the scope of the patent to that particular defendant. This is a factual situation that can be accurately determined, and should be the

basis of the equitable principle upon which the presence or absence of patentable utility (practical novelty) should be measured in a given case. The equities of the respective parties to the suit should be a vital basis of determining right from wrong. Did this patent in suit aid the defendant and to what extent?

On the other hand, the defendant's reliance upon prior art which has found no practical appeal in that industry or never before was considered to be of any commercial value should under the circumstances be considered and such should be compelling in the refusal of attributing any particular significance thereto as a defense upon the basis of an equitable estoppel because (1) the defendant profited from the patented disclosure, and (2) never was spurred into his alleged infringing practices by the prior art or knowledge now relied upon as a defense. Consequently, the extent to which the plaintiff's patented development aided the defendant and contributed to his advantage, should be the basis of determining the presence of patentable novelty in a given situation.

Reasoning a step further, the lack of impression which the prior art made upon the defendant or others in the field should dilute the effect thereof as an invalidating defense, and the presence or absence of patentable invention factually determined on this basis. This would be a more certain and satisfactory determination than the abstractions being practiced by the courts in attempting to define invention as distinguished from mere mechanical skill in any given case. This would lend force and effect to the factual degree of utility any patent has contributed to any industry or art, and would constitute a much more realistic basis upon which relief should be granted or denied in any particular equity proceeding charging patent infringement.

This analysis is generated by the high regard the courts put upon an alleged confidential disclosure usually verbally transmitted and depending entirely upon the ability of the complainant to tell his story more vividly than the defendant. An alleged confidential disclosure need not be novel or meet any particular requirements as to originality, and yet one can receive such an alleged disclosure in the ordinary course of business without having any awareness of an impending inference that the discloser expects that his equity therein shall be protected by the invited receiver of the disclosure.

There is, however, some additional observations in connection with the suggestion of evaluating patent grants on the basis of their actual and factual contributions to an industry or to the public rather than upon an abstract comparison with the archives or abstract paper records of the past. If the courts can and do give relief to anyone who makes an unpatented disclosure to another in confidence under the circumstances of the latter using such contribution without making any satisfactory arrangement with the former (such being termed a breach of a confidential disclosure), then I must conclude, in order to be consistent, that recovery on a patent grant should also be on a basis of the equities involved in the contribution that assisted the infringer.

One who breaches a confidential disclosure is legally bound to make retribution and account therefor even though what has been disclosed is old and is open to the rest of the world. This has given use to many verbal charges of disclosures having been made in confidence, and if the discloser is especially adept or clever at innuendoes he can usually portray a situation in a manner that colors the taint of the user or receiver of the so-called alleged confidential discloser. This has happened and is becoming alarmingly the vogue in present litigation wherein the alleged discloser may even have resorted to patent protection and, feeling that the latter is vulnerable, relies exclusively on the alleged confidential disclosure, which by some strange thinking is free from vulnerable onslaught even if the content thereof is as old as time itself.

Consequently, the courts deal in abstractions in deciding the validity of a patent and subject it to the most detailed and technical scrutiny, but in the case of an unpatentable concept which is disclosed to a businessman on vague terms and should the businessman decide to take a look and thereafter cannot get together with the discloser, he is bound by a strict equitable doctrine to recognize rights in an unpatented and otherwise old concept while a patent grant covering a novel concept would be subject to technical defenses unavailable as a defense to a suit for the alleged breach of a confidential disclosure.

In the latter situation, the party who looks at something at the invitation of the discloser, even though the concept proves not to be novel in any respect, is forever bound to either pay tribute as long as he uses the concept (not merely for 17 years) on the discloser's own arbitrary terms or face expensive litigation with a doubtful outcome based upon the current approach. In a patent case, the defendant can invalidate on prior art, prior publications, and prior uses

starting from the beginning of the world—even though none of these defenses contributed anything to the infringer's sum of knowledge in connection with the infringing practices.

There is no justification for the dual standards in these two situations. If anything, a patent grant that has the stamp of approval of the Government should be given more sacred protection than indefinite, vague, and loose proposals that have been used as an instrument of confidential disclosures in trapping the unthinking and innocent who chance to examine such at the request of the discloser in the ordinary course of business. This sort of claim is becoming increasingly popular because of the subtle vagaries involved that appeal to shrewd maneuvering.

Such a disclosure is less impressive from an equitable standpoint than the situation which involved an issued patent available for inspection from the Patent Office records or is disclosed in the Official Patent Office Gazette or knowledge acquired from a patented device having the patent notice thereon and thus seen in commerce. One who benefits from such patented disclosures should be committed to an equitable estoppel to contest validity from an equitable standpoint with much more justification than the receiver of an alleged confidential disclosure verbally transmitted and concerning which there may be a bona fide dispute as to the conditions under which such a disclosure was made.

The courts will not consider lack of novelty as a defense in such a so-called confidential disclosure situation; however, one who procures a patent and has convinced the Patent Office that patentable novelty is involved in his disclosure and goes to a substantial expense to procure a prima facie valid patent grant, is subjected to the most extreme tests to establish patentable novelty all over again with the defendant's opportunity to show lack of novelty from disclosures available from the beginning of time.

It is no wonder that it is now an accepted saying that "there is nothing new under the sun." This should be qualified by the exception, namely, an alleged confidential disclosure of anything new or old so long as the invited "discloseе" is less adept at sensing the significance of the situation being created by a shrewd discloser. It is high time that some consistency be resolved in treating patented disclosures with much more reverence than questionable unpatented disclosures, and should the latter be worthy of any legal protective cloak, then some standard of prerequisites should be enacted for making the terms of the disclosure clear and unmistakable. These prerequisite requirements in making an enforceable confidential disclosure should parallel the requirements for overcoming the statute of frauds covering contracts.

Such enforceable disclosures of unpatented matter should require that the terms thereof be reduced to writing and accepted before the disclosure is made and received; that if the discloser has procured a patent thereon, the latter is the sole remedy to be relied upon rather than the alleged confidential disclosure; and that the alleged confidential disclosure shall only be effective up to the date of filing a patent application thereon, since both rights should not be exercised and only one enforced at the discretion of the discloser.

In my humble opinion, confidential disclosures should be codified so that certain rigid requirements have to be met before the court may grant relief thereon and thus restrict these to situations which are worthy and meritorious—rather than permit them to become a device for entrapping unthinking people who do not make it a practice to consult a lawyer each time they make a move in a business venture. On the other hand, the patent laws should be changed to liberalize the conditions under which there should be a recovery for the patentee, and thus give preference to patent protection and less effect to unpatented disclosures made to entrap the unthinking or the novice. The time has come for the Federal Government to insure its own grants against iniquity, and protect the public from impositions by subtle gestures at the hands of shrewd opportunists under the guise of making the so-called confidential disclosures.

STATEMENT OF ELWIN A. ANDRUS, PATENT ATTORNEY, MILWAUKEE, WIS.

In my opinion it may be too early to fully appraise the working of the patent system under the new patent act of 1952 made effective on January 1, 1953. The Supreme Court has not as yet settled the vital questions of interpretation of the new law, although many lower court decisions have tended to ignore the clear legislative intent of the new act.

As I stated at the conference, I believe that the Patent Act must apply equally to all inventors whether they work alone as in the "garret" or whether they work in groups as in large research laboratories. It is the individual with the "idea" that counts in the first instance. He is the one that must be awarded to simulate invention.

But a patent is not a direct-monetary award. It only serves to protect the effort of the inventor or of his backer to develop and market the invention, and it is from this marketing of the invention in competition with other inventions that any monetary award finally reaches the inventor. Take away the award from the backer of the garret inventor or of the research laboratory and all inventors will be penalized.

There is no such distinction in the field of invention as between the alleged large and small inventor, as exists in the field of commerce between large and small business units. Since all inventors are individuals all inventors are of the same category. The only difference between the corporate employee inventor and the so-called independent inventor is not in size, but rather in having or not having a backer capable of developing and marketing the invention.

As I pointed out at the conference, patents are our only means for enforcing competition in the field of invention, just as the antitrust laws are a powerful means for enforcing competition in commerce. The two fields of law have the same general purpose and it is clear to me that of the two, patents provide the greater public benefit. Without competition in inventing there would be no real progress in new processes and things which are so essential to our well being.

I repeat that it is anomalous that the antitrust laws are used to strike down a system which enforces competition. Only by recognizing and respecting the right of property in inventive ideas can we derive the necessary public benefit from our patent system. No real benefit to the public results from striking down the property right of the patent.

In this regard it seems to me that the Supreme Court in its decision of the case of *Great Atlantic & Pacific Tea Co.* v. *Supermarket Equipment Corporation* (340 U. S. 147; 71 Sup. Ct. 127; 95 L. Ed. 162; 87 U. S. P. Q. 303) did more harm to the public by reason of the public's reaction towards patents generally, than could possibly have been done if the patent had been sustained and enforced. In fact, sustaining of the patent would not have deprived the public of anything it was not already getting through the patentee's commercial endeavors, and probably would have resulted in the infringer's inventing of a better device for the purpose.

Liberality in invalidating patents only gives the thief his freedom, and insofar as the public can then poach upon the patent property it justifies trespass by all. Under such a policy patents become like an unenforced statute disrespected by all, and businesses that do not fear the cost of litigation tend to act accordingly. The tendency under such circumstances is for few patent sale or license negotiations to net a patentee more than the estimated cost of a lawsuit, quite regardless of the commercial merits involved.

Liberality in upholding patents would correct these evils and would bring the award to the inventor nearer to the true commercial value of the contribution. The courts need never be concerned that the award will be greater than the true commercial value since competition always functions to level profits. A competitive invention will arise if it is worth while to make it, and the more tribute demanded by a patentee the more effort there will be toward making a competitive invention. Only under a system wherein the property right to inventions is highly respected can inventors receive the proper award.

Since the award for an invention comes from the public in voting in favor of this or that purchase, and so long as we keep open the channels of commercial competition, no excessive award is possible to a patentee.

Today the courts seem to be too liberal in invalidating patents. The fault is not with the Patent Office being too liberal in granting of patents. I feel that the Patent Office with the many inventions coming before it in each field of development has its fingers on the pulse of our inventors and is judging each art according to the level of invention necessary to encourage further invention. The courts with less than 1 out of every 250 patents coming before them, and seldom with more than 1 in any given art, cannot judge as well as to the appropriate level of invention to be applied in a given case.

Some courts have expressed amazement at the number of patents being issued today, but entirely disregard the great expansion in our population and in new fields for inventive effort. We are issuing today about the same number of pat-

ents per each 1,000 of our population as we issued in the Civil War period, and yet there are today many new fields for inventive improvement that did not exist in the Civil War. To mention a few we might include the entire electrical generating, transmitting, and appliance field, including electronic controls, radio, TV, telephone, lighting and power fields; the entire petroleum industry and the resulting internal-combustion engine arts and synthetic fields; the motor vehicle, airplane, and related arts; the machinery field, including machine tools and farm and road machinery; and many others.

As I stated at the conference, any tendency to apply a high standard of invention for patentability under section 103 of the present law only results in removing the patent system from benefiting the public in those fields of improvement of the simple things by which we live. The patent system, to be of maximum public benefit, should function at all levels of education for all levels of commercial effort and all fields of the useful arts. If only the superintelligent can invent, our system will no longer function for the common man, and we will soon lose the public benefit of inventions in simple things.

The standard of invention set forth in section 103 is in my opinion the very best that can be done, if the courts can be made to pay attention to its flexibility. Emphasis of the fact that the test in each instance is what would not be obvious to the man of ordinary skill in the particular art. This means that you should not test the invention of a gadget such as in the A. & P. case, supra, by the intelligence of a scientific man. Scientists just do not make gadget inventions of that type. And yet, such simple things have their place in our needs and wants, and their invention should be tested only by what would be obvious to a man of ordinary stature in the art of dreaming up simple things.

I feel that the courts have been sold the idea that patents are an unjust monopoly and against the public interest, and that as a result of this general attitude they have come to strike down as obvious any invention they can understand. In my opinion Congress needs to act to reassert the public benefit of the patent system.

I propose consideration of legislation such as the following:

1. Amend Section 103 by adding to the last sentence thereof, "or by the simplicity of the step forward."

2. Amend section 271 (d) by inserting after "following" and before the colon in line 5 the words "either alone or in combination with each other or with other acts insufficient by themselves to constitute a violation of law."

Also add at the end of section 271 (d) the following: "(4) derived revenue from the sale of a staple article or commodity of commerce suitable for use with or as an element of the invention; (5) derived revenue from the sale of patented or unpatented apparatus or parts to be employed in carrying out a patented process; (6) limited the use for which a license is granted under the patent; (7) refused to grant a license under the patent; (8) sought to control and fix the terms of sale by a licensee in competing with the patent owner under the patent; (9) entered into a cross-licensing arrangement with one or more competing patent owners; (10) refrained from enforcing the patent against another infringer or contributory infringer."

3. Amend section 282 (2) by adding thereto the following: "providing that no party shall assert any defense under Section 103 or part II of this title if: (1) the infringement originated or was derived from the patent or from the commercial device or practice of the patentee under the patent and with knowledge of the patent, or (2) the invention has been utilized commercially by or for the patentee, or (3) such party is or has been a licensee under the patent."

Also insert a paragraph before the last paragraph of section 282 as follows:

"An infringer subject to disability as provided in paragraph (2) if this Section shall not gain benefit from any prior or subsequent holding of invalidity based upon the defense under Section 103 of part II of this Title."

STATEMENT OF JOHN ALAN APPLEMAN, ATTORNEY, URBANA, ILL.

Those of us who deal in other phases of the law than patent law regard this field as the stepchild of the legal profession. We are, to be frank, ashamed of the way in which it operates. The purpose of the law is to protect an inventor, and to reward him for his genius; the result is to thwart him at every turn.

The inventor is denied protection if he logically and patiently develops an invention, instead of discovering it by some lucky fluke. This is called the burst of inventive genius test, which was supposed to have been abandoned as a result

of the last amendment. He is rebuffed if there are any ideas remotely similar in the past, even though the use he proposes is completely different than that which has been developed previously, and even though his idea may have great utility. Patent lawyers have had to develop devious wordings for claims in order to produce some result for the client's money, even though the resulting patent is so narrow as to be worthless.

After the inventor receives a patent, the courts may still strike it down. If it has value, fly-by-nighters may form corporations to infringe and fold before judgments are rendered, because there are no criminal penalties attached and the technical doctrines already developed (such as the doctrine of combination patents) permit sharpshooters to milk the value from the invention developed by another.

The prior amendment passed by Congress was supposed to have accomplished much good in these respects, particularly since a new use was made patentable. However, you still have the same bureaucrats administering the law. They are presently construing it in such a manner as to try to eliminate all of the good proposed by the law.

I would suggest that any new statute enacted be so clear that people of this type cannot destroy the good intended by Congress. May I also suggest that some steps be taken to introduce some new blood into that Bureau, and particularly into top positions, where such new personnel will be able to formulate the policies which are to be followed.

STATEMENT OF G. WRIGHT ARNOLD, PATENT ATTORNEY, SEATTLE, WASH.

INTRODUCTION

(Proposed test is that of George Litch Roberts (one of defenders of Graham Bell) set forth in his two-volume text, Patentability and Patent Interpretation)

The sole plea of this testimony, which is in addition to the oral testimony set forth in above pages, is to have the Congress amend section 103 of the above-identified act by supplying a standard test for determining patentable novelty by adding to said section 103 the herein defined objective test in a second paragraph to the subjective test of the first paragraph of said section.

The objective test herein urged to be added to section 103 of the Patent Codification Act, is that of George Litch Roberts, Esq., late of Boston, Mass., author of the two-volume text, Patentability and Patent Interpretation, which represents a careful analysis of all the Supreme Court patent cases—181 of them—before the requirement for the writ of certiorari in 1915, said study involving a period of 25 years. The test he deduced harmonized all the said cases of the Supreme Court except only three which are deemed anomalous and out of step with all the others. No other objective test proposed has a two-volume analysis of the Supreme Court cases by which to learn of the test in every detail.

OUTLINE OF TESTIMONY

I. Proposed amendment to section 103 of 1952 Patent Codification Act—section 103 being set forth in toto, with amendment in italics.

II. Meaning of subjective and objective (new functional relationship) test.

A. Uniformity of decision provided by objective new functional relationship test.

B. Subjective test defined.

C. Objective test defined.

III. Urgency of action by the Congress to provide uniform standard of test of patentable novelty.

A. Record of United States Supreme Court relative patent decisions.

B. Authorities, including governmental and judicial reports, establishing need for and approval of objective test.

(1) National Patent Planning Commission appointed by late President Roosevelt.

(2) Indictment of Supreme Court by Justice Jackson.

(3) Article of Hon. Clarence C. Galston in April 1953 Federal Rules Decisions, volume 13, page 463.

IV. List of cases in which courts have applied the objective new functional relationship test, and expressly mentioned functional relationship between factors of the invention; in some cases in Federal courts, judges have named Roberts' test.

V. Answer to contentions criticizing objective test.

VI. The Supreme Court in decision prior to writ of certiorari never held patent claim void for lack of patentable invention except where no new functional relationship was established—objective test harmonizes the cases.

VII. Patent Office, several Federal courts and lawyers, it is submitted, greatly desire an objective test.

VIII. Importance of patent system—statements setting forth value of patent system and inventors to our country.

IX. Conclusion.

I. PROPOSED AMENDMENT TO SECTION 103 OF 1952 PATENT CODIFICATION ACT—SECTION 103 BEING SET FORTH IN TOTO, WITH AMENDMENTS IN ITALICS

Congress is most respectfully petitioned to add to section 103 the following amendment:

"Independently of and apart from the above, a patent may be obtained for an invention and patentable novelty shall be found therefor, whenever there is established a new functional relationship between any of the factors which are required for rendering an invention in the industrial art practically operative."

With this amendment added, the complete section 103 would read as follows:

"SEC. 103. CONDITIONS FOR PATENTABILITY; NONOBVIOUS SUBJECT MATTER AND NEW FUNCTIONAL RELATIONSHIP.—A patent may not be obtained through the invention is not identically disclosed or described in the prior art set forth in section 102 of this title, if the differences between the subject matter sought to be patented and that prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Independently of and apart from the above, a patent may be obtained for an invention and patentable novelty shall be found therefor, whenever there is established a new functional relationship between any of the factors which are required for rendering an invention in the industrial art practically operative."

With the section thus worded not a single change has been made in the first paragraph now constituting section 103. The second paragraph sets forth the objective (new functional relationship) test which witness respectfully petitions to be added to the section. This amendment allows to the applicant the objective or new functional relationship test and renders more certain the patent grant when it is established that there are new functional relationships existing between the cooperating factors. Such establishment shall render patentable novelty finding mandatory so that the protection of the grant will continue until evidence nullifies the finding of novelty.

II. MEANING OF SUBJECTIVE AND OBJECTIVE (NEW FUNCTIONAL RELATIONSHIP) TEST

A. Uniformity of decision provided by objective new functional relationship test

The Supreme Court in decisions prior to writ of certiorari 1915 never held patent claim void for lack of patentable invention except where no new functional relationship was established. Objective test harmonizes the cases.

B. Subjective test

The test set forth by section 103 turns upon the point of whether the improvement of the application is "obvious" or "nonobvious" in view of the prior patents or state of the art. Such test is definitely subjective; what is "obvious" to one person is not obvious to another—all depends upon the knowledge or experience of the party judging the merits of the improvement. If it be claimed that the question of obviousness is addressed to "one skilled in the art," then one must imagine such a fictitious person and then must imagine whether such person would believe this particular improvement was obvious. In short, the one judging must make two imaginings as a factual basis for a judicial decision. Is it any wonder we have confusion in decisions between the Patent Office and the courts? Is it any wonder that the incentive to patent is being injured?

C. Objective test

You may ask what do we mean by the objective test; in that connection illustrations will be helpful. I will use an illustration by Mr. George L. Roberts, author of the text. Suppose we have 12 men busily screwing on the lids of shipping cases for machines being shipped out of a particular plant, and they

are using hand screwdrivers. Now, suppose (he said) that I take a brace and bit and take out the bit and put in a screwdriver, and let us assume that had never been done before, and with the greater efficiency resulting from the brace that we can now reduce the number of men from 12 to 3. Would that be a patentable invention? And the answer was "No," because there is no new functional relationship between the brace and the new screwdriver tool as compared to the function and relationship of the brace and the old bit.

That is where this new functional relationship comes in. The old brace gives the tool a rotary motion, and pressure downward, but it does the same thing with the screwdriver tool that it does with the bit, and here it does not make any difference how much you may increase the efficiency of the operators. That is simply applying what we already know, and it is not new in the sense of being patentable as having new functional relationship.

Now, let us take the illustration exemplified by the *Barbed-wire-fence* case (143 U. S. 275). There we have the case of one barb in the prior art secured to the carrier wire by a single loop; that is, it was pivotably secured to the wire and the point could be pushed over to one side of the vertical as it was only pivotably mounted. In the patent in question, which resulted in the barbed wire as we know it, the inventor applied the barbed wire to the carrier wire by making a bearing on the carrier wire. That is, he wrapped the barb 2 times around the carrier wire which gave a supporting bearing which held the barb at 90° to the carrier wire—providing for no turning of the barb without bending of the wire of the barb. Thereby, the inventor had an effective barb that resisted being turned to one side so that it had a new functional relationship to the carrier wire, which the court held patentable.

And I might say at this point, that Mr. Roberts in making his analysis of the cases had no a priori definition with which to be biased in the quest. It involved some 25 years for analyzing all of the cases before the Supreme Court before we had the requirements for the writ of certiorari. And all of that analysis is set out in the two-volume text so that all concerned have a guide for applying the test.

