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EXPLORING ANEW THE ATTORNEY-CLIENT PRIVILEGE AND WORK-PRODUCT DOCTRINE IN PATENT LITIGATION: The Pendulum Swings Again, This Time In Favor Of Protection

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Since the *Sperry* decision, however, an increasing number of courts appreciate the true legal function of patent prosecution practice in delicately crafting a document upon which a legal right is created. Increasingly, courts recognize that patent practitioners function as lawyers with respect to every aspect of their practice and accept the applicability of discovery privileges in the context of disputes concerning patent prosecution materials. The road to this recognition, though, has not been straight or easy. Instead, the road shows conflict between two landmark cases[4] and confusion among the lower courts and the Federal Circuit.

The purpose of this article is to clarify the development of discovery privileges in the context of patent prosecution materials and to submit that such protection is rational and justified.[5] Beginning with an analysis of the available grounds on which to protect patent materials against discovery (i.e., the attorney-client privilege and the work-product doctrine), this article then historically develops the conflicts in the case law, shows the present trend in the case law towards a scheme of protecting these materials from discovery, and argues that this trend is appropriate and should continue.

The article is divided into three sections. The first section addresses the attorney-client privilege in the context of discovering patent prosecution materials. The second section then addresses the work-product doctrine in the same context. The final section analyzes the present state of the law and argues for even greater discovery protection of materials prepared by all patent practitioners in the course of their work.

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practitioners, even if members of the bar, may not prosecute applications before the PTO without admission. *See Vernitron*, 186 U.S.P.Q. (BNA) at 325. And, while patent agents may prosecute applications before the PTO, they may not offer opinions on legal issues, e.g., infringement, nor may they represent a client in a court proceeding. *Id.*

[4] *Compare* Knogo Corp. v. United States, 213 U.S.P.Q. (BNA) 936, 940 (Ct. Cl. 1980) (accepting discovery protection) *with* Jack Winter, Inc. v. Koratron Co., 50 F.R.D. 225, 228, 166 U.S.P.Q. (BNA) 295, 297-98 (N.D. Cal. 1970) (rejecting discovery protection).

[5] This article concerns the activities of U.S. patent attorneys or agents in prosecuting U.S. patent applications. Thus, the applicability of the attorney-client privilege or work-product doctrine to the activities of foreign patent agents is beyond its scope.

determine whether patent materials are discoverable in actions before federal district courts.[10]

The analytical framework for application of the attorney-client privilege has remained fixed over time, although the interpretation of the elements of the basic rule have changed. In 1950, Judge Wyzanski set out the basic analytical formulation of the attorney-client privilege in *United States v. United Shoe Machinery Corp.*[11]

> The privilege applies only if (1) the asserted holder of the privilege is or sought to become a client; (2) the person to whom the communication was made (a) is a member of the bar of a court, or his subordinate and (b) in connection with this communication is acting as a lawyer; (3) the communication relates to a fact of which the attorney was informed (a) by his client (b) without the presence of strangers (c) for the purpose of securing primarily either (i) an opinion on law or (ii) legal services or (iii) assistance in some legal proceeding, and not (d) for the purpose of committing a crime or tort; and

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[10] Although Rule 501 contains provisions that make it consistent with Erie Railroad Co. v. Tompkins, 304 U.S. 64 (1938), for determining whether to apply state or federal common law, these provisions are not germane to the present article. Because patent litigation is premised on federal question jurisdiction, issues of privilege are determined under federal principles of common law. *See* 28 U.S.C. § 1338 (1988). Although there are instances where discovery of patent materials arises in cases where federal principles of privilege do not apply, these instances are rare and of limited relevance to patent litigation. *See* Prieston v. Nea Serv., Inc., 24 Misc. 2d 576, 578, 203 N.Y.S.2d 243, 245 (N.Y. Sup. Ct. 1960) (requiring production of patent application materials in litigation involving a contract for the sale of goods for which such application was filed); De Long Corp. v. Lucas, 138 F. Supp. 805 (S.D.N.Y. 1956) (refusing to require production of patent application materials in litigation involving a former employee's alleged breach of a two-year non-competition agreement).

[11] 89 F. Supp. 357, 85 U.S.P.Q. (BNA) 5 (D. Mass. 1950).

attorney-client privilege often is more complicated than in other areas of the law.

B. *Early Case Law: The Privilege Does Not Attach To The Practice Of Patent Prosecution, For This Is The Work Of A Scrivener*

Most courts did not protect against the discovery of patent prosecution materials until after the Supreme Court's decision in *Sperry*.[16] Prior to this 1963 decision, when asked to apply the attorney-client privilege to patent prosecution materials, most courts responded: We prefer not to. Courts reasoned that patent prosecution work is not legal work, and thus, patent prosecution materials are presumptively outside the scope of the attorney-client privilege.

In addition to *United Shoe*,[17] *Zenith Radio Corp. v. Radio Corp. of America*[18] was a leading early case espousing the view that most aspects

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client before the Patent Office. Special admission is required.").

[16] Sperry v. Florida ex rel. Florida Bar, 373 U.S. 379, 137 U.S.P.Q. (BNA) 578 (1963). *Sperry* ultimately decided that, although a registered patent agent not admitted to a state bar does indeed practice law when prosecuting patent applications before the PTO, such practice is not an unauthorized practice of law in view of federal statutes and regulations authorizing practice before the PTO by nonlawyers. *Id.* at 383 n.2, 137 U.S.P.Q. (BNA) at 580 n.2. Other cases also have recognized that it matters not to invocation of the attorney-client privilege whether the activities sought to be protected involve a patent attorney or patent agent. *See, e.g., Vernitron*, 186 U.S.P.Q. (BNA) at 325 ("The substance of the function, rather than the label given to the individual registered with the Patent Office, controls the determination here. In the special field of patents, there can be no question that all of the considerations which support the basis for the privilege between a client and a general practitioner handling an automobile accident claim apply with equal force to an inventor or other applicant for a patent and the representative engaged to handle the matter for him, whether he be a 'patent attorney' or a 'patent agent', so long as he is registered by the Patent Office.").

[17] *See supra* notes 11-14 and accompanying text.

[18] 121 F. Supp. 792, 101 U.S.P.Q. (BNA) 316 (D. Del. 1954).

C. Sperry: *The Pendulum Swings*

The Supreme Court's decision in *Sperry v. Florida ex rel. Florida Bar*[22] made the rule suggested in *United Shoe* and *Zenith* untenable. In holding that a person registered as a patent agent but not a member of a state bar does not engage in the unauthorized practice of law in prosecuting patents before the PTO, the Court clearly stated that patent prosecution involves the practice of law.

> We do not question the determination that under Florida law the preparation and prosecution of patent applications for others constitutes the practice of law. Such conduct inevitably requires the practitioner to consider and advise his clients as to the patentability of their inventions under the statutory criteria as well as to consider the advisability of relying upon alternative forms of protection which may be available under state law. It also involves his participation in the drafting of the specification and claims of the patent application, which this Court long ago noted "constitute[s] one of the most difficult legal instruments to draw with accuracy." And upon rejection of the application, the practitioner may also assist in the preparation of amendments, which frequently requires written argument to establish the patentability of the claimed invention under the applicable rules of law and in light of the prior art.[23]

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handling interference proceedings in the Patent Office concerning patent applications.

Id. at 794, 101 U.S.P.Q. (BNA) at 318.

[22] 373 U.S. 379, 137 U.S.P.Q. (BNA) 578 (1963).

[23] *Id.* at 383, 137 U.S.P.Q. (BNA) at 579-80 (citations omitted).

and rejected prior opinions refusing to apply the attorney-client privilege in the context of patent prosecution, including the *United Shoe* and *Zenith* cases. The *Chore-Time* court concluded that it was not possible to draw a clear line between the provision of legal advice and the analysis of technical information[28] and stated that:

> Where a lawyer possesses multifarious talents, his clients should not be deprived of the attorney-client privilege, where applicable, simply because their correspondence is also concerned with highly technical matters. Patent lawyers should not be banished to the status of quasi-lawyers by reason of the fact that besides being skilled in the law, they are also competent in scientific and technical areas.[29]

In *Sperti*, the court seized upon the language of *Sperry* and concluded that *Zenith* and similar cases were largely inconsistent with the Supreme Court's relevant findings in that case.[30] The *Sperti* court expressly adopted the conclusion of *Chore-Time* that communications between a client and his outside patent attorney are subject to the attorney-client privilege, finding this conclusion "eminently reasonable" in light of *Sperry*.[31] The court held privileged from discovery all but a few prosecution-related documents at issue.[32]

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[28] *Id.* at 1022, 150 U.S.P.Q. (BNA) at 428.

[29] *Id.* at 1023, 150 U.S.P.Q. (BNA) at 428.

[30] *Sperti*, 262 F. Supp. at 151, 152 U.S.P.Q. (BNA) at 792.

[31] *Id.* at 151, 152 U.S.P.Q. (BNA) at 792.

[32] The *Sperti* court found that, inter alia, the following materials were not privileged:

> [1] Communications, including opinions, *from* plaintiffs' outside attorneys *to* plaintiffs which are not based upon information supplied by plaintiffs to their attorneys so far as is discernible directly or by inference. . . .

withholding."[37] In the court's view, the patent attorney exercises no discretion in selecting what information must be relayed to the PTO. Thus, because the patent attorney is only a conduit for passing technical information to the PTO, the privilege does not attach to factual materials submitted by a client to his patent attorney.[38]

In a later proceeding, the *Jack Winter* court identified a number of classes of documents prepared in the prosecution context that the court considered not protected by the attorney-client privilege. The classes included: client authorizations to file applications; papers submitted to the PTO; compendiums of fees and requirements; patent resumes; technical information not calling for legal advice and meant primarily for assistance in completing patent applications; and business advice, such as that pertaining to product marketing.[39] Subsequent courts have expressly followed the *Jack Winter* cases and have held similar documents unprotected under the attorney-client privilege.[40]

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[37] *Jack Winter I*, 50 F.R.D. at 228, 166 U.S.P.Q. (BNA) at 297.

[38] *Id.* at 228-29, 166 U.S.P.Q. (BNA) at 298.

[39] Jack Winter, Inc. v. Koratron Co., 54 F.R.D. 44, 47, 172 U.S.P.Q. (BNA) 201, 202 (N.D. Cal. 1971) [hereinafter *Jack Winter II*].

[40] *See, e.g.*, Golden Valley Microwave Foods, Inc. v. Weaver Popcorn Co., 132 F.R.D. 204, 18 U.S.P.Q.2d (BNA) 1867 (N.D. Ind. 1990) (ordering production of draft applications); Quantum Corp. v. Western Digital Corp., 15 U.S.P.Q.2d (BNA) 1062 (N.D. Cal. 1990) (ordering production of draft application and transmittal letters); Howes v. Medical Components, Inc., 7 U.S.P.Q.2d (BNA) 1511 (E.D. Pa. 1988) (ordering production of draft applications and cover letters); Bulk Lift Int'l, Inc. v. Flexcon & Sys., Inc., 122 F.R.D. 482, 493, *order aff'd*, 122 F.R.D. 493, 9 U.S.P.Q.2d (BNA) 1355 (W.D. La. 1988) (ordering production of items listed in *Jack Winter II* and *Sneider, infra*); Detection Sys., Inc. v. Pittway Corp., 96 F.R.D. 152, 157, 220 U.S.P.Q. (BNA) 716, 719 (W.D.N.Y. 1982) (ordering production of items listed in *Jack Winter II* and *Sneider, infra*); Sneider v. Kimberly-Clark Corp., 91 F.R.D. 1, 10 (N.D. Ill. 1980) (ordering production of patent disclosures, draft applications, purely technical information, and prior art studies); Ashland Oil Inc. v. Delta Oil Prods. Corp., 209 U.S.P.Q. (BNA) 151, 153 (E.D. Wis. 1979) (ordering production of items listed in *Jack Winter II*); Hercules Inc. v. Exxon Corp., 434 F. Supp. 136, 144, 196 U.S.P.Q. (BNA) 401, 408-09 (D. Del. 1977) (ordering production of purely technical information); Burlington Indus. v. Exxon Corp., 65 F.R.D. 26, 33, 184 U.S.P.Q. (BNA) 651, 657 (D. Md. 1974) (ordering production of purely technical information). Interestingly,

The court found that in the application process, an inventor discloses to a patent attorney the substance of his invention, from which the attorney extracts one or more patent applications. It is a "cooperative effort," much different than that suggested by *Jack Winter*.[45] Moreover, the patent attorney's duty of disclosure is not absolute. Citing 37 C.F.R. § 1.56, the court noted that a patent attorney must only disclose information that is material to an application.[46] Thus, the *Jack Winter* rationale that the patent attorney is a mere conduit for information to the PTO is flawed,[47] and application of the attorney-client privilege to prosecution materials is appropriate. Like *Jack Winter*, *Knogo* has a strong following in case law.[48]

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[45] *Id.* at 940-41.

[46] 37 C.F.R. § 1.56(a) (1993) provides in relevant part that "[t]here is no duty to submit information which is not material to the patentability of any existing claim." Also, in noting that all attorneys are under a duty of candor under Rule 11 of the Federal Rules of Civil Procedure, as well as rules of professional conduct, other courts have reached the conclusion that the patent attorney's duty of candor under 37 C.F.R. § 1.56 does not negate the attorney-client privilege. While the patent attorney's duty of candor is significant, the attorney-client privilege would be of no meaning if the duty vitiated the privilege. *See* Ball Corp. v. American Nat'l Can Co., 27 U.S.P.Q.2d (BNA) 1958, 1959 (S.D. Ind. 1993); Advanced Cardiovascular Sys., Inc. v. C.R. Bard, Inc., 144 F.R.D. 372, 377-78, 25 U.S.P.Q.2d (BNA) 1354, 1358-59 (N.D. Cal. 1992).

The proposition that the patent attorney's duty of candor does not vitiate the attorney-client privilege is sound. Under the federal regulations, "material" information must be disclosed to the PTO; under the federal rules of evidence and procedure, "privileged" information is not discoverable and is inadmissible at trial. Because "material" and "privileged" information differ in both form and substance, it is error to equate them, as suggested from the approach in *Jack Winter*. *See* 144 F.R.D. at 378, 25 U.S.P.Q. (BNA) at 1359 ("There simply is no equation between disclosing material information and disclosing conversations.").

[47] *See supra* notes 33-38 and accompanying text.

[48] *See* Conner Peripherals Inc. v. Western Digital Corp., 31 U.S.P.Q.2d (BNA) 1042, 1046 (N.D. Cal. 1993) (protecting attorney-client correspondence regarding patent prosecution strategies, and protecting copies of draft patent application and notes on same); Rohm & Haas Co. v. Brotech Corp., 815 F. Supp. 793, 796, 26 U.S.P.Q.2d (BNA) 1800, 1802 (D. Del. 1993), *aff'd*, 19 F.3d 41 (Fed. Cir. 1994) (protecting draft applications and notes on same); *Ball Corp.*, 27 U.S.P.Q.2d (BNA) 1958,

In the authors' view, the attempted reconciliation in *Laitram* is contradictory and weak. The *Laitram* court admitted that "the *Knogo* approach is the more accurate one" and even examined the documents at issue with "the *Knogo* test in mind."[52] But because the court adopted a hybrid construction of the rule, its results were inconsistent. Although the court found a draft application protected, it ordered production of a prior art memorandum. This result is incompatible with both the *Jack Winter* model, which would find both items discoverable,[53] and the *Knogo* model, which would find both items protected.[54]

The midway result of *Laitram* is undesirable, for it offers no guidance to a patent practitioner. The *Laitram* court offered little explanation for its decision to order production of one of the two documents, other than to comment that the prior art study sought "[n]o legal advice."[55] However, if either of the two documents is protected, equally compelling arguments justify protection for the other one. On the one hand, prior art information uniquely frames the field of an invention and allows a patent attorney to make a legal judgement as to the appropriate scope of patent claims for an invention. Although the prior art information itself is not privileged, an inventor's communication of it to his patent attorney should be protected. On the other hand, a draft application is a legal document subject to revision and embodying an ongoing dialogue between the inventor and his attorney on how to claim an invention favorably.

The strained reasoning of *Laitram* supports the view that the *Jack Winter* and *Knogo* models are not reconcilable, primarily because they rely on competing conceptions of the patent practitioner's role in the prosecution of patents. The *Jack Winter* model views the patent practitioner as a scrivener or mere conduit for conveying information from

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[52] *Id.*

[53] *See* cases cited *supra* note 40.

[54] *See* cases cited *supra* note 48.

[55] *Laitram*, 827 F. Supp. at 1246, 27 U.S.P.Q.2d (BNA) at 1544-45. This conclusory view is inaccurate and misplaced. Indeed, the patent attorney provides legal advice merely by exercising his judgment, based on an understanding of patent law, as to what constitutes statutory prior art to any particular invention.

III. WORK-PRODUCT PROTECTION

A. *Definition*

In addition to the attorney-client privilege, the work-product doctrine offers immunity from discovery of materials prepared by an attorney or an attorney's agent in anticipation of litigation. It is codified in Rule 26 of the Federal Rules of Civil Procedure, which provides that materials otherwise discoverable but "prepared in anticipation of litigation" are not discoverable.[60]

Like the attorney-client privilege, the work-product doctrine has common law roots. In *Hickman v. Taylor*,[61] the Supreme Court was presented with a case in which a tugboat sank while engaged in helping to tow a car float. In the course of the sinking, a number of sailors drowned and the family of one of the deceased brought an action based on his drowning.[62] At issue before the Court was whether statements of witnesses to the accident, as taken by opposing counsel, were discoverable or protected as attorney work product.[63] The Court found the statements protected and held that a party must show cause before a court can order production of the files and mental impressions of an attorney.[64] This

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[60] FED. R. CIV. P. 26(b)(3). Like the attorney-client privilege, work-product protection also may be defeated by waiver. For example, some courts find that reliance on a noninfringement opinion of counsel where one is accused of willful infringement waives work-product protection with respect to materials relating to the opinion. *See* Mushroom Assoc. v. Monterey Mushrooms, Inc., 24 U.S.P.Q.2d (BNA) 1767, 1770-71 (N.D. Cal. 1992). *But see* Thorn EMI N. Am., Inc. v. Micron Technology, Inc., 837 F. Supp. 616, 621-22, 29 U.S.P.Q.2d (BNA) 1872, 1875-76 (D. Del. 1993) (preserving work-product protection although attorney-client privilege was waived).

[61] 329 U.S. 495 (1947).

[62] *Id.* at 498.

[63] *Id.* at 498-500.

[64] *Id.* at 512.

that ex parte prosecution materials are not prepared "in anticipation of litigation" within the meaning of Rule 26(b)(3) of the Federal Rules of Civil Procedure.

Recent case law, however, suggests an exception to the general rule for materials prepared in the ex parte prosecution context where litigation is imminent. The Southern District of New York's 1992 decision in *In re Minebea Co.*[70] provides an example of this exception. In *Minebea*, the court was presented with a suit alleging the infringement of two patents.[71] The first patent related to a unitary rotor magnet for a direct current (DC) brushless motor, and the second patent related to a method for making the magnet claimed in the first patent. On February 21, 1984, during the course of prosecuting the patents, counsel for the patent holder discovered that as a result of an unrelated infringement suit, a third party agreed to change the construction of its DC brushless motor so as to infringe the claims pending in the first patent. Several months after the first patent issued, the patent holder commenced an infringement action against the third party claiming infringement of the first patent.[72]

When the patent holder later sued the defendant in the instant action for infringement of both patents, the defendant sought discovery related to the prosecution of the two patents. The court held that discovery of information prepared after February 21, 1984 and related to the prosecution of the first patent was protected as "opinion" work product. The *Minebea* court found that materials prepared in the ex parte application process after this date were prepared in anticipation of litigation against the third party. The court also held that information related to the second patent was not protected from discovery, because there was no evidence establishing a date after which plaintiff anticipated litigation over the second patent. Thus, where one applies for a patent and learns of an infringing use, *Minebea* suggests that ex parte prosecution materials are protected after one has notice of the infringing use.[73]

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[70] 143 F.R.D. 494 (S.D.N.Y. 1992).

[71] *Id.* at 496.

[72] *Id.* at 496-97.

[73] *See also* Burroughs Wellcome Co. v. Barr Lab., Inc., 143 F.R.D. 611, 618, 25 U.S.P.Q.2d (BNA) 1274, 1278 (E.D.N.C. 1992) (citing *Minebea*, 143 F.R.D. at 498) ("[P]atent prosecution documents and related materials

squarely the applicability of the work-product doctrine in the context of reexamination proceedings,[80] the court found protected from discovery a reply prepared by outside patent counsel to a reexamination proceeding initiated by a competitor of the patentee. The court reasoned that the interests advanced by the work-product doctrine outweighed the concern that full disclosure may not be made to the PTO. The court found the threat of nondisclosure to the PTO was more likely in an ex parte patent application than in a reexamination proceeding initiated by an adversarial competitor in the marketplace.[81]

IV. ANALYSIS

A. *Attorney-Client Privilege*

As evidenced by the recent trend among courts in adopting the *Knogo* model of the attorney-client privilege,[82] this model is the better reasoned model for applying the privilege in the patent litigation context. In *Advanced Cardiovascular Systems, Inc. v. C.R. Bard, Inc.*,[83] for example, the Northern District of California adopted *Knogo* and overruled its previous adoption of *Jack Winter*.[84] The change arose from the court's "maturing perception of the realities of the patent application process," which process is "fundamentally dialectical and, in very important respects, legal."[85] It is the position of this article that the trend in the law away from *Jack Winter* and the move toward *Knogo* are sound developments of law.

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[80] *Id.* at 544, 4 U.S.P.Q.2d (BNA) at 1684 (noting that "the court addresses this question [concerning the work-product doctrine] because there is no published opinion on point and counsel may need guidance in this area with respect to other documents").

[81] *Id.* at 544-47, 4 U.S.P.Q.2d (BNA) at 1684-85.

[82] *See* cases cited *supra* note 48.

[83] 144 F.R.D. 372, 25 U.S.P.Q.2d (BNA) 1354 (N.D. Cal. 1992).

[84] *Id.* at 373-74, 25 U.S.P.Q.2d at 1355-56 (expressly rejecting portion of decision in *Hewlett-Packard* which adopted the *Jack Winter* model of attorney-client privilege).

[85] *Id.* at 375, 25 U.S.P.Q.2d (BNA) at 1357.

generally communicates information to her patent counsel, who may filter this information before sending it to the PTO. The PTO benefits by not being overly burdened with information that is not material to the masses of applications before the Office. Inventors benefit by not disclosing information that may be confidential, subject to trade secret protection, or otherwise damaging to their particular positions.

Alternatively, several reasons favor the *Knogo* model of presumptively applying the attorney-client privilege to communications between an inventor and her patent attorney, even where the communication involves purely technical information. As found by the Supreme Court, patent prosecution is legal work.[91] Patent applications are among the most difficult legal documents to draft. Given the complexity of technology and sheer volume of prior art, drafting patent applications involves careful legal and technical analysis of prior art and the invention. A rule that considers the work of a patent attorney as not involving law conflicts with Supreme Court precedent and misunderstands the patent process.

> (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
>
> (2) It refutes, or is inconsistent with, a position the applicant takes in:
>
> (i) Opposing an argument of unpatentability relied on by the Office, or
>
> (ii) Asserting an argument of patentability.
>
> A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

Id. § 1.56(b). To many inventors, this standard is often viewed as difficult to parse.

[91] *See* discussion *supra* notes 16, 23 and accompanying text.

> need to equate "privilege" with "fraud," or "non-privileged" with "candor."[93]

The attorney-client privilege represents a balance between the benefit of full and open discussion between clients and their attorneys and the cost of preventing disclosure of such communications to third parties.[94] By ensuring that communications between inventors and attorneys are full and open, the public is ensured that patents are drafted clearly, accurately, and with attention to the particular novelty embodied in an invention.

B. *Work-Product Doctrine*

As a corollary to the paradigm change in applying the attorney-client privilege to patent materials, courts should reconsider the propriety of protecting ex parte prosecution materials as attorney work product. Where materials fall outside the scope of the attorney-client privilege, such as draft patent applications kept in an attorney's file but not communicated to a client, the work-product doctrine should protect against the discovery of these documents in patent litigation.

One reason for extending work-product protection to ex parte prosecution materials is that such materials provide detail on the strengths and weaknesses of a patent. In drafting the patent application, the scope of the legal right embodied in the invention is captured in writing. Patent practitioners should be given discretion in using available means to craft claims. They should not worry about the threat of future production to opposing counsel, nor feel compelled to destroy ongoing drafts. The free production of ex parte prosecution materials removes the privacy needed by the patent practitioner in fashioning patent applications, as well as demoralizing the profession.[95]

Further, the very nature of the right conferred by a U.S. patent supports the view that ex parte prosecution materials are always prepared

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[93] Ball Corp. v. American Nat'l Can Co., 27 U.S.P.Q.2d (BNA) 1958, 1959 (S.D. Ind. 1993).

[94] *See* United States v. Zolin, 491 U.S. 554, 562 (1989).

[95] *See* Hickman v. Taylor, 329 U.S. 495, 511 (1947).

writs of mandamus concerning discovery orders issued by district courts.[101]

The Federal Circuit decision most squarely addressing the applicability of the attorney-client privilege to patent materials is *American Standard Inc. v. Pfizer Inc.*[102] However, because the result in the case seems inconsistent with the court's adopted methodology, the true position of the Federal Circuit is unclear. While the particular decision reached by the court in *American Standard* follows the *Jack Winter* model, the analytical framework adopted by the court in rendering the decision subscribes to the *Knogo* model.

On the one hand, the court found, *inter alia*, a patent validity opinion letter unprotected by the attorney-client privilege where the district court determined that the opinion was based on "*nonconfidential information* gleaned from public records."[103] As suggested by Judge Newman in a lengthy dissent, this position "negates decades of hard won precedent, and is a giant step backward into uncertainty, confusion, and prejudice" because it suggests that the communication of technical information between a client and his attorney are presumptively unprotected by the privilege.[104]

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[101] *See, e.g., In re* Ethicon, Inc., 991 F.2d 810, 1993 WL 118932 (Fed Cir. 1993) (unpublished opinion) (denying writ to order reconsideration of order directing the production of document with respect to which the district court found that the attorney-client privilege was waived); *In re* Viskase Corp., 954 F.2d 732, 1991 WL 287517 (Fed. Cir. 1991) (unpublished opinion) (denying writ to order reconsideration of order directing the production of documents with respect to which the district court found that the crime-fraud exception negated the attorney-client privilege); *In re* Cooper Companies, Inc., 878 F.2d 1444, 1989 WL 49723 (Fed. Cir. 1989) (unpublished opinion) (denying writ to order reconsideration of order directing the production of documents with respect to which the district court found that the attorney-client privilege did not apply).

[102] 828 F.2d 734, 3 U.S.P.Q.2d (BNA) 1817 (Fed. Cir. 1987).

[103] *Id.* at 746, 3 U.S.P.Q.2d (BNA) at 1825.

[104] *Id.* at 748, 3 U.S.P.Q.2d (BNA) at 1827.

V. CONCLUSION

As decided by the Supreme Court more than thirty years ago, patent attorneys and patent agents practice law. To further the public policy that justifies the attorney-client privilege and work-product doctrine, it is necessary for courts to accept the above conclusion and apply these privileges in the context of discovering patent materials. Through this recognition and the endorsement of decisions such as *Knogo*, patent practitioners, litigants, and the public will benefit. Indeed, it is incumbent on the Federal Circuit to set the lead and establish a uniform rule of applicability in this important area of patent litigation by affirmatively adopting the rationale of *Knogo* and similar cases.

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DESIGN PATENT INFRINGEMENT PUT TO SEA WITHOUT GUIDING CHARTS

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I. INTRODUCTION

In *Gorham Manufacturing Co. v. White*,[1] the United States Supreme Court created an objective "ordinary observer" test for design patent infringement analogous to the test for utility patent infringement under the doctrine of equivalents. *Gorham* requires the trier of fact to find objective evidence that differences in the patented and accused designs have no effect on the eye of the ordinary observer, i.e. that the designs have "identity of design" and are "substantially the same."[2]

In *Braun Inc. v. Dynamics Corp. of America*,[3] the Federal Circuit affirmed a jury finding of design patent infringement based on a "similarity in ornamental appearance" and the jurors' visual comparison of the patented and accused designs.[4] By employing a "similarity" standard and treating the individual jurors as "ordinary observers," the Federal Circuit undermined the acknowledged test for design patent infringement it purported to implement. *Braun* affirmed the jury's finding of infringement despite a "readily noticeable difference" and "other dissimilarities" in the patented and accused designs and the absence of substantial evidence that those differences would have no effect on the eye of the ordinary observer.

Braun is not only contrary to *Gorham*, but seems inconsistent with the rationale underlying Federal Circuit jurisprudence in the utility patent area which requires particularized evidence to support a verdict of infringement under the doctrine of equivalents so that a jury will not be "put to sea without guiding charts."[5] By substituting a similarity test for

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[1] 81 U.S. (14 Wall.) 511 (1872).

[2] *Id.* at 528.

[3] 975 F.2d 815, 820-21, 24 U.S.P.Q.2d (BNA) 1121, 1125-26 (Fed. Cir. 1992).

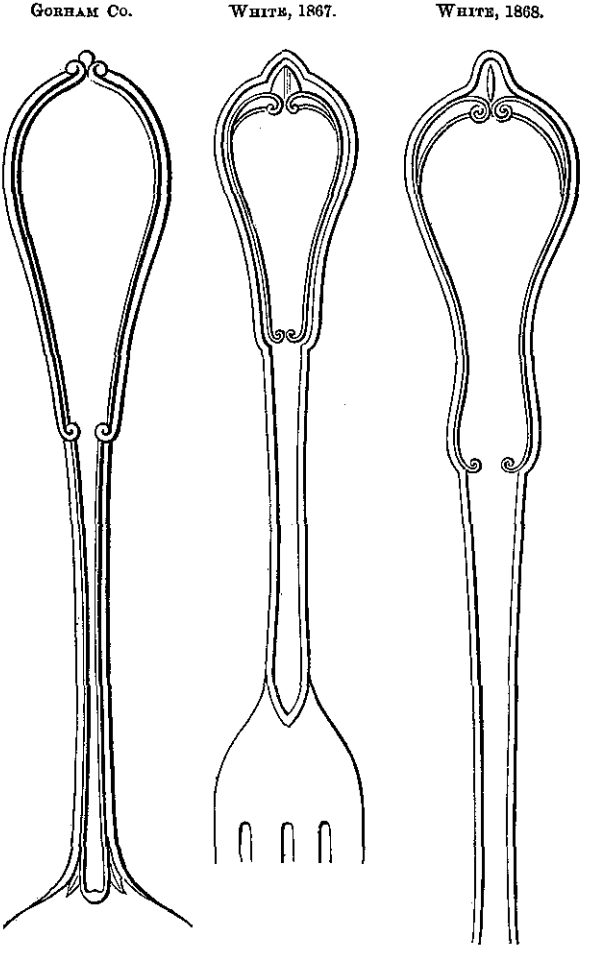
[4] The Federal Circuit also reversed the judgment with respect to willful infringement and trebling of an award of Dynamics Corporation of America's profits under 35 U.S.C. § 289 (1988), and vacated and remanded the judgment with respect to trade dress infringement and unfair competition. *Id.* at 824, 24 U.S.P.Q.2d (BNA) at 1128-29.

[5] *See* Lear Siegler, Inc. v. Sealy Mattress Co., 873 F.2d 1422, 1426, 10 U.S.P.Q.2d (BNA) 1767, 1770 (Fed. Cir. 1989).