Now, you may ask, how does the new functional test apply in the chemical field? In the chemical field let us take the case of the borated cotton. The prior art showed cotton batting had been used saturated with boric acid solely, but the boric acid on such cotton would crystallize; it tended to dry on the cotton and form crystals as discrete particles which impaired its effectiveness or efficiency and irritated the sensitive tissues of a wound.

On the other hand we also had cotton batting saturated with glycerine, but the glycerine was not as effective an antiseptic as boric acid, so what this particular inventor did was to combine the two, and then we had this situation: The glycerine prevented the boric acid from crystallizing, and thus we had a new functional relationship and the greater antiseptic properties of boric acid were made available. The patent was sustained.

Again, if carbon bisulfide renders a soybean base glue water resistant, then we have a new functional relation between the factors of the composition, or we have a new functional relation between the factors if adding a certain chemical to a cellulose solution changes the electrical charge from the anion to the cation side of the molecule so that we have the cellulose solution of the same sign electrically as the spinerette through the opening of which the solution is to pass in forming a thread. Thus, we have like signs electrically between the cellulose solution and the spinerette so that repulsion exists between them, resulting in the stopping of reduction of the opening by the drawing out of impurities from the cellulose.

If substituting one atom in a chemical structure diagram for another different atom produces a new property for that compound, then we have a new functional relation between the elements or factors of that compound.

N. B. new "functional relationship" refers to relationship between the "factors which are required for rendering an invention in the industrial art practically operative." We are not referring to the function of the whole machine or invention but to the "functional relationships between the factors, etc." The purpose or object or use of an invention is more commonly called the "result" of the invention. Note well we are not using the term function here in the sense that in drafting the claim the factors must not be claimed merely "functionally." Thus it is important to note that we are concerned with the interaction or functional relationship of the factors as between themselves.

III. URGENCY OF ACTION BY THE CONGRESS TO PROVIDE UNIFORM STANDARD OF TEST OF PATENTABLE NOVELTY

A. Record of United States Supreme Court relative patent decisions

The record of the Supreme Court is well summed up by the declaration of one of its members, Justice Jackson, in the case of *Jungerson* v. *Ostby & Barton Co.* (80 USPQ 36), in which he stated:

"But I doubt that the remedy for such Patent Office passion for granting patents is an equally strong passion in this Court for striking them down *so that the only patent that is valid is one which this Court has not been able to get its hands on.*" [Italics ours.].

Certainly such a severe indictment of one of the most democratic pieces of legislation in our laws cries out for correction by the Congress.

B. Authorities, including governmental and judicial reports, establishing need for and approval of objective test

If you please, this is no ordinary petition for an amendment to our patent laws. The confusion as between the examiners in the Patent Office resulting in long delays and large backlog of applications awaiting action, and between the Patent Office and the several Federal courts, has reached a magnitude, it is submitted, that irreparable damage can only be avoided by the taking of action by Congress. The situation has become a matter of national-defense concern.

Our country represents only about one-twelfth of the human race; therefore, militarily and economically, to maintain our liberty and freedom we must as a nation live by reason of our collective superior knowledge over our foreign competitors and possible enemies. Therefore, our pressing mutual concern is to make our patent system provide incentive to inventors; also our concern must be to keep the cost down to induce inventors of small and large means to apply for patents for their ideas which appear promising. The incentive, it is respectfully submitted, to apply for patents is weakened by the lack of a standard and uniform test for determining patentable novelty. This is true irrespective of the number of applications being filed presently. Such lack of a uniform test or standard also augments the backlog of applications awaiting action.

(1) *National Patent Planning Commission appointed by late President Roosevelt.*—In the patent field what is our greatest weakness? The National Patent Planning Commission (appointed by the the late President Franklin D. Roosevelt with Charles F. Kettering, chief engineer of General Motors as Chairman) answered this question as follows:

"The most serious weakness in the present patent system is the lack of a uniform test or standard for determining whether the particular contribution of an inventor merits the award of the patent grant. * * * No other feature of our law is more destructive to the purpose of the patent system than this existing uncertainty as to the validity of a patent" (Report of National Planning Commission, 1943).

(2) *Indictment of Supreme Court by Justice Jackson.*—Another striking piece of evidence of our confusion in decision which is destructive of the inducement to patent invention—all of this traceable to the lack of a standard or uniform test of patentable novelty—is the above-quoted statement of Justice Jackson from the case of *Jungersen* v. *Ostby & Barton Co.* (80 USPQ 36).

(3) *Article of Hon. Clarence C. Galston in April 1953, Federal Rules Decisions, volume 13, page 463.*—Furthermore, the need for a uniform standard and test for determining patentable novelty is emphasized by an article by the Honorable Clarence C. Galston, judge, United States district court, eastern district of New York, appearing in April 1953, Federal Rules Decisions, volume 13, page 463. In that article Judge Galston makes clear how great is his disappointment in the 1952 recodification of the patent law because it did not supply an objective test for patentable novelty. The judge states his opinion regarding section 103 and the difficulty of applying the rule of obviousness as set forth in that section in determining the patentability of a new development. He quotes Justice Frankfurter in the *Marconi* case (320 U. S. 1, 62), where he states:

"It is an old observation that the training of Anglo-American judges ill fit them to discharge the duties cast upon them by patent legislation."

And goes on to observe:

"Now after waiting years for a new patent statute, section 103 of the new act leaves these same American judges in the handicapped position referred to by Justice Frankfurter." After further discussing the difficulties in applying section 103, the judge states "The conclusion to be drawn from this foregoing

analysis is twofold: test of invention should be objective, the presumption of validity should be not mythical but real."

Accordingly, it is manifest from these eminent sources that the need for a uniform standard or test for patentable novelty is pressing. The National Patent Planning Commission urged that patentability shall be determined "objectively" and not "subjectively." The objective test as deduced and expounded by George L. Roberts from the Supreme Court cases, after analysis extending over a period of 25 years, was before the Commission, and so this was the test which they had in mind when they said patentability shall be determined objectively. To incorporate the test deduced by George Litch Roberts, we have only to add section 103 the amendment above set forth in italics at the beginning of this paper.

IV. LIST OF CASES IN WHICH COURTS HAVE APPLIED THE OBJECTIVE NEW FUNCTIONAL RELATIONSHIP TEST, AND EXPRESSLY MENTIONED FUNCTIONAL RELATIONSHIP BETWEEN FACTORS OF THE INVENTION; IN TWO CASES IN FEDERAL COURTS, JUDGES HAVE REFERRED TO THE OBJECTIVE NEW FUNCTIONAL RELATIONSHIP TEST

The Supreme Court apparently built wiser than they knew so far as expressing their test as objective. But in no case, where there was new functional relationship between the factors, did the Supreme Court, prior to 1915 (date of write of certiorari requirement) hold a patent invalid.

The Supreme Court in cases cited and extracted below has expressly analyzed the differences between elements of prior art and invention before the Court and has used the term "functions" in so doing.

Moreover, the district court in *Submarine Signal Corp.*, v. *General Radio Co. et al.* (D. C. Mass., July 20, 1926) states that the test of invention is objective, criticizes the subjective test as impractical, and states (citing with approval) that the court has considered the unpublished notes of George L. Roberts, Esq. of the Suffolk bar.

This Submarine Signal Corp. case will be quoted first, since it is so directly in point.

Submarine Signal Corp. v. *General Radio Co. et al.* (D. C. Mass., July 20, 1926, 14 F. 2d 178) (courts and other tribunals have adopted and cited this case with approval in other cases):

"The defendants rely principally upon the Berggraf device as showing an anticipation of the plaintiff's invention. They adopt the conventional method of testing an invention, by contending that a person skilled in the art, having this device at hand, could produce the plaintiff's apparatus by certain changes. (That is, it would be "obvious"—insert ours). This contention shows the unsatisfactory nature of the "skilled mechanic" criterion of invention.

"A test of invention may be either subjective or objective. We may determine either the novelty of an idea or the novelty of the result of this idea. The first test is impractical. Psychology is not yet so exact a science as to allow us to classify and arrange in order of importance the ideas of the human brain. Nor does it assist us to substitute for the brain of the patentee, whose idea we are criticizing, the brain of that imaginary person of the patent law, the skilled mechanic. The test is still that of the relative importance of ideas.

"George L. Roberts, Esq., of the Suffolk bar, has considered this subject in an unpublished treatise which I have been privileged to study (treatise subsequently published). He shows that the true test of invention is the novelty of the result, and that this result must be criticized by comparing it with the machines, processes, or methods known before. The test is an objective one. If the result of an idea is a machine or process involving a new function or an old function arrived at by new means, the embodiment of the idea is patentable. In an exhaustive survey of all the cases relating to the question of patentable novelty in the Supreme Court of the United States, from the earliest times down to 1915, Mr. Roberts has shown that the test above suggested is consistent with them all, with three exceptions, which he regards as anomalous."

The above speaks most clearly and positively in favor of the objective test. Since the objective test has thus been so positively endorsed in judicial decisions, it is manifest that such test must have merit and should be embodied in the statutory law in order that uniformity of decision may be developed.

Justice CLIFFORD. *Union Paper Bag Machine Co.* v. *Murphy* (97 U. S. 120, 125 (24 L. Ed. 935)):

"In determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things,

but are to look at the machines or their several devices or elements in the light of what they do, or what office or function they perform, and how they perform it, and to find that one thing is substantially the same as another, if it performs substantially the same function in substantially the same way to obtain the same result, always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce a substantially different result."

(How well these words fit the analysis given relative the barbed-wire fence, and the brace-and-bit screwdriver illustration given by witness.)

The above language of the Supreme Court in testing for patentable novelty in determining infringement was applied in *Hiler Audio Corporation* v. *General Radio Co.* (26 F. (2d) 475, 479 D. C. 1928).

"Notwithstanding the slight mechanical difference in construction, the two devices perform the same function in the same way, and accomplish substantially identical results. The two cores in the defendant's impedance coupler are the mechanical equivalents of the single core in plaintiff's unit."

"* * * The testimony shows that the iron portion of the core structure between the coils of the defendant's unit function as a magnetic path * * *."

N. B.—How Court is comparing function of element by element, is not speculating whether it is "obvious" or whether it is "only mechanical skill." Who knows, the boundaries of these subjective terms? No one, it seems clear.

Judge Brewster endorsed the objective test explained above by Judge Lowell in this manner:

"I also derive assistance from the learned opinion of Judge Lowell in *Submarine Signal Corp.* v. *General Radio Co.* ((D. C.) 14 F. 2d 178, 181), wherein he points out that the true test of invention is the novelty of the result, and that this result must be criticized by comparing it with the machines, or processes, or methods known before. The test is on objective one. If the result if an idea is a machine or process involving a new function, or an old function arrived at by new means, the embodiment of the idea is patentable."

The court proceeds comparing and using term "functions."

Wright v. *Yuengling* (155 U. S. 57, 53):

"Wright's only invention, then, was in the combination of the cylindrical guide with the trough shown in the Farrar patent. Did this accomplish a new and valuable result it is quite possible that a patent therefor might have been sustained, but we do not find this to be the case. The cylindrical guide performs the same functions as in the prior patents: the trough in which the connecting rod works in the Farrar patent, is practically the same as in the Wright patent, and the combination is a mere aggregation of their respective functions, if the combination of the trough and cylindrical guide of the Wright patent gives greater lightness and strength to the frame than the combination of the trough and the flat guides of the Farrar patent, it is a mere matter of degree, a carrying forward of an old idea, a result, perhaps, somewhat more perfect than had theretofore been attained, but not rising to the dignity of invention. * * *"

Reckendorfer v. *Faber* (92 U. S. 347, 358):

After comparing duty of lead and the eraser of a pencil, the court stated:

"* * * So long as each element performs some old and well-known function, the result is not a patentable combination, but an aggregation of elements. * * *"

"Not a new function or result is suggested by the combination in question * * *."

Grinnell Washington Machine Co. v. *Johnson Co.* (247 U. S. 426, 433 (1917)):

"In *Specialty Mfg. Co.* v. *Fenton Metallic Mfg. Co.* (174 U. S. 492, 498), the rule was again tersely stated:

"Where a combination of old devices produces a new result, such combination is doubtless patentable; but, where the combination is not only of old elements but of old results, and no new function is evolved from such combination, it falls within the rulings of this Court in *Hailes* v. *Van Wormer* (20 Wall. 353, 368), etc. (citing cases).

"Applying the rule thus authoritatively settled by this Court, we think no invention is shown in assembling these old elements for the purpose declared. No new functions 'evolved from this combination'; the new result, so far as one is achieved, is only that which arises from the well-known operation of each one of the elements."

Lincoln Engineering Co. v. *Stewart-Warner Corp.* (303 U. S. 545, 549 (1930):

"* * * The mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation

than that theretofore performed or produced by them is not patentable invention. And the improvement of one part of an old combination gives no right to claim that improvement in combination with other old parts which perform no new function in the combination. Though the respondent so concedes, it urges that in the combination of the Butler patent, the headed nipple performs a new and different function from that which it has heretofore performed, in other combinations, in that, when the coupler is withdrawn from the nipple, at the end of the greasing operation, the rounded head of the nipple "cocks" the jaws of the coupler for the next operation. * * * Moreover, the argument is unsound since the old art includes instances where the the head of a nipple or fitting performs a similar function when the chuck is disengaged from it."

The proposed amendment to section 103 includes the mandatory feature so that, after an inventor has spent years developing and marketing his patent invention, he will not have his rights lost to an infringer with the Court simply stating "we think the invention is within the skill of the art" or its equivalent, or "is obvious," or "does not rise to the dignity of an invention" or a like nebulous statement.

V. ANSWER TO CONTENTIONS CRITICIZING OBJECTIVE TEST

A. That the new functional relationship or objective test is difficult to apply seems without a substantial basis. The chairman, Senator O'Mahoney, quickly disposed of this contention by stating that he "had no difficulty in understanding the test."

How can one claim that it is easier to apply an obvious test when the facts are that the Patent Office may find that it is nonobvious and issue a patent, the district court may hold that it is obvious, the court of appeals may next hold that it is not obvious, and the Supreme Court may then hold that it is obvious. Certainly any such test which is responsible for the present divergence and confusion as the history and actual facts reveal, cannot be said to be an easy test to apply accurately.

B. Occasionally it is stated "not sure that objective test is the solution." No other test was suggested deemed to be better. It is submitted that so long as the objective test offers a great improvement over the subjective test and is the only one proposed derived from judicial authority and is the only one having a published textbook fully setting forth and applying the test, then such objection is outweighed.

Second, in substance, "The proposal would require the Patent Office to grant a patent and presumably the courts to sustain it if it involved any new functional relationship, however minor or insignificant it might be." No example of any such minor or insignificant invention was given. Would the barb-wire case be of such "minor" or "insignificant" character? Here we have a subjective approach in the question of what is "minor" or "insignificant."

If an inventor conceives a new functional relationship between the factors required for rendering an invention in the industrial art practically operative, it is submitted it should be held patentably new. We have degrees of patentability at present and only based on whether same is obvious or not. There are bound to be varying degrees of complexity in inventions. What we want is a test insuring as much certainty as possible.

The increased advantages of the objective over the subjective test, it is submitted, well warrant its inclusion as suggested herein.

C. Moreover, it is submitted, it is precisely where the change is small as may be asserted rightfully or wrongfully in the barb-wire case that the inventor needs the approximation to a criterion for precise definition of a patentable invention as afforded by the objective test proposed, and thus inventions of the inherent order of the barb-wire case will be protected.

VI. THE SUPREME COURT IN DECISION PRIOR TO WRIT OF CERTIORARI NEVER HELD PATENT CLAIM VOID FOR LACK OF PATENTABLE INVENTION EXCEPT WHERE NO NEW FUNCTIONAL RELATIONSHIP WAS ESTABLISHED—OBJECTIVE TEST HARMONIZES THE CASES

The following paragraph supplies an assurance drawn from the history of the Supreme Court patent determinations which constitute a most unique endorsement of said test.

"In view of the fact that not a century has elapsed since the Federal courts began to consider questions arising under patents for invention, and that in every branch of law, much time and long experience are ordinarily required for the

determination of principles which are to settle its uniform administration; it may be regarded as remarkable, not to say marvelous, that the Supreme Court has never yet decided a patent claim to be void for lack of patentable invention in its subject matter, except where no new functional relationship was established by or between the things claimed. It is true that the reason from time to time assigned for denying patentability to the various alleged inventions involved in the 131 cases cited as belonging to this category, have not been explicitly stated in the judicial opinions rendered thereon, to be grounded upon the absence of any new functional relationship in the subject matter claimed; but it is manifest from careful analysis that the entire series of such cases may be satisfactorily explained and harmonized by the application of such a test. They were all decided within a period of 75 years, 1850–1915, and they serve to show how successful the conservative attitude of the Supreme Court has been in preserving the rights to genuine inventors, notwithstanding the difficulties attending the discrimination of the new from the old (Roberts Patentability and Patent Interpretation, vol. I, p. 170).

VII. PATENT OFFICE, THE SEVERAL FEDERAL COURTS AND LAWYERS, IT IS SUBMITTED, GREATLY DESIRE AN OBJECTIVE TEST

In order to escape the utter confusion depicted by Justice Jackson when he states "* * * that the only patent that is valid is one which this court has not been able to get its hands on" (80 U. S. P. Q. p. 36), it is to be devoutly expected that the courts will welcome a reliable test founded on logic and derived from judicial authority, namely the Supreme Court decisions passed prior to the requirement of a writ of certiorari.

It is stated that many of the Patent Office examiners already are using the objective test set forth by Mr. Roberts.

Also we may still trust that stare decisis will contribute to uniformity of judicial determination when criterion is presented which harmonizes the Supreme Court decisions prior to requirement of writ of certiorari. As soon as the certainty and uniform justice of the rule is recognized then lawyers will know when to submit applications for inventions, the Patent Office examiners will be relieved of the confusion incident to the test of obviousness and the courts will likewise have a guide for their deliberations. It is submitted that the certainty of the validity of a patent will create the incentive for applying for patents and by the rule of survival of the fittest, the objective test will gradually supersede the nonobvious test or obvious test set forth in the first paragraph of section 103.

VIII. IMPORTANCE OF PATENT SYSTEM—STATEMENTS SETTING FORTH VALUE OF PATENT SYSTEM AND INVENTORS TO OUR COUNTRY

The great value of the United States patent system is universally recognized—based on the most democratic legislation of our laws. Other countries have even more resources than do we, yet no other country has the high standard of living which exists in the United States. The patent system, in all our progress, is given great credit.

A workman employed generally as a mechanic who conceives an improvement while working at the bench of his employer is entitled to the patent for any patentable improvement made by him.

The real defense committee of our Congress is the Judiciary Committees of the Senate and House having charge of patents. Each of our soldiers must be equipped to render him equal to many thousands of the enemy and each of our workers must have the machinery to out-produce our rivals if we are to maintain our freedom and standard of living. We are but one-twelfth of the population of the world, and if we are to maintain our liberty and freedom we in the United States must suceed by our wits. It was the Sperry gyroscopic compass which we loaned to the British fleet when their magnetic compasses failed which enabled the fleet of our ally to reach the Falkland Islands and successfully surprise and intercept the German fleet. In early Roman days inventions turned the tide of battle. It was the "corvus" invention which enabled the Romans to defeat the Carthaginians who long, by their superior naval skill, had crushed the Roman fleets. The corvus invention made the Romans victorious, thereby changing the whole Mediterranean history. Yes, in the present year of 1955 our very freedom and liberty demands a patent system of the utmost efficiency based on uniformity of standard of granting and sustaining patents. Inciden-

tally, a patent is not a monopoly any more than the right to exclude others from one's automobile renders its ownership a monopoly (generally in offensive term). This is the contention of Dean Wigmore of Northwestern University.

The Supreme Court stated in *U. S.* v. *Dubilier Condenser Corporation* (289 U. S. 178):

"An inventor deprives the public of nothing it enjoyed before his discovery and gives something of value to the community by adding to the sum of human knowledge."

Note well, the old saying "Knowledge is power."

The late President Franklin D. Roosevelt said, "Patents are the keys to our technology; technology is the key to production; production is the key to victory."

I am indebted for the following to the statement of Joseph Rossman, former Patent Office examiner and presently a general practitioner when he very well stated in hearings before the House committee:

"The inventor is our greatest and most vital national resource. He was a vital agent in building our present industrial economy in a region void of any technical facilities when the colonists settled here. He deserves to be honored and duly rewarded for his creative work which enriches the public welfare. The inventor should be recognized as a citizen of great importance because he is a public benefactor. He should therefore be given an opportunity to obtain his due reward through his patents by making sure that proper respect and adequate legal deration is given to his patent property.

"In a recent editorial in Chemistry and Engineering News, June 11, 1951, the following very important statement is made:

"'* * * The fast-approaching bottleneck of too few scientists and technologists can well be the most efficient secret weapon possessed by Stalin and the Politburo. If the present trend is not shortly reversed, our leadership in science and technology will disappear and will be supplanted by Russian domination in science and technology for we can be dead sure that Russia is straining every effort to overcome our present lead. Once our technical superiority is lost our political liberty will be gone.'

"If we are to prevail over the evil forces conspiring against our free-enterprise system and individual liberty, we must turn to the inventor to rescue us. The inventor has liberated us from physical slavery, from a filthy precarious animal existence to the possibility of living a full and rich life. He has freed us from the adverse forces of our physical environment so that we are no longer slaves to natural forces. The inventor has given us our physical environment in which the dignity of the human individual can rise to its utmost heights. Today the inventor can also save us from loss of our individual liberty and freedom and our American way of life by giving us the physical implements to fight and overcome our enemies. The inventor is our most precious asset and savior against the serfdom of communism. We must do everything possible to encourage and help him or we will surely perish."

Edwin R. Walton, Jr., former chairman of the patent committee of the Bar Association of the District of Columbia, stated before the Judiciary Committee of the House:

"I am in agreement with the statement made or given to your committee by Mr. G. Wright Arnold, of Seattle, Wash., and therefore, suggest that at the end of section 103 of the pending bill that the following paragraph be added for the reasons that he has urged: 'Whenever there is established a new functional relationship between any of the factors which are required for rendering an invention in the useful arts practically operative, patentable novelty shall be found.'"

IX. CONCLUSION

Examples above were given of the application of the objective test to definite situations including chemical cases. Time and space do not permit extending such examples further; however, all of the situations developed by the 181 Supreme Court cases analyzed by Mr. Roberts and all set forth in his 2-volume text amply illustrate, with a judicial background, the application of the objective new functional relationship test.

Let it be particularly noted that this objective test of Mr. Roberts is the only test submitted which is set forth in an extended analysis of the Supreme Court cases from which it was derived. Thus, all parties—lawyers, Patent Office officials, and courts—have a text to aid and assist them in applying the test if, perchance, difficulties should arise.

The law of life is well recognized, particularly in the moral field, that that course that leads to life more abundant is right and that course which leads to

life less abundant is wrong; by the same rule, in the legal field that principle of law which gives the greatest justice and the greatest certainty and the greatest uniformity of decision is right. With all the sincerity at my command, I trust your committee will recommend to Congress the passing of the objective or new functional relationship test.

The National Patent Planning Commission, Charles F. Kettering, chairman, in its 1943 report recommended "that patentability shall be determined objectively * * *." That committee was referred to the text of Mr. Roberts by the witness so that it was the test of Mr. Roberts' text which was recommended.

This Judiciary Committee is the real national-defense committee, because you have it in your power to recommend the test for patentable novelty which is a criterion derived from judicial authority, the only test proposed that has been so derived formally. Our workmen need the best of machines to enable them to turn out a thousandfold more goods than rivals abroad to maintain our economic life; our soldiers need equipment to make them the equal of a thousandfold of the enemy to preserve our liberties. Our very existence as a nation is in large measure dependent upon our patent system.

The including of the objective test set forth in the above-desired amendment to our laws, it is submitted, will definitely help restore the wholesome incentive to the patent system and reduce the time required for consideration of each application, thereby reducing the backlog of cases awaiting action; and particularly will such test supply a uniformity of decision by the Patent Office and the courts which will result in (*a*) greater justice, by way of the elimination of the present confusion, (*b*) uniformity of decisions, and (*c*) confidence in the patent system.

As a matter of irrefutable logic, it is submitted that the objective test should be included in the present proposed bill.

With all humility and with all earnestness, the witness most sincerely petitions this committee to include the objective test as set forth herein. It is the key to overcoming the confusion which now besets the patent system.

If any question relative to the above arises which the committee or any member of the committee desires to have answered, the witness will appreciate the opportunity of seeking the answer.

STATEMENT OF L. A. AUSTRIAN, CONSULTING ENGINEER, CHICAGO, ILL.

ABOUT THE TRAGEDY OF INVENTING

"The patent," said once a philosopher, looking from the green tablecloth of his writing desk through the stained window panes into an idealized world, "is the reward to the inventor in the form of a monopoly favoring him exclusively to make, use, or sell his invention."

Replying to him, a sober patent lawyer, however, stated this exclusive monopoly "to make, use, or sell the invention" has, in accordance with the constitutional provision under article 1, section 8, and the United States Code, title 35, Patents, under the patent law now in effect since January 1, 1953, only the meaning of "the right to exclude others from making, using, or selling the invention." In other words, the patentee has to defend himself against infringements of his monopoly before the courts, and, in exchange, to expect countercharges as to the validity of his patent.

And an even less optimistic man, a national economist, said that the patent is an ulcer in our social order, that hundreds of thousands of patents and similar monopolies are granted annually in the whole world, and that only a really negligible fraction thereof can be absorbed by national economies. "It is," he pretended, "better to keep an invention secret for the purpose of maintaining exclusive rights to new developments," alleging, probably, to the famous art of making crucibles from platinum, inherited as a family secret for generations by Heraeus, in Hanau on the Main, Germany. In another case of this kind, reference is made to the secret method of speeding up vulcanization of tires by means of organic compounds, the secret method now known of a research laboratory (compare the Journal of the Patent Office Society, February 1955, pp. 80x).

The ideal purpose of the patents for inventions is, without any doubt, the progress of mankind, and the ideal and practical purpose of the United States patent is the advancement of the inventor and our national economy. Mostly, the inventor wants to carry his invention into practice, and to convert it into money. In exceptional cases, he may dedicate his patent gratis to the Nation,

If the inventor fails in his monetary aims, the results will be not only destroyed hopes, anger, emptied money bags, but also the reaction as to having also spent great efforts of an ideal manner without success. It is true that the Patent Offices will have received their fees, and the patent attorneys taken their due compensation, but it is always the inventor who bears the whole risk.

The United States Patent Office in the Department of Commerce at Washington, D. C., carries out a most admirable search as to the novelty and patentability of an invention during the examination of the patent application. This application for patent has to be accompanied by the so-called oath of inventor, whose wording is worthwhile enough to be studied also by noninventors, executives, etc., interested in patents or national economy. Only the United States of America and Canada demand such an oath of inventorship.

The prior art cited by the examiner is of great importance. The filing fee for a United States application of patent is extremely modest. For this fee, the applicant will receive the said results of the official search from patent publications, national or foreign, and from other literature, representing anteriorities of his invention. Then the applicant will have to limit his invention with respect to the known art, or, in other words, he will have to build up valid patent claims, limiting his invention from the prior art. In United States patent claims, however, old and new matter is carefully intermingled, not at random, as well understood, but according to the rules and practice of the United States Patent Office. In Great Britain, Germany, and other countries having a preliminary examination of patent applications, the old and the new art are separated by the words "characterized by," the novel doctrine according to the invention following these words. Compare the author's article about patent claim simplification in the J. P. O. S., May 1947, page 377. It is hard to understand a British patent claim, but it is, perhaps exclusively, a privilege of the patent lawyer to understand a United States patent claim. Besides, however, United States claims have the advantage to be coordinated, while British, German, etc., patent claims are subordinate ones, subordinate with respect to a principal claim. The exact interpretation of a United States claim, but also of other countries' patent claims, is the matter of the courts, as in the case of patent infringements or the validity of patents.

The final fee for United States patents is equally very modest. There are no annuities. This advantage is shared by the Canadian patent. In England, Germany, and all the other countries of the world, there are, however, rising annuities and most patents expire after a few years for nonpayment of these fees. Their object becomes "public domain." The United States patent begins to play not with the filing date, but with the granting of the patent, and the whole period between these two dates is protected only by the general clause of the first article of the law against illicit competition.

England, Germany, the Netherlands; the Scandinavian countries, Austria, and, as states of succession, or Czechoslovakia, also in Italy, Japan, as on the same footing with Germany, have an examination of the patent applications as to novelty and patentability. As to Russia, I have to exclude it from the domain of these considerations.

France, the mother of modern patent laws and philosophy, together with Belgium, Spain or Portugal, and other Latin countries of Spanish or Portuguese tongue, including also less developed countries, like Bulgaria or Turkey, leads in field of patents granted without examination as to novelty and patentability. Such patents are, indeed, only granted sans garantie du Gouvernement, a sentence, which we bashfully omit from our vocabulary. As a whole, it has to be told, that the higher the technical civilization of a country, the better the patent laws, and the better the patents granted after an ethical examination as to novelty and patentability.

In France, or in Central and South America, the state acts simply as cashier of the rising annual fees. The interpretation of the patents granted is exclusively the matter of the courts. Yugoslavia, Switzerland, and a few other countries supervise simply by a formal examination the shape of the patents to be granted without examination of any further value.

Among three patent applications filed in the United States, or in England, or Germany, only one leads to the grant of a patent. The grandeur of this country comprises thus the selection of inventions, and, though in a negative manner, the advancement of this country, and of the inventor as victim, to give birth to a technical and scientific level non plus ultra in this utilitarian manner.

It is, indeed, difficult to invent, but it is still more difficult to become a patentee. The most difficult task, is, however, to carry a patent into practice. Many

patents may have great merits. They may be considered, perhaps, as forerunners of the solution of greater problems, and our speed is so high that they may seem to be antiquated after a few years. They may be even "dominated" in advance by prior art protected still by patents in force. Very many worthwhile patents have been buried for these reasons on the famous "patent cemetery," to use a word minted by the German airplane builder, Professor Junkers.

And, besides, we have to distinguish between the layman as inventor, and the industrial inventor, or, better, the inventor employed by industry. It is pretended that the former type of inventor is becoming extinct (cp. J. P. O. S., 1953, pp. 587). Is this caused by the lack of individual genius, or by lack of duties from the part of the human society? Are we still living in the period of the primitive adoption of inventions according to Herbert Spencer, are we still subject to the mean adaptation of inventions, as now during and after the war, or are we still full of esteem and devotion toward the creative genius, the layman inventor, only that we do not know any more about him, because the hirelings of the industrial companies are too proud to recognize him, a man, perhaps, less well educated than they, but independent like a generalissimo?

He is full of the flash of genius, but of no material means, and has no friends. If he submits his inventions to industries, they will mostly reply to him that he should submit his inventions to them * * * for the study by their engineering staffs, without the ethical reserve of the patent offices, where applications are examined under secrecy. The staff of these industries, however, comprises the hirelings, whose scope it is to make inventions, to improve the level of the art * * *. Such laymen inventors serve to reduce the budget of research, to find the directions of future development, and to use the layman inventor like a lemon to be squeezed out, and then thrown away. They pay well, these research and engineering staffs say. I admire always the saintly foolishness of these laymen inventors, their state of mind, which would have been regarded as saintly by the ancients: foolishness, or sheepishness, their manner of confiding to others the destiny, instead of mastering it themselves, or to renounce. I refer here to Antonio Pacinotti, formerly a professor of physics at the University of Pisa, Italy, the inventor of the electromotor, whom Gramme, the Belgian, deprived of the fruits of his inventive work. The member of the research department of an industry does staff work; he has the tools to carry on, his employer has the means to do so, being obliged to remain by a horse length in front of his competitors, here and abroad. Also expired and foreign patents can become a bonanza to him, who does the whole licking and advertising to sell new or improved goods.

As a result of the foregoing, it is allowed to state that the inventor, and I speak here about the isolated layman inventor, begins as hunter of fortune, often under a kind of obsession, in a state of mind not studied hitherto by psychiatrists, to end, finally, as a teacher of humanity, if he is philosopher enough, or as a martyr of mankind. He should end, at least, as a magister humanitatis, because we all have to contribute to the progress of man in some manner. Often, inventors have joined, forming associations, under the leadership of a selfish one, like the blind choose a lame seeing man for guidance. In general, it has to be told here, however, that, especially, the layman inventor increases, what Hegel calls the absolute Geist, the sum of all our knowledge, old and new.

There are exceptions, however, if the layman inventor has, what the Germans call the Fingerspitzengefuehl, the sixth sense, coldness not disturbed by sentiments, capacity to keep afar from monetary speculations, seeing, despite all, only the financial advantage, i. e., to carry his inventions into practice, and to manufacture a novel product. The most important man in an organization is, however, the salesman, not the engineer, research man, or inventor. To sell one's invention is the greatest art.

I refer here, as an example, to the infamous end of a company founded in this country to make money with the great Dane's, Woldemar Paulsen's, invention of magnetic recording and reproducing sound on a tape or wire.

Besides honor, there have to be money and luck favorable to the inventor layman. The Austrian generalissimo, Count Montecuccoli, who defeated repeatedly the Turks, said that not military leadership, but, simply, the last bullet is deciding, but, he said, this last bullet has to be of gold.

And what is luck? I cite here the poem of the Austrian poet, Nikolaus Lenau, who ended in the asylum. "Was ist das Glueck?" he asked, replying, "ein ungeahnt geborner, und, kaum gegrueast, verlorner, nie wiederkehrender Augenblick." So let us hail, with Lenau, the arrival of good luck, born without foreboding, and disappearing as suddenly as born, without returning any more. Let us think that we bear in our own breast the destiny of ours, not in the stars.

But, in addition to the foregoing, the following rules may be given to the inventor: Not to reveal, without need, his inventions to anyone, before the patent has been granted; not to rely on anyone; to do the whole inventive and introductory work alone.

Enough has already been told about the patent for invention. Let us now speak about the so-called Nixor patent, or the model of utility (Gebrauchsmuster), originally a German right of protection of technical inventions of less importance, later imitated by Japan. Article 1, paragraph 2, of the German Law for the protection of Models of Utility, says: "Novel arrangements, devices, and structural modifications of articles of the daily use, tools, etc., may be protected by models of utility." As to the duration, this law says that "the duration is of twice 3 years." There is no examination of applications for models of utility as to novelty and protectibility, only a slight formal examination. This is no protection for a layman inventor's ideas, it is sutable, however, for a manufacturer, a dealer of novelties, who wants to provide his articles with the letters G. M.—Mundus vult decipi, ergo decipiatur. This country does not have the model of utility protection.

We have, however, the design patent, covering exclusively aesthetic features of an invention or novelty, and having only one claim. It is based upon the provisions of the patent law concerning the patent for invention. The duration may be chosen as of 3½, 7, or 14 years. I think it does serve only the industry, too. I would never take out a design patent.

The French have a similar facility, the "modèle et dessin industriel," nearly as old as Jacquard's loom, and as worth while to French inventive genius in textile industry. The Germans have a primitive design patent, called Geschmacksmuster, based on the old Law on Authorship of Models, from the year 1874. It has to be registered with the courts.

The models and designs of, especially, most of the European countries can be registered internationally with the aid of the Bureaux Internationaux Réunis, in Berne, Switzerland, but the aim of this country is not to adhere to any international union, to keep apart, except as to the benefit of the priority of inventions and trademarks according to the Union of Paris, of, I think, the year 1881, equally under the administration of the Internatonal Bureaux in Berne, Switzerland.

We have here, however, the plant patent, a feature unique only to the United States.

Despite all the noise made, and the conferences, as to atomic energy for military purposes, and atomic fission, the Atomic Energy Act of 1946 obliges the layman inventor to keep his hands from these matters.

The trademark does not serve the layman inventor. It is called, in French, Marque de Fabrique et de Commerce, *i. e.*, mark of manufacture and of trade, telling the buyer more precisely, wherefrom a good comes, as to manufacture, or as through trade. It is bound to an established factory or commercial enterprise. It may include "any word, symbol, or device, or a combination thereof," according to the Trademark Act of 1946. This country has also, as the only country of the world, the service mark. Trademarks may be renewed, and their original duration is of 20 years. The registration of a trademark in this country, or, for example, Great Britain, Germany, etc., is the result of a very careful examination. A French trademark, however, for example, is registered without any peliminary examination. While England and America consider as to trademarks the importance of the common law, in other countries the law against illicit competition is of importance, first of all, as to the validity of trademarks.

The trademark does not replace a patent protection. For the layman inventor it is worthless, as based on an existing trade.

And the copyright? The copyright law of the year 1947, according to the United States Code, title 17, copyrights, is, as well as the patent, based on the United States Constitution, article 1, section 8, according to which an "Author or Inventor is given for limited Times the exclusive Right to their respective Writings and Discoveries," but the copyright does not protect ideas, only the form. It may serve as a prima facie test (proof of first use), however, as to priorities of authorships. It is well understood that also the other civilized countries have copyright laws, perhaps, better, and less formal ones, than we. There is as to copyrights also another International Union, that of Berne, but we do not appertain to it.

Patents for invention fall within the domain of the so-called industrial property (propriété industrielle), and for foreign patent applications the benefit of the priority of 1 year from the date of the original patent application may be

asked by the American inventor according to the already mentioned Union of Paris, whose administration is with the Bureaux Internationaux Réunis in Berne, Switzerland.

This industrial property is, however, only a section of the so-called intellectual property (propriété intellectuelle), which comprises also literature, especially, the belles-lettres, music, art, photography, etc., and the laws regulating the protection thereof.

And how is it with science? It is without any protection and the industrial inventor, as well as the layman inventor can use it, or, ideally, abuse it, for his own advantage as to the possible application in industry. Applied science and technology are the fields for patent application, not so theoretical science. But, as a whole, science is "vogelfrei," as the Germans say, i. e., free like a bird, exempt from protection, available to the vile grasp of the industrial or the layman inventor. There are exceptions, however: The human body, and also that of the animal, as the highest creations of our Lord, because medical science is without the reach of the inventor.

Among about 7,000 or 8,000 chemical patent applications filed in Germany before this war, there were only very few to find the way into industrial practice. Despite it, German chemical technology was world dominating. But many good patents in this field were simply discarded in advance, for certain reasons. I mention here the chromium film, replacing the silver film, or the eternal match. They would have ruined existing factories with hundreds of millions invested therein. If you are inventing something useful, take out a patent for it, and try to carry it into practice, you are, from many points of view, like the visitor of an Irish steeplechase, only that you print your ticket yourself, the ticket for a great price, or for a blank. There have to be very many blanks for one great price. I speak here about the layman inventor, and not about the professional inventor, not about beginners or charlatans.

The light attracts many insects. They are to be burned. The inventive light attracts many parasites. These parasites may kill the inventor. Nobody should turn to become a charlatan for the sake of riches from inventions. These riches are as rare as a rare bird. About 300 years ago, Montesquieu said: "La valeur, c'est une occasion rare" (i. e., the value is a rare occasion), only a rare bird being of value. But there are too many rare birds.

The laws, the competition, and the national economy will govern, together with the golden bullet and luck, the hope of riches from inventions or patents. These hopes are slim, especially for the layman inventor. The laws, the competition, and human nature take care of it that the inventors' trees do not grow unpunished toward Heaven.

STATEMENT OF WILLIAM R. BALLARD, PATENT ATTORNEY, NEW YORK, N. Y.

(The statement is not presented as necessarily that of the National Association of Manufacturers, which has not taken a policy position on the particular points)

THE HIGH MORTALITY AMONG PATENTS

At the roundtable discussions there were expressions of concern over the high percentage of patents invalidated by the courts.

To everyone who realizes the great benefits our patent system has brought to our people, this is indeed a serious matter. From the public's standpoint patents have no purpose at all unless they serve as an inducement to the improving of our standard of living. When a patent's chance of survival drops too low it ceases to be an inducement and the whole purpose and benefit of the patent system is nullified.

The measures suggested in the accompanying statement, entitled "As to Defining Invention," would of course do something to reduce court findings of invalidity. But the high death rate among patents is probably attributable mainly to a basic error that seems to have taken hold in recent years—namely, the idea that every time we can destroy a patent the public is benefited. This is untrue, myopic, and dangerous.

This antipatent attitude is shown not alone by the high percentage found invalid in infringement suits but in the eagerness of the courts to find invalidity even when it is not necessary to a disposition of the case in hand—this on the ground that the public is interested in knowing for sure whether the patent is valid. The law expressly provides that a patent, once issued, shall be presumed to be valid, and if the public interest required a court review of this

presumption, then we should set up a public bureau to test them all in court as fast as they come out.

The antipatent attitude is also shown in Government antitrust cases where Government attorneys regularly ask for, and the courts usually decree, the destruction of the patents of the defendants. It makes little difference whether the decree calls for outright dedication of the patents to the public, for free licensing or for licensing at royalties under court control. All of these effectively destroy the commercial value of the patent for all practical purposes. And this destruction is perpetrated quite without regard to the validity or invalidity of the patents. The courts, including the Supreme Court, have uniformly held that the patent right is a property right, entitled to the same protection by law as other property. Patent property is but one of the various kinds of property that can be, and are, used in ways that violate the antitrust laws. Yet patent property is the only kind of property that anyone even thinks of destroying because of such unlawful use. Yet no one even bothers to explain why the patents must be destroyed. Men may conspire to use their factories or their stocks of groceries in a way violating the antitrust laws, and the court will decree an end of such conspiracy and such use, but it will not decree destruction of the factories or of the groceries. Unlawful use of patents can be stopped without destroying them just as in the case of misuse of other types of property.

If a poll were taken of all our judges and of the lawyers of the Department of Justice, no doubt almost all of them would agree that our patent system has contributed importantly to our high standard of living in this country. Yet most of them seem to think that this destruction of patents is a benefit to the public.

The fact is, that momentarily, the public may, in some cases, garner a benefit; but when it does, the benefit is very like that which the public would gain if, after one of these officials had received his monthly paycheck, the Treasurer should take it back into the public funds upon some technicality. The public would momentarily be richer by the amount of the check, but how long could the public get the important service of these officials if this practice were common? The patent is the inventor's paycheck for having served the public by producing something to improve our standard of living. If we want to keep our standard of living the highest the world has ever known, we had better go slow in snatching back the inventors' paychecks.

Actually the destruction of a patent is apt to be against public interest, rather than a benefit even on a short-term basis. This is because (*a*) the protection for the risk capital needed to get a new thing in shape for manufacture and to get it on the market disappears, and (*b*) the public loses the most valuable type of competition there is, namely, the competition (between commercial rivals) in improving the useful arts. Patents practically never put business competitors out of business; they merely drive the competitors to find some equally good, or better improvement for their own products.

Whether, then, we are motivated by a sense of justice and fair dealing toward our inventors whom we invite (by law) to work at improving our way of living, or by pure self-interest in promoting our own comfort, we should all be zealous to see that our patent paychecks are honored.

Unfortunately, this is something that legislation can do little for. It is a question of educating people to see the whole picture and to take the long view. However, it might well be that a forceful statement on the point from this committee would do much good.

AS TO DEFINING "INVENTION"

At the roundtable discussions, October 10 to 12, a good deal was said as to the need for a definition of "invention" as used in the patent law.

The idea was that if we had this it would rectify both the improper granting of patents in the Patent Office and the improper invalidating of patents by the courts.