II. THE LAW OF DESIGN PATENT INFRINGEMENT AS DEVELOPED BY THE SUPREME COURT IN *GORHAM MANUFACTURING CO. V. WHITE*

A. *The Issues In* Gorham

Gorham Manufacturing Company owned a patent on an ornamental design for the handles of silverware and alleged that White's 1867 and 1868 designs for tablespoons and forks infringed.[6]



[6] Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 521 (1872).

means of causing that general appearance."[13] "[I]n a design, the parts and relations of the parts are the means which produce the result."[14]

White compared the patented and accused designs and noted that the patented design had "two general divisions; one is the outline or contour of the edge of the handle, and the other is the ornaments on the sides of the handle."[15] White then detailed twelve specific peculiarities of the patented design not contained in White's designs.[16]

B. *"Identity Of Design"—Design Patent Infringement As Defined In* Gorham

The Court began by framing the factual issue of "what amounts to [design patent] infringement" as whether the designs are "substantially the same" so as to "constitute[] identity of design."[17]

> The sole question, therefore, is one of fact. Has there been an infringement? Are the designs used by the defendant substantially the same as that owned by the complainants? To answer these questions correctly, it is indispensable to understand what constitutes identity of design, and what amounts to infringement?[18]

To answer that question, the Court recognized that it must articulate a standard for determining design patent infringement.

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[13] *Id.*

[14] *Id.*

[15] *Id.*

[16] *Id.*

[17] Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 531 (1872).

[18] *Id.* at 524.

are so insubstantial as to have no effect on the eye of the ordinary observer.[22]

The "ordinary observer" of the *Gorham* test is a hypothetical person, a legal construct similar to the "reasonable man" or the "person of ordinary skill in the art" through whose eyes negligence in torts and obviousness of patents, respectively, are determined.[23] The trier of fact, be it judge or jury, must use the ordinary observer legal construct in judging the evidence. Thus, the role of the trier of fact is to assess whether the evidence is sufficient to establish design patent infringement under the ordinary observer standard, not to play the role of "ordinary observer."

D. Gorham's *Test Subsumes The Doctrine Of Equivalents*

In comparing White's designs to Gorham's patented design, the Court resorted to a doctrine of equivalents analog as applied to design patents to find infringement. The Court found "no substantial difference" between Gorham's patented design and White's 1867 design. "Comparing the figure or outline of the plaintiff's design with that of the White design of 1867, it is apparent there is no substantial difference."[24] "No substantial difference," in the design patent infringement parlance of *Gorham*, seems to be an analog to the utility patent doctrine of equivalents.

As with any determination of patent infringement, determination of design patent infringement must begin with the claim, i.e. the design patent drawings.[25] The design, as claimed in the design patent drawings, must be considered as a whole.[26] Everything shown in the drawings is an

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[22] Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 529 (1872).

[23] *See id.* at 528.

[24] *Id.* at 529.

[25] Unette Corp. v. Unit Pack Co., 785 F.2d 1026, 1028, 228 U.S.P.Q. (BNA) 933, 934 (Fed. Cir. 1986); *see* Lund Indus. v. Go Indus., 938 F.2d 1273, 1275, 19 U.S.P.Q.2d (BNA) 1383, 1385 (Fed. Cir. 1991).

[26] *In re* Salmon, 705 F.2d 1579, 1582, 217 U.S.P.Q. (BNA) 981, 984 (Fed. Cir. 1983) ("A design is a unitary thing and all its portions are material."); *In re* Blum, 374 F.2d 904, 907, 153 U.S.P.Q. (BNA) 177, 180 (C.C.P.A. 1967) ("[T]here are *no* portions *of a design* that are 'immaterial'

E. Gorham *Requires Extrinsic Evidence To Determine The Effect On The Eye Of The Ordinary Observer*

Because the ordinary observer is a legal construct, the Court made clear that evidence is required for the trier of fact to judge whether the designs are the same in the eye of that hypothetical person: "How much effect this variance has must be determined by the evidence."[30] Answering the equivalency questions in the affirmative, the Court made specific reference to *the evidence*: "In regard to this we have little doubt, in view of the evidence."[31] The "evidence" to which the Court referred was extrinsic evidence, i.e. evidence independent of the patented and accused designs:

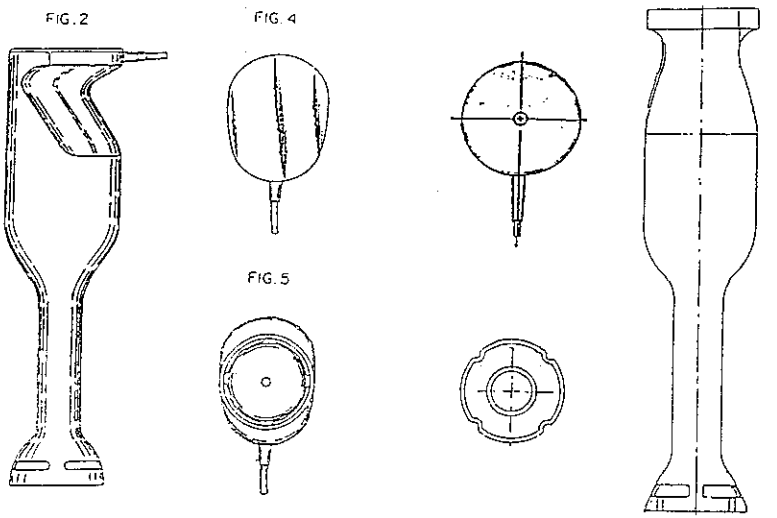
> Both the White designs we think are proved to be infringements of the Gorham patent. A large number of witnesses, familiar with designs, and most of them engaged in the trade, testify that in their opinion, there is no substantial difference in the three designs, and that ordinary purchasers would be likely to mistake the White designs for the "cottage," (viz., that of the plaintiffs). This opinion is repeated in many forms of expression, as, that they are the same pattern; that the essential features are the same; that seven out of ten customers who buy silverware would consider them the same; that manufacturers as well as customers would consider them the same; that the trade generally would so consider them; that, though there are differences, they would not be noticed without a critical examination; that they are one and the same pattern, &c., &c. This is the testimony of men who, if there were a substantial difference in the appearance or in the effect, would most readily appreciate it. Some think the White designs were intended to

[30] *Id.* at 529.

[31] *Id.* at 530.

A. *The Issues In* Braun

Braun had a patent on an ornamental design for a hand held blender and alleged that Dynamics Corporation of America's (DCA) Waring hand held blender infringed.[35]



Braun's Patented Design

Waring's Design

The case was tried before a jury, which found infringement. On appeal, DCA argued, inter alia, that there was no substantial evidence to support the jury's finding of design patent infringement.[36]

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[35] *Id.* at 830, 24 U.S.P.Q.2d (BNA) at 1133.

[36] *Id.* at 818, 24 U.S.P.Q.2d (BNA) at 1124; *see* Read Corp. v. Portec, Inc., 970 F.2d 816, 825, 23 U.S.P.Q.2d (BNA) 1426, 1434 (Fed. Cir. 1992) (reversing judgment of design patent infringement because "substantial evidence does not support the jury's verdict of infringement under the

recognize that *Gorham* embraced equivalents: "[P]atent infringement can be found for a design that is not identical to the patented design."[41]

B. Braun *Employed A Lesser "Similarity" Standard In Place Of The* Gorham *"Identity Of Design" Standard*

Among the dissimilarities in the patented and accused designs noted by the Court was a "readily noticeable difference" stemming from the fact that Braun's design has a handgrip indentation whereas DCA's Waring design did not. Because one of the design differences was "readily noticeable"—the antithesis of "identity of design" or "sameness of appearance"—the designs themselves were evidence of noninfringement and their comparison, absent extrinsic evidence, should have led to reversal of the verdict of infringement. The Federal Circuit, however, affirmed on the basis of "similarity in ornamental appearance" in light of testimony that hand held blenders are "impulse" purchase items:

> The jury could also reasonably find that the only readily noticeable difference between Braun's blender and Waring's blender is that the former has a handgrip indentation while the latter does not. However, at trial, Braun's former product manager, Alex Campbell, testified consumers typically purchase hand held electric [blenders] on an "impulse" and as a result they may not differentiate Waring['s] and Braun's designs, despite this and other

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[41] *Id.* at 820, 24 U.S.P.Q.2d (BNA) at 1125; *see* Lee v. Dayton-Hudson Corp., 838 F.2d 1186, 1190, 5 U.S.P.Q.2d (BNA) 1625, 1628 (Fed. Cir. 1988) ("[P]rinciples of equivalency are applicable under *Gorham*."); Litton Sys. Inc. v. Whirlpool Corp., 728 F.2d 1423, 1444, 221 U.S.P.Q. (BNA) 97, 110 (Fed. Cir. 1984) ("Where, as here, a field is crowded . . . we must construe the range of equivalents very narrowly."); Payless Shoesource, Inc. v. Reebok Int'l Ltd., 998 F.2d 985, 991, 27 U.S.P.Q.2d (BNA) 1516, 1521 (Fed. Cir. 1993) ("[M]inor differences between a patented design and an accused article's design cannot, and shall not, prevent a finding of infringement.") However, because design patents are only directed to form and lack written disclosures, they "have almost no scope." *In re* Mann, 861 F.2d 1581, 1582, 8 U.S.P.Q.2d (BNA) 2030, 2031 (Fed. Cir. 1988).

A similar argument was made in *Gorham*. The infringer argued that because of the large cost differential of silverware having the patented design and plated goods having the accused designs, consumers would not be confused:

> Does any purchaser of the plated goods, having on them the defendant's design, suppose he is buying silver goods? Does any purchaser of a spoon sold as a plated article for fifty cents, suppose that he is buying a silver spoon worth $4? Does a purchaser, when buying a plated spoon which is marked and sold as the manufacture of Rogers & Brother, suppose that he is purchasing a silver spoon manufactured by the Gorham Manufacturing Company?[45]

The Court's holding of infringement implicitly rejects a design patent infringement test that is price-dependent.

Not surprisingly, in the more than 120 years since *Gorham* was decided, the impulse purchaser doctrine had never before been applied in a design patent infringement context. Indeed, the Federal Circuit has criticized the application of trademark tests to design patents in other contexts.[46] Nevertheless, *Braun* is not alone in its substitution of a "similarity" standard for *Gorham*'s "identity" standard.[47]

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[45] Gorham Mfg. Co. v. White, 20 L. Ed. 731, 736 (1872) (brief of appellee).

[46] *See, e.g.*, Avia Group Int'l, Inc. v. L.A. Gear California, Inc., 853 F.2d 1557, 1565, 7 U.S.P.Q.2d (BNA) 1548, 1555 (Fed. Cir. 1988) (rejecting the argument that there was no design patent infringement because the patented and accused products do not compete in the same market); *Unette*, 785 F.2d at 1029, 228 U.S.P.Q. (BNA) at 932 (criticizing application of a likelihood of confusion trademark infringement test to design patent infringement).

[47] *See, e.g.*, L.A. Gear, Inc. v. Thom McAn Shoe Co., 988 F.2d 1117, 1126, 25 U.S.P.Q.2d (BNA) 1913, 1919 (Fed. Cir.), *cert. denied*, 114 S. Ct. 291 (1993) (affirming holding of infringement because "the four infringing models were confusingly similar to the patented design, as viewed by

D. Braun *Substituted A Subjective Test For* Gorham's *Objective "Ordinary Observer" Test By Treating The Jurors As Ordinary Observers*

Braun condoned the jury's "exclusiv[e] or primar[y]" reliance on a "visual comparison" of the patented and accused designs by equating the jurors with the *Gorham* "ordinary observer:"

> Nothing in *Gorham* suggests that, in finding design patent infringement, a trier of fact may not as a matter of law rely exclusively or primarily on a visual comparison of the patented design, as well as the device that embodies the design, and the accused device's design. It is true that in *Gorham* the U.S. Supreme Court found design patent infringement and in doing so relied in part on empirical and testimonial evidence that ordinary observers would be likely to mistake one product for another. However, in *Gorham*, the Supreme Court did not state, or suggest, that a panel of jurors was anything other than a panel of ordinary observers capable of making a factual determination as to whether they would be deceived by an accused device's design similarity to a patented design. Simply put, a jury comprised of a sampling of ordinary observers, does not necessarily require empirical evidence as to whether ordinary observers would be deceived by an accused device's design.[51]

By viewing the jury as a panel of ordinary observers, the Federal Circuit failed to recognize that *Gorham*'s "ordinary observer" is a hypothetical legal standard by which to judge infringement. The Federal Circuit's reasoning converted what the Supreme Court intended to be an objective test into one which is purely subjective, allowing jurors to

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[51] Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 821, 24 U.S.P.Q.2d (BNA) 1112, 1126 (Fed. Cir. 1992) (citations omitted).

> good is a necessary factor for determining trademark and trade dress infringement. To show infringement, the holder of a trademark or trade dress therefore must have progressed to the manufacture and distribution of a "purchasable" product. As a result, consumer behavior in the marketplace is a highly relevant factor in determining trademark and trade dress infringement. Since surveys and other empirical studies are ordinarily probative evidence of consumer behavior in the marketplace, such evidence has significance in determining trademark and trade dress infringement.
>
> In contrast . . . a different quantum of proof applies to design patent infringement, which does not concern itself with the broad issue of consumer behavior in the marketplace. The single element here required to show design patent infringement involves a much narrower field of inquiry. In short, a design patentee may prove infringement simply by showing that an ordinary observer would be deceived by reason of an accused device's ornamental design. Therefore, in showing design patent infringement there is ordinarily no compelling need for empirical evidence.[53]

Braun's rationale for differentiating the evidentiary requirements for trade dress infringement and design patent infringement cannot withstand scrutiny. *Gorham*'s ordinary observer test specifically defines the ordinary observer in terms of a purchaser in the marketplace. Even if the patented design has not progressed to the point of a "purchasable" product, that does not preclude an admissible survey of prospective purchasers from being conducted. Further, the testimony of experts may be introduced.

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[53] *Id.* at 828, 24 U.S.P.Q.2d (BNA) at 1132 (citations omitted).

design appropriated the point of novelty of the patented design.[55] The point of novelty test supplements the *Gorham* test. Although essential for finding design patent infringement, it need not and should not be considered unless and until the *Gorham* test is satisfied.[56]

The very nature of the *Gorham* ordinary observer test precludes consideration of the point of novelty in determining if the overall designs are identical in the first instance. An ordinary observer in the position of a purchaser cannot be presumed to have knowledge of prior art designs such as might be disclosed in paper patents. Moreover, it is the overall visual impression of the design as a whole to which the test is directed, whereas consideration of the point of novelty necessarily requires the design to be dissected.

Braun is not alone in confusing the *Gorham* and point of novelty design patent infringement tests. Such confusion is apparent in other

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[55] Avia Group Int'l, Inc. v. L.A. Gear California, Inc., 853 F.2d 1557, 1565, 7 U.S.P.Q.2d (BNA) 1548, 1555 (Fed. Cir. 1988); Litton Sys., Inc. v. Whirlpool, 728 F.2d 1423, 1444, 221 U.S.P.Q. (BNA) 97, 109 (Fed Cir. 1984).

[56] Lee v. Dayton-Hudson Corp., 838 F.2d 1186, 1189 n.4, 5 U.S.P.Q.2d (BNA) 1625, 1627 n.4 (Fed. Cir. 1988) ("[U]nless the *Gorham* standard for finding infringement is met by the accused devices, there is no need for detailed analysis in terms of the prior art."); Shelcore Inc. v. Durham Indus., 745 F.2d 621, 628 n.16, 223 U.S.P.Q. (BNA) 585, 590 n.16 (Fed. Cir. 1984) (*Gorham* and *Litton* are "conjunctive;" the point of novelty test is a "second standard."); L.A. Gear, Inc. v. Thom McAn Shoe Co., 988 F.2d 1117, 1125, 25 U.S.P.Q.2d (BNA) 1913, 1918 (Fed. Cir. 1993) ("While the accused design must appropriate the novelty that distinguished the patented design from the prior art, the ultimate question requires determining whether 'the effect of the whole design [is] substantially the same'." (quoting Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 530 (1872)).

To avoid those dangers, the Federal Circuit has required particularized evidence to support a jury verdict of utility patent infringement by equivalents:

> Thus, while infringement under the doctrine requires "only" substantial identity, substantial identity must be proven with regard to all three elements of the doctrine specified in *Graver Tank*, *function* performed, *means* by which function is performed, and *result* achieved.
>
> In order to assure such separate analysis, we said in *Nestier*, as Sealy's counsel argued before the trial court, a jury must be separately directed to the proof of each *Graver Tank* element. The party asserting infringement must present "*evidence* and *argument* concerning the doctrine and *each* of its *elements*."[59]

The court continued: "[T]he three *Graver Tank* elements must be presented in the form of particularized testimony and linking argument."[60]

Evidence of literal infringement—utility patent parlance for identity—alone is insufficient. "The evidence and argument on the doctrine of equivalents cannot merely be subsumed in plaintiff's case of literal infringement. Accordingly, the fact there was evidence and argument on literal infringement, that may also bear on equivalence, does not satisfy *Nestier*."[61] Particularized evidence of equivalents is required to insure that the jury "rationally find" equivalence:

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[59] *Lear Siegler*, 873 F.2d at 1425, 10 U.S.P.Q.2d (BNA) at 1770 (emphasis in original) (citations omitted) (citing Graver Tank Mfg. Co. v. Linde Air Prods., 339 U.S. 605 (1950); Nestier Corp. v. Menasha Corp., 739 F.2d 1576, 1579, 222 U.S.P.Q. (BNA) 747, 749 (1984), *cert. denied*, 470 U.S. 1053 (1985).

[60] *Id.* at 1426, 10 U.S.P.Q.2d (BNA) at 1770.

[61] *Id.* at 1425, 10 U.S.P.Q.2d (BNA) at 1770.

of design" in that the design differences have no effect on the eye of the "ordinary observer."[66]

Gorham's requirement of objective evidence is similar to the Federal Circuit's requirement of particularized evidence to prove utility patent infringement by equivalents to a jury. In both cases, a comparison of the claimed device with what is accused is insufficient to establish infringement by equivalents. Additional evidence is required.

V. EVIDENCE THAT CAN BE USED TO SATISFY THE *GORHAM* TEST OF DESIGN PATENT INFRINGEMENT

In *Gorham*, to prove "identity of design" in the eye of the ordinary observer, the Court relied on substantial objective evidence that:

- there was "no substantial differences" in the designs
- ordinary purchasers would be likely to mistake the patented and accused designs
- the patented and accused designs have the same pattern
- the "essential features" of the patented and accused designs are the same
- seven out of ten customers would consider the patented and accused designs the same
- manufacturers would consider the patented and accused designs the same

[66] *See supra* notes 30-32 and accompanying text.

patentee the "advantage of a market" created by the "novel appearance" in the eyes of the "principle purchasers," "[persons] of ordinary intelligence:"[70]

> The learned judge thought there could be no infringement unless there was "substantial identity," "in view of the observation of a person versed in designs in the particular trade in question - of a person engaged in the manufacture or sale of articles containing such designs - of a person accustomed to compare such designs one with another, and who sees and examines the articles containing them side by side." There must, he thought, be a comparison of the features which make up the two designs. With this we cannot concur. Such a test would destroy all the protection which the act of Congress intended to give. There never could be piracy of a patented design, for human ingenuity has never yet produced a design, in all its details, exactly like another, so like, that an expert could not distinguish them. . . .Experts, therefore, are not the persons to be deceived. Much less than that which would be substantial identity in their eyes would be undistinguishable in the eyes of [persons] generally, of observers of ordinary acuteness, bringing to the examination of the article upon which the design has been placed that degree of observation which [persons] of ordinary intelligence give. It is persons of the latter class who are the principal purchasers of the articles to which designs have been given novel appearances, and if they are misled, and induced to purchase what is not the article they supposed it to be . . . the patentees are

[70] *Id.* at 527-28.

trier of fact may examine the patented and accused designs in view of all of the evidence of design patent infringement. However, as set forth above, where there are differences in the patented and accused designs, the trier of fact cannot decide design patent infringement based on examination of the patented and accused designs alone. There must be some extrinsic evidence of the type set forth above to prove that the differences are so insubstantial as to have no effect on the eye of the ordinary observer.[76]

VI. CONCLUSION

Proof of design patent infringement requires evidence that the patented and accused designs are "substantially the same" and have "identity of design." The similarity standard which the Federal Circuit has employed creates confusion in the law and should be expressly rejected.

Objective evidence independent of the patented and accused designs should be required for a jury to find design patent infringement where there are differences in the patented and accused designs. Infringement in such situations necessarily requires application of a design patent analog to the doctrine of equivalents. Objective evidence is not only mandated by the *Gorham* requirement that the effect variances have on the eye of the ordinary observer "must be determined by the evidence," but also logically flows from the rationale requiring particularized evidence to support a jury verdict of utility patent infringement by equivalents. For the jury to "rationally find" infringement of a design patent, which requires a determination that variances have no the effect on the eye of the ordinary observer, it must have some evidence in addition to the patented and accused design. Otherwise, the jury is simply "put to sea without guiding charts."

[76] *See supra* notes 30-32 and accompanying text.

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SOLVING THE ALGORITHM CONUNDRUM: AFTER 1994 IN THE FEDERAL CIRCUIT PATENT LAW NEEDS A RADICAL ALGORITHMECTOMY

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I. INTRODUCTION

The Federal Circuit decided five mathematical algorithm cases in 1994 (the Year of the Algorithm): *In re Schrader*,[1] *In re Alappat*,[2] *In re Warmerdam*,[3] *In re Lowry*,[4] and *In re Trovato*.[5] In addition, in 1994 the Board of Patent Appeals and Interferences (Board) decided *Ex Parte Beauregard*,[6] which was appealed to the Federal Circuit in early 1995 as *In re Beauregard*.[7] The recent evolution of mathematical algorithm case law in the Federal Circuit may be characterized as illustrative of chaos theory,[8] or at least some kind of devolution in which the predictability of outcome progressively decreases with time. At this point, as Federal Circuit Judge Newman has aptly remarked of the doctrine of equivalents, "interpretation . . . will continue to depend on the selection of the panel."[9] That *Alappat*, the second of 1994's opinions, was decided *en banc* did not improve predictability. It is only fair to say that rulings became less predictable after *Alappat* than before, except when one knows the panel composition, whereupon predictability increases dramatically.

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[1] 22 F.3d 290, 30 U.S.P.Q.2d (BNA) 1455 (Fed. Cir. 1994).

[2] 33 F.3d 1526, 31 U.S.P.Q.2d (BNA) 1545 (Fed. Cir. 1994) (en banc).

[3] 33 F.3d 1354, 31 U.S.P.Q.2d (BNA) 1754 (Fed. Cir. 1994).

[4] 32 F.3d 1579, 32 U.S.P.Q.2d (BNA) 1031 (Fed. Cir. 1994).

[5] 42 F.3d 1376, 33 U.S.P.Q.2d (BNA) 1194 (Fed. Cir. 1994).

[6] The Board of Patent Appeals and Interferences decided Ex Parte Beauregard August 4, 1994 (decision on reconsideration).

[7] Appeal No. 95–1054 (Fed. Cir.)

[8] Chaos theory analyzes complex systems in which the value of a function varies widely in accordance with small differences in boundary conditions or initial values of one or more parameters. *See generally* JAMES GLIECK, CHAOS: MAKING A NEW SCIENCE (1987).

[9] Malta v. Schulmerich–Carillons, Inc., 959 F.2d 923, 21 U.S.P.Q.2d (BNA) 2039 (Fed. Cir.) (dissenting opinion), *cert. denied*, 112 S. Ct. 2942 (1992).

II. FROM THEN TO NOW

A. *The Case Law Before 1994*

1. Morse

It all began some time around 1850, when the Supreme Court decided *O'Reilly v. Morse*.[10] Morse invented the telegraph, solving a long existing problem of how to keep a signal from dissolving into noise by devising a particular apparatus that boosted the signal level at regular distances before noise overwhelmed the signal.[11] Morse claimed the invention in terms of this apparatus and also, in his notorious claim 8, he claimed the use of "electro magnetism, however developed, for marking and printing intelligible characters . . . at any distances."[12]

The Supreme Court sustained the other claims, but disallowed claim 8, because it blocked other inventors from developing and patenting other methods of using electromagnetism to transmit written information, with other apparatus, even though Morse had not discovered the other methods or means and taught them to the public.[13] For

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[10] 56 U.S. (15 How.) 62 (1853).

[11] Others before Morse had devised the electric battery and had developed equipment in which a flow of current through a coil caused deflection of a piece of iron. Others had combined these things to provide an apparatus in which closure of a switch caused current to flow through a remotely located coil and thus deflect a remotely located iron strip. This apparatus permitted one to send a signal to another location, but noise overcame the signal and made it useless beyond about ten miles. Morse used such a circuit to actuate the coil of another similar circuit located within ten miles' distance, which in turn operated still another similar circuit located within another ten miles. A cascade of such circuits (so–called repeaters) in series, spaced about ten miles apart, permitted a signal to be sent any desired distance. The last repeater in the series operated a clicker, which marked dots and dashes in Morse code on a moving strip of paper and/or sounded the dits and dahs. *See id.* at 72. This system apparently provided the first effective telegraph.

[12] *Id.* at 112.

[13] *Id.* at 113. The decision is discussed in Gottschalk v. Benson, 409 U.S. 63, 68, 175 U.S.P.Q. (BNA) 673, 675 (1972).

to discourage rather than promote the progress of science and useful arts.[15]

2. Benson

Skipping over another 120 years of variations on this theme brings us to the Supreme Court's first algorithm decision, *Gottschalk v. Benson*.[16] In *Benson*, the Court held a process claim to an algorithm for converting one form of number (binary–coded decimals) to another form (binary) unpatentable as nonstatutory subject matter. The only limitation on the scope of the claim which Benson sought was that the process used a shift register, a form of general–purpose digital computer apparatus.[17] Because the algorithm had no utility except for use with a computer, the limitation was meaningless and the claim for all practical purposes totally preempted any possible use of the algorithm.[18] As in the *Morse* case, Benson's claim was "so abstract and sweeping as to cover both known and unknown uses" of the claimed subject matter.[19] The Court therefore held that this kind of process—numerical manipulation in a general–purpose digital computer—was not the kind of "process" that Congress intended section 101 to cover.

The *Benson* opinion also introduced some of the recurrent themes in computer algorithm case law. One theme was that abstract intellectual concepts, such as mathematical algorithms, should not be patented because "they are the basic tools of scientific and technological

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[15] *See* U.S. CONST., art. I, § 8, cl. 8.

[16] 409 U.S. 63, 175 U.S.P.Q. (BNA) 673 (1972). *Benson* summarizes the case developments over the intervening 120 years.

[17] Only one of the two claims before the Court had this limitation. Compare claims 8 and 13. *Id.* at 73–74, 175 U.S.P.Q. (BNA) at 677.

[18] *Id.* at 71–72, 175 U.S.P.Q. (BNA) at 676 (The algorithm "has no practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly preempt . . . and in practical effect would be a patent on the algorithm itself.").

[19] *Id.* at 68, 175 U.S.P.Q. (BNA) at 675.

the plant was approaching what amounted to a meltdown. This time, the applicant expressly limited the claimed use of the algorithm to a petrochemical process, allegedly avoiding total preemption of the algorithm for all uses as in *Benson*.

This made no difference in result, however. The Court said that a field-of-use limitation could not save this claim because it was still directed to an algorithm as such. Here, there were no limitations on the apparatus used for numerical manipulation; clearly, a general-purpose digital computer was contemplated, and the claim recited nothing but determination of a number. The applicant did not purport to disclose anything new except the algorithm; otherwise, all elements of the claimed subject matter were conventional. In such circumstances, the Court held, one must dissect out from the claim the nonstatutory subject matter of the algorithm and treat it as if part of the prior art. Since what was then left did not even purport to be novel, the invention considered as a whole must be regarded as entirely old and thus unpatentable.[27] Finally, the Court said that as a matter of policy it might be in the public interest to give patent protection to algorithms (the Court called them computer programs), but Congress would have to be the judge of that.[28]

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[27] *Id.* at 594, 198 U.S.P.Q. (BNA) at 199. This patent law analysis is remarkably like a very common form of copyright analysis, which courts particularly apply to computer program copyrights. The inherently unprotectible material—such as elements in the public domain, elements dictated by function or trade custom, and *scènes à faire*—is dissected out and only the residuum is analyzed for actionable similarity. *See, e.g.*, Apple Computer, Inc. v. Microsoft Corp., 35 F.3d 1435, 1443, 1445, 32 U.S.P.Q.2d (BNA) 1086, 1091, 1093 (9th Cir. 1994), *cert. denied*, 115 S. Ct. 1176 (1995); Engineering Dynamics, Inc. v. Structural Software, Inc., 26 F.3d 1335, 1342–45, 31 U.S.P.Q.2d (BNA) 1641, 1645-49 (5th Cir. 1994); Gates Rubber Co. v. Bando Chem. Indus., 9 F.3d 823, 28 U.S.P.Q.2d (BNA) 1503 (10th Cir. 1993); Computer Assoc. Int'l, Inc. v. Altai, Inc., 982 F.2d 693 (2d Cir. 1992); Data East USA, Inc. v. Epyx, Inc., 862 F.2d 204, 9 U.S.P.Q.2d (BNA) 1322 (9th Cir. 1988).

[28] *Flook*, 437 U.S. at 595–96, 198 U.S.P.Q. (BNA) at 199.

cured, molded rubber article, that legal test was met. In addition, the process was carried out in a specific kind of special apparatus.

After *Diehr*, the Supreme Court left the field of algorithm patents to the Federal Circuit and its predecessor court. After struggling with various approaches over several decades, by early 1994 the decisions of the Federal Circuit seemed to be converging toward a predictable rule, generally based on *Diehr*. The rule, broadly stated, was that one might obtain a claim on a machine that merely uses an algorithm, but not a claim on an algorithm itself.[33] More narrowly stated, the rule was that use of an algorithm could be patented when the use was limited to specific, special–purpose implementing apparatus[34] (that is, something more specific than just a programmed general–purpose digital computer or programmed microprocessor[35]). Also, an algorithm –related claim might omit recitation of such particular apparatus if the claim described a series of steps, or means, for manipulating specific electronic signals. Such signals might be ones coming from a specific,

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[33] *See Diehr*, 450 U.S. at 191–92, 209 U.S.P.Q. (BNA) at 10.

[34] *In re* Grams, 888 F.2d 835, 12 U.S.P.Q.2d (BNA) 1824 (Fed. Cir. 1989) (Archer, J.) and *In re* Iwahashi, 888 F.2d 1370, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989) (Rich, J.), illustrate the principle. In *Grams* there was no special apparatus limitation and the court considered the claim to be one directed to an algorithm or method of doing business. In *Iwahashi*, however, the court held that the claim did not preempt the use of the algorithm involved because the claimed use was limited to systems containing a ROM (read–only memory); others were free to use the algorithm, so long as they did not use a ROM *or its equivalent*. *See also* Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992) (use of analog–to–digital converter to convert analog EKG signal to digital format for computerized signal processing) (Newman, J.).

[35] A limitation of the use of a computer algorithm to use with a programmed general–purpose digital computer has been considered not to be a meaningful limitation because one would ordinarily expect to use a computer algorithm with a computer. *See* Gottschalk v. Benson, 409 U.S. 63, 71–72, 175 U.S.P.Q. (BNA) 673, 676-77 (1972) (The algorithm "has no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly preempt . . . and in practical effect would be a patent on the algorithm itself.").