This idea is about as old the the patent law itself. It is the obvious remedy that occurs to everyone who has gotten far enough into the subject to sense the difficulty in question. It would, beyond doubt, have been applied long ago except for the one fact that invention cannot be defined; and on this all authorities have agreed. It is like trying to define what constitutes "negligence." What amounts to invention or to negligence in any given instance is, in the nature of the case, a matter of judgmet based upon the circumstances. And the variations in the possible relevant circumstances are practically infinite.

This does not mean that the situation is entirely hopeless. There is a solution which I would like to suggest after stating the problem a little more definitely.

To be patentable a thing must be new, useful, and must have required invention for its "discovery."

"Utility" gives us little or no trouble and may be passed over for the present.

"Novelty" is practically a pure question of fact. It is settled by direct comparison of the thing asserted to be new with things already known. The only difficulty here is to be sure we have turned up all the related things that are already known. (There may be a modicum of judgment involved in setting the limits of related things but a divergence in views on this is not serious.)

The question of invention does not arise until after we have found novelty. Assuming we have found novelty, one must then compare the new thing with the old things and decide whether the jump from what was old to what is new was such as to have required invention rather than the expected skill of an artisan. This is necessarily a matter of judgment. But it is a fairly easy judgment to make provided the one deciding it is thoroughly familiar with the particular art to which the new thing relates, its history, its ramifications, its rate of recent development, and the habits of thought of those working in that art. If the one passing on the question does not have this familiarity with the art—if he has only such knowledge as he may gather from a few hours with second-hand sources, a look at a few issued patents and the conflicting statements of partisan advocates—his decision as to whether the jump in question required invention is little better than a shot in the dark.

That familiar group of negative expressions such as "there is no invention in mere aggregation" or "in a reversal of parts" or "in a change of material," etc., are of no help in making the decision; they are merely clichés which we use to explain the decision to others after we have made it. None of them ever holds if the one deciding is convinced the jump took invention.

If we had an omniscient oracle perfectly familiar with all the arts to whom we could refer the question of invention whenever it arose, our troubles would be over. That, of course, we cannot have, but we do have, readymade in the Patent Office, a reasonable approach to it or we will have when we have given that Office the men and equipment it needs. We will have, say, 900 expert examiners, each thoroughly familiar with one art, or section of an art, and each well qualified to distinguish invention from ordinary skill in that particular art. No court, after a brief trial or after an hour's argument on appeal, can approach the qualifications of this expert examiner for deciding whether invention is involved in a particular case.

The courts must, of course, pass upon validity and infringement in patent suits. After properly conducted trials, they are well qualified to say whether a thing is new or is useful, whether it is being used by the defendant, whether there is fraud or an estopple involved, or to pass upon priority as between two claimants; but on the question of invention courts are bad second-guessers because they practically never have, and cannot get, the intimate acquaintance with the particular art necessary for a sound judgment on that question.

The way out of the difficulty, then, it seems to me, is:

First, give the Patent Office all it needs to do its job as well as is humanly possible; and

Second, require the courts, once they have found novelty, to accept the Patent Office ruling as to invention except in the rare cases where it can be shown that there was a clear error in the Patent Office, or a clear abuse of discretion.

This would be in line with existing practice in other phases of legal procedure and could be accomplished by a provision of law or perhaps by a rule of Federal procedure.

At this point someone will doubtless object on the ground that the jump from the old to the new, which the court has to consider, is often not the same jump that the Patent Office considered in allowing the patent in question, as witnessed by the fact that prior patents or publications not cited by the Patent Office are frequently presented to the court. To one who has been an examiner in the Patent Office this is not convincing. There may be a thousand or two earlier patents in the art within which an application for patent may fall. Obviously the examiner cannot cite them all, but it is his duty to consider them all and to select and cite those he considers to be nearest to the thing claimed in the case before him. The fact that the defendant in a patent suit may select different ones to present to the court to give the impression that he has found something the examiner overlooked means little or nothing if the court, like the examiner, still

finds novelty in the thing claimed. As the Court of Appeals of the Seventh Circuit said the case of *Artmore Co.* v. *Dayless Mfg. Co.* (99 U. S. P. Q. 306).

"Defendants' argument based upon these prior art patents, not cited by the Patent Office, is not convincing. It has been held, and we think with logic, that it is as reasonable to conclude that a prior art patent not cited was considered and cast aside because not pertinent, as to conclude that it was inadvertently overlooked."

It is worth noting, too, that once the Patent Office is fully equipped to do its job, there will be fewer and fewer cases where it has failed correctly to determine novelty because the examiners will have the time and equipment to make complete search of the prior art. This may mean somewhat fewer patents issued but it certainly will mean fewer and fewer patents held invalid in litigation. And it will reduce the delay in the processing of patent applications.

The overall effect would be to restore patents to their intended place as a powerful inducement to the improvement of our standard of living.

STATEMENT OF LAWRENCE B. BIEBEL, PATENT ATTORNEY, DAYTON, OHIO

I think it is the job of all of us to see that our system continues to serve the needs of the small inventor. Not only was that the original intention of the system, but it is today the only effective way in which a small and independent inventor may secure any substantial rights in the results of his creative thinking.

Some of the witnesses before the committee have testified to abuses which take place, and perhaps leave the impression that the system as a whole is abused and does not function for the benefit of the country's economy. It seems that this might be likened to stories having news value. An entire city can operate without a strike and without an accident, and nothing of the tremendous value of that operation will find its way into a newspaper; but if the smallest plant has a strike or one person is killed, such items merit front page attention.

It is my feeling that the patent system in its aggregate is helpful, contributes substantially the overall economy, and is thoroughly and basically important for the benefit of all of us. While the subject is too broad for comprehensive treatment in a letter, I have the following thoughts particularly from the standpoint of the small inventor.

Let us assume for instance the case of the inventor of a device such as that illustrated in the presentation made before this committee by Donn Bennett comprising a children's clothes hanger having a face which changes from a frown to a smile when clothes are hung upon it. Certainly this is far from the frontiers of science or engineering, but is nevertheless a device that required some thinking, and which has a definite place and hence has value. If devices such as this were to be branded as "gadgets" and if all gadgets were held to be outside the patent laws, then the inventor of such a device would have nothing whatever that he could sell beyond a mere idea.

It is not at all unheard of for an inventor to create something which is not within the scope of protection afforded by the patent laws. An example might be a new and ingenious system of doing business, which, however, is not comprehended within the protection of our law. Where this has occurred it becomes difficult to help the inventor or to find any basis on which he can establish a salable property right. Our usual experience in such cases is that not only does the inventor receive nothing, but the idea is frequently not used or adopted by industry, even though this could be done without payment of any royality or the like to the inventor. It seems that business prefers to have some property right or control over new developments, and that lacking such, ideas themselves depreciate.

It seems to me, therefore, that it is important that we maintain the functioning of our patent system not merely for the benefit of the pioneering type of development, or that which flows from advanced research in physics and chemistry, but also so that it will be alive and vital in the simple arts. This does not necessarily mean that a lower level of invention must be recognized, but rather that each invention be considered in the light of all of the surrounding circumstances rather than having a fixed or arbitrary rule such as the "flash of genius," or "gadget" tests.

There are several major difficulties with the working of our system currently and their impact is particularly burdensome to the small inventor. First, there is the problem of long delay in the Patent Office. An average pendency

of 4 years is too long, and places too much uncertainty on both the inventor and the public, who are unable to find out during this period what the inventor may be entitled to claim in his patent. This condition is basic, and cannot be remedied on a short-term basis. While special action can be given under certain circumstances, that does not get to the real problem, which is to bring all of the work of the Office up to a current level so that anyone making a search can do so with a reasonable expectation of ascertaining the true state of the art.

This committee is already aware of the problem and of the key to the solution; namely, additional manpower. This is a fundamental consideration in any plan to enable the Patent Office to function as it should for the benefit of inventors and industry.

In addition, the problem of invalid patents certainly merits attention. If some of the more extreme decisions of the courts were followed to their ultimate point, large areas of inventive endeavor would be effectively closed to the granting of patents. Fortunately, it seems to me, the Patent Office has not adopted such extreme cases for its guiding principles. If it had, those areas would be thrown open to free copying, with the resulting tendency toward lack of stimulus to improve and develop the product through costly research and engineering since the concern which would do so would be merely handing to its competitors the full benefits of such research, without any way to control the developments or to protect its investment in them.

The high mortality rate of patents coming before the courts is recognized and there are various ideas on how it could be improved. There is no doubt that each application should receive more careful study in the Patent Office and that all of the pertinent prior art should be cited and considered by the examiner. Here again the existing staff and facilities of the Patent Office are barely sufficient to do the required job. The circumstances clearly call for an expanded examining staff implemented with modern facilities to make an adequate search. Attention, of course, is being given to this problem and it will require continued study and planning, probably for years to come, to raise the level from its present marginal status to one which is adequate.

It is thought that this committee can be of significant value to the system in the report which it renders, if it finds it in order to endorse the broad principles served by the patent system. There are some indications of a new trend in the decisions of the courts based on the 1952 revised patent law, and if this committee of Congress indicated its support back of the broad philosophy of the system, that would be brought to the attention of the courts and would have considerable value as supporting the principles and underlying policy behind the system. It is easier to see and evaluate the workings of the system in the case of the small inventor than in other situations and happily the committee has directed its attention in this direction.

STATEMENT OF A. ARNOLD BRAND,[1] CHICAGO, ILL.

DESIGNATION OF USEFUL-ART DEVICES AS GADGETS UNJUSTIFIED—SIMPLE, NONSCIENTIFIC INVENTIONS MANY TIMES BENEFIT COMMON PEOPLE AS MUCH, IF NOT MORE, THAN WEIGHTY SCIENTIFIC ADVANCES

Certain recent reasoning of the United States Supreme Court (December 1950 and April 1951)—followed many times since by Federal district and circuit courts of appeal—is destroying valuable property rights in patents.

The so-called gadget decisions[2] and their effect—if they continue to be followed—will greatly puzzle patent law investigators at some future date. The latter will not know how to explain why—around the middle of the 20th century—valuable patent property lost caste.

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[1] Member American Bar Association, Chicago Bar Association, Illinois State Bar Association, American Judicature Society, Patent Law Association of Chicago, and vice chairman of intellectual and industrial property section for Dallas, Tex., April 1956 Inter-American Bar Association conference.

Some of this material was included in the transcript of an oral report by author of his committee to the Chicago Bar Association as chairman of that association's committee on patents, trademarks, and trade practices (April 24, 1952, meeting of the association); the transcript was published in the Journal of the Patent Office Society, June 1952, p. 449.

[2] *Great A. & P. Tea Co.* v. *Supermarket Equipment Corp.* (340 U. S. 147 (December 1950)).

Crest Specialty, a Limited Partnership v. *Trager, d. b. a. Topic Toys, et al.* (341 U. S. 912 (April 1951)).

It seems fashionable today not to do anything about little things. That seems the basis for the United States Supreme Court's liquidation of property rights, it belittles patents that lack scientific merit as covering gadgets.

A supermarket counter device saves countless hours for millions of housewives. It eliminates bickering at the store counter as to who owns what. Both district and appellate United States courts extolled its merits. But the Supreme Court said it was a gadget. It was not worthy of patent protection. Maybe Supreme Court wives don't frequently enough joust with their supermarket neighbors. Or maybe they don't come home and tell their Justice-husbands the facts of chainstore life.

This doctrine was next extended to baby feeders. A device in which the lower courts saw real homely merit was brushed aside. The patent was invalidated on the theory that it too was a gadget. Even though the protected device helped milions of frantic parents to get the morning porridge into the energy-producing zones of their reluctant offsprings. The Court reversed without even discussing the merits. Once having made the gadget statement, it didn't even defend it the next time. It just "per curiamed."

The Supreme Court misreads the Constitution. That Court now implies that only great scientific contributions are patentable. It seems to proceed on the theory that unless inventions are scientific advances, patents therefor are unworthy.

Our Constitution-framing forefathers couldn't have been thinking about scientific advances only. They deliberately specified protection for advances in science and the useful arts.[3] They didn't say "or." There is no basis for regarding science and useful arts as alternative. Congress is given power to protect both. If it does not protect gadgets, it abandons the common man. But this is the century of the common man.

Those forefathers well knew that the simple inventions are many times more useful to more people. As a matter of fact, most enjoyments of Revolutionary days were not based on advances in "science" as that term is understood today. Most of the useful arts of Constitution-framing days would be gadgetary under today's reasoning.

"We won't bother with it; it's too small" has crept into many legal fields. In 1950, a Cook County grand jury wouldn't look into Oak Park payroll scandals; they said the matter was too trivial to worry about. Charges and countercharges by different suburban factions regarding publicly paid village employees doing private work were before the jury. The latter asked that it not be bothered further with the matter. The jurors reportedly regarded the offenses as petty.

Assumedly dishonest public employees working on big private jobs would interest the jury. But when village truckdrivers are charged only with painting committeemen's houses during regular public working hours, the matter was too petty to evoke interest. It's getting pretty bad when the degree or amount of admittedly wrongdoing becomes the standard of grand-jury action.

This principle—crimes won't be punished; rights won't be preserved and property won't be protected, if too small—must be met headon. If it's not, it won't be only patent property that is liquidated as gadgetary. That critical front foot along the highway or beneath your neighbor's 20-story-high wall will be confiscated because it's too small to worry about. Or a legal easement enjoyed by but a few, will go by-by under the same reasoning.

Thus deplorable decay in values daily deepens for our profession—largely because arbiters simply won't appreciate the inherent drama and value of the United States patent system.

Every client, whether of general or patent lawyer, has significant stakes in that system. One great principle is inherent therein. Only the discoverer or inventor of an idea can apply for a patent. No one can sign a patent application but the inventor. Whether such inventor be rich or poor, the system is a shield between him and his employer. The idea that Government must protect the poor man against predatory interests is already taken care of in our patent system.

Small men—the common man—collect dividends only if the capital structure of the patent system is maintained unimpaired. If protectors of the common man impose new ideas on this specie of property, all property will ultimately be adversely affected.

It should again be insured that all clients, rich or poor, gadgeteers or Einsteinian scientists, reap the reward of their countribution to the useful arts, no

[3] "The Congress shall have the Power to promote the Progress of Science and useful Arts * * *"—Constitution of the United States, art. I, sec. 8.

matter how unscientific those arts may be. Useful arts advances should enjoy constitutional protection no less because they have humble beginnings. Good patents don't always come from cloistered research laboratories.

The matrix of genius produces chainstore counter trays and child-feeding stimulators no less than atom bombs. Each has its place. Who can say that devices, simple though they may be, which conduce to orderly purchase of daily grocery requirements or induce reluctant children to eat their morning porridge, are less important than atom bombs?

The designation of chainstore counter devices or baby feeders as gadgets highlights invasion of good patent rights. The locale of invention employment should not be the standard for judging patent validity.

The glory and respect accorded Bell and Edison should be equally bestowed on him who gave us the safety pin and the hook and eye, or eons ago, with no laboratory and no science—by divine direction—started a fire and built a wheel.

Let Congress recapture the days when patent property was protected regardless of how "unscientific" it was. Those days when courts did not limit "useful art" protection to what laymen regard as "scientific." When the inventions of Edison and Bell, great as they may have been, gave no more to "useful arts" than did the inventor of the safety pin.

STATEMENT OF DONALD BROWN, VICE PRESIDENT AND PATENT COUNSEL, POLAROID CORP., CAMBRIDGE 39, MASS.

I have prepared the following statement at Dr. Land's request and after conference with him, I think that is fairly represents his views as well as my own.

Polaroid Corp. was incorporated under the laws of the State of Delaware in 1937. Its principal offices are at 730 Main Street, Cambridge, Mass. It occupies several buildings in Cambridge and Waltham, Mass., and employs approximately 1,100 persons. In 1954, its net sales were approximately $23½ million.

As of this date (October 1955), Polaroid Corp. holds .439 unexpired United States patents and, in addition, somewhat more than 150 pending United States patent applications, all but 11 of which relate to inventions made by employees of the corporation in the course of their employment.

Of the issued United States patents owned by the corporation, approximately 200 were granted on inventions of its president, Edwin H. Land. Most of Dr. Land's inventions have been in the fields of light polarization and photography, and all of the principal products of the corporation embody basic inventions of Dr. Land's and improvements thereon made by him and other company employees. Dr. Land has been not only president and chairman of the board of directors of the corporation since its formation, but also director of research, and has personally conducted and supervised the bulk of the research in the light polarizer and photographic fields.

Since its inception, the company has maintained a large research organization. Its research and engineering budget has always represented a large proportion of its annual outlay and will this year exceed $1¼ million. This does not include the amount spent by the compny in obtaining and maintaining its patent structure.

A brief history of the development of the corporation may be of interest to the committee. Dr. Land made his basic inventions in the light-polarizing field nearly 30 years ago. A patent on the first commercially practical, cheap, synthetic light-polarizing material was issued to him in 1934. In that year a license under Dr. Land's patents was granted to Eastman Kodak Co., and in 1935 a license was granted to American Optical Co. In 1937, negotiations for financing the business started by Dr. Land culminated in the formation of Polaroid Corp. under such conditions that Dr. Land retained voting control of the new company, and the company was provided with funds sufficient to finance its expansion and development, even through the difficult war period.

The business of the company was limited almost exclusively to light-polarizing products and related optical devices until 1948, when it introduced its Polaroid Land cameras and film. These products, the result of inventions by Dr. Land in the photographic field, met with immediate success, and the business of the company has expanded rapidly over the past 6 years. At present, 85 to 90 percent of its business is in the photographic field. It has been the practice of the company to manufacture and sell essentially only products which it has developed and protected by patents. As a result, its products have been substantially noncompetitive.

There have been occasional small infringements of its polarizer patents and, until 1952, these were discontinued by the infringers upon notice. In 1952, however, a larger infringement developed, suit was brought and, in February 1955, in an opinion by Judge Sweeney in the United States district court in Massachusetts, three of the company's patents were sustained and found infringed, thus terminating the only serious infringement. There have been no infringements of the company's patents in the photographic field.

The company obviously places great reliance upon its patents. Its business is very largely dependent upon its patent structure, and it has from the outset followed a vigorous patent policy of obtaining protection on all its commercial products and, in addition, on such developments of its research group as may possess potential commercial value.

It has been the policy of the company to encourage its research personnel in pure research, and, speaking generally, the results of this type of research are not patented but are made public through the contributions of its research personnel to scientific publications. It is only where the results of such research have a direct bearing upon present commercial activity of the company or upon related fields that patent protection is obtained.

The company has obtained many foreign patents on its inventions in the light polarizer and photographic fields and is actively engaged in exploiting the foreign market.

We think there is no question but that Dr. Land's success in commercializing and developing his inventions in light-polarizing materials was to a large extent due to the patents obtained on those inventions. We know that during the early stages of the development some of the country's largest corporations carefully investigated Dr. Land's patents. No financially responsible established manufacturer infringed on any of his patents.

We know also that the strength of the patent picture was largely instrumental in securing adequate capital to finance Polaroid Corp. under conditions which permitted Dr. Land to retain control of the new corporation, and we have no question but that the strength of the company's patent picture in the photographic field has over the past several years premitted the company to develop that field and safely to spend large sums on research and engineering in this and other fields. Accordingly, we have no major criticism of the present patent system. We like it, and we believe it to be basically sound. We believe that any fundamental change in the patent law would be dangerous, that it should not be disturbed, but that, on the contrary, efforts should be made to strengthen those who are now administering it, particularly through the provision of increased facilities and personnel in the Patent Office. In this connection we have a few suggestions.

We believe that the present shortage of Patent Office personnel makes it impossible for the examiners adequately to search the art if the work of the Office is to be kept on a reasonably current footing. For example, it is our common practice, even in fields in which we are reasonably expert, to search the art before introducing a new product commercially. These searches, which are usually limited to United States patents of the last 15 or 20 years, may average 4 to 5 days of 1 man's time. An exhaustive literature search, such as we make if we are charged with infringement of another's patent, may run from 10 to 20 days of 1 man's time or even longer. As opposed to this, it is our understanding that the Patent Office examiners, on the average, can devote not more than one-half day to the preparation of each Office action. It is not at all unusual for applications when filed to be of such length that a careful consideration of the specification and claims may take substantially more than half a day, even though no search is made. We do not believe that it is possible, even for a skilled examiner familiar with the art, to make an adequate search and to consider a new specification or a fairly complete amendment within a period of 3 or 4 hours.

We feel, therefore, that there is a tendency on the part of the examiners to base actions, where possible, upon formal grounds and to postpone actions on the merits, and that this results in delay in the prosecution of the applications. We believe that it is to the best interests of the inventor, and certainly to the best interests of the public, that time spent in the prosecution of patent applications be reduced to a minimum. The individual inventor is particularly anxious to know at the earliest possible date what protection he may expect to obtain, and he, therefore, anxiously awaits a comprehensive first action. Today the first

action may not be received until 14 to 18 months after the application is filed, and it may then be merely a requirement for division or some other formal action which gives the applicant very little information with respect to the position of his invention in the art.

We suggest that a special department be created within the Patent Office having for its purpose the acquisition and classification of publications, particularly technical publications such, for example, as foreign technical journals, house organs, theses written for advanced degrees in universities, etc., and that this department make available to the examining divisions the results of its work. We feel that today much of the technical literature is not searched by the Patent Office examiners. We know that our own searches invariably develop references which we believe are closer than those developed by the Office. We think any appropriation directed to activities of this kind within the Office would be well spent, as would additional appropriations for enlarging the examining staff and inducing experienced members of the staff to remain within the Office, to the end that the work of the Office may be made more current and effective.

We suggest, also, that a brief digest of the art and of the position of the patented invention in the art be affixed to the patent at the time of issuance as an appendix or supplement much in the manner in which cited references are now listed. We think the addition of the cited reference list was a step in the right direction and conveys valuable information to workers in the art. We believe that patents may become a more effective part of living scientific literature if a more comprehensive digest of the art accompanies the printed patent. Such an addition should also be of value to the court in a subsequent infringement suit as indicating more clearly the position to which the Patent Office thought the invention was entitled and, also, as indicating more accurately the scope of the search made by the Office examiners.

We feel that the cost of patent litigation and the delay invariably incident to the determination of patent rights in the Federal courts are injurious to the public interest and to the rights of the individual inventor and small corporation. A patent owner cannot expect a final adjudication of his patent within less than 3 or 4 years from the institution of suit, and he must usually anticipate expenses in connection with the suit of the order of $20,000 or more. For the individual patentee seeking to establish a new business and who has spent considerable sums in research and development which must be recovered from profits derived from the sale of the new and patented product, such delay and expense may constitute an insuperable barrier to successful commercialization of his invention. The infringer usually is saved the expense of research and development and can, therefore, market the infringing product at a price destructive of the patentee's business. If he can do this with impunity for a period of 3 or 4 years, the patentee's market is frequently destroyed.

We think the individual inventor and small corporation suffer much more severely from this situation than does the established, large corporation. Moreover, we have found that where the patent structure is sound, the larger, financially responsible and established competitors of the patentee are apt to recognize his patents and that infringement is to be feared primarily from the financially irresponsible, fly-by-night operator who hopes to profit from his infringement only during the period in which the patentee cannot obtain effective relief and whose activities are particularly destructive of the patentee's market as they involve, usually, the offer for sale of inferior products.

We have no specific suggestions as to how this situation may be remedied. We are hopeful that improved effectiveness of the Patent Office search and examination in connection with the prosecution of the application will result in a greater reliance by the courts upon the actions of the Office with a corresponding strengthening of the presumption of validity arising from the issuance of the patent. Today it is practically impossible to secure a preliminary injunction on an unadjudicated patent largely because a defendant can almost always uncover pertinent art not developed by the Office during the prosecution of the patent application. We think that if the Patent Office search were effective to uncover the pertinent art and if infringement were clear, the likelihood of obtaining relief through preliminary injunction would be greatly increased. We are hopeful also that extension of the pretrial conference practice and wider use of relief through summary proceedings will result in quicker decisions in patent cases and reduction of litigation costs.

STATEMENT OF JOHN H. BRUNINGA, PATENT ATTORNEY, ST. LOUIS, MO.

UNITED STATES PATENT LAWS

First, (a) the practical problem of the inventor—his cost of obtaining the patent

(*a*) The filing in the Patent Office of an application which is adequate to comply with section 112 of 1953, gives the applicant a prima facie right to a patent, if it is new in the sense provided by section 103, which latter states the required patentable novelty in the negative sense.

(*b*) While the inventor may file his own application, Patent Office rule 31, he is generally advised by the Patent Office to employ an attorney, and the Patent Office will not aid him in the selection of an attorney.

(*c*) The cost of employing an attorney is, however, high under the present economic conditions of a patent attorney's practice, with the result that many inventors are discouraged from filing their applications.

(*d*) The first step taken by most attorneys is to make a preliminary search of the Patent Office records, but even that is by no means nominal, and such a search, unless extended at greater expense, is not as adequate as can be done by the Patent Office examiner who is already familiar with the particular art because of his continual investigation in that art.

(*e*) Prior to 1910 and by Revised Statutes 4902 and as early as 1836, an inventor himself could file, with a fee of $10, a caveat in the form of a description and a drawing, if necessary, of his invention, and that gave him a record date, if sufficient to disclose the invention. The caveat had a term of 1 year, but could be renewed from year to year. The disclosure was placed in the file of the particular Patent Office division in which the invention was classified. If another party filed an application, the caveator was given 3 months to file his application and then an interference was instituted to determine the question of priority No search was made by the Patent Office, nor was the caveator given the benefit of any search.

(*f*) The caveat statute was repealed in 1910 because it was not deemed workable. My experience from 1905 to 1909 was that it was workable to the extent covered by Revised Statutes 4902. What the examiner did after the filing of another application, or before allowance of that other application, was to search the caveats and then notify the caveator as noted above. One of the reasons for the repeal of Revised Statutes 4902 was that the inventor could protect himself by preserving evidence; but surely that is not as satisfactory as getting a record date in the Patent Office which cannot be disputed except for insufficiency of disclosure.

(*g*) I believe that something simple should be promulgated, particularly to cover simple inventions, in order to enable an inventor to protect his invention by a record date. However, this need not be limited to simple inventions, because more complicated inventions can be presented by the inventor, for he will, on account of his training, be able to present a proper disclosure.

(*h*) I believe the protection of the inventor can be accomplished by permitting him to file a description and a drawing, if necessary, of what he believes he has invented. Revised Statutes 4902 did not require a typewritten description or a drawing in ink. However, if what is filed is not permanent, the present photostating service of the Patent Office can remedy that by placing in the file, photostats of what is filed. That can be readily included in the caveat filing fee, as is now included the printing and photolithographing of the description and drawings when a patent is issued on a regularly filed application, and which is now included in the final fee.

(*i*) Provide that the examiner make a search of the Patent Office records and report to the inventor what the examiner has found bearing on what is filed, citing patents and publications by number and date, as is now done in the case of regularly filed applications. That will enable the inventor to determine whether he should proceed with his invention and even to file an application.

(*j*) I believe that the examiner should, however, go further and suggest one or more claims to which he believes the inventor is entitled, and also, if the description should be amplified, to suggest amplifications. The examiner can readily so state, giving particulars. I had personally done that while I was an examiner, where the inventor filed his own application, and a number of patents issued in such cases. Claims are now suggested by the examiner for common subject matter to parties where there appears to be an interference, so there is nothing unusual in what I have said, see Patent Office rule 203 (b).

(*k*) If the above procedures are followed, I believe that the examiner assisting the inventor can, in many cases, work a caveat into form where it will be sufficient

to form the basis for a patent. The final drawings for the patent can be made by the Patent Office draftsmen, and that is now provided for by Patent Office rule 86. An oath can always be required, and the Patent Office has in the past furnished printed forms for that purpose.

(*l*) Of course, the above will mean additional services by the Patent Office, but that can be covered by filing fees which can even be as high as the present application filing fee, $30, and which now covers complete searching to final disposal of the application before the primary examiner. No caveat renewal provided for by Revised Statutes 4902 should be necessary any more than where an application is filed.

(*m*) There are many simple inventions which can be taken care of in the manner stated above, for instance, toys, gadgets, accessories, appliances, shoe lasts, shoes, etc., all of which may be short lived. I have examined some cases of the above nature and have encountered others in my practice. An outstanding case was the Stroud patent for the employment of a weighting material for controlling oil and gas wells. Stroud, who was an engineer, filed with an attorney a description and even claims which were much better than the application prepared by the attorney.

(*n*) Whatever is done from (*h*) to (*k*), the inventor will at all times be in a position to submit his invention by a copy of the Patent Office records to a prospective commercializer. Commercializers are now afraid to take the inventor's disclosure unless an application has been filed, or in the alternative, to require the inventor to stand on patent rights. That is because the decisions on unpatented inventions have been rather severe against a commercializer.

(*o*) Moreover and most importantly, as I see it the inventor can build up his own business, if necessary, by shoestring methods and many inventions have been commercialized in that manner. I have had a number of outstanding examples in my practice to which I will later refer.

First, (B) the practical problem of the inventor—Commercializing or marketing

The inventor today will proceed in two ways, namely, he will start by a shoestring method and commercialize the invention himself, or he will interest a commercial organization.

Where the inventor has proceeded himself to commercialize, I have had a number of cases which have grown into substantial industries. The Stimsonite reflector which is now used on every automobile throughout the world as a tail light and also on highways, was commercialized by J. C. Stimson himself and built up to a substantial business. The Sterling piston molding machine by Flammang and Bowser was built up on a shoestring and resulted in the largest piston manufacturing company in the world. The Baldor electric motor was commercialized by Edwin Ballman and his friends, and is today a good-sized company. The Valley battery charger was commercialized by Edwin Ballman and his friends, and had a large sale until the alternating current radio came into use. The Wirfs weatherstrip was commercialized by Wirfs himself and, although it was one of those temporary devices which did not have a long commercial life, during its life Wirfs had a large business. The above are some of the cases encountered in my practice, but there are many others like it.

Second, the problem of dealing with organized industry

There are, of course, cases where the inventor cannot build up his business on a shoestring and in such cases, of course, he has to apply to organized industry. From the very nature of the cases, organized industry is only too happy to deal with inventors because any patent rights must be based on the inventors' "discoveries" as termed in the Constitution. Most industrial concerns have special departments dealing with such situations, and my experience has been that they deal frankly with the inventors. Of course, in many cases their files show that the subject matter is old and my experience with the automobile companies has been that they inform the inventors if such be the fact.

One of the objections to dealings with organized industry is that they do not want to be in the position where it is claimed that they have used unpatented inventions disclosed to them, unless it is understood that the inventor must stand upon his patent rights. Some of them will not deal at all unless an application has been filed, and in such cases what I have said with reference to caveats will be of importance. On a whole, however, if the invention is new and patentable, the natural inclination of industry will be to deal with the inventor and secure his patent rights.

Another objection has been that industry files applications for improvements. hibited is in crude form and has to be placed in workable order so as to be com- That is only natural and even indispensable. In most cases the invention ex- mercially feasible. An old example of this was the Bell telephone which was so crude that it would not operate beyond 2 miles. It took the improvement of Berliner with his transmitter to place it in practical form. In the Bell case, how- ever, it was the Bell patent which was sustained to practically cover the telephone, even though employing the Berliner improvement on the transmitter.

With reference to protection of unpatented inventions, I personally cannot see how the inventor's rights can be covered by an act of Congress. The general law is now overwhelmingly in favor of the inventor, as will be seen by even the most recent cases. The inventor's rights are based upon quasi-contract, viz, unjust enrichment, which is determined by State court decisions unless there is diver- sity of citizenship.

Third, the problem of high mortality of patents

In my opinion the trouble resides mainly in the administration of justice by the courts in patent causes. There is, however, a difference in the status of the application as prosecuted in and allowed by the Patent Office, and in the status of the resulting patent, passed upon in the courts in an infringement suit. I will treat this last part first.

In the Patent Office the examiner takes the case as presented in the application. He then examines the prior patents and publications, United States and foreign. He does not, however, generally consider the practical art, that is as practiced in the industry, except as found in patents and publications. In rare cases a proceeding is filed by a third party under Patent Office Rule 292, to show that the patent should not be granted in view of something in public use or on sale in the United States, at present for more than 1 year prior to the date of the application as filed.

While affidavits are frequently filed as to the status of the practical art, they are all ex parte and not subject to cross-examination and are not, and cannot, therefore, be given the weight that would otherwise be the case. That is a matter I will treat further under sixth.

Additionally the Patent Office does not consider the question of what would be an infringement, except indirectly in interference proceedings, or where a competitive device is submitted to the Patent Office which the applicant seeks to cover.

In the district courts and in a well-presented case, the practical art is pre- sented by evidence, as well as the status of the patent in suit as related to the prior art by patents, publications, and prior and public uses. All this evidence on both sides is in open court except where depositions are filed, but in all cases there is cross-examination.

On the question of infringement, the accused thing is presented and its rela- tion to the patent is shown pro and con, again by evidence subject to cross-ex- amination. The question then is whether the patent can be construed broad enough to cover the accused thing and still be valid. Accordingly, before the court is a question whether matter common to the patent and accused thing is in the prior art on the basis of equivalency, on which there is also testimony. Frequently the court takes the position, and properly so, that if the common subject matter is in the prior art, then on the contentions of the plaintiff the patent should be held invalid.

On the basis of the validity of the patent, both the courts and the Patent Office are controlled, or at least should be controlled, by section 103, viz: "* * * if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said matter pertains."

Here the Patent Office takes the position that the examiner is in fact a person having ordinary skill in the art to which the subject matter pertains, although the examiner may not be fully skilled in the practical art. The patent is granted on the above basis.

When now the patent is presented to the court, and in a properly presented case the parties produce evidence subject to cross-examination on the question of whether in view of the prior art, the subject matter of the patent, or subject matter common to the patent and accused device, would or would not have been obvious to a person having ordinary skill in the art to which the subject matter pertains.

From the above it is self-evident that in a properly presented infringement suit the status before the court will be more fully explored than was done in the Patent Office, even if we leave out the presentation before the court of what was in the practical art, and consider only the patents and publications. It is, therefore, to be expected that in a properly presented case the court may hold patents invalid even over prior patents cited by the examiner.

Where the courts frequently err in neglecting what is provided for in section 103, stated negatively, is in taking the court's own view of what would or would not be obvious to one having ordinary skill in the art to which the subject matter pertains. If the court would decide the case on the evidence before it, the result might be different in many cases. I believe that this tendency to err can be taken care of by adding to section 281 a provision something like in section 145, namely: "in such a case the court shall determine the questions of validity and infringement of the patent on the evidence before it."

In section 145 the court decides the case "as the facts in the case may appear," although that provision does not appear in section 146 covering interference suits, as will be hereinafter pointed out. In section 284 relating to damages, the court is authorized to "receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances."

The above amendment to the statute does not, of course, prohibit the court from drawing on its own personal knowledge by taking judicial notice of the art as was done in *Brown et al.* v. *Piper* (91 U. S. 37), a patent case, which is the classical case on judicial notice cited in our books on evidence generally. However, the limitations given in *Brown et al* v. *Piper* should be carefully observed by the court and will be by counsel citing that case.

What I think is important is to have a patent case tried by a district judge who has at least a general knowledge of physics and chemistry such as taught in a college course. Physics courses include the elements of mechanism, light, heat, and electricity, while the course in chemistry includes elemental chemistry. My experience has been that a judge who has studied even elementary physics and chemistry, will be able, by the aid of evidence as to a particular art, to decide patent cases. There are many judges in a circuit who are thus qualified. A particular judge can be readily called upon by a senior judge in the district, or by a senior circuit judge, to try patent cases. That was done early in our patent cases where Judge Archbold (middle district of Pennsylvania) was specially assigned to try an electric-motor case; *Westinghouse Electric & Mfg. Co.* v. *Roberts et al* (125 F. 6 (E. D. Pa.)). In a recent case a judge familiar with adding machines was called upon to try a particular case.

The establishment of a special patent court of appeals will not solve the problem, because civil rule 52 (a) specifically provides for the weight to be given to a district court's findings of fact because "due regard shall be given to the opportunity of the trial court to judge of the credibility of the witnesses." Accordingly, as stated in that rule, the appellant must show that the District Court's findings of fact are "clearly erroneous." Nor, will the appointment of technical experts to aid the court solve the problem, because we may finally have a decision by the technical expert and not by the judge. I believe with Judge Hand, that if there is a special patent court of appeals it should be a reveloving one so as to get new blood into the court.

Fourth (A), cost of obtaining patents

The cost of obtaining a patent to an inventor can be considerably reduced by a caveat procedure as noted under first (A). However, the cost can also be reduced by a more efficient prosecution of a regularly filed application. By that I do not mean that the Patent Office personnel does not work conscientiously, because they do. They are simply pressed for time because of insufficient examiners; which deficiency can be cured by more examiners. However, there should be closer cooperation by the examiner with the attorney or the inventor. That is important even where the inventor has an attorney who frequently is not skilled in the art, and more so where the inventor files his own application. I personally have found, when I was an examiner, that I could reduce my time on a case by making suggestions as to the amendments to the specification and even as to the claims. I believe the examiner should do so, and, although that is sometimes done, that is not the general rule. It is only where there are interfering parties that the examiner even formulates the claims to a common subject matter. If there is close cooperation, I am confident that the time that the application is pending and the expense of prosecuting it will be reduced both to the Patent Office and to the inventor.

In the Court of Customs and Patent Appeals the expense is more than I deem necessary. That court not only requires that the record, but that even the briefs be printed, rule 26, when that should not be necessary, or alternately require the inventor to take a pauper's way out. Then the time for the argument is 45 minutes for the appellant and 30 minutes for the appellee, unless otherwise ordered, rule 27, which is seldom done. Finally the whole case is decided on the record before the Patent Office and by the arguments of the attorney on one side and the Patent Office on the other side which takes a lot of work and ingenuity by both. It can readily be seen why the Patent Office should be affirmed in 80 percent of the cases, when the case is tried by argument rather than by evidence.

Alternately by section 145 in an ex parte case, and by section 146 in an inter partes case, the evidence can be presented in open court. There, briefs need not be printed. Furthermore, ample time is allowed for argument at the conclusion of the trial and frequently the decision is rendered after the conclusion of the argument. The latter was done in a number of my cases. My experience is that the time and expense required for preparation for trial and the trial itself and the argument is less than required for an appeal to the Court of Customs and Patent Appeals. Furthermore, I have found that such a proceeding, where the court sees as well as hears the witnesses, is more satisfactory than trying a case on appeal where the court neither sees nor hears the witnesses; and neither do the examiners, the Board of Appeals and the Court of Customs and Patent Appeals.

The Commissioner stated that the percentage of Patent Office affirmances was about 80 percent in the Court of Customs and Patent Appeals, and about 78 percent in the District Court for the District of Columbia. However, that does not mean much because so much depends upon the character of the case. It might just as well be said that if you only have 1 chance out of 5 in either court, you should not take any proceeding at all. In my own personal experience out of 16 ex parte cases which I tried in the District Court for the District of Columbia, I won 8 and lost 8, but 1 of these was reversed by the court of appeals. Of the 8 cases which I lost in the district court, I took 4 to the court of appeals, and not in the other 4 because of the weight given to the decisions of the district court under civil rule 52 (a). However, in 3 inter partes cases in the last few years, I lost 1 before the Court of Customs and Patent Appeals and won the other 2 cases before the district court, 1 at St. Louis and the other at South Bend. The three were related cases.

I am certainly opposed to a repeal of either section 145 or section 146. The cases under those statutes are really like a trial in the district court in an infringement suit, which not only permits evidence to be produced by both sides, even by the Commissioner in ex parte cases, but finally a favorable decision gives a resulting patent a standing much more effective than by the Patent Office and by the Court of Customs and Patent Appeals based upon a Patent Office record and not on evidence apart from the record.

Fourth (B), cost of patent litigation

The present cost of patent litigation is much more than it should be because of the extended time required for preparation for trial, perhaps before a judge who has no adequate knowledge of physics and chemistry. That, however, can be taken care of as noted under Third. An experienced judge is able to and does frequently give his decision from the bench after the conclusion of the trial and without requiring briefs, and I have had such cases, not only in ex parte cases in the District Court of the District of Columbia, but also in other district courts in infringement suits.

Today the cost of the trial is actually reduced much more than previously, namely, by pretrial conferences and liberal rulings on interrogatories and particulars. That frequently results in a settlement without a trial because the parties have been forced to lay their cards on the table. I had one such case recently.

I personally believe, based on my experience, that while the cost of litigation affects the inventor more than it does the large corporations, I want to observe here that there is nothing a large corporation shies away from as much as a suit by the inventor himself who inevitably will have the sympathy of the court and of the jury.

I believe that the number of appeals can be materially reduced by sound decisions of a district court and I have had quite a number of cases where I have not appealed because such was the case.

The cost of appeal can moreover be reduced by reducing the cost of the record and of the briefs. That is, of course, a matter for the Supreme Court in the promulgation of its rules. I, however, want to observe that one court of appeals still requires abstracting of testimony, and the printing of the abstract as well as the briefs. I can see no reason why such abstracting should be required, since the record is available and the parties can be tied down to what they rely on in their briefs. Some, but not all, courts of appeals take that position. I can see no reason why, with our excellent typewriters and duplicating machines, the record or the briefs should be printed any more than is required of the printing of exhibits, of which most courts will permit seven photostatic copies to be filed.

Fifth, adequacy of present courts

This is really covered by Third and Fifth. I am not in favor of a patent court of appeals except as a rotating one as suggested by Judge Hand. I am not in favor of experts to advise the district court, which experts are not subject to cross-examination. The remedy is really in having more district judges who can give more time to a case, and with all, district judges who have a general knowledge of physics and chemistry, in order to try the case thoroughly. I have found that if that is done, not only will justice be rendered but the time of the trial is really cut down.

Sixth, administration of the Patent Office

I believe that the administration of the Patent Office has been as efficient as conditions permit it. I have visited and had conferences with the examiners of the British and German Patent Offices, and I believe that our examining corps as a whole is just as capable as in those Patent Offices. The drawbacks, as I see it, are the following.

The working conditions as to office space in the present building is not even as good as in the old building on Seventh Street where I was an examiner. The examiners are now crowded desk to desk. There is, moreover, a lack of a sufficient number of stenographers. In the offices of patent attorneys the first thing we do is to provide a separate room for an assistant and a separate stenographer. We also have air conditioning. We find that all of this pays.

The examining corps is insufficient in number, with the result that the work falls more and more in arrears. The tendency, therefore, is to cut down on the time which an individual examiner can put on cases. This means more of a burden on the attorney and, while that may be somewhat excusable, it certainly is disadvantageous to an inventor who attempts to prosecute his own application.

The examiners should be paid better salaries so that the Patent Office can keep experienced examiners, as against the offers from outside attorneys and patent departments who out bid the Patent Office. While the personnel so taken away is not lost because they are usefully employed, it does affect the efficiency of the Patent Office. The salaries should certainly be raised in the lower grades, in any event, because it is in the lower grades that the examiners leave the Patent Office.

The classification needs overhauling of the classes and continuously so because of changes in the arts.

There should be an opportunity for an examiner to become acquainted with the practical arts; that is, as practiced outside. The entrance salary is now so low that it only attracts college graduates who have not had much practical experience. The examiners should, therefore, be encouraged to periodically see what is going on in the practical arts. They need not be compelled to do that because they will be eager to do so. However, they should not be required to go outside on their own time and expense, but on Patent Office time and expense. I know that some of the examiners are experienced in the practical arts, but that is by no means general.