The problem is that determining what is the prevailing, or maximizing, combination of bids at any given time involves making calculations too difficult for a person to carry out quickly, and the difficulty increases exponentially with the number of items (for example, plots) involved.[42] The procedure must be computerized to make it practicable.

As Schrader contemplated carrying out a multiple–item auction according to his invention, he would group bidders in different locations, possibly in different cities. Bidders would view a large TV display unit on which bids would be displayed. Telecommunications links would relay bids to a central processing unit, which would determine the prevailing bid combinations and send the information back to the display units. The display units would show the bidders what combinations of bids for plots and sets of plots were prevailing at a given time. That would give different bidders the opportunity to submit higher bids for particular plots and sets of plots, so as to become prevailing bidders instead of those previously prevailing.

The Federal Circuit panel denied the patent, ultimately, on the ground that it was directed to an algorithm rather than to a machine using an algorithm or to an algorithm–using process involving physical activity. Schrader argued that the claimed invention was patentable subject matter because it involved considerable physical activity and apparatus. Thus, bidders sent bids to the central processing unit of a computer via a telecommunications link (apparatus). The processor sent bid information back to the displays (apparatus) via a telecommunications link (apparatus). The bidders then input new bids into the system, in response to what they saw on the displays. The court rejected Schrader's argument, however. The court pointed to the wording of the claim and considered it determinative that "[t]he word 'display' is nowhere mentioned in the claim."[43] The claim therefore con-

[42] The number of calculations per round of bidding is approximately 2^n where n is the number of items involved.

[43] 22 F.3d at 293, 30 U.S.P.Q.2d (BNA) at 1458. The court also said that there was no closed–circuit TV system (telecommunications link) mentioned in the claim. *Id.* at 294, 30 U.S.P.Q.2d (BNA) at 1458.

method patent may also cover a state transformation of intangibles, such as electrical signals, if the subject matter thus transformed is "representative of or constitut[es] physical activity or objects."[49]

In summary, then, in early 1994 the legal standard for claiming algorithms or algorithm–related inventions was that one should put into the claim some apparatus of some kind before the claimed use of the algorithm (for example, a CAT scanner apparatus[50] to gather and provide data for the algorithm to process), alongside of it (for example, a ROM[51] to aid in performing calculations using the algorithm), or after it (for example, a device to open a heated rubber mold[52] after it has cooked a molded article long enough according to the algorithm). One wanting a belt along with these patent–drafting suspenders could also mention signals on which the algorithm operates, where the signals are representative of a physical activity or object (such as reflected energy from an underground explosion[53]). If one did none of these things, or simply claimed a general–purpose digital computer or microprocessor programmed to carry out the algorithm, with data going in and data going out, the claim would be rejected as lacking proper structural limitations.[54]

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[49] Judge Newman dissented, on the grounds that methods of doing business should not be considered nonstatutory subject matter and that data–in, data–out transformations were as patentable as those of signals representative of physical parameters.

[50] *In re* Abele, 684 F.2d 902, 214 U.S.P.Q. (BNA) 682 (C.C.P.A. 1982); *see* Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992).

[51] *In re* Iwahashi, 888 F.2d 1370, 12 U.S.P.Q.2d 1908 (Fed. Cir. 1989); *see also* Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992) (analog–to–digital converter to convert analog EKG signal to digital format for computerized signal processing).

[52] Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981).

[53] *See Taner*, 681 F.2d at 787, 241 U.S.P.Q. (BNA) at 678.

[54] *In re* Grams, 888 F.2d 835, 12 U.S.P.Q.2d (BNA) 1824 (Fed. Cir. 1989).

reasonable means whatsoever for accomplishing the function, rather than try to puzzle out what is and what is not equivalent to that which the specification describes, unless the applicant persuaded the Office that particular means were not equivalents. After a running battle for years, the Federal Circuit set *Alappat* and another case, *In re Donaldson*,[58] for argument together *en banc* to resolve the issue. The upshot was that the Federal Circuit *en banc* unanimously directed the Office to read the specifications of patent applications and determine in each case what equivalent means are, just as courts must do in patent infringement litigation.

The by–product was that the *Alappat* opinion revealed the Federal Circuit's inability to provide a clear articulation of a rule on patenting algorithms to which an *en banc* court would subscribe. Moreover, the resolution of *Alappat* was complicated by the disagreement of four members of the court with the Office's internal appeal procedures, specifically, the extent to which the Commissioner was entitled to prescribe substantive law interpretations that must be followed within the Office.

a. *Alappat's invention.*

Alappat invented a system for improving the appearance of digital oscilloscopes' screen displays. A digital oscilloscope ordinarily represents data points as isolated points on the screen; each point occupies a small area on the screen termed a "pixel." It is convenient to connect successive data points on the screen by a line, so that the data appears on the screen as a line graph. There were two problems. First, there would be "jaggies" or a "staircase effect." Second, random noise superimposed on the signal makes the lines appear to flicker and move up and down ("aliasing").

Expedients to overcome these problems are known, and the record in this case contains other patents addressing them. The basic technique ("anti–aliasing") generally used is to lessen the illumination intensity of those pixels more remote from the desired trajectory between data points, in accordance with some formula or scheme (for example, least squares averaging). Conventional means are well known for varying the amount of energy delivered to the location of a pixel,

[58] 16 F.3d 1189, 29 U.S.P.Q.2d (BNA) 1845 (Fed. Cir. 1994).

or formula, not to an algorithm or formula as such. The claim does not preempt all use of the algorithm:

> Rather, claim 15 is limited to the use of a particularly claimed combination of elements performing the particularly claimed combination of calculations to transform . . . digitized waveforms (data) into anti-aliased, pixel illumination data to produce a smooth waveform. . . . Claim 15 thus defines a combination of elements constituting a machine for producing an anti-aliased waveform.[60]

That would have been enough to resolve the case. One may disagree with how the majority construed claim 15.[61] It is clear, however, that once one reads the claim, as the majority did, the case is over. The claim is then limited to an oscilloscope containing a subcombination or subsystem that interacts with the rest of the oscilloscope system; the subsystem passes signals back and forth to the rest of the oscilloscope system and it controls the screen illumination of the oscilloscope. Claim 15, so read, covers the same kind of algorithm–using apparatus as the prior decisions[62] say a claim must, rather than covering an algorithm as such. So read, the majority opinion is hardly different from *Schrader* and other earlier decisions.

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[60] 33 F.3d at 1544, 31 U.S.P.Q.2d (BNA) at 1558.

[61] One may question the majority's interpretation of claim 15 because it implies into the claim in order to sustain its patentability, structural limitations connecting the body of the claim (the part following "comprising:") to the environment of an oscilloscope even though these limitations are not made explicit in the claim itself. These structural limitations include receiving input signals representative of vertical elevation of pixels and sending output signals representative of illumination intensity to a device in the oscilloscope that controls illumination intensity of pixels on the screen. The problem of interpreting claim 15 stems from its drafter's reluctance to place into the body of the claim any language reciting relations and interactions with the oscilloscope or other environment in which the claimed subject matter operates.

[62] *E.g.*, Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981); Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992); *In re* Abele, 684 F.2d 902, 214 U.S.P.Q. (BNA) 682 (C.C.P.A. 1982).

about face. Sweeping past all objections with a broad brush, the majority said:

> Alappat admitted that claim 15 would read on a general purpose computer programmed to carry out the claimed invention, but argues that this alone also does not justify holding claim 15 unpatentable as directed to nonstatutory subject matter. We agree. We have held that such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software. . . . [A] computer operating pursuant to software may represent patentable subject matter, provided, of course, that the claimed subject matter meets all of the other requirements of Title 35. In any case, a computer, like a rasterizer, is apparatus not mathematics.[66]

This is where cognitive dissonance sets in. Two interpretations are possible for the phrase "the claimed invention" in the first sentence of the quoted passage. One interpretation is that the phrase refers to some type of programmed computer equipment subsystem intertwined with an oscilloscope, in which case the scope of claim 15 is limited to an oscilloscope environment. Alternatively, "the claimed invention" also includes a free–standing microprocessor or general–purpose digital computer programmed to carry out the algorithm, in which event claim 15 is not limited to the oscilloscope environment and effectively covers the algorithm itself.[67] The only way that this passage can make sense is if some of the terms have a secret or private, question–begging meaning that is different from their apparent meaning. For example, a programmed computer might "represent" patentable subject matter but not

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[66] 33 F.3d at 1545, 31 U.S.P.Q.2d (BNA) at 1558.

[67] Conceivably, there is another possibility, but it is not significant. In theory one might devise a different hardware implementation of the invention, which claim 15 would not cover if the implementation were considered nonequivalent to the hardware and software implementations of the patent application. It is questionable, however, that any such nonequivalent implementation could be devised; any possible implementation would seem to be equivalent to those that Alappat disclosed.

As for the argument that a programmed general–purpose digital computer is statutory subject matter because putting a new program into an old computer converts the latter into a new machine, Judge Archer argued that a Chopin–playing player piano does not magically become a "new" player piano simply because one inserts into it a piano roll for Brahms' Lullaby. He denied that a claim to a general–purpose digital computer running a new program could be directed to statutory subject matter: "It is illogical to say that although a claim to a newly discovered mathematical operation to be performed by a computer is merely a nonstatutory discovery of mathematics, a claim to any computer performing that same mathematics is a statutory invention or discovery."[69]

The public policy implications of the majority opinion also troubled Judge Archer. He considered "[t]he majority's holding . . . dangerous"[70] because it will create mathematical patents with an enormous scope of technological exclusivity. These patents will issue without "meaningful examination," because the patent office cannot effectively examine such claims in terms of obviousness and other statutory requirements.

3. Warmerdam and Lowry

That the immediate aftermath of *Alappat* is a great deal of uncertainty is illustrated in two Federal Circuit panel decisions, respectively decided two and four weeks after the *en banc Alappat* decision—*In re Warmerdam*[71] and *In re Lowry*.[72] That these opinions were written for the court by two different members of the *Alappat* majority, Judges

[69] 33 F.3d at 1567, 31 U.S.P.Q.2d (BNA) at 1577.

[70] 33 F.3d at 1568, 31 U.S.P.Q.2d (BNA) at 1578.

[71] 33 F.3d 1354, 31 U.S.P.Q.2d (BNA) 1754 (Fed. Cir. 1994).

[72] 32 F.3d 1579, 32 U.S.P.Q.2d (BNA) 1031 (Fed. Cir. 1994).

matter.[76] The data structure was not "a physical arrangement of the contents of a memory" device (an article of manufacture?), and it certainly was not "a physical, interconnected arrangement of hardware and thus embraced by the term 'machine'."[77] The court declined to resolve the case in terms of whether the "essentially mathematical" steps of the claimed method were a mathematical algorithm because of the difficulty in resolving cases in terms of that legal category.[78] Irrespective of whether the *Warmerdam* claims belonged to the algorithm species, they clearly belonged to the genus comprising algorithms—manipulation of abstract ideas.[79] The claimed steps described nothing more than manipulation of mathematical constructs, which the court considered "paradigmatic" of abstract ideas.[80] In effect, the court said, "Never mind *Benson, Flook, Diehr*, whatever," and strategically retreated to the precedential underpinning of that line of authority: "An abstract idea of itself is not patentable."[81]

In *Lowry*, the court held that a claim to a memory[82] comprising a data structure was patentable subject matter, because the applicant's "data structures impose a physical organization on the data" that they contain, and the elements of the data structures have not been shown to

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[76] *Warmerdam*, 33 F.3d at 1362, 31 U.S.P.Q.2d (BNA) at 1760. The invention in *Warmerdam* was a method of controlling operation of a robot to avoid collisions with obstacles. The claims, however, did not have any apparatus limitations referring to that environment.

[77] *Id.*

[78] 33 F.3d at 1360, 31 U.S.P.Q.2d (BNA) at 1758.

[79] *Id.* at 1360, 31 U.S.P.Q.2d (BNA) at 1759.

[80] *Id.*

[81] Rubber-Tip Pencil Co. v. Howard, 87 U.S. (20 Wall.) 498, 597 (1874) (quoted in *Warmerdam*, 33 F.3d at 1360, 31 U.S.P.Q.2d (BNA) at 1759).

[82] A memory is typically a device such as the random-access memory of a PC, which is typically implemented by DRAM chips. More abstractly, a memory is the information storage function in a computer that such a device performs. A floppy diskette or hard disk is perhaps equivalent to a DRAM memory for purposes of this invention.

of the panels may more readily pave the road to predicting the outcome than will any exercise in doctrinal harmonization.[89] Some Federal Circuit panels will now find patentability–conferring "structure" in the fact that an algorithm or other idea is to be used in a computer or portion of a computer. Other panels will find structure only when a computer–using algorithm or idea is embedded in a more specialized environment that is regarded as an integral part of the claim. Each approach can find support in *Alappat*.

4. Trovato

In re Trovato[90] was the last Federal Circuit panel decision in 1994 on algorithms. The invention was a method of determining the least distance between two points, where "least distance" is defined in terms of some material parameter such as cost, time, or even physical distance. Trovato described a mathematical procedure for manipulating a data structure to determine a least cost path, without describing any apparatus more specific than "means" for accomplishing the various steps.[91] It was clear that the various means were different software instructions to be used in a program for a general–purpose digital computer.[92] There was no X–ray machine front end or mold press opener back end. This led the court to conclude that "Trovato claims nothing

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preempts the use of the data structure and is therefore equivalent to a patent on the data structure itself. Presumably, the *Warmerdam* panel would have held Lowry's memory device containing a given data structure to be unpatentable as nonstatutory subject matter, while the *Lowry* panel would have held Warmerdam's data structure to be statutory subject matter and patentable.

[89] The Office petitioned for rehearing *en banc* because of the seeming conflict between *Lowry* and *Warmerdam*, but the court denied the petition. The Solicitor General did not seek certiorari in *Lowry*.

[90] 42 F.3d 1376, 33 U.S.P.Q.2d (BNA) 1194 (Fed. Cir. 1994).

[91] *See id.* at 1377-78, 33 U.S.P.Q.2d (BNA) at 1196.

[92] *Id.* at 1382, 33 U.S.P.Q.2d (BNA) at 1199 ("all the disclosed means are simply software instructions; no `structure' appears in the specification").

5. Beauregard

Finally, the Board's mid–1994 decision in *Ex Parte Beauregard*,[101] appealed to the Federal Circuit in early 1995, addresses another variation on these themes. *Beauregard* is IBM's test case on still another way of imparting alleged "structure" to an algorithm claim, so that the claim can be said to be something more than a claim to a mathematical algorithm as such. The *Beauregard* claims are essentially in the following format: An article of manufacture that is a storage medium (such as a floppy diskette[102]) encoded with machine–readable computer program code for carrying out a mathematical algorithm. The claims then describe the algorithm as a sequence of "means" for performing various mathematical functions. The specific algorithm involved in *Beauregard* is one for filling in a polygon on a screen display of a computer, but the principle of the case would appear to apply equally well to any algorithm.

a. *Beauregard's invention.*

A polygon fill according to the *Beauregard* algorithm operates, essentially, as follows: Beginning at the highest vertex of the polygon, a series of horizontal stripes ("scan lines") are established across the polygon. Then, a complete circuit of the polygon is made in which the leftmost and rightmost values of the x–coordinates of the polygon are calculated at each horizontal stripe, and these x_{min} and x_{max} values are recorded in memory. Finally, a series of traverses of each horizontal

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important area of law would be helpful to the Office and the industry." At the time that this issue of *AIPLA Q.J.* went to print the Federal Circuit had not ruled on the matter.

[101] The Board's original opinion of September 29, 1993, preceded the *Alappat* decision by approximately ten months. The August 4, 1994, Board opinion denying reconsideration followed *Alappat* by a week and preceded *Lowry* by three weeks.

[102] The Board said that IBM admitted that the instructions are computer readable code placed on "a magnetic diskette, an optical disk, a read–only memory (ROM), a random–access memory (RAM) . . . etc." For whatever it is worth, the examiner and Board found that the list of computer media should also include similar instructions in English or a programming language on a sheet of paper, if one equips the computer with an optical scanner.

program code was conventionally encoded onto the floppy disk, and the computer apparently read the code from the diskette in a normal, conventional manner. Everything was old and conventional except for the particular algorithm embodied in the code. The message was new, but the medium was old, and the cooperation between message and medium was old. To the Board, that made the combination of that message on that medium unpatentable under the printed matter rule.

IBM's position was that the instructions of the code (the alleged printed matter) interact in patentable, functional ways with the floppy diskette, with the computer into which the floppy diskette is placed, and with one another. The Board responded that under the printed matter case law[104] it is immaterial whether a new functional relationship exists among the elements of the printed matter or whether one exists between the printed matter and the device reading or using it. The only material question is whether there is a new and unobvious functional relationship between the printed information and the substrate. Here the substrate acts only as a support for the printed matter. That is an old and obvious relationship.

IBM made two other points. It criticized the Office for placing focus on the various old, conventional elements of the claim instead of on "the subject matter considered as a whole." This may be regarded as the battle of *Diehr* versus *Flook*.[105] The Board apparently felt that, no matter how many times the mantra "subject matter as a whole" is chanted, when the claimed subject matter is a conventional storage medium conventionally encoded with new information that conventionally cooperates with the old medium, the subject matter as a whole still remains old and conventional.

IBM also argued that an algorithm–encoded floppy diskette, when inserted into drive A of a computer, operates in a manner analogous to a machine part such as a new cam or gear. Therefore the diskette should be patented because it causes the machine to operate in a new, unobvious way. (This echoes the argument in *Alappat* that a

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[104] The leading case is *In re* Gulack, 703 F.2d 1381, 217 U.S.P.Q.2d (BNA) 401 (Fed. Cir. 1983).

[105] *See supra* text accompanying notes 27, 30–31.

into a computer.[109] That means that a patent on all floppy diskettes encoded with the algorithm is effectively a patent on the algorithm *per se*. Unless the policy against patents on algorithms as such no longer has any vitality or precedential support, therefore, one might well conclude that a claims drafting expedient that completely undermines that policy would be explicitly challenged on that basis. Yet, the Board said nothing about patents on algorithms; the Board's discussion of the legal issues is confined entirely to doctrinal analysis of the printed matter rule. It contains no explanation of whether or why the printed matter rule is sound or sensible, let alone whether the case is really one about algorithms and whether allowing claims on algorithms in the form of claims to printed matter describing algorithms would subvert the rule against patenting algorithms as such (or, for that matter, whether that rule ought to be preserved or deserves to be subverted).

c. *The printed matter rule.*

Previous printed matter cases did not in the main involve somebody's attempt to get a patent on a table of sines and cosines, thus preempting others from doing trigonometry. Rather, the printed matter sought to be patented was usually an arrangement of information in a way that facilitated doing something useful with it. For example, a trolley transfer ticket might be issued with a detachable "P.M." stub, to be torn off when the transfer was issued in the morning, so that

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[109] That is, unless a nonequivalent hardware implementation were practicable, which is not suggested in the Board's opinion or the specification.

In any event, a wrinkle in this case places IBM in a position to preempt all exploitation of the algorithm, even if a nonequivalent hardware implementation is feasible. The application on appeal is a continuation of an earlier application that has already resulted in issuance of a patent on methods and systems using the same algorithm or algorithms. The "means" claims of the issued patent would apparently cover any hardware implementation. However, this case's wrinkle would probably become the rule in subsequent cases if article of manufacture claims of this type are upheld. A well advised applicant would then separately claim any algorithm in apparatus (means), method, and article of manufacture formats. (That would cover any conceivable implementation and exhaust all possibilities except for compositions of matter.).

Courts have on rare occasions perceived printed matter cases as involving a question of giving a patent on an abstract idea.[115] *Beauregard* is one of the rare examples of such an attempt to get a patent on an abstract idea (algorithm) in a printed matter case—if indeed *Beauregard* should be regarded as a printed matter case. The phrase "printed matter" is really more a metaphor for what is wrong with claims of the kind involved in the *Beauregard* case than a reasoned legal analysis or perhaps even a useful analytic tool. The kind of information encoded on the floppy diskettes in *Beauregard* is not information in the form of data but in the form of code for a computer program. Is that fact situation conceptually akin to configuring trolley transfer stubs, arranging surnames phonetically instead of orthographically, or putting a new set of symbols on dice? Perhaps it is, but it seems more likely that the wrong analytic mechanism, or at least a suboptimal one, is being used here to determine whether algorithms or computer pro-

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the basis of the relative roles of patents and copyrights in our intellectual property laws. Actually, neither patents nor copyrights protect information as such. The reason is that doing so would run counter to their respective purposes of promoting the progress of useful arts and human knowledge. Thus, copyright protects only the expression of information, not the substantive or idea content. *Baker, supra; see also* Feist Pubs., Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 18 U.S.P.Q.2d (BNA) 1275 (1991) (data cannot be protected in itself by a copyright on a compilation of such data; selection and arrangement features of data are protectible under copyright law, but not the underlying data itself). In contrast, the European Community has promulgated a directive that requires its member states to protect the data in compilations of data under *sui generis* data protection laws. For a general discussion of the EC approach to data protection, see Simon Chalton, *Amended Database Directive Proposal: A Commentary and Synopsis*, 16 EUR. INTELL. PROP. REV. 94 (1994).

Therefore, neither patents nor copyrights are appropriate for protection of information as such, if one believes that protecting information as such under intellectual property law is inconsistent with its constitutional purpose. On the other hand, things such as information may perhaps be protected under some system other than patents or copyrights, as trademarks and trade secrets are. But in any event, patent law's printed matter rule is not supportable simply on the basis that our intellectual property system allocates different respective roles to copyrights and patents.

[115] Boggs v. Robertson, 13 U.S.P.Q. (BNA) 214 (D.C. Sup. Ct. 1931), suggested that patents on printed matter would amount to patents on ideas, adding that "where an idea is simply an abstraction the mere reduction of it to writing does not amount to invention."

whether it is machine–readable.[118] Where the information is an algorithm or another abstract idea, the patent amounts to one on the algorithm or other abstract idea. That is why *Lowry* is not a sound basis for reversing the Board's rejection of the claims in *Beauregard* as printed matter.[119] The Board's verbalization of the unpatentability of information as such (for example, calling it "printed matter" rather than an "abstract idea") may be suboptimal, but *Lowry* does not provide a clue for improving it.

e. *The motion to remand.*

On the other hand, the rejection of these claims makes more sense on algorithm or abstract idea grounds than it does on printed matter grounds; or, to reverse the judgmental spin, it makes less sense on printed matter grounds than on algorithm or abstract idea grounds. This created a dilemma, for the Office understandably did not want to risk having the Federal Circuit roast, or at least chide, it for trying to substitute its appellate counsel's post hoc algorithm rationalizations for the printed matter opinion of the Board.[120] The Office was caught between two millstones—difficulty in defending a rejection of machine–readable information as printed matter right after *Lowry*, on the one

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[118] The leading case on printed matter, *In re* Gulack, 703 F.2d 1381, 217 U.S.P.Q. (BNA) 401 (Fed. Cir. 1983), holds that the key to patentability in a printed matter case is whether the information cooperates or interacts functionally with the substrate on which it is imprinted or encoded in a novel and unobvious way. *Id.* at 1386 ("whether there exists any new and unobvious functional relationship between the printed matter and the substrate").

[119] Further, *Beauregard* and *Lowry* are different in the subject matter sought to be patented. Lowry sought a patent on a method of arranging information (or corresponding memory structure) without regard to the identity of the particular information to be arranged. But the *Beauregard* appeal involves an attempt to get a patent on particular information (the algorithm), as such, not just a method of arranging it or doing something with it.

[120] *See* FTC v. Sperry & Hutchinson Co., 405 U.S. 233, 247–49 (1972); Burlington Truck Lines, Inc. v. United States, 371 U.S. 156, 168 (1962) (courts may not accept appellate counsel's post hoc rationalizations for agency action).

expenditure of judicial resources to have the Federal Circuit hear an appeal and write an opinion in a case in which the agency asks for such a remand. Nevertheless, in a terse and uninformative order, the Federal Circuit denied the motion.[124] The *Beauregard* appeal will therefor be argued shortly, and presumably will be decided on some basis later this year.

Clearly, no useful decision from the Federal Circuit can now be expected in *Beauregard.* If the case had been remanded, perhaps the Office could have issued another decision presenting a more coherent view of the matter, stating what it considers to be the general principles applicable to cases involving computer-related abstractions, and whether the claims, invention, or patent application on appeal was congruent with those principles. The Federal Circuit might then have agreed or disagreed, stating its own views, preferably in a coherent and general way that would provide much-needed guidance to industry and the Office in this field. On the other hand, considering what happened in the Year of the Algorithm, one might properly and seasonably ask: Why is this opinion going to be different from other opinions? Is it not quixotic to expect coherent, much-needed guidance in an area of law that thus far has so resolutely defied such efforts? In any event, given the Office's frank statement to the court that it appears to the Office that the Board's *Beauregard* decision, as written, is unsupportable after *Lowry*,[125] there does not appear to be much room

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program, not a data structure, in a diskette or other storage medium or device.

[124] *In re* Beauregard, Fed. Cir. App. No. 95-1054 (Order of Apr. 6, 1995).

[125] Given the facts that the Federal Circuit denied rehearing *en banc* in *Lowry* and that the Solicitor General would not seek Supreme Court review, the Office is not in a position to argue to the Federal Circuit that *Lowry* was wrongly decided. To be sure, *Lowry* involved a patent sought on the article of manufacture resulting from use of a method or organizing data in general, without reference to what the specific information content of the data was, while *Beauregard* involves a patent sought on an article of manufacture embodying specific information; a computer program carrying out the particular polygon-fill algorithm involved. (In both cases, the article of manufacture is generic—any memory means; hence that is not a distinguishing factor.) Thus, *Beauregard* is more specifically a case on patenting information as such. Nonetheless, the Board's opinion in *Beauregard* is clearly based on a

1994 Algorithm Decisions of Federal Circuit
Table Showing Voting Patterns of Members of Court
(U=unpatentable, P=patentable, *=author, majority opinion)

	Cases				
JJ.	*Schrader*	*Alappat*	*Lowry*	*Warmerdam*	*Trovato*
Rich		P*	P		
Rader		P	P*		
Newman	P	P			
Michel		P			U
Lourie		P		U	
Plager	U*	P		U*	
Clevenger				U	
Schall					U
Mayer	U				
Archer		U			
Nies		U			U*

It may be seen[127] that three members of the court have consistently voted in favor of algorithm patents on every occasion, at least three are swing voters who have come down on one or the other side depending on the particular fact pattern (for example, content of specification) or claim wording, two are strongly committed to requiring nonfrivolous apparatus limitations in algorithm claims, and several have voted too few times (and have not authored opinions for

[127] This pattern and its evaluation are usefully supplemented by reference to several prior Federal Circuit panel decisions concerning algorithm–related subject matter. *E.g.*, Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992) (Newman, J.); *In re* Iwahashi, 888 F.2d 1370, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989) (Rich, J.); *In re* Grams, 888 F.2d 835, 12 U.S.P.Q.2d (BNA) 1824 (Fed. Cir. 1989) (Archer, J.).

appropriate—indeed, there may be a crying need for it. But the U.S. patent system is not equipped, in its present form, to provide appropriate legal protection for algorithms while appropriately satisfying the public interest.

Since the effort to obtain algorithm patents began, some time before *Benson*, proponents of algorithm patents have argued that the computer software industry is a major factor in the United States economy,[129] and that it needs and deserves intellectual property incentives to innovation, which other United States industries enjoy. Although not empirically supportable, their arguments are forceful.[130]

Furthermore, the difference between software and hardware implementations of a computer-related advance is usually casual and unrelated to the substance of the particular technological advance. Hardware and software implementations are largely interchangeable, and which of them one uses at any given time depends or should

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[129] U.S. CONG., OFFICE OF TECHNOLOGY ASSESSMENT, FINDING A BALANCE: COMPUTER SOFTWARE, INTELLECTUAL PROPERTY AND THE CHALLENGE OF TECHNOLOGICAL CHANGE ch. 3 (1992) [hereinafter FINDING A BALANCE] collects a body of economic statistics on the United States software industry. In 1990, U.S. software development was a $35 billion industry. *Id.* at 93. U.S. software and services domestic industry revenue for 1990 was $93 billion, of which software products accounted for $42.5 billion. *Id.* at 96. There does not appear to be any data on what portion of this value should be attributed to algorithms and other abstract forms of software.

[130] Arguments of this type can be found in the 11 *amicus curiae* briefs filed in the Federal Circuit in the *Beauregard* case. The difficulties in marshalling reliable empirical evidence to support the proposition that the social gain from establishing intellectual property protection for a form of technology exceeds the social cost are formidable. *See* Robert W. Kastenmeier and Michael Remington, *The Semiconductor Chip Protection Act of 1984: A Swamp or Firm Ground?*, 70 U. MINN. L. REV. 417, 422-23, 441-22 (1985). Not only is the data elusive but the methodology for evaluating it may not exist. *See* FINDING A BALANCE, *supra*, at 186–90; FRITZ MACHLUP, AN ECONOMIC REVIEW OF THE PATENT SYSTEM, Study of Subcomm. on Patents, Trademarks, and Coprights of Comm. on the Judic., U.S. Sen., Study No. 15, 85th Cong., 2d Sess. (1958) at 62 (analysis "can only be highly speculative"), 76 ("perhaps a hopeless task"). Typically, legislative bodies make a leap of faith, for example, as in extending copyright scope and term. *But see* Kastenmeier and Remington, *supra* (calling for utilitarian calculus).

A patent on an algorithm preempts others' use of the algorithm only if, and to the extent that, the law allows preemptive remedies, such as penal sanctions, injunctions, or confiscatory monetary relief. By the same token, if remedies can be appropriately adjusted, the preemption problem may vanish.

A problem with algorithm patents that is harder to address is that which the Supreme Court sensed in *O'Reilly v. Morse.*[133] An algorithm patentee teaches and enables the public to enjoy only one implementation of the claimed algorithm but gains a patent (a monopoly if you will) on implementations that only subsequent workers in the field will teach and enable. Thus, Morse with claim 8 in hand discourages anyone else from developing the fax machine, because his patent will dominate their patents and any exploitation of their inventions. This problem, which greatly troubled Judge Archer and was a main focus of his dissenting opinion in *Alappat,* has been discussed at length elsewhere and need not be rehearsed here.[134] In summary, the problem of enablement for broad, algorithm patents is extremely difficult to solve and may not be solvable at all:

> If we are to have algorithm patents in the future, [after *Alappat,*] . . . a rational test must be devised to determine when an algorithm patentee has sufficiently enabled the defendant's infringing use to deserve to recover from the defendant, and how much is a fair recovery. That may be a formidable task, and the test may prove very expensive to administer and uncertain in application. There may be a considerable deficit in predictability and security of expectations. Indeed, the present patent system simply cannot satisfactorily deal with algorithm patents. For example, what is a fair test as to monetary recovery, if any, in this context may be inconsistent with the rest of patent law doctrine. Thus . . . a sliding scale proportioning . . . amount of recovery to . . . degree of enablement would be alien to United States patent law. One could not modify our patent law to deal

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[133] 56 U.S. (15 How.) 62 (1853).

[134] *See* Richard H. Stern and Edward P. Heller, *Patenting Algorithms—The Gordian Knot Retwisted,* 2 U. BALT. INTELL. PROP. L.J. 1 (1994).