With reference to the expenses of the Patent Office, it must not be overlooked that the Patent Office renders a public service as do the Bureau of Standards and the Department of Agriculture, with no incomes from the outside. The Patent Office expenses should not be limited to the aggregate of the filing fees, final fees, and other fees. I do not believe that the present fees should be increased because we still have garret and basement inventors. The cost of patent copies is entirely too high, thus the cost is 25 cents per page irrespective of its size. I find that in reproducing patents for a record, I can have a 1-page patent printed for less than 25 cents. On the other hand, the Bureau of Standards and Department of Agriculture publications of considerable size are either distributed free or at low prices. The cost can possibly be taken care of by final fees based on the size of the specification and drawings.

We should not resort to annual taxes or annuities as in foreign countries. Furthermore, no working or commercialization should be required as in some foreign countries. Great Britain had that practice, but finally cut it down to compulsory licenses. I do not believe we should require compulsory commercialization or compulsory licenses. My experience has been that if there is a patent of utility, it will be practiced regardless. The fact is that our patent system as it now stands with no annual taxes or commercialization or compulsory licenses, has worked for over a hundred years, and much better than in foreign countries.

ADDITIONAL COMMENT NOT INCLUDED, BUT DISCUSSED AT THE CONFERENCE

(1) *Definition of what is patentable or what is invention*

Section 101 now enumerates the four classes of inventions which may be patented, to which has now been added plant patents, section 161.

Section 100 contains the definition of what is a process or method and that "invention" is synonymous with "discovery."

It is difficult to define what is patentable apart from the above, because a patent must be based on whether the subject matter involved an invention, sections 101 and 103. Section 103 states that in the negative and that has always been the law, although the Supreme Court has changed its position a number of times from *Atlantic* v. *Brady* (107 U. S. 192), to *Diamond* v. *Consolidated* ((rubber tire case), 220 U. S. 428), and then back to recent cases of which an example is *Jungersen* v. *Ostby & Barton Co.* (335 U. S. 560), on which Mr. Jungersen was heard. However, in *Goodyear Co.* v. *Ray-O-Vac Co.* (321 U. S. 275), involving a dry battery, the Supreme Court approved its former decisions from 93 United States on. Judge Hand's recent decision in *Lyon* v. *Bausch & Lomb Optical Co.* (224 F. (2d) 530), regards section 103 as restoring the law as it existed prior to the unfavorable decision by the Supreme Court; certiorari was denied December 5, 1955.

We now have section 282 which states:

"A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it."

That means that the Patent Office decision is recognized as prima facie correct, as is a decision of a district court under civil rule 52 (a).

Perhaps we need an amendment to section 103, and it is interesting that the heading as given in the pamphlet of the 1953 patent laws is:

Section 103. Conditions for patentability; nonobvious subject matter."

However, the statute then states in the negative what is nonpatentable rather than what is patentable. Perhaps section 103 can be amended by inserting before the first line thereof, the following:

"A patent may be obtained if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

Judge Hand apparently took the statute as meaning just that, but since the statute was enacted over 2 years ago, I believe a positive statement would at least help the situation.

What is stated in the part that I have just quoted has really always been the law and it is a perfectly natural law, and is even applied by the courts of Great Britain and Germany whose decisions I have studied.

In contradistinction to the negative statements in section 103, we had the following situation before the enactment of section 112, last paragraph. Before that enactment, a host of decisions of the Patent Office and of the courts rejected and held invalid claims which were said to be "functional." Section 103, last paragraph, now positively states:

"An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. (R. S. 4888; 35 U. S. C., 1946 ed., 33.)"

I believe an amendment to section 103 in the positive, together with an amendment to section 281, as I have suggested above, will do much to clarify our patent laws. If the district judge decides the case on the evidence before him rather than on his personal view, then civil rule 52 (a) with reference to the weight of the district court's decision will really become effective. All of that will not

hamstring a district court, nor any higher court. Perhaps all this may not be adequate but at least, in my opinion, will go much toward solving the difficult problems.

(2) Interference proceedings in the Patent Office

Section 135 provides for the determination of priority of invention by the Board of Interference Examiners, and section 23 provides that the testimony be taken by deposition; and that is the practice today.

While the testimony can be filed in typewritten form, the briefs must be printed if over 50 legal pages, Patent Office Rule 254. Thereafter, a final hearing is had before the Board of Interference Examiners, but the time is 1 hour unless extended. Patent Office Rule 256, which it rarely is. Thereafter, there is a decision.

From the above it will be seen that the practice of the Patent Office is that of the district courts before the enactment of the 1912 Federal rules. The Board of Interference Examiners neither sees nor hears the witnesses, so that their credibility can only be obtained from dry print, and obviously the decision cannot have the standing of a decision of the district court under civil rule 52 (a). The procedure is not like the procedure in open court.

While the Commissioner said that testimony can be taken in the Patent Office, but has not been done, will this court visualize what that means if one of the interfering parties has his witnesses on the Pacific coast? The Commissioner further says that in one case the parties agreed to have the Solicitor accompany them and rule upon the evidence. Of course, then the Solicitor and not the Board sees and hears the witnesses.

In an appeal to the Court of Customs and Patent Appeals, the case is on the record before the Patent Office and again on dry print. Here again the record as well as the brief must be printed, and there is a short hearing of about an hour, rules 26 and 27.

One of the parties may, however, proceed to a district court under section 146. In a two-party case the suit is filed against the prevailing party where he can be served, but in case of more than two parties, the case is tried in the District Court of the District of Columbia. In all cases it is tried in open court where the district judge is able to see as well as hear the witnesses, and so as to judge their credibility. Section 146 does not have the provision as has section 145; namely, that the decision has as a basis "as the facts may appear," although Revised Statutes 4915, which covered inter partes as well as ex parte proceedings, had the above-quoted part.

My rather recent experience in an interference suit shows what happens with the cumbersome practice of requiring an inventor in an interference to first proceed before the Board of Interference Examiners. Two cases I have in mind involved the automatic choke, which finally reached the courts in the following cases: *Jorgensen* v. *Ericson* (*General Motors* v. *Carter Carburetor Co.*) (81 F. S. 614, D. C. E. D. Mo., affirmed 180 F. (2d) 180, C. C. A. 8); and *General Motors* v. *Bendix Aviation Corp.* (123 F. S. 506, D. C. N. D. Ind.). After the first case, which was decided adversely to the decision of the Patent Office, the second case was submitted to the Patent Office and again decided against Jorgensen and General Motors; but that was decided in favor of General Motors at South Bend. Bendix did not even appeal, although a large company with sufficient funds. There was double expense in both cases.

In a parallel case involving the same automatic choke, but with specific claims directed to control of the fuel valve, the Court of Customs and Patent Appeals affirmed the Patent Office in *Jorgensen* (*General Motors*) v. *Shaff* (*Bendix*) (189 F. (2d) 264). Although the decisions in the eighth circuit were cited, page 269, actually the device relied upon in *General Motors* v. *Carter* (81 F. S. 614), was the same as before the Court of Customs and Patent Appeals. Judge Swygert held that Jorgensen had proved priority of the specific device, as well as of the broad subject matter, by the same device as before the Court of Customs and Patent Appeals, and reversed the Patent Office (123 F. S. 506).

The above cases show the difference between a case where the judge sees as well as hears the witnesses, and a case involving depositions and dry print. If one of the interfering parties in the above cases would have been able to proceed directly under section 146 (formerly included in Revised Statutes 4915), the expense of proceedings in the Patent Offive could have been wholly avoided.

(3) A Board of Interference Examiners' decision should optionally be dispensed with

I believe that any party to an intereference should be given the option after the institution of an interference and, if necessary, after preliminary motions with reference to patentability, to proceed directly to a district court under section 146. There certainly can be no hardship to anybody in the exercise of such an option by any party. Such an option is already permitted by section 146 to proceed in the district court, rather than under section 144 to the Court of Customs and Patent Appeals.

Under 28 United States Code, section 1404 (a), under the forum non conveniens doctrine, a district court may in its discretion transfer a case to another district for greater convenience of the parties. That actually happened in the *General Motors-Bendix* case (123 F. S., p. 507), where the suit was originally filed in St. Louis, but was transferred by Judge Moore to South Bend, because Bendix asserted that its witnesses were located near to South Bend than to St. Louis. The decisions as reported in United States Code Annotated under section 1404 (a) show that the courts have been liberal in their transfers.

Even in a case where there are more than two parties, I believe a district court has authority to transfer the case to another district court for convenience to all parties rather than requiring someone, say on the Pacific coast, to bring his witnesses to Washington as now required by section 146. Even in cases where all witnesses are not in or near one district, there is no reason why a judge selected by a district court, where the suit is filed, should not hear witnesses in different districts, or why the senior judge should not select a judge who can do so. It is quite usual for judges in other districts to sit in Washington and California. Here again, of course, the answer to the problem is that there be sufficient judges. It must be kept in mind that the expenses to litigants is much greater than the salary of a judge for the time spent by the judge.

The purpose of my recommendation is to save expenses. If an inventor must first go to the Board of Interference Examiners before proceeding under section 146, the expenses will be doubled. That was actually true in the General Motors-Carter and General Motors-Bendix cases. I do not say that it should be mandatory, but a party should have an option to proceeding directly to a district court.

In a simple case, all parties may find that the Board of Interference Examiners is the proper tribunal, particularly where the testimony can be stipulated. However, any party should have the option of trying his case in open court where the court can see as well as hear the witnesses. The expenses of the winning party can always be covered by taxing the losing party.

(4) Proceedings following Patent Office decisions

In proceedings from the Patent Office decisions, I will at this point not consider proceedings to the Court of Customs and Patent Appeals submitted on the same record, but only those to the district courts under sections 145 and 146, where evidence can be produced in open court.

As noted previously, while section 145 contains the expression "as the facts may appear," section 146 does not. Both, however, should be strengthened in favor of an inventor, and I suggest the following:

In section 145 add: "In such a case the court shall determine the question of patentability of the subject matter on the evidence before it as a case de novo, by a preponderance of the evidence, giving due consideration to the decision of the Patent Office."

In section 146 by adding: "In such a case, the court shall determine the question of priority of invention on the evidence before it as a case de novo, by a preponderance of evidence, giving due consideration to the decision of the Patent Office."

The reasons for such proposed amendments are as follows: The courts have generally held that a case under Revised Statutes 4915, which then included ex parte cases under now section 145 and inter partes cases under section 146, is a case de novo. However, in the district court under section 145, the Patent Office has continuously contended that in an ex parte case the question is one of setting aside a judgment, that is having a status superior to that of a decision of a district court under civil rule 52 (a). The winning parte in an interference proceeding under section 146 has taken the same position. In some cases the courts have affirmed the Patent Office while others have not.

Of course, such a view places a burden on the real inventor beyond what is contemplated by sound judicial procedure. It means that an ex parte decision of the Patent Office and an interference decision in the Patent Office, both

without evidence, except by affidavits and by depositions, will be given precedence over a proceeding in a district court on evidence in open court subject to cross-examination and where the district court has had an opportunity to see as well as hear the witnesses, while the Patent Office has not had that opportunity. In other words, the inventor is cut off from presenting his witnesses where the trier can see and hear the witnesses and then should be punished for it.

The basis of the cases applying such a strict rule of proof is *Morgan* v. *Daniels* (53 U. S. 120). That case was decided before the change of the equity rules in 1912 providing for testimony in open court. In that case the testimony was submitted to the then circuit court "without any additional testimony", page 122; indeed the case had gone by appeal to the Supreme Court of the District of Columbia from a decision by the Patent Office. Of course, in that case the witnesses in the second case were not before a court where the trier could judge their credibility, but the then Supreme Court of the District of Columbia and the district court as well as the Supreme Court only had before it the same evidence as did the Patent Office.

The Supreme Court has not passed on that in *Morgan* v. *Daniels* except in *Radio Corp.* v. *Radio Labs.*, (293 U. S. 1), where again the evidence in the suit was "word for word" that in the previous interference. However, there the Supreme Court refers to the fact that the evidence "must have more than dubious preponderance".

The Patent Office still insists upon relying on *Morgan* v. *Daniels* and did so in the General Motors cases on the automatic choke. Fortunately, our testimony was so thorough that our evidence in that case even complied with the very strict rule in *Morgan* v. *Daniels* (see 81 F. S., p. 618, and 123 F. S., p. 516). Accordingly, the district court and the court of appeals did not have to depart from the strict rule of proof.

It is believed that with the amendments noted above to sections 145 and 146, the matter will be cleared so that an inventor will really have his day in court rather than only his day in the Patent Office.

(5) An inventor's status and patent monopoly

There has been some confusion as to an inventor's status and what is called "patent monopoly", so I believe the following will not be out of place.

As to the constitutional provision, article I, section 8, which was quoted in Senator O'Mahoney's statement, page 1, of course the Constitution provides that primarily the inventor be rewarded for disclosing his invention, and the 1953 Patent Act provides that the application be by the inventor, section 111, except in a special case, section 118. Others than the inventor can only obtain rights by contract with the inventor and, accordingly, section 261 provides for an assignment which had been provided for in the early patent acts. The courts have, however, judicially protected the rights of an inventor as is well illustrated in *U. S.* v. *Dubilier*, (289 U. S. 178). In the Patent Office as well as in the courts, all the proceedings are based upon what the applicant for the patent has invented as distinguished from the prior art. Accordingly, the assignee really stands in the place of a quasi agent for the inventor even though there be an assignment. The most the assignee can do is to show for instance utility by commercial acceptance of the invention. This should always be kept in mind in considering our patent system as distinguished from the patent systems of those countries in which a corporation can file direct without even mentioning the inventor.

There has been much confusion as to the status of a patent which is a grant and does not constitute a monopoly; that was made clear in the Dubilier case, (289 U. S., p. 186). However, a patent grant is subject to the general laws, including the antitrust laws, *Standard* v. *U. S.* (226 U. S. 20, 49). The Supreme Court has gone far in protecting the public against misuse, as to an applicant and his assignee misleading the public during the prosecution of the application; see *Precision Instrument Co.* v. *Automotive Maintenance Co.*, (324 U. S. 806), and decisions cited.

STATEMENT OF FRANK CAMPBELL, PATENT ATTORNEY, WASHINGTON, D. C.

There is nothing which could more effectively relieve congestion in the Patent Office and at the same time assure greater justice to the inventor than for Congress to affirmatively define what shall constitute a patentable invention. The following is suggested:

(*a*) A case of patentability shall be deemed to have been established when the idea of doing the thing is new, and the device of the application achieves a

new and useful result, which no single prior device is capable of producing and which result goes beyond mere increased excellence of workmanship.

(*b*) A case of patentability shall also be deemed to have been established where a new assembly and relationship of parts accomplishes an old result in a markedly more facile, economical, and efficient way and especially where a marked saving in time or labor by the user results.

Provided, That the claim or claims presented do not read upon any prior unitary device; clearly define the invention sought to be patented, and distinguish the invention from each and every unitary, prior art, device or method in the respects in which the invention accomplishes the said new and useful result or accomplishes the said old result in a more facile, economical, and efficient way.

The following reasons are offered in support of the foregoing.

1. At present too much latitude is left to the patent examiner. What one man may consider to amount to invention another waves off as amounting to mere mechanical skill. That the inventor is torn between a welter of conflicting opinions is shown by the frequency with which the Board of Appeals of the Patent Office disagrees with the examiner and the Court of Customs and Patent Appeals disagrees with the Board of Appeals. Some definite standard is highly desirable.

2. The examiners frequently fail to give sufficient credit to the conception of the "idea of doing the thing." Even where the prior art shows no suggestion by anyone of accomplishing the inventor's end result the examiners frequently reject by putting together a plurality of separate prior patents (no one of which accomplishes the end result) and saying that no invention is involved in combining the references. Or that only mechanical skill would be required to combine the prior patents. They forget that they are looking at the prior patents with eyes instructed by the inventor's work and teaching and they confuse the ability to perceive an analogy between the invention and the prior-art devices, with the ability to create the invention with only the prior patents as a guide.

Further it has long been said that "You cannot patent an idea." Why not? Assuming that an Edison is the first to produce motion pictures by taking photographs of moving objects in rapid succession in a given order and at a given speed, and then projecting said photographs in the same order at substantially the same speed, upon a screen; where does the invention lie? With Edison or with any one of the thousands of mechanics who could produce the necessary machine, once the idea of doing the thing is suggested.

If the foregoing suggested definition of what shall constitute patentability be adopted the public could lose nothing, because the public could continue to use all known and prior-art devices. The patent would impose a burden on the public only when the public found the device of the patent to be so superior to the prior-art devices that it (the public) would prefer to use the patentee's contribution to the art.

Through the years the courts have pointed out how prone we are to fail to give proper credit to the man who first saw the device in imagination.

Faries Mfg. Co. v. *Brown & Co.* (121 Fed. 547): "The eye that sees a thing already embodied in mechanical form gives little credit to the eye that first saw it in imagination, but the difference is just the difference between what is common observation and what constitutes the act of creation. The one is the eye of inventive genius; the other of the looker-on after the fact."

International Tooth Crown Co. v. *Richmond* (30, Fed. 775): "It is not difficult, after the fact, to show by argument how simple the accomplishment was, and by aggregating all the failures of others to point out the plain and easy road to success. This is the wisdom after the event that often forfeits invention, and levels it to the plane of mere mechanical skill.

It should be recognized that there are two classes of inventions: (1) Those of a high degree of invention where the inventive act lies in the conception of the idea of doing the thing; and (2) where the idea of doing the thing is old and the invention resides in new assembly of parts, or the introduction of new elements, through which the old result is secured in a better or more facile or economical way.

It is believed that the suggested definition of patentability would go a long way toward solving the problem of congestion in the Patent Office. Much of the time of the examiners is consumed in arguments over the question of invention versus mechanical skill. Further greater justice to the inventor would result and the welfare of the whole body of our people would be promoted. Just as no one would plant an orchard and prune and spray through a creative period, unless he could be assured that the fruit would be his when the trees came into

bearing, so no one will undertake the great expense and labor of developing new things unless they can be assured that the result of their labors will not be tossed aside as new, but lacking invention.

The necessity for adoption by the Congress of some definite standard of patentability is emphasized by the decision of the Supreme Court of the United States in *The Great Atlantic and Pacific Tea Company* v. *Supermarket Equipment Corporation*, decided December 4, 1950 (87 U. S. P. Q. 303). The issue there was the validity of United States Patent No. 2,242,408 to Turnham. The patent covered the now well-known arrangement, so widely used in self-service grocery stores, where a counter at the cashier's stand is extended toward oncoming customers, to provide a counter space in advance of the cashier's position upon which the group of separate purchased articles of a customer may be deposited while the customer waits for a preceding customer to be checked out, and wherein an open-bottom pusher frame is so slidably related to both the main counter and the counter extension that when the preceding customer moves on, the whole group of articles upon the counter extension may be drawn up to the cashier's position, by the sliding of the frame, without the necessity for the second customer to again pick up the packages. Further the frame is open at its front, so that after the packages have been drawn before the cashier, the frame may be returned to the counter extension there to receive the loose packages of a third customer, while the packages of the second customer are being checked and packaged.

There were three claims in the patent. The Patent Office deemed its subject matter to be patentable, the two courts below had concurred in holding the claims to be valid and it had been stipulated by counsel that if valid, they had been infringed.

In the face of all this the Supreme Court held the claims to be invalid.

I quote one of the claims (Italics mine).

"6. A cashier's counter for cash and carry type of grocery comprising a *portion spaced from* the cashier's stand and upon which the merchandise may be deposited and arranged, *a bottomless frame on said portion* and within which the merchandise is deposited and arranged, means whereby said frame is movable on said counter from *said portion to a position adjacent the cashier's stand so that the merchandise may thus be moved as a group to a point where it may be conveniently observed, counted, and registered by the cashier*, said frame being *open at the end* adjacent the cashier's stand and readily movable to be *returned over said portion* so as to receive the merchandise of *another customer* while the cashier is *occupied with the previous group*."

The district court had explicitly found that each element in this device was known to prior art. "However," it found, "the conception of a counter with an extension to receive a bottomless self-unloading tray with which to push the contents of the tray in from of the cashier was a decidedely novel feature and constitutes a new and useful combination."

The Supreme Court in its decision disposed of the district court's conclusions by saying in part:

"We need not go so far as to say that invention never can reside in mere change of dimensions of an old device, but certainly it cannot be found in mere elongation of a merchant's counter—a contrivance which, time out of mind, has been of whatever length suited the merchant's needs. * * * What indicia of invention should the courts seek in a case where nothing tangible is new and invention, if it exists at all, is only in bringing old elements together?"

To support the foregoing the Court quoted:

"*Lincoln Engineering Co.* v. *Stewart Warner Corp.* (303 U. S. 545, 549 (37 USPQ1, 3)): 'The mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than that theretofore performed or produced by them, is not patentable invention.'"

After referring to a number of patents which the Court felt were totally lacking in invention the Court concluded its decision with the following:

"The patent involved in the present case belongs to this list of incredible patents which the Patent Office has spawned. The fact that a patent as flimsy and as spurious as this one has to be brought all the way to this Court to be declared invalid dramatically illustrates how far our patent system frequently departs from the constitutional standards which are supposed to govern."

From the foregoing paragraph it is clear that the Court completely missed the crux of the matter. It is apparently unwilling to give any credit whatever to the conception of the idea of doing the thing. The real point is not whether the

several elements employed were old, but whether the inventor had arranged them in a new correlation, with the end result of producing a new and useful apparatus which had never before existed as a mental concept in the mind of any human being. It is true that counters are old, and that pusher frames used in wholly dissimilar devices are old, but that mere fact would not teach the idea of associating with a main counter (cashier's stand) and an extension counter disposed in the direction of oncoming customers, a pusher frame having a new relationship to both of said counter portions, movable from one to the other and back again and so constructed as to move packages in one of its directions of movement but not in othe other. Thus it could be returned to its first position, leaving the packages in front of the cashier.