The remainder of this article is directed to a proposal for a petty patent system for algorithms and related subject matter,[140] with special attention to a few selected problems that crafting such a system raises. The most important of these special problems is how to deal with the issues raised in the five Federal Circuit cases decided during the Year of the Algorithm—notably, *How does one properly distinguish between an algorithm per se and an algorithm–using machine?*

IV. PETTY PATENTS FOR ALGORITHMS

The centerpiece of this proposal is a radical algorithmectomy—getting algorithms out of the regular patent system and into a new Part V at the end of Title 35 of United States Code. Legal protection under the new, petty–patent system would effectively supersede patent protection for all computer–related questionable statutory subject matter, whether called an algorithm, method of doing business, printed matter, or an abstract idea. Assuming that the new petty patent is sufficiently attractive to applicants to make them willing to elect it, a drastic reduction will occur in algorithm appeals to the Federal Circuit or even to the Board; there would not be another Year of the Algorithm in the Federal Circuit.

A. *Overall Scheme Of Statute*

A new Part V would be added to Title 35, at its end. The new part would direct the Commissioner to issue petty patents with only negligible prior examination, which would be limited to facial compliance with statutory requirements and implementing regulations. That would permit the Office to issue petty patents inexpensively, as in the case of copyright registrations. That, in turn, implies a very slight

[140] The proposed statutory provisions seek to implement two policy options described in FINDING A BALANCE, *supra*, note 129, at 33 (options 2.1 and 2.2—refining the statutory definition of patentable subject matter in regard to algorithms, excluding algorithms from the ordinary patent law and creating a new form of protection for them within a patent type of framework, utilizing shorter term, lower criteria for inventiveness, and/or special exemptions from infringement).

(revocation)[143] should also be available to permit those in the software industry to bring to the Office's attention prior commercial software

1990 Reform Act, 20 AIPLA Q.J. 1 (1992); E. Häusser, *Utility Models: The Experience of the Federal Republic of Germany*, 26 INDUS. PROP. 314 (1987).

[143] This would be like reexamination, *see* 35 U.S.C. §§ 302–07, but actually it would be the first real examination of the algorithmic subject matter for novelty. The procedure should be post–issuance, rather than pre–issuance, in order not to delay prompt registration of the subject matter and attachment of rights to the owner, and opposers should be allowed to submit art to the Office, explain its relevance, and controvert the owner's arguments as to the significance of the art. Generally, European patent practice permits *inter partes*, post–grant opposition, but Japanese patent practice has thus far provided pre–grant opposition. For a general discussion of administrative revocation of patents, see HAROLD C. WEGNER, PATENT HARMONIZATION BY TREATY OR DOMESTIC REFORM § 2160 (1993).

of the patent law. (That in turn would imply reliance on the commerce clause, rather than the patent clause, as constitutional authority.[145])

Remedies would be less preemptive, except in exceptional cases, and they would appropriately be gauged to the relative contributions of the parties to commercialization (e.g., relative enablement). The ordinary remedy would be reasonable and entire compensation for the use made.[146]

B. *Subject Matter And Conditions Of Protection*

1. Entry Into The System

The basic scheme of the proposed statute is to offer patent applicants a right of election whenever they face a rejection of a claim on the ground that the claimed subject matter is computer–related non-statutory subject matter, for example, an algorithm, method of doing business, or printed matter. Such rejections triggered the appeals in every one of the algorithm cases that ever went to the Supreme Court as well as all of those before the Federal Circuit in 1994. The election would have two immediate results—the application for protection of the rejected subject matter would be transferred to the petty patent system, and the applicant then would probably immediately receive a petty patent on the subject matter.

In addition, such a petty patent system might well permit any person to apply for a petty patent without first filing a regular patent application or receiving a rejection on grounds of nonstatutory subject

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[145] In Graham v. John Deere Co., 383 U.S. 1, 148 U.S.P.Q. (BNA) 459 (1966), the Court asserted that the Constitution establishes a minimum level of invention for patentability and that present 35 U.S.C. § 103 provides a test equivalent to that of the Constitution. *See also* The Trade-Mark Cases, 100 U.S. 82 (1879) (first trademark act held unconstitutional because not restricted to commerce). A provision of the type contemplated here exists in the enforcement section of the Semiconductor Chip Protection Act of 1984. 17 U.S.C. § 910(a).

[146] *See* 28 U.S.C. § 1498, which provides for an award of reasonable and entire compensation, and permits no other remedy, when the United States infringes intellectual property rights.

§ ___. Requirements of originality, novelty, technical advance

(a) Registration and protection under this part of this title are available only to computer software innovations that are original, are novel, and embody a technical advance in computer software art, as further particularized in the following subsections of this section.

(b) The originality requirement of this section is met if and only if the person claiming to be the creator of the innovation created it without having copied it from computer software previously created by another person.

(c) The novelty requirement of this section is met if and only if, on the effective date of registration of the innovation, the identical, or substantially identical, subject matter has not previously been any of the following:

(1) disclosed in a printed publication circulated anywhere in the world;

(2) publicly known in the United States;

(3) used anywhere in the world in a nonsecret manner that would permit a person skilled in computer software art to learn the subject matter; or

(4) disclosed in an earlier filed application under this title.

(d) The requirement of this section that a protected innovation must embody a technical advance in computer software art is met if and only if, on the effective date of registration of the innovation, creation thereof involved more than mere average or routine technical skill, relative to software described in paragraphs (1)–(3) of subsection (c). The technical advance

used throughout the section simply means the subject matter on which legal protection is sought and does not imply actual novelty and technical merit; the term is analogous to "alleged invention."[151]

C. *Relation To Regular Patent System*

A bright–line distinction between the subject matter of petty patents (new Part V of Title 35) and that of regular patents (existing Part II of Title 35) is essential to bring an end to the present state of confusion and uncertainty. The following provision is intended to describe a sharp, bright–line divide between the respective domains of petty and regular patents:

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a European or Japanese petty patent, utility model, or *Gebrauchsmuster*.

[151] There has been a running controversy in United States patent law over whether the word "invention," as used in 35 U.S.C. § 101 and elsewhere, is a mere token or placeholder, or instead has substantive meaning. Graham v. John Deere Co., 383 U.S. 1, 5–6, 17, 148 U.S.P.Q. (BNA) 459, 462-463 (1966) (obviousness standard under § 103 same as constitutional standard of technical merit for discoveries of inventors), indicates that the word has substantive significance related to the use of the same–stemmed term "inventor" in U.S. CONST. art. I, § 8, cl. 8. On the other hand, *In re* Bergy, 596 F.2d 952, 201 U.S.P.Q. (BNA) 352 (CCPA 1979), vehemently denies that "invention" has any substantive meaning in patent law (and instead is, in effect, synonymous with "subject matter claimed in patent application"), so that "*alleged* invention," as used, for example, in 35 U.S.C. 131 ("alleged new invention") and Hotchkiss v. Greenwood, 52 U.S. (11 How.) 248, 252–53, 267 (1950) ("alleged invention"; decision states legal standard for obviousness on which 35 U.S.C. § 103 is based, *see Graham*, 383 U.S. at 11–17, 148 U.S.P.Q. (BNA) at 464-467), would be an utterly vacuous term.

It is unnecessary to resolve the merits of this controversy to know that one should avoid laying the groundwork for a new, like controversy. A definitional section of the statute or passage of legislative history would therefore advisedly state something to this effect: "'Innovation' means an aspect of software that a person seeks to register, or has registered, under this part of this title. The use of the term does not imply that the person necessarily has a valid right to legal protection under this part of this title." That would assure that the term "innovation" would be a mere token, as *Bergy* argues that "invention" in section 101 should be.

gorithm, in combination with a category of printed matter, or to carry out a method of doing business.

(3) Lack of obviousness for purposes of Part II of this title or paragraph (1) of this subsection shall not be predicated upon alleged recognition of the desirability of computerizing a procedure or method of doing business, nor upon motivation (or absence thereof) to use an algorithm or printed matter to computerize a procedure or method of doing business.

(4) When an alleged invention otherwise falling within subsection (a) of this section is claimed with limitations requiring that it be carried out with a general-purpose digital computer or a portion thereof, including, without limitation, a read-only memory or an arithmetic logic unit, such limitations shall not bring the alleged invention within paragraph (1) of this subsection and outside subsection (a). Programming a conventional microprocessor or general–purpose digital computer with new software shall not be deemed to make the microprocessor or computer a new machine for purposes of this title.

(c) RELATION OF PART V TO PARTS I–III.—

(1) Parts I-III and this part of this title are intended to be mutually exclusive in respect of the same, or substantially the same, subject matter. Nonetheless, any applicant owning subject matter described in section ___ [describing petty patent subject matter] shall have the right to elect to proceed exclusively under this part rather than under Parts I–III.

device, claimed as standing alone without interconnection to a larger machine system, arguably should be unpatentable either as nonstatutory subject matter or as *per se* obvious.[167] Furthermore, as the dissenting opinion in *Alappat* suggests,[168] if a hardware stand–alone implementation is patented, and the software implementation is then considered equivalent to the hardware implementation (as is ordinarily true), then a patent on the hardware implementation becomes a patent preempting all practicable use of the algorithm. That would undo the proposed algorithmectomy. One might therefore conclude that a further provision of this kind should be added to this paragraph.[169]

3. Administration

Subsection (c) contains provisions relating the petty patent system to the regular patent system from an administrative standpoint. Paragraph (1) states that the patent and petty patent systems are intended to be mutually exclusive, but any applicant is entitled to elect a petty patent without risking a later challenge to the correctness of the election. Therefore, a petty patent cannot be invalid on the theory that the applicant should have taken a regular patent. However, an alleged infringer can still defend against a claim of infringement of a regular patent on the ground that the patent is invalid because it claims nonstatutory subject matter.

Paragraph (2) authorizes the Commissioner to promulgate regulations that will be definitive in the administration of the statute. For example, the Commissioner may promulgate a regulation stating that any claim in the form presented in the *Beauregard* case shall automatically be relegated to Part V. That regulation would have the

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[167] *See* Parker v. Flook, 437 U.S. 584, 198 U.S.P.Q. (BNA) 193 (1978) (to be patented, algorithm must be unobviously implemented). *But see* Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981) (sufficient for patentability if algorithm plus implementation is unobvious as a whole).

[168] *See supra* text accompanying note 67-70.

[169] So far as the writer is aware, no reported decision directly addresses this issue, although *Flook* and the *Alappat* dissent imply it. Therefore, the problem may be more academic than practical and consequently unnecessary to cure.

does not address them.[173] The subject of remedies is so huge, however, that the scope of this Article cannot reasonably include them.

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[173] Some of these factors are indicated in the following provision:

§ ___. **Factors in determining compensation, reasonableness**

(a) The following circumstances, among others, do not provide a complete defense to an action for infringement, but each may be considered in determining reasonable and entire compensation and the reasonableness of a party's behavior:

(1) that the infringing computer program [that is, the defendant's computer program using the plaintiff's protected algorithm] or subject matter is a substantial enhancement over the infringed subject matter;

(2) that the infringer engaged in substantial independent work to implement or commercialize the infringed subject matter;

(3) that the infringer independently created the infringing subject matter or did not copy from the registrant;

(4) that the infringer reasonably, albeit incorrectly, believed that its conduct was not infringing;

(5) that the infringer did not act for purposes of commercial gain or financial benefit;

(6) whether the amount of technical advance in the art or technical merit of the infringed innovative subject matter was modest or substantial;

(7) that compatibility requirements made it commercially impracticable not to use the infringed subject matter;

(8) that the registrant made excessive demands for compensation or excessive claims as to the scope of its rights;

(9) that the registrant did not give reasonable notice of protection pursuant to this part of this title; and

(10) that the infringer in good faith, prior to the registrant's effective date of registration, and without derivation from the registrant, exploited the infringed subject matter.

(b) A court may, in its sound discretion, decrease a registrant's compensation award because of its unreasonable behavior and the infringer's reasonable behavior, or increase a registrant's compensation award because of the infringer's unreasonable behavior and the registrant's reasonable behavior.

patentability of floppy diskettes carrying computer program code for algorithms, and there is hardly any basis for expecting harmony and clarity to emerge.

The respective arguments for and against algorithm patents are too powerful for the matter to be resolved under present law. A compromise in which an applicant could elect to take a petty patent on an algorithm or similar subject matter, instead of trying to snare the brass ring of a regular patent, has been proposed as a way out of the algorithm patent conundrum. The law would not only permit such an election, but it would spell out a sharp, definite boundary between the respective domains of petty patents (algorithms as such) and regular patents (algorithm–using machines that are not merely programmed general–purpose digital computers). Such a law, clearly setting boundaries between regular patents and algorithm petty patents, could bring an end to the uncertainty and confusion now plaguing the computer and electronic industries.

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SUPPLEMENTAL CLAIM JURISDICTION IN THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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patent claims without any opposition by the party asserting them, the Federal Circuit will not take appellate jurisdiction over the supplemental claims;

(3) there must be at least a nominal showing of a "common nucleus of facts" between the patent claims and the supplemental claims;

(4) a claimant can amend its pleadings to add a nonfrivolous patent claim, thereby conferring Federal Circuit appellate jurisdiction over the supplemental claims in the case, even though the pleadings are amended at a very late date and even after the case has been separately appealed to another regional circuit and then remanded; and

(5) if a nonpatent case is later consolidated with a case containing a nonfrivolous patent claim, then the entire case (including all supplemental claims) will be subject to Federal Circuit appellate jurisdiction.

As to the second issue, the Federal Circuit has not clearly spoken on whether it will interpret 28 U.S.C. § 1367 as *requiring* that a district court extend supplemental claim jurisdiction unless one of the statutory exceptions applies. It has hinted, however, that it would continue to apply existing case law regarding supplemental claim jurisdiction instead of a mandatory scheme.

II. SUPPLEMENTAL CLAIM JURISDICTION GENERALLY

The subject matter jurisdiction of the Federal Circuit in patent-related appeals from the district courts is governed by 28 U.S.C. § 1295(a)(1),[2] which provides that the Federal Circuit will have jurisdiction of "an appeal" if the jurisdiction of the district court was based, in whole or in part, on 28 U.S.C. § 1338.[3] This appellate jurisdiction is limited, however, to cases involving at least one patent

[2] 28 U.S.C. § 1295(a)(1) (1992).

[3] 28 U.S.C. § 1338 (1988).

Under 28 U.S.C. § 1338(b), district courts (and, thus, the Federal Circuit) have jurisdiction over any civil action asserting a claim of unfair competition when joined with a related claim under copyright, patent, or trademark laws.[12] This section provides limited statutory supplemental claim jurisdiction over claims which ordinarily would not confer subject matter jurisdiction.

The genesis of supplemental claim jurisdiction in federal courts stems from two Supreme Court cases which set forth a test for determining whether a federal court can constitutionally take jurisdiction over nonfederal claims.[13] Under this test, (1) there must be a substantive federal issue (i.e. the federal claim is not prima facie frivolous); (2) the federal and nonfederal claims must derive from a "common nucleus of facts"; and (3) the federal court has discretion as to whether to take jurisdiction, considering factors such as judicial economy, convenience, and fairness.[14] In other words, a party has no constitutional right to supplemental jurisdiction. The primary policy underlying supplemental jurisdiction is judicial economy; parties should not be required to try their case in two different courts merely because some of the claims are federal in nature. In dicta, the Supreme Court in *Gibbs* stated that, if the federal claims were dismissed before hearing the merits, then any supplemental state claims should be dismissed also.[15]

Although the test set forth in *Gibbs* is a constitutional test, not a statutory test, most courts—including the Federal Circuit—have used it as the basis for determining whether to take jurisdiction over

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[12] 28 U.S.C. § 1338(b) (1988).

[13] United Mine Workers of America v. Gibbs, 383 U.S. 715, 725-26 (1966); Hurn v. Oursler, 289 U.S. 238, 245-46 (1933).

[14] *Gibbs*, 383 U.S. at 725-26. Although couched as a constitutional inquiry, it appears that only the first and second prongs of the articulated test have anything to do with the Constitution, since there is no constitutional right to "convenience" of the court.

[15] *Id.* at 726.

Although the Federal Circuit has apparently not yet interpreted the scope of section 1367, it *has* interpreted section 1338(b), which states that "district courts *shall have original jurisdiction* of any civil action asserting a claim of unfair competition when joined with a substantial and related claim under [the patent statute]."[21] The Federal Circuit held that, despite the affirmative language in section 1338(b), district courts should still use discretion in determining whether or not to confer supplemental jurisdiction over the unfair competition claims.[22] This interpretation allows the *Gibbs* rationale to trump a more specific provision in the jurisdictional statute, a result which on its face does not appear to be that intended by Congress.

The Federal Circuit has generally affirmed decisions of the district courts with respect to exercising jurisdiction over supplemental claims. Cases in which the Federal Circuit has reversed a district court decision relating to supplemental claim jurisdiction are very rare.[23]

III. FEDERAL CIRCUIT JURISPRUDENCE DEALING WITH SUPPLEMENTAL CLAIMS

If a district court refuses to take jurisdiction of a state law claim and the case is appealed to the Federal Circuit, the Federal Circuit will review the refusal to exercise jurisdiction under an abuse of discretion standard.[24] That a district court has taken jurisdiction over

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[21] 28 U.S.C. § 1338(b) (1988) (emphasis added).

[22] Verdegaal Bros. v. Union Oil Co., 750 F.2d 947, 950, 224 U.S.P.Q. (BNA) 249, 251 (Fed. Cir. 1984) (citing United Mine Workers v. Gibbs, 383 U.S. 715, 726 (1966)).

[23] *See* Mars, Inc. v. Kabushiki-Kaisha Nippon Conlux, 24 F.3d 1368, 1375, 30 U.S.P.Q.2d (BNA) 1621, 1626 (Fed. Cir. 1994) (holding error in assuming jurisdiction under section 1367(a)); Windsurfing Int'l v. AMF, Inc., 828 F.2d 755, 759, 4 U.S.P.Q.2d (BNA) 1052, 1055-56 (Fed. Cir. 1987) (holding trademark claims unrelated to the patent claims, and therefore supplemental jurisdiction was improper); *Verdegaal Bros.*, 750 F.2d at 950, 224 U.S.P.Q. (BNA) at 251 (holding no abuse of discretion in refusing to hear supplemental claims).

[24] *Mars*, 24 F.3d at 1374, 30 U.S.P.Q.2d (BNA) at 1625 ("the exercise of jurisdiction over that claim is discretionary with the trial court"); *Verdegaal Bros.*, 750 F.2d at 950, 224 U.S.P.Q. (BNA) at 251 (reviewing

had jurisdiction over the nonpatent claim which had been "separated" from the patent claims. The Federal Circuit held that the district court's jurisdiction was originally and remained based in part on 28 U.S.C. § 1338, and that a mere procedural motion could not divest it of jurisdiction.[28] The court also noted that what was appealed was a case, not a claim.[29] The Federal Circuit also stated that "[t]he criteria for jurisdiction . . . over a case are determined at the time the complaint is filed and a subsequent event, such as [a] separation order [which] does not alter [these] criteria, cannot oust the appellate court of its . . . jurisdiction."[30] At the time of the *Atari* decision, therefore, supplemental claim jurisdiction was apparently determined with respect to the *Gibbs* standard and by looking at the complaint as filed to determine whether there were both patent and nonpatent claims. Jurisdiction was determined with respect to the "case," not individual claims, and the entire "case" was subject to the jurisdictional standard described under 28 U.S.C. § 1295(a)(1).

In *Bandag, Inc. v. Al Bolser's Tire Stores, Inc.*,[31] the Federal Circuit exercised supplemental jurisdiction over a supplemental trademark claim which was appealed separately from a patent claim. In that case, Bandag sued Al Bolser's for patent infringement, trademark infringement, and unfair competition. The district court found Al Bolser's liable for trademark infringement, but not liable for patent infringement. Al Bolser's appealed the trademark infringement decision to the Federal Circuit. Bandag moved to transfer the case to the Ninth

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[28] *Id.* at 1429-30, 223 U.S.P.Q. (BNA) at 1079-80.

[29] *Id.* at 1429, 223 U.S.P.Q. (BNA) at 1079; *See also*, Bandag, Inc. v. Al Bolser's Tire Stores, 750 F.2d 903, 908, 223 U.S.P.Q. (BNA) 982, 985 (Fed. Cir. 1984) ("The term 'case' in this context refers collectively to the proceedings that transpired at the district court level when viewed pragmatically at the time of appeal.").

[30] *Atari*, 747 F.2d at 1431-32, 223 U.S.P.Q. (BNA) at 1081. The general rule that appellate jurisdiction is determined at the time the suit is filed and, after vesting, cannot be ousted by subsequent events, was earlier stated by the court in *F. Alderete General Contractors, Inc. v. United States*, 715 F.2d 1476, 1480, (Fed. Cir. 1983) (regarding jurisdiction under 28 U.S.C. § 1491 (1988 & Supp. V 1993)).

[31] 750 F.2d 903, 223 U.S.P.Q. (BNA) 982 (Fed. Cir. 1984) (decided the same day as *Atari*).

applied Ninth Circuit law, finding that no abuse of discretion had occurred.[36]

B. *Exceptions To The General Rule*

In *Interpart Corp. v. Imos Italia*,[37] the Federal Circuit held that it could take jurisdiction over a Lanham Act claim and a state unfair competition claim that were filed in one court with no patent claims because the case was later consolidated with a patent case. This appears to be the first deviation from the court's test of looking at the case as of the time the complaint was filed, but it is consistent with the court's considering "a case" rather than individual claims. In that case, Interpart had filed a declaratory judgment complaint under the Lanham Act and state unfair competition law in 1980 in California. Two years later, Imos Italia filed its patent infringement suit in Illinois. The patent infringement action was transferred to California and consolidated with the Lanham Act and unfair competition claims. After the district court's decision, Imos Italia appealed to the Federal Circuit on the issue of attorney's fees and separately appealed to the Ninth Circuit on the unfair competition claim. Interpart moved to transfer the Ninth Circuit's appeal to the Federal Circuit. The motion was granted.

The Federal Circuit held that it had jurisdiction to hear the supplemental Lanham Act and unfair competition claims, even though the case as originally filed had no patent claims. The court's reasoning was very brief: it would look at "the case" and not the claims. When the claims were consolidated, they became one case and, therefore, the Federal Circuit had jurisdiction.[38] Thus, the general time-of-filing rule was apparently modified to include the situation in which a non-patent

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[35] *Id.* at 950, 224 U.S.P.Q. (BNA) at 251 (emphasis added) (quoting *Gibbs*, 383 U.S. at 726).

[36] "[D]iscretion is abused only where no reasonable man would take the view adopted by the trial court. If reasonable men could differ as to the propriety of the action taken by the trial court, then [there is no abuse] . . . ." *Id.* at 952, 224 U.S.P.Q. (BNA) at 252 (quoting Delno v. Market St. Ry., 124 F.2d 965, 967 (9th Cir. 1942)).

[37] 777 F.2d 678, 228 U.S.P.Q. (BNA) 124 (Fed. Cir. 1985).

[38] *Id.* at 680-81, 228 U.S.P.Q. (BNA) at 125-26.

In another exception to the general rule that supplemental claim jurisdiction will be determined at the time the complaint is filed, the Federal Circuit held, in *Schwarzkopf Development Corp. v. Ti-Coating, Inc.*,[43] that when patent counterclaims were dismissed at the pleading stage without opposition (so that they could not be raised again later), it would not take jurisdiction over the supplemental state law contract claims dealing with breach of a licensing agreement. In that case, Schwarzkopf sued Ti-Coating in state court for royalties due under a patent license and the case was removed to federal court based on diversity jurisdiction. Ti-Coating raised a defense of noninfringement. This defense was not a "well-pleaded complaint" and, therefore, could not confer section 1338 jurisdiction. Ti-Coating then filed a declaratory judgment counterclaim for patent invalidity, unenforceability, and noninfringement. These claims were dismissed for res judicata (from an earlier suit) and other grounds, however, without opposition by Ti-Coating. The district court held that Ti-Coating was liable under the patent license and Ti-Coating appealed to the Federal Circuit, claiming that the suit as originally filed included patent claims.

The Federal Circuit declined, however, to hear the contract claims on appeal, stating that appellate jurisdiction "requires something more than the mere filing, followed by the unopposed dismissal, of a counterclaim."[44] The court stated that "the transient appearance of the counterclaim did not give it irrevocable control of the jurisdictional basis of the case."[45] The court cited as support a Ninth Circuit case holding that when a patent declaratory judgment claim was dismissed and not raised in an earlier appeal, the Ninth Circuit retained jurisdiction over a subsequent antitrust appeal.[46] Therefore, the principle stated in *Schwarzkopf* appears to be that if the patent claims are dismissed at the outset and the claimant fails to oppose the dismissal, there will be no Federal Circuit jurisdiction to hear the

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[43] 800 F.2d 240, 231 U.S.P.Q. (BNA) 47 (Fed. Cir. 1986).

[44] *Id.* at 244, 231 U.S.P.Q. (BNA) at 50.

[45] *Id.* at 245, 231 U.S.P.Q. (BNA) at 51.

[46] *Id.* at 245, 231 U.S.P.Q. (BNA) at 51 (citing Handguards, Inc. v. Ethicon, 743 F.2d 1282, 1285-88, 223 U.S.P.Q. (BNA) 214, 215-17 (9th Cir. 1984)).

the Federal Circuit, which held that it had jurisdiction over all the supplemental claims and briefly cited the factors listed in *Atari* and *Gibbs* in a footnote.[50] The Federal Circuit stated that the infringement claim was not frivolous or baseless, nor was its addition to the complaint a "tactical maneuver."[51] Moreover, the amended complaint was really a "consolidation" of cases. The Federal Circuit, therefore, had jurisdiction over all the claims. In view of *Eaton*, a party may seek to amend its complaint at a very late date to add a nonfrivolous patent claim (even after appealing the original claims to the regional circuit) and, if successful, this maneuver will confer Federal Circuit jurisdiction over the entire case, including the supplemental claims.

The Federal Circuit held, in *Gronholz v. Sears, Roebuck & Co.*,[52] that a plaintiff who dismissed its own patent claim *without prejudice* prevented the Federal Circuit from hearing an appeal of the remaining supplemental unfair competition claim. In that case, Gronholz had filed claims for patent infringement and unfair competition against Sears; Sears moved for summary judgment on both claims. The district court granted summary judgment to Sears on only the unfair competition claim, leaving the patent claim in the suit. Gronholz then moved to voluntarily dismiss *both* counts without prejudice. The district court dismissed the patent count but refused to dismiss the unfair competition count, granting judgment to Sears on that count. Gronholz appealed the unfair competition count to the Federal Circuit. The Federal Circuit held that it did not have jurisdiction to hear that count, characterizing Gronholz's voluntary dismissal as really an amendment to the pleadings under Rule 15 of the Federal Rules of Civil Procedure rather than a dismissal of the action.[53] The Federal Circuit stated that "the procedural difference is critical here," and that the "amendment" to the complaint left only a single nonpatent claim for unfair competition, which did not meet the well-pleaded complaint rule and, therefore, did not arise under section 1338.[54] Accordingly, the

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[50] *Id.* at 876 n.3, 229 U.S.P.Q. (BNA) at 670 n.3.

[51] *Id.*

[52] 836 F.2d 515, 5 U.S.P.Q.2d (BNA) 1269 (Fed. Cir. 1987).

[53] *Id.* at 517-18, 5 U.S.P.Q.2d (BNA) at 1271.

[54] *Id.* at 518, 5 U.S.P.Q.2d (BNA) at 1271.

from *USM*, noting that *USM* concerned cases decided before the Federal Circuit was created.[60] The Federal Circuit held that the district court's jurisdiction was indisputably based on 28 U.S.C. § 1338, and, therefore, the Federal Circuit had jurisdiction. The court also noted that if the issues had been tried in the reverse order, it would have had jurisdiction over the supplemental antitrust claim although the patent claim had not yet been appealed.[61] Accordingly, even if the only remaining patent claim is dismissed and the dismissal is affirmed on appeal to the Federal Circuit, the Federal Circuit will still hear later appeals of any supplemental claims from the case.

In *Micro Motion, Inc. v. Kane Steel Co.*,[62] the Federal Circuit held that it had jurisdiction over a nonpatent appeal filed from an ancillary proceeding in another circuit. In that case, Micro Motion sued Exac for patent infringement in California and the jury ruled that Exac did not infringe. The district court ordered a new trial, however, including new discovery on possible damages. Micro Motion tried to obtain discovery from a non-party competitor, Kane Steel, by obtaining a subpoena from a New Jersey district court, which thereafter issued a protective order limiting the discovery to exclude Kane Steel's customer list. Micro Motion appealed the protective order to the Federal Circuit and Kane Steel cross-appealed.

The Federal Circuit held that it had jurisdiction to hear Kane Steel's cross-appeal, even though there was no independent jurisdiction over its appeal of the protective order. Because "[t]he issues of the cross-appeal are closely intertwined factually and legally with the issues of the appeal," the court reasoned, "we may exercise pendent jurisdiction to review the merits of the cross-appeal."[63]

In *Abbott Laboratories v. Brennan*,[64] the Federal Circuit made perhaps its clearest statement yet regarding supplemental claim

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[60] *Id.*

[61] *Id.*

[62] 894 F.2d 1318, 13 U.S.P.Q.2d (BNA) 1696 (Fed. Cir. 1990).

[63] *Id.* at 1320, 13 U.S.P.Q.2d (BNA) at 1697.

[64] 952 F.2d 1346, 21 U.S.P.Q.2d (BNA) 1192 (Fed. Cir. 1992).

included at least one nonfrivolous patent claim or counterclaim filed at some point during the district court proceedings. The supplemental claims must originate from a "common nucleus of operative fact" with the patent claims, but the Federal Circuit has rarely challenged a district court's determination on this issue. If the only patent claim asserted is voluntarily dismissed or is dismissed by the lower court without opposition by the party asserting it, however, the Federal Circuit will not hear the remaining nonpatent supplemental claims.

With respect to the second issue, the case law is sparse.[67] Should a district court's exercise of supplemental claim jurisdiction be *mandatory* under section 1367(a) in view of the affirmative statutory language?[68] The Federal Circuit, in a recent footnote, has offhandedly dismissed a suggestion that either section 1338(b) or section 1367 imposes a mandatory exercise of supplemental claim jurisdiction.[69] Its

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[67] *See* Mars, Inc. v. Kabushiki-Kaisha Nippon Conlux, 24 F.3d 1368, 1374, 30 U.S.P.Q.2d (BNA) 1621, 1625 (Fed. Cir. 1994) (stating that, despite affirmative language in statute, "[T]he statute reaffirms that the exercise of supplemental jurisdiction is within the discretion of the district court."); Windsurfing Int'l, Inc. v. AMF, Inc., 828 F.2d 755, 4 U.S.P.Q.2d (BNA) 249 (Fed. Cir. 1987) (reversing district court's finding of jurisdiction, alternatively rejecting suggestion of supplemental claim jurisdiction in view of lack of "common nucleus of operative fact"); Verdegaal Bros. v. Union Oil Co., 750 F.2d 947, 224 U.S.P.Q. (BNA) 249 (Fed. Cir. 1984) (applying abuse of discretion standard in section 1338(b) context).

[68] 28 U.S.C. § 1367(a) states, in relevant part, "[e]xcept as provided in subsections (b) and (c) or as expressly provided otherwise by Federal statute, in any civil action of which the district courts have original jurisdiction, the district courts *shall have supplemental jurisdiction* over all other claims . . . ." (emphasis added). Section 1367(c) states, in relevant part, "[t]he district courts *may decline* to exercise supplemental jurisdiction over a claim under subsection (a) *if*" four specific circumstances listed occur. 28 U.S.C. § 1367(c) (emphasis added).