No one had ever though of such an arrangement. As a whole it was completely new. It saved a tremendous amount of time for purchasers by extending the self-service idea to the point where a customer could not only serve himself in selecting his purchases but could (during time that would otherwise be wasted in merely waiting) place them in position to be quickly presented to the cashier in spread-out condition. It is believed that this was invention of a high order of merit and yet the patent was thrown out because of the failure of the Court to give reasonable credit to the conception of the idea of doing the thing.

In *Faries Mfg. Co.* v. *Brown & Co.* (121 Fed. 547), the Court said: "The eye that sees a thing already embodied in mechanical form give little credit to the eye that first saw it in imagination."

In its decision the Supreme Court says that the Patent Office "has placed a host of gadgets under the armor of patents—gadgets that obviously have had no place in the constitutional scheme of advancing scientific knowledge * * *"—and in another place the Court pointed out that "Every patent is the grant of a privilege of exacting tolls from the public." That statement would be true only if the patent contained a provision requiring the public to purchase the patented device.

Some time ago I purchased a gadget at a cost of 69 cents. Its purpose is to maintain a spare automobile key in an accessible place if the automobile owner locks his car with the key inside. The gadget consists of a small box of a size to hold and keep clean a spare key, the box being strongly magnetized so that it will cling beneath an auto bumper or other part where the spare key will be concealed but will be available to the car owner. I stopped overnight at a tourist court, on a long trip. When I wanted to leave the next morning I found that I had locked my regular key inside the car. I was far from a garage. I would readily have paid 10 times 69 cents for another key, until I remembered the spare key in the gadget. Did the creator of the gadget exact a toll from me? Upon the contrary, he had not only made a useful device available to me but in presenting it to me for sale, he had put into my mind the idea that it would be a desirable thing to do—to put a spare key outside the car body proper. Incidentally, he had given jobs to many people in the making, advertising, and marketing of the device.

This Nation is now putting its automatic machinery and its know-how into the hands of many other nations having great density of population and much cheaper labor than we have. How can the United States maintain its markets when those other nations get into full production? I do not pretend to know the answer to that but I suggest that one way is to unleash the American inventor. The native ingenuity which has been characteristic of this Nation since its inception is still with us and it can still keep America ahead of the rest of the pack if given proper encouragement and protection. At present the American inventor is discouraged. With the Patent Office being required by judicial interpretations as to what is and what is not patentable, to impose more and more restrictions upon the grant of patents and with the strong possibility that a court may declare his patent invalid after long and expensive litigation, the inventor has two strikes against him when he goes to bat. Just as no man will plant an orchard, prune, spray, and cultivate it until it comes into bearing unless he can enjoy the fruit from it, so no one with an embro invention will undertake to bring a new device to the marketable stage if he must risk having others merely copy his patterns and undersell him after he has introduced the device to the public.

With automation in the offing the crying need is going to be jobs and jobs and more jobs.

There is another aspect of the matter which deserves attention. That is that often, even after the Patent Examiner finally determines that a patent may be granted, the inventor is forced to accept claims so restricted to his specific con-

struction that he goes out of the Patent Office with a patent which leaves the door open to an infringer to use the heart of his idea, as long as such infringer stays away from the patentee's particular construction. The patent examiner is frequently constrained by court decisions to so restrict the claims allowed.

Fifty years ago the courts were declaring that in close cases the doubt was to be resolved in favor of the inventor. Now we seem to have reversed that concept and have concluded that all doubts must be resolved against the inventor. This should not be. It is better to grant a patent in a doubtful case than to deny one, because if the claims are so phrased as to define something never before known, then the public suffers no loss. The public still can use all that was open to it before the grant of the patent. It is only when the claims define a thing so much more desirable than known things that the public wants it enough to pay for it, that anything savoring of a toll upon the public comes into existence If the inventor has introduced to the public something so much more desirable, then he is clearly entitled to such toll.

While it is a matter of secondary importance I would point out that the restoration of confidence upon the part of the inventor, which would come within the adoption of a definite standard of patentability, would accomplish two important results.

1. It would quickly render the Patent Office self-supporting.

2. It would enable the Patent Office to bring its work up to date within 2 or 3 years by removing the principal bone of contention between the patent examiners and the attorneys for the inventors, to wit, the presence or absence of invention.

The cost to the Patent Office of processing a patent application would be greatly reduced since agreements could be more quickly reached upon the question of patentability.

STATEMENT OF HERMAN COHN, INVENTOR, BALTIMORE, MD.

THE SUGGESTED PLAN

Regarding the idea, the plan is to encourage, protect, and assure adequate reward for the independent inventor, and is as follows:

Firstly, incorporate the assistance of approved, accredited colleges throughout the country. In this plan, an independent individual inventor could apply with his idea or model where he will receive practical advice, help and encouragement along the following lines:

The college will process his idea for its practicability, and so forth, and the inventor will receive advice on the next steps to take, as to lawyers, drawings, and so forth and also receive help in negotiating a sale, so that he may be assured of adequate protection and receive the reward to which he may be entitled.

For this guidance, I think there should be a contract between the inventor and the college, stipulating a partnership in any remuneration that may be derived from royalties or the sale of the patent, after expenses have been deducted.

You asked me if I thought the Government should subsidize this and I said I did not believe it would be necessary. Don't you think there may be foundations that would finance any extra expense this would involve? If no funds are forthcoming from foundations, then I do believe the Government should subsidize the idea. If a patent should prove successful, it not only may be self-sustaining, but a source of income for the college.

Under such a plan, an individual inventor will not be very far from a source where he can apply to at no or very little expense. He would be in good hands and would be confident that he would receive proper treatment and remuneration as outlined. It may have a tendency to increase the number of individual, independent inventors, and the public would reap the benefit.

STATEMENT OF T. T. COLLINS, JR., INVENTOR, PALATKA, FLA.

First, to qualify myself to comment on this subject, I can say that although I am not a patent attorney, I have filed and tried to prosecute a number of applications through the Patent Office. I am technical director of one of the larger paper companies and my hobby is the writing of patent and literature reviews. Altogether, I have published at least 35 technical articles and bibli-

ographies and have prepared many others so that my background in the patent literature of the pulp and paper industry is probably as extensive as that of any other chemical engineer.

Now, as to my various opinions and suggestions regarding this matter.

1. Althought the Patent Office rules say that anyone can handle their own patent applications, I do not believe that laymen are given the same consideration as attorneys. I have been told by patent attorneys who have worked in the Patent Office that such applications are treated as a joke, rarely granted, etc.

2. The claim of the Patent Office that they employ competent engineers as examiners is a specious one. My contact with this Office has convinced me that these engineers are not experienced in the various industries and that it is difficult to make them see the viewpoint of competent authorities in the field.

3. There is a considerable loss to technology and knowledge due to the fact that abandoned and disallowed patents are not publicized at a later date, say 10 years after the date of application. Of course the applicant deserves some protection even though his application has been rejected.

4. It appears that the small inventor with limited funds is at a great disadvantage as compared with large corporations with a strong organization of patent attorneys. I do not recall the exact figures but there is allowed by the courts an appreciable percentage of the patents appealed from the rulings of the examiners. This would indicate that of those that are not appealed, are abandoned due to lack of unds, disgust on the part of the inventors, etc., there must also be many that should rightfully be granted. It is a terrible thing that a Government bureau should have such power over the economic life or death of an inventor without some sort of safeguard for the individual.

5. Some system should be devised to lay patents out for examination and criticism by the public for a few months before they are granted. In this way the Patent Office would be forced to include protests, prior art, etc., in the record and would be less liable to make a serious error in granting a patent without a proper survey of prior art. As it is, a patent is granted to a large concern with adequate funds to defend it and others in the field, without funds but with basic rights, etc., may be forced to abandon their inventions.

6. It would also be fairer to require the Patent Office to give consideration to prior art presented in protest against patents. At the present time there is no way of assuring this. In fact, I have been told by attorneys that the examiners resent material that makes them look incompetent being called to their attention, and can properly ignore it.

7. Some investigation of the misuse of the Boykin Act for certain patent applications should be made. As an example, I wish to cite the case in 105 U. S. P. Q., pages 272 and following. Bergstroem-Trobeck are being allowed to use the Boykin Act to file a 1939 Swedish application in 1948 even though the material was disclosed in United States patent applied for in 1943. In other words, they are using this device (and being allowed to use it, even though I have called it to the attention of the Patent Office and Judge Worley of the Court of Customs and Patent Appeals) to escape the fact of dedication and double patenting. This is being done in the face of a complete file of protests, including literature translations, etc. I would say that this one case encompasses most of the faults one would find with the Patent Office.

A close investigation would probably show many things wrong with the patent system. I have never heard inventors voice anything but condemnation and criticism of the Office. In my own case, I feel that of about 8 applications I filed myself that were rejected, only 1 was rightfully rejected on pertinent prior art.

It appears also that the Patent Office is in about a 25-year cycle. In other words they are again patenting things that were patented about 25 years ago without citing the earlier patents as prior art. There are a number of such very prominent cases in the paper industry patents such as green liquor clarification and secondary causticizing, hot stock refining, semichemical liquor recovery, vapor phase cooking, black liquor oxidation, two-stage cooking, etc. After the new patents issue and we write the Patent Office and call the prior art to their attention, they reply "Thank you for your interest in the Patent Office."

It is to be hoped that the work of your committee will remove the many inequalities and injustices in the patent system.

STATEMENT OF FLOYD H. CREWS, PATENT ATTORNEY AND PRESIDENT NEW YORK PATENT LAW ASSOCIATION, NEW YORK, N. Y.

It seems to me that from the session of October 10, the following tentative conclusions may be drawn:

1. The patent laws are now serving the small inventor well, except for delays in the Patent Office.
2. The small inventor has a serious marketing problem.
3. There is a need for a market place where the individual inventor may market his inventions.
4. This need has been filled in part by Don Bennett who has shown that the need exists and that a market place may be provided.
5. Other organizations, such as the Research Corp. and the Southwest Research Institute, San Antonio, Tex. (not mentioned yesterday), are also supplying part of this need.

Don Bennett did not tell his whole story yesterday. He also provides a service for industry under which companies may have a look at all of the inventions which have been submitted to Mr. Bennett which may be of interest to those companies. I believe that a number of inventions have been placed in this manner.

Last summer I suggested to Mr. Bennett that he open a large inventor's fair in Philadelphia where all of the inventions submitted to him would be on display for an admission charge. This would provide a market place where industry or those with venture capital could come to find a new product. Mr. Bennett appeared not to be interested in this suggestion at that time, but it still seems to me to be a good idea, at least from the standpoint of the small inventor.

Possibly such an inventor's fair is something that could be established under the small-business bureau of the Government, although I would hate to see public funds expended if a job which is as good or better could be done privately. Of course, for a thorough job there should be more than one and probably several such fairs around the country.

Possibly Mr. Bennett would be interested in undertaking such a venture on a risk basis if he were provided with some kind of a subsidy for the first year. This could be justified historically by the Government's contribution to the Morse telegraph. There are probably other precedents as well.

Perhaps some sort of a tax advantage might be provided temporary to get such a project underway, and probably with recoupment of the tax advantage if the project was successful.

It might be well worthwhile for the committee to call a considerable number of independent inventors who have been successful and get from them step by step the case histories of how they made a success of their inventions. This might throw considerable further light on what can be done to provide a suitable market place.

STATEMENT OF HON. LOGAN R. CROUCH, JACKSON, MISS.

INVENTION AND DISCOVERY

The question most often asked when one discusses patents and invention is: whether or not the day of the individual inventor is not over, since one man, without funds perhaps, working alone, cannot keep pace with the research department of a giant corporation, drawing gifted young men from the best schools, with unlimited funds and equipment available. And can a small or middle-sized business hope to develop an invention when the fields of technology are so vast and the machines so complex.

There is every mechanical and technological reason to believe that the answer to both question is "Yes." The technical fact is that the field is wide enough for both and that, in theory at least, neither organized research nor individual invention can take the place of the other without disadvantage, because each has an advantage over the other in the field where it is best. The same thing is true of the large or middle-sized business.

Unfortunately, the legal trend for 2 decades has been in favor of the organized research and the great business organizations.

The reason this is true is a technical one. What we ordinarily call "invention" is two things: invention and discovery. Literally, discovery is the broadest term and includes both, and is used in the patent section of the Constitution.

In the Statutes of 1836, Congress recognized the technical difference between the two and the courts also mention it at an early date. The Revised Statutes of 1952 reemphasized it by distinctly stating that invention means either invention or discovery. In the abstract, the distinction is somewhat difficult, but, by looking at Edison's phonograph, which is an invention, and comparing it with his incandescent lamp, which is a discovery, the difference becomes fairly clear.

We have all heard how Edison gave his layout man a sketch of a cylinder mounted on a frame so it could be turned and would move endways as it turned, a disk with a needle fastened to it was also mounted on the frame, positioned so that as the cylinder turned the point of the needle brushed against it. Edison wound a sheet of tinfoil around the cylinder and turned it, repeating "Mary had a little lamb," while he directed his voice at the disk. He then reset the cylinder and again turned it, this time the needle moved through the slot it had just made in the tinfoil and the disk repeated the words of "Mary had a little lamb."

Some who study invention believe that Edison formed a mental picture of the operations that had to be performed and then selected mechanical elements which could perform them. But in whatever way his mind may have worked, mechanical analysis of his sketch and his model show that when he drew the sketch, he had a mechanical plan resting on three mechanical theories. The first theory was that the waves in the air caused by the voice would set up vibrations in the disk which would pass to the needle; second, that if the vibrating needle formed a slot, the vibrations would register on the slot, and, third, that if the needlepoint again passed through the slot, the vibrations would pass back to the disk, which would set up sound waves and so reproduce the voice.

Edison had a large research staff and priceless equipment, but he did not use either. It is evident that, given his ability to form the mechanical plans he showed in his sketch, he could have worked just as well in a blacksmith shop, or even in a garret. Until he had completed his mechanical plan, no research or experiment would aid him. When he had completed his plan, only simple, ordinary devices were needed to put it into effect.

But, if we look at the Edison invention of the electric light, we see something entirely different. It had long been believed that an electric resisting element, placed in a glass bulb, would produce a light. But no one had been able to produce one which would work, chiefly because no proper resisting element could be found. Even Edison, the greatest inventor of them all, could not solve this problem simply by mental reasoning, as with phonograph. He had to use experiment and research. With the aid of his helpers and his equipment, he was able to form a filament of treated carbon. The phonograph and the light were among the greatest creative work of Edison, but one need not be expert to see that the technics used were different. Technically, the phonograph was an invention and the light was a discovery. Edison, the master, could work equally well with either. But there was only one Edison. If our way of life is to move ahead, we must use those whose creative gifts are less extraordinary.

Most of those less gifted cannot work well with both technics. Generally those who work well with the inventing technique, work best alone, and are the individual inventors. Those whose gifts lay along the line of creative research, of course, work best where the technic needed is discovery. Since they are both needed, because both kinds of problems must be solved, the technical and legal problems are to see that a place is available for each. Generally the inventive technic is necessary for a mechanical device and creative research the best way to solve a nonmechanical problem, but this is not always true. For example, a particular angle of blades on a steam turbine might provide unexpected results and be discernible only by means of creative research.

In the technological field, as a practical manner, the interest of the individual inventor and the smaller business are closely connected. As a practical example, we might consider a modern plant for producing electric power from steam. Outsiders have overlooked it, but great improvements have taken place in such plants within the last 20 years.

To build such a plant, one must, of course, have the huge boilers, steam turbines, and electric generators. A newspaperman who saw a plant under construction would see only these and ask how there could be a place for a small business here, or how an individual inventor could work with such devices. Of course, a business firm which made these things would need heavy capital and large production facilities. Many of the mechanical problems involved would require organized research. As a matter of fact, it is desirable to have a productive system which does provide these things. However, even such complex devices contain parts which are mechanical entities in themselves, and which can be designed by an individual inventor, and produced by a small-business man.

The men who build the plant know that, while the boilers, turbines, and electric generators are the most spectacular part, they are the smaller part of the finished plant. To put these things to work and keep them working, dozens of other devices must be provided. Because the large things could not be used without them, they are an essential part of the plant. The records of a buying agent would show that over 100 manufacturers sold their products to an average plant. Some of these products are as simple as a band used to hold insulation on a steam pipe. Many of them are the kind of device most likely to result from the invention of an individual inventor, who might be a steamfitter or electrical worker on such plants, and which could be produced by a small, individually operated business.

Surely it is evident that to secure our best progress we need the united effort of the large business, with its organized research, and also of the individual inventor and the smaller business, and it is plain there is a field for all.

So far as the inventions and their production is concerned, the problem is a legal one, and it must be admitted that the answer is not an easy one.

In a general way, it is plain that uncertain rules regarding validity of a patent in infringement suits would be much more of a burden on the small business and the individual inventor.

But, even worse, the tendency of legal decisions in the past 15 years has been to find favor with the technic of creative research and to disfavor the technic of mental invention, such as Edison used in his phonograph. Since the first technic is the one used largely by the giant business with its organized research, the result is a turn of the scales against the individual inventor and the small business, because the chief opportunities for both lie in the fields of the mechanical devices which are now called gadget patents.

But we can see that the legal answer may not be as difficult as one might expect by looking again at Edison's invention of the phonograph and electric light.

We can see that each of the three theories which made up his complete plan for a phonograph was a mechanical cause and a mechanical effect, that is, a certain mechanical thing would operate in a certain manner and produce a certain mechanical result.

In patent law such a mechanical action is called a mode of operation, and the definite result it produces is called a function. A complete theory, setting out a particular physical thing, and how it performs in a particular way, to accomplish a particular physical result (if the theory proves correct), is called a conception. The greatest jurists have said many times that an invention was a physical embodiment of a mental conception. With this type of invention then, a mechanical analysis which showed that a device contained a mode of operation and function which was not contained in any former device, would set up presumption that the device was a legal invention. The records show that the courts did follow this theory for over 100 years before it was set aside in the Cuno case.

Looking at the electric light, a different legal technic is required. We cannot make an analysis of the light and show which physical theories Edison can be presumed to have used, or whether, in fact, he might have used any. We know that it did require a great deal of research and experiment to produce the lamp. The question a court would have to answer would be whether or not this was creative research which went beyond what might have been expected of a routine worker skilled in the art.

There are no positive rules to show the presence of creative research as there are to show the mental conception. Here a court must use indfinite evidence. But it can consider that former researchers tried and failed. It can see that the research was different in principle than former research. It can consider how many experiments were tried and whether or not the result might have been expected. It can consider how useful the thing produced is and how it met a need long known. From such evidence it can draw the conclusion that more than skill in art was required and so uphold the patent.

From what has been said, it is evident that if a court became confused and tested a mental conception by the rule needed for creative research, it might rule the patent for the phonograph invalid, or, conversely using the wrong test, it might rule the patent for the electric light invalid. Study of the records has convinced the writer this confusion does exist and causes many of the uncertain decisions which are so troublesome to industry in connection with patent law.

For what it is worth, the suggestion is made that the statute require one who maintains a patent invalid because it is too near to the prior art, be required

to plead that it is neither a mental conception or equal to creative research, by alleging the absence of the things which would show either in separate paragraphs, and maintain both in order to prevail.

STATEMENT OF WILLIAM T. CRUSE, EXECUTIVE VICE PRESIDENT, SOCIETY OF THE PLASTICS INDUSTRY, NEW YORK, N. Y.

The Society of the Plastics Industry, Inc. is a national technical society and trade association composed of members from all parts of the country who manufacture plastics materials or process them. It is composed of 900 company members and consists of firms which are the leading producers of plastics raw materials and plastics products within the industry in the United States of America. One division of the Society of the Plastics Industry, Inc. is the plastics housewares division. The members of this division are manufacturers of such articles made from plastics materials as bowls, bread boxes, butter dishes, cannister sets, refrigerator boxes, sink strainers, tumblers, wastebaskets, and the like.

One of the biggest problems which confronts the industry is that of design piracy. As you can see from the examples of the products, it is rare that a manufacturer designs or invents something that is really new. While it may be new in the plastics field, it will be so similar to something already designed and produced from some other material such as metal, ceramics, or glass, that not even one design patent can be procured. Nevertheless it may be new to the plastics industry and it has been necessary for some manufacturer to develop by research and experiment a finished product made from one or several plastics materials having the necessary physical characteristics which are, rigidity, reaction to high or low temperatures, nonabsorbent as to odors and the like. In short, the application of some plastic material to this particular use may have required considerable expenditure of time and money for research and development.

Under the presently existing patent laws this manufacturer has no protection. There is nothing that in any way deters the unethical manufacturer from waiting until an item has been launched successfully on the market then buying a half dozen of the items, a couple of which he turns over to his mold manufacturer to produce the necessary mold, and the others of which he turns over to his salesman with which to take orders from the customers to whom the original manufacturer has sold.

On communicating with your office today we were informed that the hearings before the subcommittee will be held the first 3 days of this week but will probably be confined to patent problems from the standpoint of the inventor and that hearings will be continued next month on suggested changes which will be of interest to the manufacturer. If this is so we would appreciate the opportunity of having some one from the industry appear before your committee at some subsequent hearing. In the meantime we are getting in touch with our own counsel and with a number of our members in the plastics housewares industry who are interested in this problem and hope to be able to present to you some specific recommendations as to changes or revisions of the patent laws.

STATEMENT OF L. DAVIDSON, CONSULTING ENGINEER, NEW YORK, N. Y.

I would respectfully like to register my thoughts based on 40 years of experience as an engineer-inventor.

If patents are to stimulate the starting of businesses based on patents, it is necessary to provide a stronger incentive for risk capital. One way of doing this to the distinct advantage of our country and everyone concerned, is to extend the life of the patent from the present 17 years to about 25 years.