[69] Conopco, Inc. v. May Dep't Stores Co., 32 U.S.P.Q.2d (BNA) 1225, 1235 n.14 (Fed. Cir. 1994) (stating that section 1338(b) "is a codification of the doctrine of pendent jurisdiction as it applies to patent, trademark, and copyright causes of action" and thus did not limit the district court's discretion). Moreover, the court rejected an argument that section 1367 limited the district court's discretion to hear supplemental claims, on the technical grounds that the statute only applied to cases filed after December 1, 1990. *Id.*

to render section 1367(c) superfluous."[74] The history of section 1367 as it made its way through Congress also indicates that proposed language leaving discretion for "judicial economy, convenience, and fairness to the litigants" was deleted in favor of the "compelling reasons" exception of Section 1367(c).[75] In view of these considerations, the statute should be interpreted to require supplemental claim jurisdiction unless one of the statutory exceptions is applicable. The Federal Circuit, therefore, should not allow vague formulations of supplemental claim jurisprudence developed by various courts over the years to trump a more specific statutory provision enacted specifically to eliminate some of the uncertainty.

Finally, there is the question of what body of law (i.e. regional circuit or "Federal Circuit") should be applied to an appeal in which the propriety of supplemental claim jurisdiction under section 1367 is an issue. In order to determine whether it will defer to regional circuit law or apply its own law, the Federal Circuit has generally inquired into whether the issue concerns a "subject which is not unique to patent law,"[76] or which is not specific to the Federal Circuit's statutory jurisdiction.[77] If the subject is not unique to patent law and is not specific to the court's appellate jurisdiction, then the Federal Circuit will generally defer to regional circuit law. If the subject concerns the appellate jurisdiction of the Federal Circuit, however, deference is inappropriate.[78]

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[74] *Id.* at 1556.

[75] Wolf, *supra* note 71, at 25. Even stronger language which prohibited a court from dismissing a nonfederal claim for any reason other than those identified in the statute was also deleted. *Id.* at 27. The compromise resulting in the final version has thus caused some of the present uncertainty.

[76] Kalman v. Berlyn Corp., 914 F.2d 1473, 1480, 16 U.S.P.Q.2d (BNA) 1093, 1098 (Fed. Cir. 1990).

[77] Registration Control Sys., Inc. v. Compusystems, Inc., 922 F.2d 805, 807, 17 U.S.P.Q.2d (BNA) 1212, 1214 (Fed. Cir. 1990).

[78] Woodard v. Sage Prods., Inc., 818 F.2d 841, 844, 2 U.S.P.Q.2d (BNA) 1649, 1651 (Fed. Cir. 1987) (en banc).

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As outlined above, the issue of whether the Federal Circuit has appellate jurisdiction over a particular appeal involving supplemental claims is generally well established, and the Federal Circuit has not deferred to regional circuit law in these cases. In reviewing a district court's decision to extend jurisdiction over supplemental claims under section 1367, however, the Federal Circuit's appellate jurisdiction is not directly at issue and the Federal Circuit should therefore defer to regional circuit law. Assuming that the Ninth Circuit's recent decision in *Executive Software* is followed by other regional circuits in determining whether supplemental claim jurisdiction should be extended, future Federal Circuit cases should reverse those district court decisions which fail to acknowledge the mandatory nature of section 1367.

brief explanation for doing so, however, leaves room for doubt.[70] The court noted that general principles of supplemental jurisdiction are not limited by the statutory formulation given in section 1338(b). The sources cited in its footnote, however, generally refer to discretion in finding supplemental jurisdiction for cases beyond those listed in section 1338(b). The converse is not also true by implication. That is, merely because courts find supplemental claim jurisdiction for cases beyond those listed in the statute, it does not follow that a court may refuse to exercise discretion for cases which *are* clearly within the statute.

The "shall have jurisdiction" language of 28 U.S.C. § 1367(a), when combined with the "exceptional circumstances" and "other compelling reasons for declining jurisdiction" language of 28 U.S.C. § 1367(c), appears to impose a mandatory requirement that federal courts extend jurisdiction over supplemental claims to the full extent allowed by the Constitution. Although there is general agreement that section 1367 was intended to extend jurisdiction as far as Article III of the Constitution allows, the legislation as finally passed did not clearly indicate whether a two-pronged or three-pronged test was to be applied, thus creating some room for uncertainty.[71] The Court of Appeals for the Ninth Circuit, in a well-reasoned decision based on both case law and legislative history,[72] makes a strong case for requiring that a district court extend supplemental claim jurisdiction if the constitutional test is met, unless one of the specific exceptions contained in section 1367(c) is applicable.[73] Indeed, the Ninth Circuit persuasively noted that "a contrary reading of the statute would appear

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[70] The footnote cites 13B CHARLES A. WRIGHT ET AL, FEDERAL PRACTICE AND PROCEDURE § 3582, at 317 (1990), for the proposition that section 1338(b) was an attempt to codify the existing case law on supplemental jurisdiction. However, Wright characterizes it as "an ill-conceived attempt" and cites a law review article for the proposition.

[71] *See* Arthur D. Wolf, *Codification of Supplemental Jurisdiction: Anatomy of a Legislative Proposal*, 14 W. NEW ENG. L. REV. 1, 23 (1992).

[72] Executive Software N. Am., Inc. v. United States Dist. Court, 24 F.3d 1545, *withdrawing and superseding* 15 F.3d 1484 (9th Cir. 1994).

[73] *Id.* at 1556-57.

jurisdiction. In that case, there was an interference in the U.S. Patent and Trademark Office between Brennan's patent application and a patent owned by Abbott Laboratories. The Board of Patent Appeals and Interferences awarded priority to Brennan and Abbott sued in federal district court in Michigan to reverse the Board's decision. Brennan counterclaimed for fraud, abuse of process, antitrust, and other wrongs. Brennan won a jury award on some of his claims but the district court denied his motion for sanctions under Rule 11 of the Federal Rules of Civil Procedure. Brennan appealed the denial of the motion for sanctions and the antitrust claim to the Federal Circuit and Abbott cross-appealed on the abuse of process claim. No patent claims were appealed.

The Federal Circuit held that it had jurisdiction to hear all the supplemental nonpatent claims, because "the direction of appeal to the Federal Circuit does not change during or after trial, even when the only issues remaining are not within our exclusive [jurisdiction]."[65] Thus, filing the original action under 35 U.S.C. § 146[66] in the district court vested the Federal Circuit with jurisdiction to hear the entire case, including all supplemental claims.

C. *Jurisdiction Over Claims At District Court Versus Appellate Court Level*

Implicit in the foregoing discussion are two related but distinct issues: (1) under what conditions will the Federal Circuit find appellate jurisdiction over supplemental claims for which it ordinarily would have no jurisdiction; and (2) how will the Federal Circuit review a district court's decision regarding the application of supplemental claim jurisdiction under 28 U.S.C. § 1367? Thus far, the case law of the Federal Circuit has for the most part answered the first issue, but has left the second one largely unanswered.

With respect to the first issue—in view of the cases discussed in the preceding text—the case law of the Federal Circuit can presently be summarized as follows: The Federal Circuit will find appellate subject matter jurisdiction over *all* claims which were part of a "case" which

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[65] *Id.* at 1350, 21 U.S.P.Q.2d (BNA) at 1195.

[66] 35 U.S.C. § 146 (1988).

Federal Circuit transferred the case to the Eighth Circuit on Sears' motion.[55] The rule of this case appears to be that a voluntary dismissal of a patent claim, even without prejudice, will be characterized as an amendment to the pleadings and can divest the Federal Circuit of its jurisdiction over any remaining supplemental claims.

In *Windsurfing International, Inc. v. AMF Inc.*,[56] the Federal Circuit reversed a district court's exercise of jurisdiction on the grounds that (1) the requirements for a declaratory judgment action were not satisfied, and (2) supplemental jurisdiction could not be used to hear trademark claims which did not derive from a common nucleus of operative facts.[57] In that case, the defendant had counterclaimed to cancel the trademark registration for a trademark which was registered for various other goods besides the patented invention.

In *Technicon Instruments Corp. v. Alpkem Corp.*,[58] the Federal Circuit took jurisdiction over an appeal of a supplemental antitrust claim, even though there was no patent claim left to appeal. In that case, Technicon sued Alpkem for patent infringement, Alpkem counterclaiming for antitrust violations. The district court separated the patent and antitrust issues for trial and dismissed the patent claim, holding that the patent was invalid, unenforceable, and not infringed (i.e. the district court ruled on the merits). Technicon appealed the dismissal to the Federal Circuit, which affirmed the dismissal on the basis of noninfringement. The district court then ruled in favor of Alpkem on the antitrust counterclaim and Technicon appealed the remaining antitrust ruling to the Federal Circuit.

The Federal Circuit held that it had jurisdiction to hear the antitrust counterclaim, stating that "[o]ur jurisdiction should not depend upon the happenstance that the district court here decided the patent issues before deciding the antitrust issues."[59] The court distanced itself

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[55] *Id.* at 519, 5 U.S.P.Q.2d (BNA) at 1272.

[56] 828 F.2d 755, 4 U.S.P.Q.2d (BNA) 1052 (Fed. Cir. 1987).

[57] *Id.* at 759, 4 U.S.P.Q.2d (BNA) at 1055-56.

[58] 866 F.2d 417, 9 U.S.P.Q.2d (BNA) 1540 (Fed. Cir. 1989).

[59] *Id.* at 420, 9 U.S.P.Q.2d (BNA) at 1542.

supplemental claims. It is unclear what degree of opposition or objection might be required to retain Federal Circuit jurisdiction.

In *In re Innotron Diagnostics*,[47] the Federal Circuit held that, when an antitrust case was consolidated with a later filed patent infringement suit, but the two issues were "separated for trial," the Federal Circuit would have jurisdiction over the entire case, including review of the separation order itself. In that case, Innotron sued Abbott Laboratories in California federal district court for alleged antitrust violations. A few weeks later, Abbott sued Innotron in the same court for patent infringement, but as a separate action rather than a counterclaim. The district court consolidated the actions, but ordered that the patent issues would be "separated for trial" under Rule 42(b) of the Federal Rules of Civil Procedure. Innotron appealed to the Ninth Circuit for *mandamus* to recombine the actions for trial. The Ninth Circuit dismissed, stating that the Federal Circuit had jurisdiction. The Federal Circuit held that it had jurisdiction to hear all appeals from the case, even though the issues had been "separated" for trial, stating that "[t]he mere labeling and sequencing of pleadings in the trial tribunal cannot be allowed to control every exercise of this court's appellate jurisdiction."[48] Thus, the Federal Circuit took jurisdiction over the appeal of the separation order, a mere procedural move that would normally be heard by the regional circuit.

In *Eaton Corp. v. Appliance Valves Corp.*,[49] the Federal Circuit found jurisdiction over supplemental claims in a case even when a patent claim was added *after* the original claims had already been appealed to the regional circuit. In that case, Eaton sued Appliance Valves for breach of contract and other state law causes of action for allegedly stealing trade secrets. Eaton's request for a preliminary injunction was denied, however, and the denial was affirmed by the Seventh Circuit. After the Seventh Circuit appeal, Eaton filed an amended complaint which added other defendants to the case, four other state law claims, and a patent infringement claim. The district court found for the defendants on all counts. Eaton then appealed to

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[47] 800 F.2d 1077, 231 U.S.P.Q. (BNA) 178 (Fed. Cir. 1986).

[48] *Id.* at 1080, 231 U.S.P.Q. (BNA) at 180.

[49] 790 F.2d 874, 229 U.S.P.Q. (BNA) 668 (Fed. Cir. 1986).

case was later consolidated with a patent case. In such a circumstance, it is proper to look at a later-filed patent claim.

In one special situation that will probably never occur again, *USM Corp. v. SPS Technologies, Inc.*,[39] the Federal Circuit *declined* to take jurisdiction over an appeal of an antitrust claim, even though the case *as filed* included patent claims. In 1974, USM sued SPS alleging patent misuse, invalidity, and non-infringement. USM added antitrust claims in an amended and supplemental complaint filed in 1978. The antitrust claims were severed for separate trial upon motion of USM. The patent issues were finally resolved, following appeal to the U.S. Court of Appeals for the Seventh Circuit and denial of a petition for certiorari to the Supreme Court, in 1983. (The Federal Circuit was created in 1982; before then, patent appeals went to the appropriate regional circuit court of appeals). The parties then returned to the district court for resolution of the antitrust claims. The district court ruled in favor of SPS on the antitrust claims and USM appealed to the Federal Circuit. SPS then filed a motion to transfer the appeal to the Seventh Circuit, alleging that the Federal Circuit lacked jurisdiction.

The Federal Circuit noted that there were patent claims at the time the original suit was filed, but distinguished *Atari* on the grounds that *Atari* did not rule on whether the Federal Circuit would have "jurisdiction over an appeal in which patent claims had been withdrawn with prejudice" *before* the appeal was filed.[40] The court noted that "all section 1338 patent claims have been finally adjudicated and there is no possibility that these claims will be reopened in the . . . litigation."[41] But the Federal Circuit also seemed to be swayed by the fact that it did not even exist at the time the suit was brought, indicating that "judicial economies" favored transfer.[42] Therefore, it declined to take jurisdiction of the supplemental antitrust claims and granted SPS's motion to transfer the appeal to the Seventh Circuit.

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[39] 770 F.2d 1035, 226 U.S.P.Q. (BNA) 1038 (Fed. Cir. 1985).

[40] *Id.* at 1037, 226 U.S.P.Q. (BNA) at 1039.

[41] *Id.*

[42] *Id.*

Circuit, reasoning that there were no patent claims on appeal and that section 1295(a)(1) specifically precludes Federal Circuit jurisdiction for "case[s] involving . . . copyrights . . . or trademarks and no other claims under section 1338(a)."[32] The Federal Circuit denied the motion as premature because Bandag's time to appeal the patent ruling had not yet expired. Bandag then filed a *separate appeal,* rather than a cross-appeal, to the Federal Circuit on the patent claim and renewed its motion to transfer the trademark claim, arguing that the trademark and patent claims were "separate appeals."

The Federal Circuit rejected this procedural maneuver. Because the claims were tried below as a single "case" and jurisdiction under section 1295(a) must be determined on the basis of *the whole case,* the court could hear both appeals as part of the same "case." Therefore, the Federal Circuit exercised jurisdiction over the supplemental trademark claim on appeal. The Court stated, however, that "[w]e explicitly reserve for future resolution the proper treatment to be accorded a similar motion to transfer in a case in which no appeal is brought of the patent issues tried before the district court."[33] In view of *Bandag,* it appears that even if an appeal of a supplemental claim is styled as a "separate appeal," the Federal Circuit will take jurisdiction of the claim if it originates from the same "case."

In *Verdegaal Bros. v. Union Oil Corp.,*[34] the Federal Circuit affirmed a district court's decision to dismiss supplemental state law claims for unfair competition which were joined with a patent infringement claim. In that case, Verdegaal sued Union Oil for patent infringement, misappropriation of trade secrets, and unfair competition. The district court dismissed the supplemental claims of misappropriation and unfair competition due to insufficient overlap in the facts, exercising its discretion in refusing to hear them. Verdegaal appealed the dismissal to the Federal Circuit, which upheld the dismissal under the *Gibbs* rationale, stating that "[p]endent jurisdiction is a doctrine of *discretion,* not of plaintiff's right."[35] The Federal Circuit

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[32] 28 U.S.C. § 1295(a)(1) (1992).

[33] *Bandag,* 750 F.2d at 908-09, 223 U.S.P.Q. (BNA) at 985.

[34] 750 F.2d 947, 224 U.S.P.Q. (BNA) 249 (Fed. Cir. 1984).

supplemental claims, however, does not guarantee that the Federal Circuit will take jurisdiction over the appeal.

A. *General Rule: Case As Filed Must Include A Patent Claim*

One of the leading Federal Circuit cases dealing with supplemental claims is *Atari, Inc. v. JS&A Group, Inc.*,[25] in which Atari sued JS&A for patent infringement and other wrongs, including copyright infringement. The case involved one patent count and six nonpatent counts, including Illinois state law claims of deceptive trade practices. All of the claims arose out of JS&A's advertising and sale of a product called "Prom Blaster," satisfying the *Gibbs* "common nucleus of operative facts" test. Under these circumstances, the district court's jurisdiction over the state law claims was supplemental.

After the district court issued a preliminary injunction on the copyright infringement claim, Atari moved to separate the patent count "for trial and judgment."[26] Atari's stated intention was to prevent the Federal Circuit from hearing the copyright appeal because Atari instead wanted the Seventh Circuit to hear those issues.[27]

The district court granted Atari's motion to "separate" the patent claims from the rest of the case. Nevertheless, JS&A appealed the preliminary injunction on the copyright claim to the Federal Circuit. Therefore, the only claim appealed to the Federal Circuit was a non-patent claim, although there still were patent claims pending in the district court.

Atari moved to transfer the copyright appeal from the Federal Circuit back to the Seventh Circuit, but the Federal Circuit refused. The sole issue was whether the Federal Circuit, which would have had jurisdiction over the entire "case" if the entire case had been appealed,

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section 1338(b) supplemental jurisdiction).

[25] 747 F.2d 1422, 223 U.S.P.Q. (BNA) 1074 (Fed. Cir. 1984) (en banc).

[26] *Id.* at 1424, 223 U.S.P.Q. (BNA) at 1075.

[27] *Id.* at 1425, 223 U.S.P.Q. (BNA) at 1076.

supplemental claims.[16] When the Federal Circuit finds subject matter jurisdiction over supplemental claims, it must separately determine which law to apply to these claims, even for federal issues such as copyright law.[17]

In 1990, Congress enacted 28 U.S.C. § 1367, entitled "Supplemental Jurisdiction," which in many respects codified the *Gibbs* standard. Unlike *Gibbs*, however, section 1367(a) states that "district courts *shall have* pendent jurisdiction over all other claims that are so related to claims in the action . . . that they form part of the same case or controversy."[18] Under section 1367(c), district courts *may decline* to exercise supplemental jurisdiction in a limited number of situations.[19] Thus, under the new statutory scheme, supplemental claim jurisdiction appears to be *mandatory* if the requirements under section 1367(a) are met and none of the exceptions in section 1367(c) applies. The Court of Appeals for the Ninth Circuit recently reached this result, reversing the district court's refusal to take jurisdiction over supplemental claims.[20]

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[16] *See, e.g.*, Windsurfing Int'l, Inc. v. AMF Inc., 828 F.2d 755, 759, 4 U.S.P.Q.2d (BNA) 1052, 1055-56 (Fed. Cir. 1987); Eaton Corp. v. Appliance Valves Corp., 790 F.2d 874, 876 n.3, 229 U.S.P.Q. (BNA) 668, 670 n.3 (Fed. Cir. 1986); Verdegaal Bros. v. Union Oil Co., 750 F.2d 947, 950, 224 U.S.P.Q. (BNA) 249, 251 (Fed. Cir. 1984); Atari, Inc. v. JS&A Group, Inc., 747 F.2d 1422, 1429, 223 U.S.P.Q. (BNA) 1074, 1078 (Fed. Cir. 1984).

[17] Brooktree Corp. v. Advanced Micro Devices, Inc., 977 F.2d 1555, 1561, 24 U.S.P.Q.2d (BNA) 1401, 1404 (Fed. Cir. 1992) (applying Ninth Circuit law to pendent claims under Semiconductor Chip Protection Act).

[18] 28 U.S.C. § 1367(a) (Supp. V 1993) (emphasis added).

[19] 28 U.S.C. § 1367(c) contains exceptions for cases where a supplemental claim raises "a novel or complex issue of state law;" the supplemental claim "predominates" over the other claims; the district court has dismissed all the nonsupplemental claims; or in "exceptional circumstances."

[20] Executive Software N. Am., Inc. v. United States Dist. Court, 24 F.3d 1545, 1555-56, *withdrawing and superseding* 15 F.3d 1484 (9th Cir. 1994). The court held that section 1367(a) creates a *presumption* that supplemental jurisdiction should be asserted unless one of the specific exceptions listed in section 1367(c) is invoked.

claim.[4] Therefore, the appellate jurisdiction of the Federal Circuit under section 1295(a)(1) is limited in scope to cases in which the district court properly had subject matter jurisdiction under section 1338;[5] a party may not appeal to the Federal Circuit on the basis of diversity jurisdiction under 28 U.S.C. § 1332[6] because Title 28 does not provide independent appellate jurisdiction for diversity claims.

Under 28 U.S.C. § 1338(a), a district court (and, consequently, the Federal Circuit, subject to the limitations of section 1295(a)) has jurisdiction over a civil action "arising under" any Act of Congress relating to patents, copyrights, and trademarks.[7] The Supreme Court has interpreted "arising under" to mean a "well-pleaded complaint;"[8] the complaint must state a federal question on its face. Thus, the defendant may not allege an anticipated defense such as patent invalidity in order to gain jurisdiction under section 1338.[9] The Supreme Court has held that the well-pleaded complaint rule specifically applies to section 1338(a) jurisdiction,[10] and this rule has been followed by the Federal Circuit.[11] Accordingly, a single patent infringement claim is sufficient to confer Federal Circuit jurisdiction over an appeal, as long as it is well-pleaded and not frivolous.

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[4] 28 U.S.C. § 1295(a)(1) states that "except that a case involving . . . [no patent] claims . . . shall be governed by sections 1291, 1292, and 1294 of this title."

[5] *See* Schwarzkopf Development Corp. v. Ti-Coating, Inc., 800 F.2d 240, 244, 231 U.S.P.Q. (BNA) 47, 50 (Fed. Cir. 1986) (stating that Federal Circuit jurisdiction is measured by the jurisdiction of the district court from which an appeal is taken).

[6] 28 U.S.C. § 1332 (1988).

[7] 28 U.S.C. § 1338(a) (1988).

[8] Louisville & Nashville R.R. v. Mottley, 211 U.S. 149, 152 (1908).

[9] *Id.* at 153.

[10] Christianson v. Colt Indus. Operating Corp., 486 U.S. 800, 808, 7 U.S.P.Q.2d (BNA) 1109, 1113 (1988).

[11] AT&T Co. v. Integrated Network Corp., 972 F.2d 1321, 1324, 23 U.S.P.Q.2d (BNA) 1918, 1920 (Fed. Cir. 1992).

I. INTRODUCTION

This article reviews the circumstances under which the United States Court of Appeals for the Federal Circuit ("Federal Circuit") will find subject matter jurisdiction over appeals involving "supplemental" claims in patent-related cases, i.e. those claims for which the Federal Circuit does not have independent jurisdiction, and the interpretation it will give to 28 U.S.C. § 1367.[1] For example, a patent owner may sue a patent licensee for both patent infringement (for exceeding the scope of the license) and for breach of contract (for nonpayment of royalties). The state law contract claim is supplemental to the federal patent infringement claim because the Federal Circuit does not have independent appellate jurisdiction over state law claims.

As another example, a patent owner may sue a party for both patent infringement and for trademark infringement. In such a case, the trademark claims would be supplemental to the patent claims because the Federal Circuit does not have independent appellate jurisdiction over the trademark claims, even though they are federal claims.

Two related but distinct issues are implicated in considering supplemental claim jurisdiction at the appellate level: First, whether the Federal Circuit will find appellate jurisdiction over a case involving no patent claims, and second, how the Federal Circuit will review a district court's decision to extend supplemental claim jurisdiction under 28 U.S.C. § 1367.

As to the first issue, the case law of the Federal Circuit so far indicates that appellate subject matter jurisdiction over supplemental claims can be established in virtually all appeals, subject to the following general rules and limitations:

(1) the supplemental claims must be part of a case which at one point included a nonfrivolous patent claim, although no patent claim need be appealed in order to confer appellate jurisdiction;

(2) if the patent claims or counterclaims are voluntarily dismissed in the district court, or if the district court dismisses the

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[1] 28 U.S.C. § 1367 (Supp. V 1993) ("Supplemental Jurisdiction").

Another difficult issue, not discussed here, is whether a system that is not limited to elections out of the regular patent system as a result of a rejection of a claim as nonstatutory subject matter should require claims,[174] or should have peripheral[175] rather than central claims.[176] Without peripheral claims, the definition of infringement becomes very difficult. Yet, "the highly developed art of drafting"[177] peripheral claims is expensive and raises the front–end costs of applicants.

V. CONCLUSION

The Year of the Algorithm in the Federal Circuit showed that present patent law probably cannot deal with algorithms in any satisfactory manner. At the beginning of the year, a long line of case law seemed to be converging toward some clear, albeit complex, rules for distinguishing patentable algorithm–using machines and algorithm–using processes from unpatentable algorithms. The *en banc Alappat* decision shattered any seeming consensus in Federal Circuit law, and three subsequent panel decisions showed irreconcilable differences among the members of the court, with "data structures" for computer software, for example, being either patentable or else unpatentable, depending on panel composition. In 1995 the court will address the

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[174] Copyrights have no claims, nor do registrations under the Semiconductor Chip Protection Act of 1984. Courts determine the scope of such intellectual property rights in the first instance in litigation.

[175] Peripheral claims are the ordinary claims of regular patents. Typically, they define the scope of a patent in terms analogized to the metes and bounds of a realty deed. A typical peripheral claim is of this format: *a machine comprising a combination of elements A, B, and C, connected to one another in such and such a way.* A machine having only elements A and B, and lacking C, will not infringe. *See generally* Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 128 U.S.P.Q. (BNA) 354 (1961) (describing claims as definitive measure of patent grant).

[176] A central claim is one that refers to the patent's specification describing the invention and states that the inventor claims the invention substantially as described. A claim in a design patent or plant patent is a central claim. *See* 35 U.S.C. § 162; 37 C.F.R. §§ 153, 164.

[177] Brenner v. Manson, 383 U.S. 519, 534, 148 U.S.P.Q. (BNA) 689, 695 (1966).

force of law unless proved to be arbitrary and capricious. This paragraph would effectively bring to an end controversies such as that over whether a data structure claim is statutory subject matter under Part II.[170]

The last sentence of paragraph (2) is a savings clause that says, in effect, that the Commissioner classifies something as patentable subject matter under Part II rather than petty patent subject matter under Part V does not keep an alleged infringer from challenging patent validity on the ground of nonstatutory subject matter, despite the limited availability of judicial review of the Commissioner's regulations. However, the alleged infringer would have to contend against the presumption that an agency interprets its organic statute correctly.[171]

This legislative proposal is not complete. It does not address remedies in any detail, and yet proper definition of remedies is perhaps at the crux of resolving the problem. Remedies must not be too preemptive,[172] but they must be sufficient to make the election of a petty patent attractive. The remedy mechanism should consider factors that are material in the present context, even though regular patent law

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[170] *See supra* text accompanying notes 152-166.

[171] *See* Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 843–45 (1984) (agency interpretation of its statute upheld if "permissible," particularly as to matters delegated to agency).

[172] An injunction against use of an algorithm is a preemptive remedy. Probably, a remedies system generally akin to that which 28 U.S.C. § 1498 applies to infringement by the United States of intellectual property rights is not preemptive.

from petty patent coverage under Part V to patent coverage under Part II. If that argument prevailed, it would completely undermine the compromise proposed here.

Paragraph (4) addresses possible frivolous apparatus limitations (for example, a ROM in which information is stored) and contentions that a general–purpose digital computer or portions of it provide "structural limitations" making an algorithm claim non–preemptive. It also addresses the contention that a new program placed into an old microprocessor or general–purpose digital computer makes the latter a new, patentable machine.[163] Arguments of this kind, if accepted, would also undermine the proposed compromise. (If algorithms creep back into the regular patent system, the proposed radical algorithmectomy will not have been performed successfully.)

Conventional hardware implementations of algorithms raise an issue that this paragraph may not have covered, which therefore may warrant further specific language. Any algorithm can be implemented either in software as a programmed microprocessor or general–purpose digital computer or else in hardware as a series of interconnected chips, in a gate array, or by similar devices.[164] Consider the case of an algorithm or equation implemented in such conventional hardware, for example, the method of computing a hypotenuse by using the Pythagorean Theorem—$a^2 + b^2 = c^2$—implemented as a summing circuit, which receives the outputs of two squaring circuits, and feeds the sum to a circuit for taking the square root.[165] Should a conventional hardware implementation of a new, unobvious algorithm or formula, where there is no x–ray machine input, no mold press opener device output, and no physical signal transformation,[166] be patented under the regular patent system? Since the hardware and software implementations are equivalent, why should the conventional hardware implementation be given preferred treatment? Such a bare hardware

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[163] *See supra* text accompanying notes 65-67.

[164] *See supra* text accompanying note 134.

[165] For a more detailed discussion of such circuitry, see Richard H. Stern, *Tales from the Algorithm War:* Benson *to* Iwahashi, *It's Deja Vu All Over Again*, 18 AIPLA Q.J. 371, 379–80 (1991).

[166] *See supra* text accompanying notes 29-39, 45-55.

> (2) The Commissioner is authorized to effectuate this section and particularize it as to technical details by promulgating regulations exclusively allocating specified subject matter to protection under this part of this title; and specifying the form, interpretation, and manner of examination of claims directed to such subject matter. Such regulations shall have the force of law. Such regulations shall be subject to judicial review only in the course of direct judicial review of a final rejection of an application under this title; and they shall be upheld unless arbitrary and capricious. Nothing contained in this paragraph, however, takes away the right of a person alleged to have infringed a patent to defend on the ground that the patent is invalid under section 101 because it claims nonstatutory subject matter.

1. Point–Of–Departure Approach

Subsection (a) of this section adopts the so–called point–of–novelty or point–of–departure approach in distinguishing petty patent subject matter from regular patent subject matter. Under this approach, analysis focuses on how the claimed innovation is different from the prior art. If everything described in the claim is old and conventional, except for a new algorithm (or other nonstatutory subject matter), the claimed innovation is really a new algorithm.[152]

Whether to use the point–of–novelty approach, under regular patent law, as a conceptual tool to distinguish algorithmic, nonstatutory subject matter from algorithm–using, statutory subject matter was a major point of difference and contention between the Supreme Court's *Diehr* majority opinion, on the one hand, and the *Flook* majority opinion

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[152] *See* Parker v. Flook, 437 U.S. 584, 591–95, 198 U.S.P.Q. (BNA) 193, 197-99 (1978). For reference to the Office's use of this conceptual tool, see *id.* at 587.

§ ___. Relation of software protection to patent laws

(a) ALGORITHMS UNPATENTABLE.—When the main point or points in which an alleged invention departs from the prior art is an algorithm, a category of printed matter, a method of doing business, or other subject matter protectable under this chapter, the sole available form of intellectual property protection, if any, for the alleged invention shall be that which this part of this title provides.

(b) ALGORITHM-USING MACHINE SYSTEMS PATENTABLE.—

(1) Notwithstanding subsection (a), even though an invention utilizes or carries out an algorithm, category of printed matter, method of doing business, or other subject matter protectable under this chapter:

(A) if the invention is implemented in novel and unobvious apparatus, the apparatus may be patented as provided under part II of this title;

(B) if the invention is implemented by a novel and unobvious use of new or old apparatus, the use may be patented as provided under Part II of this title.

(2) Novelty for purposes of Part II of this title or paragraph (1) of this subsection shall not be predicated on newly causing an otherwise conventional apparatus to operate in accordance with an al-

need not, however, be unobvious within the meaning of section 103 of this title.

The originality requirement of subsection (b) is essentially the same as that for copyright law. The novelty requirement of subsection (c) is generally similar to that of patent law,[148] adapted to a system in which rights depend on filing. The technical merit requirement of subsection (d) is not as high as that of patent law,[149] and simply filters out routine or commonplace contributions.[150] The term "innovation"

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[148] *See* 35 U.S.C. § 102.

[149] *See* 35 U.S.C. § 103. According to Dann v. Johnston, 425 U.S. 219, 189 U.S.P.Q. (BNA) 257 (1976), "[t]he gap between the prior art and respondent's system [must be] . . . so great as to render the system nonobvious to one reasonably skilled in the art" for a software innovation to be patented. *Id.* at 230, 189 U.S.P.Q. (BNA) at 261. Subsection (d) does not require a gap like that described in *Johnston;* put differently, the gap can be quite small, so long as it exceeds zero magnitude.

[150] *See* 17 U.S.C. § 902(b)(2). There are considerable difficulties in specifying with precision the requisite level of technical advance for software protection to be warranted.

The French Court of Cassation has sought to define this level under the French copyright law applicable to software. French copyright law uses the term "original" as the standard for legal protectability. In the *Pachot* judgment (Plen. sess., March 7, 1986, RIDA July 1986 at 136), the court defined an original computer program as one that bears "the mark of an intellectual contribution."

German law also uses the term "original" to describe works deserving legal protection. The German Supreme Court, in the *Inkassoprogram* decision (May 9, 1985, GRUR no. 12, at 1041), held that computer software is original only if "more than average programming skills" are required to develop the computer program for which protection is sought.

It has been said that the French standard of originality is lower than the German standard, and that the Dutch standard of originality is also lower than the German standard. J.H. Spoor, *Protecting Expert Systems, In Particular Expert System Knowledge,* 14 EUR. INTELL. PROP. REV. 9, 11 (1992). Probably, the German Supreme Court's standard of originality for computer program copyright, described above, comes closest to that of the present proposed statutory provision, whose language ("more than mere average or routine technical skill") is similar to that of the German court's *Inkassoprogram* decision. This level of technical advance is also approximately comparable to that required for

matter. But that aspect of the system is beyond the scope of this Article.[147]

The right of election, triggering a patent applicant's transfer into the petty patent system, may be statutorily described as follows:

> **§ ___. Right of election of software protection**
>
> Whenever any claim of any patent application is rejected under section 101 of this title on the ground that the claim is directed to an algorithm, printed matter, a method of doing business, or any other computer–related nonstatutory subject matter, the applicant may elect to obtain rights to the claimed subject matter under this part of this title instead of under Part II. Any applicant making such an election shall be entitled, for purposes of determining priority, to the benefit of the effective filing date of the applicant's patent application insofar as it discloses the claimed subject matter. This provision is intended only for use when a regular patent application can be transferred to petty patent application status and receive substantially automatic issuance without further processing. The Commissioner would prescribe regulations governing how the election and transfer would occur.

2. Originality, Novelty, And Technical Advance

The basic qualifying conditions for petty patent protection would be originality, novelty, and technical advance. These conditions may be described as follows:

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[147] Permitting direct application for a petty patent on an algorithm or similar nonstatutory subject matter would raise a number of issues not necessary to address in a statute only contemplating transfer of a case from the regular patent system to a petty patent system. For example, how detailed an application should be required? Must there be claims? *See* 35 U.S.C. § 112.

products that anticipate a registered algorithm,[144] rather than engage in infringement litigation.

The focus in determining entitlement to a petty patent (that is, validity) would be more on novelty than on level of technical merit, with a standard of required technical merit set below that of section 103

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[144] One might expect those in the software industry to have knowledge of the content of previously commercialized software superior to that of the Office. This procedure would therefore help overcome the past difficulty experienced in the Office in finding relevant prior art in software cases. *See* Gottschalk v. Benson, 409 U.S. 63, 72, 175 U.S.P.Q. (BNA) 673, 677 (1972) (quoting report of presidential commission describing Patent Office's difficulty in making proper search for computer program art and stating that effect is to make "patenting of programs . . . tantamount to mere registration"). The reexamination of the Compton–Encyclopedia Britannica multimedia patent confirmed the value of post–issuance examination of prior art concerning software patents, as facilitated by software industry participation. *See* Ex Parte Reed, Reex. No. 90–3270 (final rejection of multimedia patent, order of Sept. 16, 1994), *reprinted in* COMPUTER L. REP., Dec. 1994, at 776.

In one respect, the post–issuance opposition contemplated here may be broader than that for reexamination of United States patents. Such reexamination is limited to patents and printed publications as prior art. 35 U.S.C. §§ 301–02. Public use and sale will not be considered unless the patentee admits it. Quad Environmental Technologies Corp. v. Union Sanitary Dist., 946 F.2d 870, 875 n.7, 20 U.S.P.Q.2d (BNA) 1392, 1395 n.7 (Fed. Cir. 1991). It is not clear whether a commercial floppy diskette containing a computer program embodying an algorithm is a printed publication disclosing the algorithm (although it does evidence public use and sale); the algorithm could be discerned from the diskette by disassembling ("reverse compiling") the object code. This obviously represents a different kind of disclosure or public knowledge than has been involved until now in precedents regarding printed publication for purposes of 35 U.S.C. § 102. Hence, it is uncertain whether the Office will consider such things as an old copy of a *Visicalc* diskette as prior art in a reexamination proceeding. However, this is precisely the best kind of prior art that should be particularly relevant to a post–issuance opposition against a software registration under the proposed legislation. It also illustrates the kind of art that those in the software industry will know about, although the Office does not.

presumption of validity.[141] Courts would need to scrutinize a registered computer–idea innovation in depth for its validity, in terms of the prior art and its technical merit, but this would occur only in the remote eventuality of litigation.[142] Post–registration administrative opposition

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[141] A conventional patent is presumed valid in all respects. 35 U.S.C. § 282. The presumption can be overcome only by clear and convincing evidence. Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 1177, 26 U.S.P.Q.2d (BNA) 1018, 1028 (Fed. Cir. 1993) ("patent is presumed valid and the party asserting invalidity must overcome this presumption by clear and convincing evidence establishing the facts which support the conclusion of invalidity"); Hewlett–Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1467, 15 U.S.P.Q.2d (BNA) 1525, 1527 (Fed. Cir. 1990); Chrysler Motors Corp. v. Auto Body Panels of Ohio, Inc., 908 F.2d 951, 953, 15 U.S.P.Q.2d (BNA) 1469, 1471 (Fed. Cir. 1990) ("Under § 282, a patent is presumed valid. This presumption of validity places the burden of persuasion as well as the burden of going forward on the party asserting invalidity."); Ralston–Purina Co. v. Far–Mar–Co, Inc., 772 F.2d 1570, 1573, 227 U.S.P.Q. (BNA) 177, 178 (Fed. Cir. 1985).

[142] The same scheme now applies in the United States to copyrights and rights under the Semiconductor Chip Protection Act of 1984. *See generally* RICHARD H. STERN, SEMICONDUCTOR CHIP PROTECTION §§ 3.9, 5.3[A] (1986). Invalidity of a copyright because of prior art or obviousness is not a meaningful concept in copyright law, however, so that copyright may not comprehensively provide a useful analogy. Rights under the chip act can be invalid, however, because of prior art and complete obviousness. Richard H. Stern, *Determining Liability for Infringement of Mask Work Rights under the Semiconductor Chip Protection Act*, 70 U. MINN. L. REV. 271, 317–21 (1985). *Compare* 17 U.S.C. § 902(b)(2) (work is unprotectable if commonplace designs are "combined in a way that, considered as a whole, is not original") *with* 35 U.S.C. § 103 (subject matter, considered as a whole, is obvious). The determination of originality under 17 U.S.C. § 902(b)(2) is made in the first instance, if at all, by a court in an infringement case; the determination of obviousness under 35 U.S.C. § 103 is made administratively, in the first instance, by a patent examiner.

A similar scheme exists in Germany for its *Gebrauchsmuster* or petty patent or utility model. Application is made to the German Patent Office's Utility Model Section, which performs a cursory examination to determine whether the claimed subject matter is the kind of subject matter that a *Gebrauchsmuster* protects, and if so the Office registers it. No examination for novelty or technical merit occurs unless infringement or cancellation proceedings occur. CHRISTINE FELLNER, THE FUTURE OF LEGAL PROTECTION FOR INDUSTRIAL DESIGN 138 (1985). For descriptions of the *Gebrauchsmuster*, see R. Liesegang, *German Utility Models After the*

> with this without changing it into something that was no longer our patent law, which would be unacceptable to the users and beneficiaries—the clients—of traditional patent law.[135]

Without legislative resolution of some kind, we are probably in for a great deal of uncertainty in the law for a long time and the software and electronics industries will be condemned to a long and expensive educational experience. An appropriate legislative resolution would be a compromise that provided to those who disclose new and useful algorithms and other computer-related nonstatutory subject matter an industrial property right that did not preempt and discourage the creative work of others. Moreover, the scope of the new right and its relation to the patent system would have to be delineated with sufficient clarity to lessen significantly the high transaction costs illustrated by the litigation of the Year of the Algorithm. Above all, the new system of industrial property rights would have to increase certainty and predictability, and thus lead to greater security of business expectations.

A possible resolution of the algorithm patent problem in accordance with the foregoing prescription would be to provide a different kind of patent, a petty patent, for algorithms and such other computer-related nonstatutory subject matter as computer-related printed matter and methods of doing business. Petty patents are not complete strangers to United States intellectual property law. While not so denominated, plant patents[136] and design patents[137] are kinds of petty patent, in comparison with ordinary patents. They have shorter terms and are narrower. The Semiconductor Chip Protection Act of 1984,[138] which protects chip layouts, also provides a type of petty patent right.[139]

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[135] *Id.*

[136] 35 U.S.C. § 161 (1994).

[137] 35 U.S.C. § 171 (1994).

[138] 17 U.S.C. §§ 901–914 (1994).

[139] The EC data protection directive, see *supra* note 114, contemplates a kind of petty patent system.

depend on engineering and economic considerations, not legal ones. Thus, a well known electrical engineering textbook states:

> A central theme of this book that will occur over and over again is: *hardware and software are logically equivalent.*
>
> Any operation performed by software can also be built directly into the hardware, and any instruction executed by the hardware can also be simulated in software. The decision to put certain functions in the hardware and others in the software is made on the basis of such factors as cost, speed, amount of memory required, reliability, and frequency of expected changes. There are no hard and fast rules to the effect that X must go into the hardware and Y must be programmed explicitly.[131]

It is, therefore, unsound in principle to allow intellectual property protection on hardware implementations of a computer system advance and to deny such protection to software implementations. To do so distorts the making of choices between hardware and software, and decreases allocative efficiency.

The arguments against algorithm patents are in the main based on general principle or other abstract reasoning. The metaphor of depriving the artisan of his tools,[132] for example, may be excessive and unrealistic. A new algorithm is not the same thing as an old screwdriver, and when new screws and screwdrivers were invented (consider the Phillips–head screw), patents were allowed without ensuing industrial disruption. Closely akin to the tool metaphor is the concept of entirely preempting the algorithm and thus hindering the scientific and technological advances of others in the field. That is really a remedy problem, however, rather than one of fundamental conflict.

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[131] A.S. TANENBAUM, STRUCTURED COMPUTER ORGANIZATION 10 (1976) (italics in original).

[132] Parker v. Flook, 437 U.S. 584, 589, 198 U.S.P.Q. (BNA) 193, 197 (1978) (quoting *Benson*); Gottschalk v. Benson, 409 U.S. 63, 67, 175 U.S.P.Q. (BNA) 673, 675 (1972).

the court) to permit one to place them in Algorithm Alley or the opposite camp. Given this pattern, an observer might well be tempted to predict the outcome of subsequent decisions, such as the prospective decision of *In re Beauregard*, largely on the basis of panel composition.[128]

III. WHERE WE ARE AND WHY

The *Alappat* decision and the rest of the Year of the Algorithm in the Federal Circuit have left algorithm–related and computer–related patent law in such disarray that, without legislative intervention, it may be years before any equilibrium is reached. The outcome of cases will now significantly depend on the happenstance of panel composition. By the same token, infringement and validity opinions of counsel will not be definite and reliable. Security of expectation and investment, for software innovators with software patents and for their competitors with potentially infringing products, will suffer. That is not acceptable. It is unfair to the software industry and unfair to the electronic industry upon which patents impact. It is not in the interest of the public that predictability of commercial affairs, business expectations, and security of investment should be impaired by this much legal uncertainty.

Many will regard this as an unmitigated evil. On the other hand, some in industry will applaud. They are hopeful that they can reshape the law from what *Schrader* and the precedents on which it relied said it is to something more hospitable to patents on software abstractions. They consider that hoped–for result far more important than any costs of uncertainty during the interim. Perhaps, there is something to be said for that view. Perhaps, the Year of the Algorithm has given us all an opportunity.

A reprise of the pros and cons of algorithm patents is in order. The sharp division of opinion about algorithm patents among different Federal Circuit panels is not a mere epiphenomenon of judicial temperament. Both camps can find considerable policy support for their respective positions. In a sense, and in some respects, public policy supports both positions; yet a fundamental problem with algorithm patents prevents satisfactory resolution of the controversy at this time. Intellectual property protection for algorithms is desirable and

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[128] It should be noted that a new twelfth member has recently joined the court, without any prior algorithm–related history.

left to turn *In re Beauregard* into a silk purse[126] but the court vacated and remanded. Probably, *Beauregard* will return to the Federal Circuit later in 1995 in a somewhat altered state and with a new spin vector.

6. 1994 Summary

The sharp division among Federal Circuit panels in the 1994 algorithm decisions is illustrated in the following table:

printed matter rationale, so that supporting the Board's result under an analysis pitched at a higher level of abstraction (for example, abstract idea) or based on another category of nonstatutory subject matter (algorithms) would provide serious problems for appellate counsel. *See supra* note 115 and accompanying text.

[126] *But see In re* Schrader, 22 F.3d 290 (Fed. Cir. 1994), discussed *supra* at notes 40-55. In *Schrader*, most observers and a dissenting member of the Federal Circuit panel though that the Board had rejected the patent on the grounds that it claimed a nonstatutory method of doing business. Nevertheless, the majority of the Federal Circuit panel sustained the rejection below on the grounds that the patent claimed an algorithm. Such lightning might strike again in *Beauregard*. For example, the court could consider the abstract idea rationale implicit in the printed matter doctrine, indeed, its "true meaning." That would not be very difficult from how the court addressed a similar issue in *Warmerdam*. *See* 33 F.3d at 1360, 31 U.S.P.Q.2d (BNA) at 1758-59 (abstract idea rationale rather than algorithm rationale). The *Trovato* opinion operates similarly. *See* 42 F.3d at 1381.

side, and the absence of discussion of algorithms or abstract ideas in the Board's opinion, on the other.

The Office therefore filed a motion to remand the case to the Board for further proceedings and a new opinion that would take *Lowry* into account.[121] IBM opposed the motion on the ground, among others, that the Office was hypocritical in asking for a remand to give the matter further consideration in the light of *Lowry*. IBM said that everyone knows[122] that the Office pays no attention to a Federal Circuit panel decision unless it is "a decision that the Commissioner happens to agree with." One might have thought that the appeal was moot, or that important elements of a live, justiciable controversy between the appellant and appellee were lacking, once the Office said that it "appears" that the agency's rejections were inconsistent with a subsequent decision of the reviewing court and therefore a remand would be appropriate.[123] At least, one might think it an uneconomical

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[121] The Office said: "It appears to the Commissioner that the rejections in the present appeal are inconsistent with this Court's holding in *Lowry*. The Commissioner requests a remand . . . for further consideration by the Office not inconsistent with *Lowry*." The Office said that if *Beauregard* were remanded the Office would also reconsider its decision in the light of *Alappat* and *Trovato*, and it noted two recent unpublished decisions in which the Federal Circuit remanded cases to permit the Office to apply *Alappat*. *In re* Fraenkel, Fed. Cir. App. No. 94-1217 (remanded Mar. 8, 1995); *In re* Sommen, Fed. Cir. App. No. 94-1023 (remanded Jan. 19, 1995).

[122] IBM cited several directives from the Commissioner to the examining staff stating that certain Board decisions had been correctly decided, that Federal Circuit panel decisions reversing them were wrongly decided, and that the staff should continue to follow the Board decisions or authorities on which they had been based. *See, e.g.*, 1161 Off. Gaz. Pat. Office 314 (Apr. 19, 1994) (*In re Baird* "was wrongly decided); 1134 Off. Gaz. Pat. Office 633, 636 (Jan. 7, 1992) (Federal Circuit panel decisions "do not overcome" *In re* Lundberg); 1112 Off. Gaz. Pat. Office 16 (Mar. 13, 1990) (limiting *In re* Iwahashi to its facts).

[123] IBM argued that "appears" and similar words of qualification belied the Office's sincerity in requesting the remand. Without a more abject confession of error, IBM maintained, one could expect the Office simply to try to limit *Lowry* to its facts, for example, merely "computer data structures in memory or the like," and thus deem *Lowry* inapplicable to the *Beauregard* case, which involves storing an algorithm or computer

grams on a floppy disk ought to be patented. The substance of the claimed invention, not its form, should guide the analysis. The substance here is algorithm, not trolley ticket.

d. Lowry.

The Office apparently became troubled with defending the Board's decision in *Beauregard* on a printed matter theory because of the Federal Circuit's panel decision in *Lowry* stating that the printed matter rule does not apply to machine–readable information.[116] That statement was clearly too broad, however, and missed the point. It was too broad, particularly for obviousness purposes, because it welcomed machine–readable piano rolls, music CDs, and videotaped sales presentations into the patent system as articles of manufacture, something against which Judge Archer warned in his dissenting opinion in *Alappat*.[117]

It missed the point, also, because the printed matter rule effectively is a rule against patents on information as such—whether the information is machine–readable is not the point. If every claim element is old and conventional, if all elements cooperate in an old, conventional manner, and if the only thing novel in the whole claim is the identity of the information, then a patent on that combination of elements amounts to a patent on the new information, regardless of

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[116] *In re* Lowry, 32 F.3d 1579, 32 U.S.P.Q.2d (BNA) 1031 (Fed. Cir. 1994); *see supra* text accompanying notes 82-87.

[117] *In re* Alappat, 33 F.3d 1526, 1553-54, 31 U.S.P.Q.2d (BNA) 1545, 1565-66 (Fed. Cir. 1994). The Board also noted in its initial opinion that IBM had admitted on oral argument that claims to phonograph records are nonstatutory subject matter because one phonograph record differs from another only in the informational content. The Board's opinion and IBM's concession preceded *Alappat* and *Lowry*.

In addition, at least one of the printed matter cases *did* involve machine–readable information. *In re* Jones, 373 F.2d 1007 (C.C.P.A. 1967). In that case, the inventor encoded markings on a disk—successive opaque and transparent regions—so that light would or would not pass through the disk, depending on the angle of rotation. That permitted the disk's analog rotary motions to be converted to digital signals. The court held that the information on the disk functionally cooperated with the disk, and that therefore the combination was patentable.

customers could not use it in the afternoon;[110] a directory might be printed in which surnames are arranged phonetically rather than as spelled;[111] conventional dice might be imprinted with new symbols for playing a game;[112] a measuring cup for making half as much of a food item as shown in a recipe book might have a line reading "1 cup" where the actual volume was 0.5 cup, a line reading "0.75 cup" where the actual volume was 0.375 cup, and so on, so that the user would not need to perform arithmetic calculations to get half as much of everything.[113] The usual problem in printed matter cases was whether the subject matter was obvious, not that society would necessarily be injured, even apart from any obviousness considerations, if subject matter of this kind were patented.[114]

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[110] Cincinnati Traction Co. v. Pope, 210 F. 443 (6th Cir. 1913) (held patentable).

[111] *In re* Russell, 48 F.2d 668 (C.C.P.A. 1931) (held unpatentable).

[112] *Ex parte* Gwinn, 112 U.S.P.Q. (BNA) 439 (Bd. App. 1955) (unpatentable).

[113] *In re* Miller, 418 F.2d 1392, 164 U.S.P.Q. (BNA) 46 (C.C.P.A. 1969) (patentable).

[114] A patent on printed matter is a patent on information, at least in the ordinary case where everything in the claim, including the functional interrelationships of the claim elements, is old and conventional except for the identity of the information. The printed matter rule thus emits faint emanations or overtones of the idea that our intellectual property system allocates protection of information to copyrights rather than patents, *see* Baker v. Selden, 101 U.S. 99 (1879), which in turn suggests a number of important differences between patent and copyright law. For example, independent creation is a defense under copyright law, Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49 (2d Cir.), *cert. denied*, 298 U.S. 669 (1936), but not under patent law, Schnadig Corp. v. Gaines Mfg. Co., 620 F.2d 1166, 1173 n.3, 206 U.S.P.Q. (BNA) 202, 206 n.3 (6th Cir. 1980); *see* Granite Music Corp. v. United Artists Corp., 532 F.2d 718, 189 U.S.P.Q. (BNA) 406 (9th Cir. 1976); Alfred Bell & Co. v. Catalda Fine Arts, 191 F.2d 99, 103, 90 U.S.P.Q. (BNA) 153, 157 (2d Cir. 1951), so that assigning information to copyright gives information necessary breathing room. Moreover, patent law examines its subject matter for technical merit, *see* 35 U.S.C. §§ 103, 131 (1994), but copyright does not. *Baker, supra*. Information is usually not readily susceptible to examination for intrinsic merit or technical advance. And so on.

However, the printed matter rule cannot be justified simply on

new computer program turns an old computer into a new machine.[106]) The Board simply brushed aside the metaphor of the cam and the argument based on it.[107] Perhaps, the Board should have said that the patentability of a machine system as a whole does not necessarily confer patentability on every individual conventional element or subcombination in the machine. Cams as such are old. A new cam shape, when the cam cooperates with the adjacent part of the machine just as any other cam does, is obvious and not separately patentable. By the same token, even if one regards the encoded diskette of Beauregard as a quasi–cam, it is still an *obvious* quasi–cam.[108] However, the Board said none of that; perhaps it simply could not take the cam metaphor seriously.

The Board opinion is most remarkable for what it fails to say. It does not state that a patent on a floppy diskette containing code for a mathematical algorithm is tantamount to a patent on the algorithm itself. As a practical matter, however, there is no way to exploit a mathematical algorithm without encoding it in machine readable form into a floppy diskette or other storage medium and placing the latter

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[106] *See supra* text accompanying notes 65–67.

[107] The Board said a floppy diskette is unlike a cam, because a cam is dynamic and active, but a floppy diskette is static and passive. (A cam *pushes* [v.t.] a cam follower as it rotates, while a diskette or similar medium *is read by* [passive mode] a computer's disk drive's read head.) The dissenting Board opinion said that a cam lying on a shelf is not active but in use becomes a dynamic element.

The Board also said that a phonograph record is like a cam, the undulations on the record acting as the cam shape and the phonograph needle acting as the cam follower. It then noted that IBM conceded at oral argument that putting new music on an otherwise old phonograph record does not make the phonograph record patentable.

The Board opinions are richer in metaphor than in depth of legal analysis of floppy diskettes and cams as active/dynamic–static/passive statutory/nonstatutory subject matter.

[108] Similarly, one can patent a new circuit comprising conventional resistors, capacitors, and other elements. One resistor in the circuit may have the resistance value 314,159 ohms, and no published reference may exist that discloses a resistor of that value. But nonetheless one cannot get a patent on otherwise conventional resistors that have the value 314,159 ohms.

stripe from the left side of the polygon to the right side are made and every pixel between the two sides (i.e., wherever $x_{min} \leq x \leq x_{max}$) is illuminated, starting at the top vertex and proceeding down to the bottom vertex.

The article of manufacture claims of the patent application are not limited in terms of any particular apparatus, and it is clear that the computer and the screen of the associated monitor are not elements of the claims. The claims cover the encoded floppy diskette, *per se*, standing apart from the computer and screen.[103]

b. *The Board's opinion.*

The Board said that the claimed article of manufacture was non-statutory subject matter and obvious, for essentially the same reasons in both instances. A floppy diskette encoded with a computer program is like a piece of paper or other substrate on which information is printed or otherwise placed (so–called printed matter). Unless the information in the printed matter interacts functionally with the medium or substrate, in a novel and unobvious way, the printed matter product is unpatentable and obvious. In *Beauregard* the algorithm was conventionally encoded into C programming language, the computer

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[103] IBM has already obtained a presumably valid patent on computer graphics methods and systems operating in accordance with the algorithm, U.S. Pat. No. 4,962,468, and acquiesced in an obviousness double patenting rejection of the claims of the continuation application. The question thus is whether IBM is *additionally* entitled to a patent on a floppy diskette into which is encoded computer program code for carrying out the algorithm. The claims of the issued patent and the continuation application on appeal are essentially alike, except that the patent claims' preambles refer to a system or method, while the appeal claims' preambles refer to an article of manufacture; after the preambles, all of the claims have the same kind of "means for" elements or their equivalents.

It is said that the purpose of writing the present claims this way is to make it possible to sue a supplier of an infringing diskette for direct infringement under 35 U.S.C. § 271(a) (1994) instead of being obliged to sue for inducement of infringement or contributory infringement under 35 U.S.C. § 271(b) or (c) (1994). This avoids the need to prove the seller's culpable knowledge, an element of the plaintiff's case under sections 271(b) or (c), but not an element under section 271(a). *See* Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 141 U.S.P.Q. (BNA) 681 (1964) (innocent infringement not actionable under section 271(c)).

more than the process of performing a numerical calculation."[93] Trovato failed even to explain what to do with the calculated numbers.[94]

The court said the case was indistinguishable from *Warmerdam* and operated entirely in the realm of abstract ideas.[95] Although the apparatus claims were like those of *Alappat* in that they consisted of a series of means–for elements, unlike the claims of *Alappat* (the court said) these claims did not recite a combination of hardware elements, and the specification of the patent application did not disclose any such combination.[96] Any apparatus was "illusory."[97] There was too little "application or connection to a technical art" for the claims to pass muster under any Federal Circuit formulation of the legal test for statutory subject matter.[98]

Finally, the court addressed Trovato's argument that computer software advances are no less worthy than those in more traditional mechanical fields, and that therefore it would be unjust to deny patents on them. The court responded that "[i]ngenuity and utility . . . have never been sufficient in themselves to garner patent protection."[99] The statute provides its own measure, and it does not embrace mathematical calculation procedures; if that gives you a problem, tell Congress about it.[100]

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[93] *Id.* at 1380, 33 U.S.P.Q.2d (BNA) at 1197; *see also id.* at 1383, 33 U.S.P.Q.2d (BNA) at 1200.

[94] *Id.* at 1381, 33 U.S.P.Q.2d (BNA) at 1198.

[95] *Trovato*, 42 F.3d 1376, 1381, 33 U.S.P.Q.2d (BNA) 1194, 1198 (Fed. Cir. 1994).

[96] *Id.* at 1383, 33 U.S.P.Q.2d (BNA) at 1200.

[97] *Id.* at 1383, 33 U.S.P.Q.2d (BNA) at 1199.

[98] *Id.* at 1381, 33 U.S.P.Q.2d (BNA) at 1198.

[99] *Id.* at 1383, 33 U.S.P.Q.2d (BNA) at 1200.

[100] The applicant has sought rehearing *en banc*. The Office responded with a statement that it did not agree with the applicant's arguments, but agreed that matters were so unsettled that rehearing the case *en banc* might be useful, for "[c]larification by this Court in this complex and

"lack a new and nonobvious functional relationship with the memory."[83] The *Lowry* court rejected the Office's argument that an arrangement of data in a memory was a form of "printed matter" and therefore unpatentable. The court said that whatever vitality the printed matter doctrine still had, if any, it did not apply to the facts before the court.[84] The court very tersely indicated that the printed matter doctrine applies only to human–readable information, such as books[85] and trolley transfers,[86] which almost all previous printed matter cases had involved, and does not apply to the machine–readable information to which Lowry's invention was directed.[87]

Perhaps, there is in some way a meaningful difference between a data structure (*Warmerdam*) and a memory device or medium containing a data structure (*Lowry*).[88] But the difference in membership

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[83] *Lowry*, 32 F.3d at 1583, 1584, 32 U.S.P.Q.2d (BNA) at 1035. Judge Rader criticized the Office's determination that the subject matter was obvious because it was so–called printed matter. Judge Rader said that the printed matter cases have no factual relevance where the invention requires the information to be processed by a machine rather than a human being. *Id.* at 1583, 32 U.S.P.Q.2d (BNA) at 1035. (*Query:* Does this theory apply to piano rolls and CD ROMs?) He also said that data structures are not even analogous to printed matter, because the claimed data structures impose a physical organization on the data. *But see* Baker v. Selden, 101 U.S. 99 (1879) (format of ledger sheet for carrying out book keeping procedure unprotectible under copyright law).

[84] *Lowry*, 32 F.3d at 1583, 32 U.S.P.Q.2d (BNA) at 1035.

[85] *See In re* Russell, 48 F.2d 668 (C.C.P.A. 1931) (directory book in which surnames are arranged phonetically rather than as spelled held unpatentable).

[86] *See* Cincinnati Traction Co. v. Pope, 210 F. 443 (6th Cir. 1913) (trolley transfer with detachable "P.M." stub, to be torn off when the transfer was issued in the morning, so that customers could not use it in the afternoon, held patentable).

[87] The printed matter issue comes up again in connection with the *Beauregard* appeal and is discussed then in more detail. *See infra* text accompanying notes 101-120.

[88] There appears to be no way to exploit a data structure other than putting data into a memory in accordance with the data structure. A patent on a memory having a given data structure therefore effectively

Plager[73] and Rader,[74] illustrates also the difficulty even for members of the court that decided it to determine what *Alappat* holds or stands for.

In *Warmerdam*, the court held a claim to a "data structure"[75] generated by a given computer procedure, and claims to methods of generating such a data structure, to be directed to nothing but "a way of describing the manipulation of ideas" and thus nonstatutory subject

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[73] Judge Plager spoke for the court in *Schrader*, *see supra* notes 40–49 an accompanying text. The unanimous *Warmerdam* panel also included Judge Lourie, who was part of the *Alappat* majority, and Judge Clevenger, who joined no opinion on the substantive merits in *Alappat* because he did not consider that the court had appellate jurisdiction.

[74] Judge Rader has previously supported comprehensive reinterpretation of the law concerning algorithm–related patents. In Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992), he argued that one could not sensibly harmonize the Supreme Court's decisions in Gottschalk v. Benson, 409 U.S. 63, 175 U.S.P.Q. (BNA) 673 (1972) and Parker v. Flook, 437 U.S. 584, 198 U.S.P.Q. (BNA) 193 (1978), on the one hand, with its later decisions in Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981) and Diamond v. Chakrabarty, 447 U.S. 303, 206 U.S.P.Q. (BNA) 193 (1980). He read later Supreme Court opinions to have cut the Gordian Knot by effectively overruling *Benson*. He also took the view that "process" under section 101 is self–defining, and considered it to extend to "anything under the sun." *Arrhythmia*, 958 F.2d at 1064, 22 U.S.P.Q.2d (BNA) at 1042 (quoting S. Rep. No. 1979, 82d Cong., 2d Sess. 5 (1952); H.R. Rep. No. 1923, 82d Cong., 2d Sess. 6 (1952)).

The unanimous *Lowry* panel included Judge Rich, who wrote for the court in *Alappat* and Senior Judge Skelton, who did not participate in *Alappat*.

[75] A data structure is a scheme or plan of organization of information, such as that of information stored in a computer's memory. A possible non–computer analogy for a data structure is a scheme or plan of organization of data written on a piece of paper. *Cf.* Baker v. Selden, 101 U.S. 99 (1879) (system of double entry bookkeeping described in book held not within scope of copyright in book; accounting sheets used to practice system thus not within scope of copyright in book; decision codified in 17 U.S.C. § 102(b) (1994)). *Baker* may be regarded as denying copyright protection to a type of data structure because it is an "idea."

"be" patentable subject matter, whatever that might mean. Or maybe meeting "all of the other requirements of Title 35" means complying with section 101 as interpreted in *Benson, Flook, Diehr, Abele, Schrader* and so on. To say the least, this passage of the opinion is more poetic than lucid.