Also, suggest revision of the present laws on court procedure involving patent infringement. Our present laws are too cumbersome, slow in obtaining results, and, what is most important, too expensive to protect the average inventor.

It is my sincere belief that the continued and sustained economic prosperity of this country will depend in the not too distant future on new business based on patents.

Patents create wealth for the country if the invention is marketed. If it is not marketed, it does not create wealth.

The individual who invents and patents his invention does so with his own time and at his own expense, and does not use money that would, through the regular channels, be mostly tax money.

The establishing of businesses backed by patents has the potential of growing into large business and provide the growth and idea stimulation that will assure this country's continued industrial supremacy. Without this stimulation, existing large business eventually becomes stagnant—self-satisfied—in spite of the present splurge of research that spends money that would normally be paid as taxes.

New business, with new and improved products, is the healthiest form of business stimulation and competition, as it means much more than only price competition.

Extending the life of patents makes more practical the obtaining of risk capital, as the present patent life of 17 years is not sufficient to attract this kind of capital.

Our country's continued industrial supremacy depends on progress in the form of new and better and more economical industrial products, and I believe our present patent system, with suggestions mentioned above, can accomplish this end.

STATEMENT OF DR. LEE DE FOREST, INVENTOR, LOS ANGELES, CALIF.

I wish to urge upon the committee most emphatically the glaring lack of personnel in the Patent Office, especially among the examiners. From my recent experience in filing patent applications, it is only too evident that the examiners are too few and greatly overworked. This results in a deplorable and costly delay in the proper inspection of newly filed patent applications. The entire system of American industry which depends so largely on patent protection for its proper development suffers greatly on account of the lack of efficient personnel among the Patent Office examiners.

Whereas in the old days I used to obtain patents within 6 months to 1 year after filing, it is now approximately 3 years before my patent applications receive even their first examination and criticism.

The number of American inventors has enormously increased and is continually increasing, but Congress apparently has failed to recognize this fact and has not taken adequate means to obtain needed appropriations to enable the Patent Office to properly expand its examiner personnel to meet the rising requirements.

Allow me to urge upon the committee most emphatically the need for taking the necessary steps to substantially increase the number of qualified Patent Office examiners. The committee can confer no greater benefit to American inventors and, therefore, to American industry than to make possible the immediate and substantial increase in qualified Patent Office examiners.

STATEMENT OF P. J. FEDERICO, EXAMINER IN CHIEF, UNITED STATES PATENT OFFICE

PATENT NO. 2,705,484, APRIL 5, 1955, JORGENSEN & JORGENSEN, ASSIGNED TO GENERAL MOTORS CORP., FOR MECHANISM FOR CONTROLLING THE STARTING AND OPERATION OF INTERNAL COMBUSTION ENGINES

The above-identified patent was pending 23 years, 2 months, and 27 days and the chairman of the subcommittee has requested "a résumé setting forth in summary fashion how this time was consumed."

The application involved was filed in the Patent Office on January 8, 1932. The inventors were Peter J. Jorgensen and Clarence H. Jorgensen. At the time of its filing, the application was assigned to the Wilcolator Company of New Jersey. The application was later assigned to General Motors. Beginning with March 30, 1934, it became involved in a series of 12 interferences with other applications the last of which was terminated October 21, 1954. The time of pendency is hence divided as follows:

	Years	Months	Days
Ex parte prosecution	2	8	5
Interferences	20	6	22
Total	23	2	27

Ex parte prosecution

The ex parte prosecution prior to the interferences took 2 years 2 months and 22 days. This was consumed by 2 actions by the examiner (each of which took about 5 months to reach), the replies by the applicant, to these actions (about 6 months each), and a further time until the interferences were declared. After the last interference was over a further time of 5 months and 13 days was used in a winding-up action by the examiner, a reply by the applicant, the notice of allowance, the payment of the final fee, and the printing and issuing of the patent. The total ex parte time can be divided as follows:

Ex parte time	Years	Months	Days
Chargeable to office	1	5	14
Chargeable to applicant	1	2	21
Total	2	8	5

Interferences

The interferences in which the application was involved may be considered in three groups.

On March 30, 1934, 5 interferences were declared involving the J. & J. application and applications of 7 other parties. Subsequently, 4 other interferences growing out of these were declared between the J. & J. application and applications of 5 of the other parties. The last 1 of this group of 9 interrelated interferences was terminated December 23, 1940, which was 6 years, 8 months, and 23 days after the declaration of the first. These interferences are listed as follows:

	Declared	Terminated	Time
1. Interference No. 68187	Mar. 30, 1934	Mar. 27, 1939	4 years 11 months 27 days.
2. Interference No. 68188	do	Mar. 25, 1940	5 years 11 months 25 days.
3. Interference No. 68189	do	do	Do.
4. Interference No. 68190	do	do	Do.
5. Interference No. 68191	do	June 6, 1935	1 year 2 months 6 days.
6. Interference No. 71141	Sept. 24, 1935	Mar. 25, 1940	4 years 6 months 1 day.
7. Interference No. 71142	do	do	Do.
8. Interference No. 71473	do	May 21, 1937	1 year 7 months 27 days.
9. Interference No. 77410	Aug. 23, 1939	Dec. 23, 1940	1 year 4 months.
Average per interference			4 years 5 days.
Total elapsed time			6 years 8 months 23 days.

While the total elapsed time was 6 years 8 months 23 days, the average duration of the 9 interferences was 4 years 5 days.

Shortly before the termination of the last of the first group of interferences another interference was declared on June 4, 1940, with an application owned by Carter Carburetor Corp., and later another interference was declared with another application (a reissue application) also owned by Carter Carburetor Corp. These two interferences were tried and decided together in the Office. The applicant lost both interferences in the Office and filed civil actions under Revised Statutes 4915 (now 35 U. S. C. 146) to review the Office decision, and the decision of the district court in these actions was appealed to the court of appeals. There was an unsuccessful attempt to have the Supreme Court review the decision. This last step was concluded October 9, 1950, and the time from the declaration of the first of these 2 interferences until the simultaneous termination of both in the courts was 10 years 4 months 5 days. This time is divided as follows:

	10. Interference No. 78345	11. Interference No. 80733
1. Declaration	June 4, 1940	Feb. 12, 1943.
2. Office decision	Dec. 26, 1945	Dec. 26, 1945.
3. District court decision	Nov. 30, 1948	Do.
4. Court of appeals decision	Jan. 26, 1950	Do.
5. Certiorari denied by Supreme Court	Oct. 9, 1950	Do.
Time from (1) to (2)	5 years 6 months 22 days	2 years 10 months 14 days.
Time from (2) to (5)	4 years 9 months 10 days	Do.

The decisions of the district court and the court of appeals in these two interferences were published, *Jorgensen and General Motors Corp.* v. *Ericson, Henning and Carter Carburetor Corp.* (81 F. Supp. 614, 619, 80 U. S. P. Q. 358, 364, affirmed 180 F. 2 (d) 180, 84 U. S. P. Q. 176).

While the two interferences last mentioned were pending in the court, another interference, the last one, was declared, on May 2, 1947. This was with a patent owned by Bendix, which had been issued on one of the applications involved in the first group of interferences. This interference was decided by the Office and a civil action was filed in the district court. The times involved were as follows:

	12. Interference No. 82841
1. Declaration	May 2, 1947.
2. Office decision	Aug. 21, 1951.
3. District court decision becomes final	Oct. 21, 1954.
Time from (1) to (2)	4 years 3 months 19 days.
Time from (2) to (3)	3 years 2 months.

This interference was pending 7 years 5 months 19 days, of which 4 years 3 months 19 days were in the Office and 3 years 2 months, in the court.

The decision of the district court in this case was published, *General Motors Corp.* v. *Bendix Aviation Corp. et al.* (123 F. Supp. 506, 102 U. S. P. Q. 58).

The entire group of 12 interferences was pending 20 years 6 months 22 days; of this time 12 years 7 months 12 days was in the Patent Office and 7 years 11 months 10 days was consumed by the court reviews.

The multiplicity of interferences

Two unusual features are present in the pendency of the J. & J. application. One is the multiplicity of interferences, and the other is the duration of the interferences. Both of these are out of the ordinary.

In 1934 when the first of the interferences were declared, there were 15 interferences relating to the same subject matter declared among a number of applications of different parties; 5 of these involved the J. & J. application. Subsequently, about 30 more interferences, mainly growing out of the first group, were also declared. The J. & J. application was party to 12 interferences (omitting mention of one which was consolidated with 1 of the 12.)

In 1934 interferences were rather freely declared by the examiners. The average number per year during the 4 fiscal years 1932–35 was 2,273. At this time, over 6 percent of patent applications filed became involved in interferences. Shortly thereafter the number of interferences declared began to decrease, due to changes in procedure and also to special efforts and training to avoid declaring unnecessary interferences whenever possible. This decrease continued until a new lower level was reached. The number of interferences declared during the 4 fiscal years 1952–55 averaged only 553 per year, and the number of patent applications which became involved in interferences was about 1½ percent of patent applications filed. These numbers are one-fourth of what they were 20 years earlier.

Duration of interferences

The 12 interferences in which the J. & J. application was involved averaged 4 years and 26 days duration each, not counting the time involved in court reviews.

For purposes of comparison some figures compiled about 10 years ago with respect to interferences declared in 1939 and 1940 will be used. Some general data was compiled with respect to the 1,089 interferences declared during the year following October 8, 1939, when some changes in the law affecting interferences took effect. More detailed data was compiled with respect to the first 100 of these interferences.

The average pendency in the Office of the 1,089 consecutive interferences was 1 year 1 month 5 days. The J. & J. application interferences averaged 3.71 times this general average.

The first stage in an interference after it is declared is the filing of preliminary statements by the parties. These are received and acknowledged by the Office at which time the second stage of the interference starts. The average duration of this first stage, for the above-mentioned 100 interferences, was 83 days.

The average duration of the first stage in the 12 J. & J. interferences was 155 days.

After the preliminary statements are received and approved each party to an interference has an opportunity to bring various motions to dissolve or to reform the interference. Such motions are brought in about half the interferences. The average time from the beginning of the motion period to the resumption of proceedings after the motions were decided, in the 51 of the 100 interferences in which motions were brought, was 8 months and 3 days. Motions were brought in all 12 of the J. & J. interferences and the average time for this stage (excluding appeals) was 17 months and 6 days.

At the time when the motions in the first group of interferences were decided, an appeal to the Board of Appeals in the Patent Office from the decisions on motions in interferences was provided. Appeals were taken in 8 of the interferences and the duration of the appeal period for these 8 averaged 27 months and 26 days. Such appeals were abolished in the case of interferences declared after October 8, 1939.

After the motion stage is over the parties take their testimony and there is an oral hearing and a decision. Most inteferences are terminated before reaching this stage. Of the 100 interferences mentioned, only 19 passed through the testimony and hearing stage and the average duration of this period for these 19 was 12 months and 21 days. Only the last 3 of the J. & J. interferences went through the testimony and hearing stage and the duration for these 3 averaged 31 months and 21 days.

The above results are tabulated as follows:

	Average for J. & J. interferences	Average for 1939–40 interferences
Preliminary statement stage	5 months 5 days	2 months 23 days.
Motion stage	1 year 5 months 3 days	8 months 3 days.
Appeals from motions	2 years 3 months 26 days (8 cases)	Appeal abolished.
Testimony and final hearing stage	2 years 7 months 21 days (3 cases)	1 year 0 month 21 days.

The course of the interferences included numerous stipulations for extensions of time, numerous requests for reconsideration of decisions, and a number of petitions to the Commissioner. It should also be noted that a number of companion interferences going on at the same time tend to delay each other since effort is usually made to keep them going together and a delay in any one may correspondingly delay the others. The office time involved in the last interference, which was pending in the office 4 years, 3 months, and 19 days, can be divided into 21 months and 26 days used by the office and 29 months, 23 days, used by the parties. Of this latter time, 8 months, 6 days, was the time initially set for performing various acts and 21 months, 17 days, represents extensions of time requested and granted. The 10th interference was pending in the office 5 years, 6 months, and 22 days. This time can be divided into 2 years, 7 months, and 18 days used by the office, and 2 years, 11 months, and 4 days used by the parties which included 16 months and 27 days of extensions of time.

Reduction of delays

Request was also made for suggestions for legislative enactment whereby such delays might be reduced in the future.

It should first be noted that the prosecution of the application bridges a period during which both administrative and legislative changes were made and that the case is not an ordinary one by any standard. Greater care in the initial declaration of intereference with great reduction in the number of interferences instituted, and greater control and strictness in permitting extensions of time, obtain now than was the case 20 years ago. Also, in 1939, a number of changes in the statute were enacted, as a result of recommendations of the Temporary National Economic Committee and also some administrative changes were made which tended to reduce delays in interferences.

The principal legislative change which has been recommended in the past, and which has not been enacted, which would have an effect on the time is the so-called 20-year bill. This proposal provides that a patent will expire not more than 20 years after the date of the filing of the application, and hence if the application is pending a long time the term of the patent will be correspondingly curtailed. The last proposal of this nature which was before Congress was H. R. 2631 of the 79th Congress on which hearings were held in May and June

1945. However, in order to not penalize an applicant for delays due solely to the office the bill provided that delays during the pendency of the application not chargeable to the applicant (as determined by the Commissioner) were not to be included in determining the curtailment of the term of the patent. Such a limitation was also contained in the bill S. 2688 of the 76th Congress which passed the Senate on April 26, 1940. A provision such as that mentioned would require an accounting to be made of the time spent during the prosecution so that delays not chargeable to the applicant could be allowed for. This accounting has not been made in connection with the J. & J. application except as to certain parts of the prosecution. If the 20-year provision had been in effect at the time the patent was granted the term of the patent would have been curtailed a substantial amount and the term of the patent would have been considerably less than the ordinary 17-year term. Such a provision, aside from the curtailment of the term of patents pending an unusually long time, would also have the effect of eliminating numerous delays since applicants would be anxious to have their patents issue as soon as possible so as not to have the term curtailed.

STATEMENT OF P. J. FEDERICO, EXAMINER IN CHIEF, PATENT OFFICE, WASHINGTON, D. C.

SUPREME COURT DECISIONS

The chairman of the subcommittee has requested a comparison of the file record references with the references used by the court in connection with patents recently held invalid by the Supreme Court, similar to the comparison made in connection with decisions of the courts of appeal.

Following are notes on the patents involved in the 10 most recent decisions of the Supreme Court in which a patent was held invalid. The earliest of the decisions is dated May 29, 1944, and there have been none since April 23, 1951. In all of these cases the patents had been sustained in some other court.

1. Patent No. 1,537,593, May 12, 1925, G. Egloff, for "Process for cracking oil"; held invalid in Universal Globe Oil Refining Co. (322 U. S. 471, 61 U. S. P. Q. 382, May 29, 1944).

The Court of Appeals for the Seventh Circuit had held the patent not infringed, without ruling on validity (58 U. S. P. Q. 504, 1943), the district court had held the patent invalid; the patent had been held valid and infringed by the Court of Appeals for the Third Circuit in 1935 (26 U. S. P. Q. 105).

The main reference used by the Supreme Court was a patent to Dubbs (1,392,629) which had not been cited by the examiner. Four other United States patents are mentioned in the Supreme Court's decision in a subsidiary manner; none of these had been cited by the examiner. The patent file shows that the examiner cited 11 United States patents and 1 foreign patent.

2. Patent No. 1,877,504, September 13, 1932, Grebe and Sanford, for "Treatment of deep wells"; claims 1, 5, 7, 8, 9 held invalid in *Dow Chemical Co.* v. *Halliburton Oil Well Cementing Co.* (324 U. S. 321, 64 U. S. P. Q. 412, Mar. 5, 1945).

The Court of Appeals for the Sixth Circuit had held the patent invalid (60 U. S. P. Q. 90, 1943). The patent had been held valid and infringed by the Court of Appeals for the Tenth Circuit in 1936 (28 U. S. P. Q. 243).

The decision of the Supreme Court cited 11 United States patents and a prior use by another company. The main reference had not been cited by the examiner and of the 10 other patents, used only collaterally, only 1 had been cited by the examiner. Fifteen patents and two publications were cited during the prosecution of the patent.

3. Patent No. 2,087,190, July 13, 1937, A. E. Gessler, for "Printing ink"; claims 3 and 10–13 held invalid in *Sinclair and Carroll Co., Inc.* v. *Interchemical Corp.* (325 U. S. 327, 65 U. S. P. Q. 297, May 21, 1945).

The patent had been held valid and infringed by the Court of Appeals for the Second Circuit (62 U. S. P. Q. 445, 1944).

The decision of the Supreme Court mentions 4 United States patents, only 1 of which had been cited by the examiner, and 2 publications, which had not been cited by the examiner. The prosecution of the patent shows the citation of 13 United States patents, 3 foreign patents, and 3 publications.

4. Patent No. 1,687,510, October 16, 1928, M. Pipkin, for "Electric-Lamp bulb"; held invalid in *General Electric Co.* v. *Jewel Incandescent Lamp Co. et al.* (326 U. S. 242, 67 U. S. P. Q. 155, November 5, 1945).

The Supreme Court affirmed the decision of the Court of Appeals for the Third Circuit (64 U. S. P. Q. 74, 1944) which held the patent invalid. The patent had been held valid and infringed by the Court of Appeals for the Second Circuit in 1938 (36 U. S. P. Q. 214) and by the Court of Appeals for the Sixth Circuit in 1936 (29 U. S. P. Q. 59).

The decision of the Supreme Court cites two United States patents, which had been cited by the examiner, a domestic publication and several foreign publications. The patent file shows the citation of four United States patents and no publications.

5. Patent No. 2,156,519, May 2, 1939, C. P. Walker, for "Means for measuring the location of obstructions in wells"; claims 1, 13–15, 17 held invalid in *Halliburton Oil Well Cementing Co.* v. *Walker et al.* (329 U. S. 1, 71 U. S. P. Q. 175, Nov. 18, 1946).

The patent had been held valid and infringed by the Court of Appeals for the Ninth Circuit (64 U. S. P. Q. 278, 1944).

The Supreme Court held the claims involved to be invalid because of their form and not because of prior art. In the court of appeals the main reference urged by the defendant, and over which the court held the claims valid, was a patent which had been cited by the examiner.

6. Patent No. 2,200,532, May 14, 1940, V. S. Bond, for "Bacterial inoculant for leguminous plants"; claims 1, 3–8, 13, 14 held invalid in *Funk Bros. Seed Co.* v. *Kalo Inoculant Co.* (333 U. S. 127, 76 U. S. P. Q. 280, Feb. 16, 1948).

Two judges dissented from the decision of the majority of the Supreme Court. The claims had been held valid and infringed by the Court of Appeals for the Seventh Circuit (74 U. S. P. Q. 1, 1947).

The ground of invalidity was essentially that only an unpatentable discovery had been made.

7. Patent No. 2,236,387, March 25, 1941, J. H. Wallace and W. C. Hand, for "Perspiration inhibiting composition"; claims 1–6, 8–13, 15, 16 held invalid in *Mandel Bros. Inc.* v. *Wallace* (335 U. S. 79 U. S. P. Q. 220, Nov. 8, 1948).

The claims had been held valid and infringed by the Court of Appeals for the Seventh Circuit (76 U. S. P. Q. 347, 1947) and invalid by the Court of Appeals for the Second Circuit in 1943 (56 U. S. P. Q. 488).

The decision of the Supreme Court cites 4 prior United States patents, only 1 of which had been cited by the examiner. The file of the patent shows that three references had been cited by the examiner, 2 patents and 1 publication.

8. Patent No. 2,118,468, May 24, 1938, T. G. Jungersen, for "Method of casting articles of intricate design and a product thereof"; held invalid in *Jungersen* v. *Ostby and Barton Co.* (335 U. S. 560, 80 U. S. P. Q. 32, Jan. 3, 1949).

Three judges dissented from the decision of the Supreme Court. Decisions of two court of appeals were involved. In the second circuit the patent was held invalid, affirming the district court, but one judge (Hand) dissented (76 U. S. P. Q. 488, 1948). In the third circuit, the district court held claims 1–4 valid and infringed and claims 5, 6 invalid (69 U. S. P. Q. 362, 1946); the court of appeals held the patent not infringed without passing on validity (75 U. S. P. Q. 151, 1947). There also had been 2 prior district-court decisions holding the patent valid and infringed, 1 in Pennsylvania in 1940 (44 U. S. P. Q. 257) and 1 in Maryland in 1939 (43 U. S. P. Q. 448). Altogether there were 19 different judges who passed on the patent; 9 found the patent invalid, 7 thought the patent valid (1 in part), and 3 ruled on a question of infringement only.

As to the references used, the decision of the Supreme Court mentions 3 United States patents, a British patent of 1876, and 5 publications (these publications included the Encyclopedia Britannica and a treatise on goldsmithing and sculpture by Benvenuto Cellini). The British patent and 1 of the 3 United States patents had been cited by the examiner; the publications and 2 of the 3 United States patents had not been cited by the examiner. The file of the patent shows the citation of 13 United States and 1 British patent.

9. Patent No. 2,242,408, May 20, 1941, E. D. Turnham, for "Merchandise handler"; claims 4–6 held invalid in *The Great Atlantic and Pacific Tea Co.* v. *Supermarket Equipment Corp.* (340 U. S. 147, 87 U. S. P. Q. 303, Dec. 4, 1950).

The claims had been held valid and infringed by the Court of Appeals for the Sixth Circuit (84 U. S. P. Q. 209, 1950).

The decision of the Supreme Court does not mention any specific references. The decision of the court of appeals, in sustaining the patent, states that 17 patents not cited by the examiner were introduced in evidence and analyzes 7 of them. The file of the patent shows the citation of 5 patents.