Is the statement about a newly programmed computer being a new machine just so much irrelevant *obiter dictum* without substantive significance? Or does it state a manifesto for a new doctrine that past rules (the clear zig–zag of *Schrader*) may be disregarded; that now, a novel, unobvious computer program *X* is patentable if claimed as "a computer programmed with program *X*"? Under this doctrine, there is no longer any need for more specific apparatus at the front end, such as a CAT scanner or EKG machine; for specific apparatus in the middle, such as a ROM; for specific apparatus at the back end performing significant post–solution activity, such as a press opener; or for signals that are representative of physical quantities, such as temperature. "Data in, data out" will now suffice. As will appear, different post–*Alappat* Federal Circuit panels have embraced diverse interpretations of the decision.

c. *The dissenting opinion.*

The manifesto is what bothered the two dissenting judges, Chief Judge Archer and former Chief Judge Nies. Their first concern was that claim 15 was broad enough to cover the use of the described anti–aliasing procedure "in conjunction with any current or future device that prints in an x–y coordinate grid, such as oscilloscopes, computer monitors, televisions, laser printers, [or] mechanical printing devices . . . ." More important, that claim 15 also covered a general–purpose digital computer or microprocessor programmed to carry out Alappat's algorithmic procedure[68] was critical. Because a programmed computer is just a collection of the functions for which it is programmed, claim 15 effectively claimed the mathematical functions of the algorithmic procedure—which is to say, claimed the algorithm itself. Moreover, because the same mathematical operations can be performed in many ways—with gate arrays, operational amplifiers, and other devices—the range of equivalents for claim 15 will be so broad that the patent would cover and thus preempt all practical ways to use the algorithm.

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[68] *See supra* text accompanying notes 65-67.

But Judge Rich's opinion for the court did not stop after the quoted passage. Perhaps, the court could not stop there, because the board had also found claim 15 unpatentable because it "reads on a general purpose digital computer 'means' to perform the various steps under program control."[63] (This finding appears to be directly contrary to the interpretation of claim 15 described above, limiting claim 15 to a subsystem embedded in and connected to an oscilloscope system.) The parties had agreed that claim 15 covered, among other things, a general–purpose digital computer programmed to operate in accordance with "the claimed invention." Indeed, counsel for Alappat urged the court not to limit the scope of claim 15 to the hardware system disclosed in the specification, because then it would be far too easy for a would–be infringer to evade the claim to the invention by using a programmed microprocessor or general–purpose digital computer instead of hardware. A pirate might even make and sell floppy diskettes encoded with a computer program for performing Alappat's anti–aliasing procedure, and end users might then load this software into their oscilloscope systems.[64]

Therefore, after holding claim 15 to be patentably directed to the use of an algorithm in a limited hardware setting,[65] rather than unpatentably directed to an algorithm itself, the majority opinion made an

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[63] The Office's legal theory apparently was based on the Court's statement in *Benson*, 409 U.S. at 71–72, 175 U.S.P.Q. (BNA) at 676-77, that a patent on an algorithm, if limited only by the requirement that the algorithm must be used with computer equipment, is in practical effect a patent on the algorithm itself.

[64] This is not entirely fanciful. Similar procedures occur in which software is "uploaded" to a hard disk or modem to upgrade its capabilities.

[65] This interpretation would not preclude the anti–aliasing algorithm from being implemented in a programmed microprocessor (or general–purpose digital computer) connected to and intertwined with an oscilloscope. Such a system would still be a machine (oscilloscope) with software elements embedded inside it. The problem arises when the anti–aliasing algorithm is implemented in a free–standing microprocessor (or general–purpose digital computer) that is not connected to and intertwined with an oscilloscope. That erases the machine system limitation on the claim.

and accordingly for varying the intensity of its illumination. In a television or cathode–ray tube (CRT), a beam of electrons is accelerated by an electromagnet coil around the neck of the tube. The electrons' speed (and therefore energy, and therefore illuminating effect) is proportional to the current in the coil at the time the electrons pass through it. Hence, to implement an anti–aliasing scheme one controls pixel intensity by varying CRT neck coil current in accordance with the scheme. The result is to provide variable illumination intensity for each pixel, so that the pixels closest to the trajectory of the data points are made brighter, and those farther away, dimmer. The procedure improves the appearance of the display by providing a continuous-appearing and non-jumping waveform.

Alappat devised what appears to be a novel and convenient anti–aliasing scheme—an anti–aliasing algorithm. The specification discloses how to provide a smooth–appearing waveform (something appearing to be a straight diagonal line without jaggies) by determining illumination intensity of each of the pixels in accordance with the new formula $I' = c\ (1 - [\Delta y_{i\,j} / \Delta y_i])$. In this formula, c is an arbitrary constant, and the Δ values represent vertical pixel–to–pixel distances on the screen. Presumably, one then makes the CRT's neck coil current proportional to I', as calculated according to the foregoing formula.

There was no serious question whether Alappat invented the kind of thing with which the patent laws are concerned. Alappat invented and described a device within an oscilloscope, that helps to control the oscilloscope's screen illumination in a certain way. The issue was whether the patent claimed merely that thing or claimed something else, as well—something that goes beyond the kinds of thing on which the patent laws grant exclusive rights.

b. *The majority opinion.*

According to Judge Rich's opinion for six members[59] of the eleven–judge *en banc* court, the proper interpretation of the claim on appeal was that it was a directed to a machine that used an algorithm

[59] Three members of the court refused to express a view on the merits because they considered the court to lack jurisdiction of the appeal. Two members dissented on the merits.

The rule was not simple, but it was clear. If not a bright-line rule, it was a bright zig-zag rule. Counsel could predict case outcomes, based on the *Schrader* opinion's restatement, even if the rule may have seemed artificial.[55] For those of us who highly value predictability and security of expectation, among whom the author ranks himself, that was as good as it got.

2. Alappat

In re Alappat[56] was largely a by-product of a running skirmish between the Federal Circuit and Patent and Trademark Office over how paragraph 6 of section 112 should be applied in patent prosecution matters. This section permits an applicant to claim an element of an invention in functional language, such as "means for doing so-and-so." This is a useful expedient when it does not matter to the inventor how a function is accomplished—for example, a given invention may work equally well when *A* is nailed to *B*, or screwed, glued, welded, or soldered to it. The problem arises when one tries to determine the scope of the "means for fastening" claim. Does it include making *A* relaxably stick to *B* by a switch-controlled electromagnet? Section 112 says that the scope of a claim written in this form extends to all structures expressly described in the specification of the patent application and to equivalents of what is expressly described.

Determining equivalency in patent infringement litigation is a major project, however, and the Federal Circuit has been unable to form an internal consensus on the appropriate legal standard.[57] The Office had tried to avoid the equivalency quagmire by adopting a rule that in patent prosecution it would interpret a means-for claim to cover any

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[55] There was a policy problem that the rule did not address. The rule made problematical the protection of computerized methods of doing business, despite their economic value, as Judge Newman persuasively argued in her dissenting opinion in *Schrader*, 22 F.3d 290, 30 U.S.P.Q.2d (BNA) 1455 (Fed. Cir. 1994). *See also* Stern, *supra* note 40 (supporting Newman's policy position).

[56] 33 F.3d 1526, 31 U.S.P.Q.2d (BNA) 1545 (Fed. Cir. 1994).

[57] *See* Malta v. Schulmerich-Carillons, Inc., 959 F.2d 923, 21 U.S.P.Q.2d (BNA) 2039 (Fed. Cir.) (Newman, J., concurring), *cert. denied*, 112 S. Ct. 2942 (1992).

tained no "structural" limitations on the claimed use of an algorithm.[44] It simply described a transformation of one set of nonphysical data to another data set in accordance with a particular scheme. That was fatal to patentability.

The court compared the case to others allowing patents even though algorithms were involved. In one case,[45] the claims "involved the manipulation of electrical signals [electrocardiograph signals] and data representative of human cardiac activity." In another case,[46] the claims involved manipulation of data coming from a CAT scanning X-ray machine. In still another case,[47] the claims involved "the manipulation of electrical signals representative of reflected seismic energy" from discontinuities in the earth. In every one of these cases, the court said, the claims involved use of special apparatus or "involved the transformation or conversion of subject matter representative of or constituting physical activity or objects." For a method or process to be patentable, the court added, the case law for over a century has required either limitations in the claim to particular apparatus or else "that there be a transformation or reduction of subject matter" from one state to another.[48] This does not mean, the Federal Circuit said, that the transformation in a method patent must occur in a physical substance; a

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[44] The algorithm in this case was the method for determining an optimal combination of bids, that is, a combination whose sum was a maximum possible sum.

[45] Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992).

[46] *In re* Abele, 684 F.2d 902, 214 U.S.P.Q. (BNA) 682 (C.C.P.A. 1982).

[47] *In re* Taner, 681 F.2d 787, 214 U.S.P.Q. (BNA) 678 (C.C.P.A. 1982).

[48] For example, an 1877 Supreme Court decision, Cochrane v. Deener, 94 U.S. 780 (1876), held a method for grinding up flour more finely to be patentable because acts were "performed upon the subject matter to be transformed and reduced to a different state or thing." The court pointed out that the same notion is reflected in the Supreme Court's decision in Gottschalk v. Benson, 409 U.S. 63, 175 U.S.P.Q. (BNA) 673 (1972). According to the Benson opinion, a process claim is patentable when it results in the "transformation and reduction of an article 'to a different state or thing'." *Id.* at 70, 175 U.S.P.Q. (BNA) at 676. *See supra* note 22 and accompanying text.

special-purpose apparatus, such as a CAT scanner[36] or an electrocardiograph machine.[37] Probably, signals would qualify, also, if they were representative of physical parameters, such as the temperatures[38] or weights of objects. But signals representative of pure data, not tied to any specific physical parameter of an object, probably would not qualify for this purpose.[39]

B. *The Federal Circuit's 1994 Decisions*

1. Schrader

The first of the Federal Circuit's 1994 decisions, *In re Schrader*,[40] illustrated the seeming convergence toward a predictable rule, described above. The applicant devised a new system for carrying on real-time auctions of related, multiple items. For example, a tract of land might be divided into several plots—*A*, *B*, *C*, *D*, and *E*. Bidders might offer a bid on a single plot, such as *A*, or on any combination of plots, such as *A*+*B*+*C*. Because the value of *A*+*B*+*C* might be worth more to a given bidder than the sum of the values of *A*, *B*, and *C* sold separately to three different bidders, the seller of the tract may be able to realize more money by auctioning the property off in this manner.[41]

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[36] *See In re* Abele, 684 F.2d 902, 214 U.S.P.Q. (BNA) 682 (C.C.P.A. 1982) (Nies, J.).

[37] *See* Arrhythmia Research Technology, Inc. v. Corazonix Corp., 958 F.2d 1053, 22 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1992) (Newman, J.).

[38] *See* Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981).

[39] *See In re* Grams, 888 F.2d 835, 12 U.S.P.Q.2d (BNA) 1824 (Fed. Cir. 1989).

[40] 22 F.3d 290, 30 U.S.P.Q.2d (BNA) 1455 (Fed. Cir. 1994) (Plager, J.). The author has analyzed *Schrader* in greater detail in Richard H. Stern, *Federal Circuit Equates Methods of Doing Business to Algorithms for Patentability Purposes:* In re Schrader, 16 EUR. INTELL. PROP. REV. 496 (1994).

[41] For example, combining the particular plots into one unit might permit use of more efficient agricultural equipment or other economies of scale, warranting a higher bid. The same principle applies to suppliers' bids in procurement of systems including a number of components, where a minimum sum of bids is sought.

4. Diehr

The last algorithm case that the Supreme Court has thus far considered, *Diamond v. Diehr*,[29] marked a change in direction. This time, an applicant sought a patent on an algorithmic process that implemented a known thermodynamic equation (the Arrhenius equation) for use in a rubber molding apparatus. This process presented the Court, for the first time, with a claim that both had apparatus limitations and had physical activity occurring after completion of the numerical calculations.[30] The majority of the Court (5–4) considered the claim not to be one on an algorithm, as such, but rather on a machine process that merely used an algorithm or formula.

Further, the Court rejected the analytic dissection approach of *Flook*. It refused to dissect out the algorithm, find an old residuum, and declare the latter unpatentable. Instead, the Court said, one must view the claimed subject matter as a whole, in which old algorithm and possibly old (or possibly novel) apparatus combined to form a novel and unobvious entirety.

The Court reaffirmed *Benson* and *Flook* as authority for the proposition that a mathematical formula, as such, is not patentable subject matter.[31] On the other hand, the Court said, the statutory subject matter requirements of section 101 are met when a claim describes a structure or process for implementing or applying a formula and the structure or process performs a patentable function, such as "transforming or reducing an article to a different state or thing."[32] Since *Diehr* claimed a process for transforming uncured rubber into a

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[29] 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981).

[30] The method was limited to operation of a rubber molding press. One element to which the steps referred was an interval timer; another was a mold with a mold cavity. One claim called for use of a rheometer. Some claims called for automatically opening the press when a comparison of temperature and a calculated value were equivalent; one claim called for opening the press and removing the molded article from the mold. *Id.* at 179 n.5, 209 U.S.P.Q. (BNA) at 5 n.5.

[31] *Id.* at 191, 209 U.S.P.Q. (BNA) at 10.

[32] *Id.* at 192, 209 U.S.P.Q. (BNA) at 10.

work."[20] That is, a monopoly over such tools will hinder technological progress of other artisans in the field, because they will be deprived of access to their tools; the implied analogy is that of taking the hammer and saw from a carpenter. Another theme was whether a process patent for an operation in which the specific nature of the apparatus did not matter—such as a process to be performed in any general–purpose digital computer—must involve "[t]ransformation and reduction of an article 'to a different state or thing'."[21] The Court called this the "clue" to patentability, but indicated that even though earlier precedents required such transformations, perhaps some other kind of process patent could nonetheless "qualify."[22] A theme pervading the opinion was that a patent on an algorithm would be a patent on an idea, that is, something at a very high level of abstraction, and patenting ideas is antithetical to our patent system.[23] Finally, the Court raised the theme of "tell it to Congress, not the courts" that algorithms are worthy creations and therefore deserve patents.[24]

3. Flook

The next decision[25] of the Supreme Court, *Parker v. Flook*,[26] involved another attempt to obtain a patent on a numerical manipulation algorithm. In this case, numerical data representative of an operational parameter (for example, temperature) associated with a petrochemical production plant was processed in a general–purpose digital computer to provide a number whose value indicated whether

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[20] *Id.* at 67, 175 U.S.P.Q. (BNA) at 675.

[21] *Id.* at 70, 175 U.S.P.Q. (BNA) at 676.

[22] *Id.* at 70-71, 175 U.S.P.Q. (BNA) at 676.

[23] *See, e.g., id.* at 67, 71, 175 U.S.P.Q. (BNA) at 675, 676.

[24] *Id.* at 72–73, 175 U.S.P.Q. (BNA) at 677.

[25] An intervening algorithm case, Dann v. Johnston, 425 U.S. 219, 189 U.S.P.Q. (BNA) 257 (1976), involved an algorithmic sorting and reporting procedure that covered a method of doing banking business. The Court did not reach the issue of statutory subject matter under 35 U.S.C. § 101 because it held the claimed invention obvious under 35 U.S.C. § 103.

[26] 437 U.S. 584, 198 U.S.P.Q. (BNA) 193 (1978).

example, Morse did not teach the public how to make and use a facsimile (fax) machine. Yet, Morse's claim 8 would cover the fax machine. A fax machine marks and prints intelligible characters at a distance through the use of electromagnetism. By no stretch of the imagination, however, did Morse teach or enable the fax machine, and therefore he was not entitled to a patent broad enough to cover it. The Court therefore held that Morse was entitled to patent protection on the particular form of apparatus that he disclosed for telecommunications use, but not on different forms of telecommunications apparatus that only future inventors would give to the public. Too broad a grant to Morse would take away, or at least diminish, their potential rewards as incentive to invent and would thus discourage their creative efforts.[14]

That is one way of explaining the *Morse* decision. Another explanation might be that no one can have a patent on the use of electromagnetism, for that would be a patent on a principle of nature. The first explanation is now subsumed within the first paragraph of section 112 of the patent code. The second explanation, that principles of nature are nonstatutory subject matter, is now subsumed within section 101 of the patent code. Are they really different theories of unpatentability? Or are they just different ways of expressing a policy of the patent system that a patent on too abstract a legal formulation of an invention necessarily preempts more than an inventor is entitled to as the *quid pro quo* for public disclosure? Such patents would thwart the enterprise of other potential inventors, and their net effect would be

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[14] For example, if Morse's claim 8 had been sustained, a notional contemporary inventor considering whether to undertake research and development leading to the fax machine would have to consider the fact that any patent on the fax machine would be "subservient" to Morse's claim 8. That means that a licensee under the fax patent would need a license from Morse under claim 8 in order to use the license under the fax patent. Morse might withhold the license entirely, price it at a high royalty, or otherwise subject it to conditions that he dictated. *See id.* at 113. If the fax inventor could obtain a royalty R_1 for the use of the fax invention, in the sense that R_1 was all that the traffic would bear, at the very least existence of claim 8 would require the fax inventor to net a lower royalty R_2, where $R_2 = R_1 - R_3$, and R_3 is the toll Morse required for use of claim 8. This would suggest to the notional fax inventor that inventive efforts could more profitably be directed to another invention and getting a patent on it that would not be subservient to someone else's patent. This point is addressed in Brenner v. Manson, 383 U.S. 519, 534–35, 148 U.S.P.Q. (BNA) 689, 695 (1966).

Something is wrong with the law of patenting algorithms. The rich diversity in correlation of cases' outcomes to cases' operative parameters cannot be attributed entirely to individual diversity of opinion in the Federal Circuit. The problem is a fundamental difficulty in fit between highly abstract late 20th and early 21st century technology and the structure of patent law, a difficulty that mathematical algorithms paradigmatically illustrate. Patent law was fashioned to address, and it works well with, tangible machines (hardware). It also works well with industrial processes for converting one substance to another. It works acceptably with machines and processes for converting electronic signals of one kind into another. It works very poorly or not at all, however, when it addresses systems for processing one kind of data into another kind of data, where it does not matter to anybody what kind of machine does the processing, or what meaning the user associates with the data, because the technological advance is in the idea of how to transform the data into other data.

At that point, legal fictions take over and ingenious lawyers pretend to courts that abstractions and ideas are really tangible machines or articles of manufacture. There are good reasons why courts should condone the fictions and pretend that the emperor of algorithms is wearing clothes, and there are also good reasons why courts should not do so. The policy arguments on each side are so good that the courts are unable to choose sensibly between them, and enter the realm of chaos theory. That is what happened in the Year of the Algorithm.

Consideration of these opposing policy arguments compels the conclusions that algorithms need and deserve intellectual property law protection and that protecting algorithms under traditional utility patent law would be a mistake. Accordingly, this article concludes with a proposal for a petty patent statute on algorithms and related subject matter. Some statutory language is proposed, and several of the problems in devising such a statute are discussed.

> injured, and that advantage of a market which the patent was granted to secure is destroyed.[71]

Although the Supreme Court rejected expert comparison as the determinant of design patent infringement, it did not intend to exclude consideration of expert testimony. The Court heavily relied on expert testimony in the form of "opinion" testimony from witnesses "familiar with designs" and "engaged in the trade."[72] Under *Gorham*, expert opinion testimony is relevant to inform the trier of fact of the effect the designs have on the eye of the hypothetical ordinary observer.

Gorham also makes clear that fact testimony from consumers, manufacturers and members of the trade and supporting documentary evidence that the patented and accused designs are the same, is relevant evidence of design patent infringement. That evidence also is directed to informing the trier of fact of the effect on the eye of the hypothetical ordinary observer. For example, evidence that consumers actually "purchase[d] one [design] supposing it to be the other" or consider the patented and accused designs the same would be highly probative.[73] If the patentee had not marketed a product embodying the patented design, evidence that consumers of products of that kind, i.e. potential consumers, would "purchase one [design] supposing it to be the other" or consider the patented and accused designs the same would suffice.[74] Such evidence can be obtained through a scientifically conducted survey and admitted through the testimony of the person who conducted the survey. In addition, fact testimony of intentional copying or imitation of the patented design and supporting documentation is relevant evidence of infringement by equivalents.[75]

Finally, real evidence consisting of the patented and accused designs is obviously a necessary part of the patent owner's proofs. The

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[71] *Id.*

[72] Gorham Mfg. Co v. White, 81 U.S. (14 Wall.) 511, 530 (1872).

[73] *Id.* at 528, 530.

[74] *Id.*

[75] *Id.*

- the trade generally would consider the patented and accused designs the same
- the differences in the patented and accused designs were not noticeable without a critical examination
- the patented and accused designs are one and the same pattern
- the accused designs were intended to imitate the patented design
- the patented and accused designs are nearly identical
- the dissimilarities in the patented and accused designs are "minor differences" in ornamentation
- the configuration and general aspect of the patented and accused designs are the same.[67]

The litany of evidence relied on by the Court runs the gamut of testimonial, documentary and real evidence incorporating opinions from expert witnesses "familiar with designs" and "engaged in the trade," testimony of fact witnesses and supporting documentation and examination of the patented and accused designs.[68]

The Supreme Court, however, criticized the lower court for comparing the "features which made up the two designs" through the eyes of "persons versed in designs."[69] The Court rejected such an expert comparison as contrary to the Congressional intent to secure for the

[67] Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 529-31 (1872).

[68] *Id.*

[69] *Id.* at 527.

> [I]f a jury is to rationally find all three elements of equivalence, it must be told what evidence establishes the equivalence of the claimed and accused devices as to each element. Otherwise, there is too much risk the jury will simply compare the two inventions as to overall similarity, in violation of *Graver Tank*.[62]

"[S]uch proof is necessary to prevent the jury from being 'put to sea without guiding charts,' and from determining infringement by simply comparing the claimed invention and the accused device 'as to overall similarity'."[63]

B. *By Analogy, Extrinsic Evidence Of Equivalency For Design Patent Infringement Should Be Required*

The dangers inherent in permitting a jury to determine utility patent infringement by equivalents are equally present when a jury is permitted to determine design patent infringement by equivalents. Design patents have a claim—the drawings of the design patent—which, like a claim in a utility patent, defines the scope of the patent protection.[64] As with a determination of utility patent infringement under the doctrine of equivalents, in a design patent case the jury must determine outer limits of the claim when the patented and accused products are not identical.

Gorham recognizes that, where there are differences or dissimilarities in the patent and accused designs, infringement may be found under a design patent analog to the doctrine of equivalents.[65] *Gorham* makes clear, however, that objective evidence is required to prove that the designs are "substantially the same" so as to constitute "identity

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[62] *Id.* at 1427, 10 U.S.P.Q.2d (BNA) at 1771.

[63] Malta v. Schulmerich Carillons, Inc., 952 F.2d 1320, 1327, 21 U.S.P.Q.2d (BNA) 1161, 1166 (Fed. Cir. 1991) (quoting *Lear Siegler*, 873 F.2d at 1426-27, 10 U.S.P.Q.2d (BNA) at 1770-71).

[64] *See supra* note 25 and accompanying text.

[65] *See supra* notes 13-29 and accompanying text.

Federal Circuit cases as well.[57] Thus, the Federal Circuit has improperly grafted the point of novelty test onto the *Gorham* overall identity test.

IV. EXTRINSIC EVIDENCE OF EQUIVALENCY SHOULD BE REQUIRED TO SUPPORT A JURY VERDICT OF DESIGN PATENT INFRINGEMENT

A. *The Federal Circuit Has Required Particularized Evidence Of Equivalency To Support A Jury Verdict Of Utility Patent Infringement*

In utility patent cases, the Federal Circuit has recognized the dangers inherent in allowing a jury to determine infringement under the doctrine of equivalents:

> While the doctrine of equivalents extends the claims beyond their literal words, it does not prevent the manufacture, use, or sale by others of every device generally similar to the patented invention. As we have said, although an "invention may be entitled to some range of equivalents, a court may not, under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim[s] on which the public is entitled to rely in avoiding infringement."[58]

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[57] *See* Winner Int'l Corp. v. Wolo Mfg. Corp., 905 F.2d 375, 376, 15 U.S.P.Q.2d (BNA) 1076, 1077 (Fed. Cir. 1990) ("To consider the overall appearance of a design without regard to prior art would eviscerate the purpose of the 'point of novelty' approach, which is to focus on those aspects of a design which render the design different from prior art designs."); Unette Corp. v. Unit Pack Co., 785 F.2d 1026, 1028-29, 228 U.S.P.Q. (BNA) 933, 934 (Fed. Cir. 1986) ("Although the district court supplemented the *Gorham* test with a 'point of novelty' requirement, the results under either test are the same.").

[58] Lear Siegler, Inc. v. Sealy Mattress Co., 873 F.2d 1422, 1425, 10 U.S.P.Q.2d (BNA) 1767, 1770 (Fed. Cir. 1989) (quoting Perkin-Elmer Corp. v. Westinghouse Elec. Corp., 822 F.2d 1528, 1532, 3 U.S.P.Q.2d (BNA) 1321, 1324 (Fed. Cir. 1987)).

E. Braun *Muddled* Gorham's *"Ordinary Observer" Test With The Federal Circuit's Own Secondary "Point Of Novelty" Test*

In affirming the district court's judgment of design patent infringement, the Federal Circuit contrasted the "fluid, ornamental aerodynamic overall design" of the patented and accused designs with prior art hand-held blender designs "which had a utilitarian mechanical appearance:"

> [E]xamination of Braun's and Waring's respective designs, in addition to the blenders themselves, tells us a jury could reasonably find they are, when viewed as a whole and compared to pre-existing hand held blenders, similar. For instance, in contrast to pre-existing hand held blenders, which had a utilitarian, mechanical appearance, both Waring's blender and Braun's blender share a fluid, ornamental, aerodynamic overall design. The shafts of both blenders are encased in a housing that gradually tapers away from the motor housing. The top portion of each blender, when viewed from the front, is tapered at the top to integrate the handle into the motor housing. The shaft housing of each blender gradually expands to form a blade housing, which is punctured by four elongated, essentially rectangular ports.[54]

In so doing, the Federal Circuit muddled *Gorham*'s "ordinary observer" design patent infringement test and the so-called "point of novelty" test.

Under the point of novelty test, the patented and accused designs are compared in relation to the prior art to determine if the accused

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[54] Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 820, 24 U.S.P.Q.2d (BNA) 1121, 1125 (Fed. Cir. 1992).

expand the reach of a design patent claim to encompass a different but similar design based on their personal subjective reactions to the designs. By having the jurors assume the mantle of "ordinary observers" and report whether "they would be deceived,"[52] the Federal Circuit has eliminated the need for evidence and, thereby, destroyed the objectivity of the *Gorham* test. If *Braun* is now the law, it is virtually impossible to render a reliable opinion of noninfringement where similarity exists in two designs because infringement depends on the whim of each jury.

In addition, the Federal Circuit has eliminated the possibility of effective appellate review. If the jury—the trier of fact—is a panel of "ordinary observers," no verdict of infringement could ever be reversed. The search of the record for substantial evidence would be rendered moot. Indeed, the factors on which each individual juror based his or her finding of infringement are *dehors* the record and would be unknown to the appellate court.

Ironically, after using the impulse purchaser doctrine of trademark law to support the verdict of design patent infringement, *Braun* contrasted trademark infringement from design patent infringement on the basis that the latter is not focused on "consumer behavior in the marketplace," rejecting DCA's argument that extrinsic evidence was needed to find patent infringement:

> At first blush, it may seem inconsistent that empirical evidence regarding likelihood of confusion is of considerable significance in determining trademark and trade dress infringement, yet it is . . . of less significance in determining design patent infringement. However, the difference in weight given to empirical evidence is fully understandable in light of the stark differences between the elements required to show design patent infringement and trademark and trade dress infringement.
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> In particular . . . purchasers' likelihood of confusion as to the source of a

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[52] *Id.*

C. Braun *Dispensed With* Gorham's *Evidence Requirement*

Because the patented and accused designs in *Braun* were not identical, infringement could only be found under the design patent analog to the doctrine of equivalents. The Federal Circuit should have reviewed the record for extrinsic evidence, i.e. evidence independent of the patented and accused designs, that the "readily noticeable difference" and "other dissimilarities" in the patented and accused designs would have no effect on the eye of the ordinary observer. In *Gorham*, the Supreme Court cited extensive testimony that the designs were "substantially the same" in the eye of the ordinary observer notwithstanding the design differences.[48]

The Federal Circuit in *Braun* was unable to point to substantial evidence that the design differences would have no effect on the eye of the ordinary observer so that the observer would be deceived. It was only able to cite the conjectural testimony of Braun's product manager that blenders are bought on impulse and that, as a result, purchasers may not differentiate the designs.[49] That, however, is not substantial evidence of the effect the differences would have on the eye of the ordinary observer as required by *Gorham*. Self-serving testimony that consumers merely "may not" differentiate the patented and accused designs is not substantial evidence that the designs are "substantially the same" and have "identity of design."[50]

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an ordinary observer."); Read Corp. v. Portec, Inc., 970 F.2d 816, 826, 23 U.S.P.Q.2d (BNA) 1426, 1434 (Fed. Cir. 1992) ("Infringement . . . depends upon (1) the similarity of the ornamental features of the Portec device and the patented design, and (2) the likelihood that an ordinary person would be confused because of such ornamental similarity."); Shelcore Inc. v. Durham Indus., 745 F.2d 621, 629, 223 U.S.P.Q. (BNA) 585, 590 (Fed. Cir. 1984) (no error in "failing to find that the two designs are substantially similar in overall appearance").

[48] Gorham Mfg. Co. v. White, 81 U.S. (14. Wall.) 511, 530 (1872).

[49] Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 820, 24 U.S.P.Q.2d (BNA) 1112, 1125 (Fed. Cir. 1992).

[50] *Id.* at 820, 24 U.S.P.Q.2d (BNA) at 1125.

> dissimilarities. Thus, Waring has not convinced us that the jury's finding of infringement was not supported by substantial evidence. In light of evidence of record, the jury could have reasonably concluded that Waring's blender meets the *Gorham* test of similarity in ornamental appearance such that an ordinary observer would be likely to purchase one blender thinking it was the other.[42]

Based on *Braun*'s rationale, it appears that the Court was applying something akin to the test for trademark infringement—viz. likelihood of confusion, mistake or deception based on similarity of appearance under the impulse purchaser doctrine—to determine design patent infringement.

The impulse purchaser doctrine is antithetical to patent law because it would allow a jury to disregard material claim limitations on the assumption that, through carelessness, the purchaser will disregard design differences. Such design differences, however, must be taken into account.[43] Moreover, the impulse purchaser doctrine would subject the scope of a design patent to the uncertainties and vagaries of consumer purchasing habits.[44] Under such a variable standard, the expensive version of the accused design may well be exonerated while the inexpensive version found to infringe.

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[42] Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 820, 24 U.S.P.Q.2d (BNA) 1112, 1125 (Fed. Cir. 1992).

[43] FMC Corp. v. Hennessy Indus., 836 F.2d 521, 527, 5 U.S.P.Q.2d (BNA) 1272, 1276 (Fed. Cir. 1987) (stating that differences as well as similarities must be taken into account); Unette Corp. v. Unit Pack Co., 785 F.2d 1026, 1028, 228 U.S.P.Q. (BNA) 933, 934 (Fed. Cir. 1986) (affirming noninfringement based on design differences).

[44] *Gorham*'s reference to "the eye of an ordinary observer, giving such attention as a purchaser usually gives" is not an invitation to apply the impulse purchase doctrine. It simply means that the designs must be "undistinguishable in the eyes of [persons] generally" in contrast to experts. Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 528 (1872).

DCA compared the two designs, noting that Braun's patent drawings claim a blender design having a motor housing that is unbalanced and nonsymmetrical. One vertical side of Braun's motor housing is straight, the opposite side has a severe cut-out or indentation so that the user can grip the blender, and the motor housing is oval in cross-section.[37]

DCA's Waring motor housing has a symmetrical hand grip indentation which extends uniformly around the circumference of a circular housing. As a result, in contrast to Braun's patented design, DCA's blender had a symmetrical, balanced appearance.

Because of those differences, DCA argued that there was no "identity of design" or "sameness of appearance," and that without substantial objective evidence, independent of the patented and accused designs, that an "ordinary observer" would be induced to purchase the Waring blender, supposing it to be the Braun patented blender design, there was no basis for finding infringement.[38] DCA further argued that extrinsic evidence should be required to prove design infringement by equivalents.[39] This reasoning is analogous to the strict requirement for particularized evidence of utility patent infringement by equivalents in order "to prevent the jury from being 'put to sea without guiding charts,' and . . . simply comparing the claimed invention and the accused device 'as to overall similarity'."[40]

After setting forth the *Gorham* "ordinary observer" test for determining design patent infringement, the Federal Circuit seemed to

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correct legal standard for infringement of a design patent.").

[37] Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 830-31, 24 U.S.P.Q.2d (BNA) 1112, 1133 (Fed. Cir. 1992).

[38] *Id.* at 821, 24 U.S.P.Q. (BNA) at 1126.

[39] *Id.*

[40] Malta v. Schulmerich Carillons, Inc., 952 F.2d 1320, 1327, 21 U.S.P.Q.2d (BNA) 1161, 1166 (Fed. Cir. 1991) (quoting Lear Siegler Inc. v. Sealy Mattress Co., 873 F.2d 1422, 1426-27, 10 U.S.P.Q.2d (BNA) 1767, 1771 (Fed. Cir. 1989), *cert. denied*, 112 S. Ct. 2942 (1992)).

> imitate the other, and they all agree that they are so nearly identical that ordinary purchasers of silverware would mistake one for the other.[32]

Thus, the Court found substantial objective evidence proving "identity of design" in the eye of the ordinary observer, and reversed the lower court, holding that White's designs infringed Gorham's patented design.

III. THE FEDERAL CIRCUIT HAS CREATED UNCERTAINTY AND CONFUSION IN THE LAW OF DESIGN PATENT INFRINGEMENT BY MISAPPLYING THE *GORHAM* TEST

A review of the decisions handed down by the Federal Circuit which purport to implement the teachings of *Gorham* reveals a surprising laxness in analysis and looseness of language that is atypical of that Court. The *Braun* decision is a case in point.[33] In the course of its analysis, the *Braun* court (a) dispensed with the need for "identity of design," requiring instead only "similarity," (b) dispensed with the need for extrinsic evidence to support the jury verdict, (c) dispensed with the objective hypothetical "ordinary observer" by treating the jury as a panel of ordinary observers whose subjective views suffice, and (d) muddled the *Gorham* test with the Federal Circuit's secondary "point of novelty" test.[34] As a result, both the public and the patent bar must engage in a "crap shoot" when determining whether a design patent is infringed or not.

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[32] *Id.*

[33] Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 24 U.S.P.Q.2d (BNA) 1112 (Fed. Cir. 1992).

[34] *Id.* at 821-22, 24 U.S.P.Q.2d (BNA) at 1126-27.

essential element of the claim.[27] Because the claim of a design patent is the drawing and everything shown in the drawing is essential, literal infringement would require an exact replication of the patented design.

The Court's finding of "no *substantial* difference" between Gorham's patented design and White's 1867 design indicates that there were some design differences. Thus, because White's 1867 design was not an exact replication of Gorham's patented design, infringement was found by a design patent analog to the doctrine of equivalents.

With respect to White's 1868 design, the Court was not so subtle in invoking a doctrine of equivalents. The Court compared the designs and noted similarities and differences.[28] It found the differences "discoverable" and "real to the eye of the expert," but invoked clear language of equivalents—"same way," "same result," "colorable evasion"—to find infringement:

> No doubt to the eye of an expert they are all real. Still, though variances in the ornament are discoverable, the question remains; is the effect of the whole design substantially the same? Is the adornment in the White design used instrumentally to produce an appearance, a distinct device, or does it work the same result in the same way, and is it, therefore, a colorable evasion of the prior patent, amounting at most to a mere equivalent?[29]

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or 'not important'.") (emphasis in original).

[27] Dixie-Vortex Co. v. Lily-Tulip Cup Corp., 95 F.2d 461, 467, 37 U.S.P.Q. (BNA) 158, 163 (2d Cir. 1938) ("[E]very element of the design is essential."); Lee v. Dayton-Hudson Corp., 838 F.2d 1186, 1189, 5 U.S.P.Q.2d (BNA) 1625, 1627 (Fed. Cir. 1988).

[28] Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 529-30 (1872).

[29] *Id.* at 530.

C. Gorham *Created An Objective "Ordinary Observer" Standard For Design Patent Infringement*

Turning toward articulation of the standard, the Court equated "identity of design" with "sameness of appearance" and noted "slight variances . . . will not destroy substantial identity:"

> We are now prepared to inquire what is the true test of identity of design. Plainly, it must be sameness of appearance, and mere difference of lines in the drawing or sketch, a greater or smaller number of lines, or slight variances in configuration, if insufficient to change the effect upon the eye, will not destroy the substantial identity.[19]

The Court arrived at an "ordinary observer" standard for determining whether the designs are "substantially the same:"

> [I]f, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other.[20]

Under *Gorham*, design patent infringement is not proven merely because two products resemble each other or are substantially similar. Infringement of a design patent requires "identity of design" or "sameness of appearance."[21] Infringement is not avoided by "slight variances" if they

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[19] *Id.* at 526-27.

[20] *Id.* at 528.

[21] *Id.* at 526.

The lower court found that White's designs did not infringe.[7] Before the Supreme Court, Gorham argued that the lower court erred by analytically comparing the patented and accused designs. Although White's designs were not exactly like the patented design, Gorham argued that there was infringement because "the differences are immaterial, have no effect upon the artistic result of the designs, and that the patterns are so much alike that . . . the infringing goods are 'calculated to deceive the unwary, or persons moderately skilled in the article, and to injure the sale of plaintiffs goods'."[8] "In other words, that the devices of the defendant are simply the equivalents of the plaintiff's design, in an artistic point of view."[9]

Gorham reasoned that the Congressional purpose in granting design patents was to "foster and encourage the decorative arts" and "[t]he decorative arts appeal solely to the eye."[10] Thus "[i]t is the eye of the observer which is to determine whether or not the design, as a whole, is or is not artistic, and whether or not it embodies the same artistic idea or thought."[11]

White argued that it is not enough that the "articles resemble each other in general appearance" so that "one may be mistaken for the other by a cursory observer."[12] White reasoned that the law of utility patent infringement should be applied to design patents such that "[t]here must be reference not only to the general appearance of the article, but to the

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[7] *Id.* at 524.

[8] Gorham Mfg. Co. v. White, 20 L. Ed. 731, 732 (1872) (brief of appellant) (citation omitted).

[9] *Id.*

[10] *Id.*

[11] *Id.* at 732.

[12] Gorham Mfg. Co. v. White, 20 L. Ed. 731, 734 (1872).

the *Gorham* identity test and dispensing with the need for objective evidence, the Federal Circuit has relegated design patent infringement to the whim of a jury. If, as stated in *Braun*, a jury is a panel of ordinary observers who need only compare the patented and accused designs to find infringement, the Federal Circuit has effectively insulated jury findings of design patent infringement from appellate review. Because the findings of the jury as the trier of fact are reviewed under the substantial evidence standard, meaningful appellate review is not possible because the basis of each individual juror's finding is subjective and, hence, *dehors* the record.

This article examines the Federal Circuit's law of design patent infringement. Section II addresses the test for design patent infringement as developed in *Gorham* and, in particular, recognition of a design patent analog to the doctrine of equivalents and the need for objective evidence of infringement. Section III addresses Federal Circuit decisions in design patent cases and, in particular, the design patent infringement standard employed in *Braun*, which looks to the similarity of the designs, the subjective reaction of the jurors and the harmful implications of such a standard. Section IV addresses the advantages of requiring objective evidence to support a jury finding of design patent infringement and, in particular, the rationale for requiring particularized evidence of equivalents in utility patent cases and the applicability of that rationale to design patent infringement. Section V addresses the types of evidence that will suffice under *Gorham* to prove design patent infringement.

The authors conclude that there is a need for certainty in the law relating to design patent infringement. The Federal Circuit would do well to reject the subjective approach employed in *Braun* for determining design patent infringement and reaffirm *Gorham*'s requirement of objective evidence to prove patent infringement under the design patent analog to the doctrine of equivalents.

On the other hand, the court carefully limited its holding to the particular facts of the case,[105] and the court also indicated its general approval of a *Knogo*-based model of the attorney-client privilege:

> The view that in-house and outside patent counsels' patent-validity opinions are never protected by the attorney-client privilege, expressed in *United States v. United Shoe Mach. Corp.*[106] and *American Cyanamid Co. v. Hercules Powder Co.*[107] was dealt a fatal blow by the Supreme Court in *Sperry v. Florida*,[108] and was administered the coup de grace by our predecessor, the Court of Claims, in *Ledex, Inc. v. United States*.[109] The current weight of authority,[110] to which we would add our own, recognizes that counsel's opinions on patent validity are not denied the client's privilege protection merely because validity must be evaluated against publicly available information.[111]

For support, the majority even cited the same cases cited by Judge Newman in her dissent. Neither opinion cited or endorsed *Jack Winter* or its progeny as authority. But, because of the functional result of the case, the Federal Circuit nevertheless must clarify its true position.

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[105] *Id.* at 746, 3 U.S.P.Q.2d (BNA) at 1825.

[106] *Supra* note 11.

[107] *Supra* note 19.

[108] *Supra* note 22.

[109] *Supra* note 26.

[110] *See Ampicillin, supra* note 26; *Nestle, supra* note 26.

[111] *Id.* at 745-46, 3 U.S.P.Q.2d (BNA) at 1825 (citations omitted).

"in anticipation of litigation."[96] This is so because patent rights do not exist prior to the successful prosecution of a patent. In exchange for the public disclosure of an invention, an inventor receives a time-limited legal right to sue infringing parties. The effect of obtaining a patent is receiving a legal license to sue.[97] Thus, patent prosecution necessarily, albeit implicitly, contemplates litigation. Case law which recognizes work-product protection for ex parte prosecution materials only to the extent an infringer is identified at the time of prosecution seems arbitrary and myopic.[98] The work-product doctrine should extend generally to protect ex parte prosecution materials.

C. *Federal Circuit Direction*

Although jurisdiction of the Court of Appeals for the Federal Circuit includes appeals from decisions by the federal district courts in patent matters,[99] the Federal Circuit provides little guidance for applying the attorney-client or work-product privileges in the context of patent infringement disputes. The court views discovery as within the discretion of the trial court,[100] and the Federal Circuit routinely denies petitions for

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[96] The sole right conferred by a U.S. patent is the right to *exclude* others from making, using or selling the invention defined by the class of the patent. *See* 35 U.S.C. § 271(a) (1984). A U.S. patent conveys no right upon its owner to make, use or sell the patented product. This is the classic paradox of U.S. patent law. Thus, if a first patent owner has a patent claim with elements A+B+C, and a second patent owner has a patent with claim elements A+B+C+D, the second patent owner has no right to make his invention because, in doing so, he violates the right of the first patent owner to exclude all others from making the patented invention A+B+C.

[97] *See* Steven D. Glazer, *Patents Don't Grant Exclusive Right to Market*, N.Y. TIMES, Oct. 14, 1993, at A22.

[98] *See In re* Minebea Co., discussed *supra* notes 70-73 and accompanying text (ex parte prosecution materials related to first patent protected and those related to second patent unprotected).

[99] *See* 28 U.S.C. § 1295 (1988 & Supp. IV 1992).

[100] *See* Heat & Control, Inc. v. Hester Indus., Inc., 785 F.2d 1017, 1022, 228 U.S.P.Q. (BNA) 926, 930 (Fed. Cir. 1986).

Public policy also favors application of the attorney-client privilege in the prosecution context. The threat that a patent applicant and his attorney will not provide full disclosure to the PTO is mitigated by two factors. First, whether disclosure is made to the PTO is not temporally or substantively related to the attorney-client privilege. Whether information is disclosed or not disclosed at the time of application is not discovered until the time of litigation. Second, the crime-fraud exception to the attorney-client privilege results in the production of documents where certain unlawful conduct has occurred. At least in part, this general exception to the attorney-client privilege corrects for previous nondisclosure to the PTO.[92]

Also, assertion of the attorney-client privilege does not necessarily imply underlying fraud. The attorney-client privilege promotes important goals, and there is no reason to single out patent prosecution as an exception to this privilege. As recently stated:

> Information must flow freely between a client inventor and the attorney before the final patent application is signed and filed, just as it must in an ordinary civil case before the filing of a complaint. There is nothing inherent in patent practice that diminishes the value of respecting an intended confidential communication to an attorney. There is nothing sinister about the attorney-client privilege. One cannot assume that if a client inventor intends a confidential communication to his attorney, fraud on the PTO is afoot, and there is no

[92] Although the crime-fraud exception to the attorney-client privilege is more narrowly defined than inequitable conduct before the PTO, the crime-fraud exception to the attorney-client privilege presents a balance between the public interest in disclosure to the PTO and the public interest in keeping communications between attorney and client private. *See* Research Corp. v. Gourmet's Delight Mushroom Co., 560 F. Supp. 811, 819-20, 219 U.S.P.Q. (BNA) 1023, 1030 (E.D. Pa. 1983).

The reasons supporting the philosophy of limiting the attorney-client privilege in the prosecution context are not persuasive. The view that patent practice involves only business and not law is misconceived.[86] To an extent, all legal advice involves business advice; it is a matter of semantics and characterization. Suppose an inventor submits to a patent attorney a memorandum discussing prior art, as well as a memorandum discussing his invention, and asks for advice about whether his invention is patentable. One may view this request as asking for business advice in the form of a cost-benefit analysis of the propriety of applying for patent protection. This cost-benefit calculus may weigh the likelihood of obtaining patent protection, the scope of such protection, the value of such protection given the invention's potential market, the likelihood of obtaining relief in an infringement suit, the cost of waiving trade secret protection as a consequence of obtaining patent protection, as well as numerous other factors. But behind each of these cost-benefit decisions are legal questions: Is there a legal right? Is it obtainable? Is it enforceable?

The view that patent practitioners are under an absolute obligation to pass all information gleaned from the inventor to the PTO is also misconceived.[87] Patent prosecution only requires the disclosure to the PTO of information "material" to patentability.[88] To be sure, this disclosure requirement applies to attorneys *and* inventors.[89] But in practice, the materiality standard calls for a difficult legal interpretation as to whether information meets the standard.[90] In practice, an inventor

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[86] This position was suggested by *Zenith*. *See* discussion *supra* notes 18-21 and accompanying text.

[87] This position was suggested by *Jack Winter*. *See* discussion *supra* notes 33-40 and accompanying text.

[88] *See* 37 C.F.R. § 1.56(a) (1993).

[89] The requirement extends to everyone involved in prosecution of the application. *See id.* § 1.56(c).

[90] The standard of materiality is the following:

> Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

Another case appearing to support the imminent litigation exception is *Rohm & Haas Co. v. Brotech Corp.*,[74] a 1993 decision by the District of Delaware. As part of a discovery dispute in this patent infringement action, the parties contested the production of a copy of an inventor's affidavit filed with an ex parte application. The specific copy of the affidavit was found in an attorney's files and reflected "yellow highlighting of passages of the affidavit that the attorney . . . thought were pertinent to certain noninfringement arguments being made by another company."[75] The court found the document protected from discovery under either the attorney-client privilege or work-product doctrine.[76] Although details concerning this document are unclear, by protecting from discovery an ex parte prosecution document with litigation notes, *Rohm & Haas* appears to support the imminent litigation exception.

C. *Contexts Other Than Ex Parte Prosecution: Substantial Protection*

Although ex parte prosecution materials generally are not protected by the work-product doctrine, materials prepared for reexamination proceedings[77] and interference proceedings[78] are protected. In *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*,[79] perhaps the only case to address

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may be classified as work product if the primary purpose for their creation was for use in pending or anticipated litigation.").

[74] 815 F. Supp. 793, 26 U.S.P.Q.2d (BNA) 1800 (D. Del. 1993), *aff'd*, 19 F.3d 41 (Fed. Cir. 1994).

[75] *Id.* at 795, 26 U.S.P.Q.2d (BNA) at 1801.

[76] *Id.* at 795, 26 U.S.P.Q.2d (BNA) at 1801.

[77] *See* Hewlett-Packard Co. v. Bausch & Lomb, Inc., 116 F.R.D. 533, 4 U.S.P.Q.2d (BNA) 1676 (N.D. Cal. 1987).

[78] *See In re* Natta, 410 F.2d 187, 192-94, 161 U.S.P.Q. (BNA) 389, 393-94 (3d Cir.), *cert. denied*, 396 U.S. 836, 163 U.S.P.Q. (BNA) 704 (1969); Natta v. Zletz, 418 F.2d 633, 637-38, 163 U.S.P.Q. (BNA) 675, 678-80 (7th Cir. 1969); Natta v. Hogan, 392 F.2d 686, 693-94, 157 U.S.P.Q. (BNA) 183, 188-89 (10th Cir. 1968); Burlington Indus. v. Exxon Corp., 65 F.R.D. 26, 42, 184 U.S.P.Q. (BNA) 651, 659 (D. Md. 1974).

[79] 116 F.R.D. 533, 4 U.S.P.Q.2d (BNA) 1676 (N.D. Cal. 1987).

ruling established a basis for developing the work-product doctrine and resulted in the codification of the doctrine in the Federal Rules.[65]

Unlike the attorney-client privilege, however, the work-product doctrine provides only qualified immunity from discovery. The protection of materials prepared in anticipation of litigation is overcome by a two-part showing that the party seeking discovery has substantial need for the materials and is unable without undue hardship to obtain them.[66] But even if this showing is made, "the court shall protect against disclosure of the mental impressions, conclusions, opinions, or legal theories of an attorney or other representative of a party concerning the litigation."[67] For this latter category of "opinion" work product, immunity from discovery is either absolute, or near absolute, in that a heightened showing of necessity is required prior to a court ordering production of the materials.[68]

B. *Ex Parte Prosecution Context: Limited Protection*

The work-product doctrine offers a layer of protection against the discovery of patent materials in addition to the attorney-client privilege. Historically, though, the work-product doctrine has provided little additional protection, as most courts find the doctrine inapplicable in the context of ex parte prosecution.[69] The rationale behind this reasoning is

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[65] FED. R. CIV. P. 26(b)(3) advisory committee's notes (1970 amendments).

[66] FED. R. CIV. P. 26(b)(3).

[67] *Id.*

[68] *Compare* Bulk Lift, Int'l, Inc. v. Flexcon & Sys., Inc., 122 F.R.D. 482, 491, *order aff'd*, 122 F.R.D. 493, 9 U.S.P.Q.2d (BNA) 1355 (W.D. La. 1988) (providing for absolute immunity for opinion work product) *with In re* Minebea Co., 143 F.R.D. 494, 499 (S.D.N.Y. 1992) (requiring heightened showing prior to production of opinion work product).

[69] *See Bulk Lift Int'l, Inc.*, 122 F.R.D. at 491; Detection Sys., Inc. v. Pittway Corp., 96 F.R.D. 152, 155, 220 U.S.P.Q. (BNA) 716, 718 (W.D.N.Y. 1982); Sneider v. Kimberly-Clark Corp., 91 F.R.D. 1, 6 (N.D. Ill. 1980); Hercules Inc. v. Exxon Corp., 434 F. Supp. 136, 151-52, 196 U.S.P.Q. (BNA) 401, 412 (D. Del. 1977). *See also* McNeil-PPC, Inc. v. Procter & Gamble Co., 136 F.R.D. 666, 671 (D. Colo. 1991) (no work-product protection for deposition of attorney who drafted patent application).

the inventor to the PTO.[56] In contrast, the *Knogo* model views the patent practitioner as a lawyer whose factual frame of reference is science and technology.[57] This fundamental difference in policy is manifested in the different results produced by courts relying on the competing models. Courts following the *Jack Winter* model order production of most items, and courts following the *Knogo* model find most items privileged.[58]

It seems that a court must adopt one or the other of these two models in deciding discovery issues in patent litigation. Although it appears that the *Knogo* model is the better reasoned, trial courts should not have to choose between competing policies. It is time for the Court of Appeals for the Federal Circuit, which was created to eliminate doctrinal instability in the application of the nation's patent laws, to choose an appropriate case in which to enunciate stable, workable principles that district courts can apply when deciding issues concerning the applicability of the attorney-client privilege to patent materials.[59]

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[56] *Jack Winter I*, 50 F.R.D. at 228, 166 U.S.P.Q. (BNA) at 297-98.

[57] *Knogo*, 213 U.S.P.Q. (BNA) at 940-41. *See also Vernitron*, 186 U.S.P.Q. (BNA) at 325 ("It is very common for registered patent attorneys and agents to have had graduate education in electrical, chemical or mechanical engineering, for example. Lawyers engaged in general practice usually do not possess this additional expertise, and so would be obliged to decline to represent a client in a patent matter unless he expects in good faith to become qualified to handle it, or, with the client's consent, secures association of a lawyer who possesses the requisite competence. See Canon 6, Code of Professional Responsibility, and especially EC 6-3 and DR 6-101 (A) (1).").

[58] *Compare* cases cited *supra* notes 40, 48.

[59] The Court of Appeals for the Federal Circuit was created by the Federal Courts Improvement Act on October 1, 1982. Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified as amended in scattered sections of 28 U.S.C.). It has exclusive appellate jurisdiction over cases arising under U.S. patent law. *See* 28 U.S.C. § 1295 (1988 & Supp. IV 1992).

F. *Reconciliation Of* Jack Winter *And* Knogo?

Are the views expressed in *Jack Winter* and *Knogo* reconcilable? At least one court has attempted such a reconciliation. In *Laitram Corp. v. Hewlett-Packard Co.*,[49] the court considered "whether these two divergent lines of cases can be harmonized" and concluded "that to some extent they can and should be."[50]

In trying to resolve the issue of whether the communication of purely technical information between client and patent attorney is subject to the attorney-client privilege, the court concluded "that the central inquiry is whether the client had a reasonable intention that a communication remain confidential" or, alternatively, whether "technical information [was] disclosed primarily for legal guidance."[51] The court found protected a number of documents, including a draft application and ongoing communications about the scope of the claims. The court also ordered production of a number of documents, including a memorandum describing the prior art.

1958-59 (S.D. Ind. 1993) (protecting draft patent applications and notes on same); Hydraflow, Inc. v. Enidine Inc., 145 F.R.D. 626, 635-36 (W.D.N.Y. 1993) (protecting communication of purely technical information about invention and correspondence on approach of response to office action); *Advanced Cardiovascular Sys. Inc.*, 144 F.R.D. at 378, 25 U.S.P.Q.2d (BNA) at 1359 (stating that communications from inventor to patent attorney are presumptively protected, even where communication consists of entirely technical information); *In re* Minebea Co., 143 F.R.D. 494, 502-03 (S.D.N.Y. 1992) (protecting memorandum on prior art search conducted with intent to determine patentability of present invention); Cuno, Inc. v. Pall Corp., 121 F.R.D. 198, 202 (E.D.N.Y. 1988) (protecting communications entirely technical in nature); Minnesota Mining & Mfg. Co. v. Ampad Corp., 7 U.S.P.Q.2d (BNA) 1589, 1590-91 (D. Mass. 1987) (protecting technical memoranda prepared by inventor to describe invention); FMC Corp. v. Old Dominion Brush Co., 229 U.S.P.Q. (BNA) 150, 152-53 (W.D. Mo. 1985) (protecting memorandum of prior art prepared by the inventor). *See also* Fromson v. Anitec Printing Plates, Inc., 152 F.R.D. 2, 4 (D. Mass. 1993) (endorsing *Knogo* in establishing outline for future discovery).

[49] 827 F. Supp. 1242, 27 U.S.P.Q.2d (BNA) 1541 (E.D. La. 1993).

[50] *Id.* at 1245, 27 U.S.P.Q.2d (BNA) at 1544.

[51] *Id.* at 1246, 27 U.S.P.Q.2d (BNA) at 1544.

E. Knogo: *The Pendulum Swings Yet Again*

The 1980 decision of the Court of Claims in *Knogo Corp. v. United States*[41] directly attacked the *Jack Winter* cases. The discovery dispute in *Knogo* concerned twelve documents: four documents from the inventor to his attorney containing technical information about the invention and the general field of the invention, a letter from the inventor to his attorney with comments regarding a near-final draft of the application, five documents from the attorney to the inventor regarding patentability of the invention and the scope of patent claims, and two cover letters. Except for the two cover letters, the court found the documents protected by the attorney-client privilege.[42]

The *Knogo* court found that the *Jack Winter* line of cases oversimplified the role of the patent attorney in the patent application process.[43] As held there:

> A distinction can be made between the duty to disclose how to make and use the invention and the mere funneling of technical information through the attorney to the Patent Office. The former is the job of the patent attorney, while the latter is an inaccurate, and uninformed characterization of the patent attorney's role in the preparation and prosecution of a patent application.[44]

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however, the district court in the Northern District of California subsequently declined to follow the *Jack Winter* reasoning in *Advanced Cardiovascular Sys., Inc. v. C.R. Bard, Inc.*, 144 F.R.D. 372, 374, 25 U.S.P.Q.2d (BNA) 1354, 1356 (N.D. Cal. 1992), discussed *infra* at notes 83-85 and accompanying text.

[41] 213 U.S.P.Q. (BNA) 936, 940 (Ct. Cl. 1980).

[42] *Id.* at 942.

[43] *Id.* at 940.

[44] *Id.*

D. Jack Winter: *The Pendulum Swings Again*

Sperry undermined the argument that the attorney-client privilege does not apply to patent prosecution materials because the practice of law is not involved in prosecution. However, an alternative and arguably novel ground for rejecting the attorney-client privilege in the prosecution context was articulated in the 1970 decision in *Jack Winter, Inc. v. Koratron Co.*[33] Although suggesting that *Sperry* effectively overruled *Zenith* and its progeny,[34] the court in *Jack Winter* found that the attorney-client privilege nevertheless failed to apply in the prosecution context because of the patent attorney's duty of disclosure to the PTO.[35]

Essentially, the *Jack Winter* court found that the duty of candor imposed upon an attorney prosecuting a patent application in the PTO *a fortiori* prevents such practice from satisfying the confidentiality element of Judge Wyzanski's *United Shoe* test.[36] In applying to the PTO for a patent, the *Jack Winter* court found that "there is no room for partial disclosure or half truth" and that "there is no room for game playing or

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> [2] Communications pertinent to plaintiffs' legal matters between two firms of outside attorneys who represent plaintiffs where the communications are not based upon information supplied by plaintiffs.
>
> [3] Communications between plaintiffs' outside attorneys and parties other than plaintiffs.
>
> [4] Communications *from* plaintiffs *to* their outside attorneys on non-legal matters such as fixing a date for a conference. . . .
>
> . . . .
>
> [8] Inter-company communications between officers or employees of the plaintiff[].

Id. at 151, 152 U.S.P.Q. (BNA) at 793.

[33] 50 F.R.D. 225, 166 U.S.P.Q. (BNA) 295 (N.D. Cal. 1970) [hereinafter *Jack Winter I*].

[34] *Id.* at 228, 166 U.S.P.Q. (BNA) at 297.

[35] *See* 37 C.F.R. §§ 1.56, 1.97 (1993).

[36] *See supra* note 12 and accompanying text (Judge Wyzanski's test to apply the attorney-client privilege).

After *Sperry*, courts increasingly recognized that patent prosecution involves the practice of law and applied the attorney-client privilege in this context.[24] Two of the leading transitional cases recognizing the protection of the attorney-client privilege in the patent prosecution context were *Chore-Time Equipment, Inc. v. Big Dutchman, Inc.*[25] and *Sperti Products, Inc. v. Coca-Cola Co.*[26]

In *Chore-Time*, discovery of correspondence between the patent holder and its patent attorney was at issue.[27] The court found the correspondence privileged. Without citing *Sperry*, the court distinguished

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[24] A few courts, though, found that because *Sperry* did not specifically overrule *Zenith*, nor address the particular issue of privileged communications, the proposition that the attorney-client privilege does not attach to communications involving a *patent agent* is still good law. *See* Sneider v. Kimberly-Clark Corp., 91 F.R.D. 1, 5 (N.D. Ill. 1980) (citing *Duplan, infra*); Duplan Corp. v. Deering Milliken, Inc., 397 F. Supp. 1146, 1194, 184 U.S.P.Q. (BNA) 775, 807 (D.S.C. 1975); Underwater Storage Inc. v. United States Rubber Co., 314 F. Supp. 546, 548, 165 U.S.P.Q. (BNA) 97, 98 (D.D.C. 1970); Rayette-Faberge, Inc. v. John Oster Mfg. Co., 47 F.R.D. 524, 526, 163 U.S.P.Q. (BNA) 373, 374 (E.D. Wis. 1969) (citing *Kearney, infra*); Kearney & Trecker Corp. v. Giddings & Lewis, Inc., 296 F. Supp. 979, 980-81, 161 U.S.P.Q. (BNA) 700, 701 (E.D. Wis. 1969); Joh. A. Benckiser G. m. b. H. Chemische Fabrik v. Hygrade Food Prods. Corp., 253 F. Supp. 999, 1000-01, 149 U.S.P.Q. (BNA) 28, 29 (D.N.J. 1966).

[25] 255 F. Supp. 1020, 150 U.S.P.Q. (BNA) 426 (W.D. Mich. 1966).

[26] 262 F. Supp. 148, 149, 152 U.S.P.Q. (BNA) 790, 792 (D. Del. 1966). Other cases followed *Chore-Time* and *Sperti*. *See* cases cited *infra* note 78; Eutectic Corp. v. Metco, Inc., 61 F.R.D. 35, 41-42, 180 U.S.P.Q. (BNA) 570, 574 (E.D.N.Y. 1973) (citing *Chore-Time* and *Ledex, infra*); Ledex, Inc. v. United States, 172 U.S.P.Q. (BNA) 538, 539-40 (Ct. Cl. 1972) (citing *Chore-Time* and *Sperti*); Collins & Aikman Corp. v. J.P. Stevens & Co., 51 F.R.D. 219, 220 n.2, 169 U.S.P.Q. (BNA) 296, 297 n.2 (D.S.C. 1971) (citing the *Natta* trilogy, *infra* note 78). *See also* Nestle Co. v. A. Cherney & Sons, Inc., 207 U.S.P.Q. (BNA) 930, 933 (D. Md. 1980) (finding the attorney-client privilege applicable in the context of trademark registrations and applications, citing *Eutectic* and *Ampicillin, infra*, with approval); *In re* Ampicillin Antitrust Litigation, 81 F.R.D. 377, 392-94, 202 U.S.P.Q. (BNA) 134, 145-46 (D.D.C. 1978) (finding attorney-client privilege available to patent agents registered with the PTO as well as patent attorneys; rejecting previous case law to the contrary); *Vernitron*, 186 U.S.P.Q. (BNA) 324 (D.N.J. 1975) (same).

[27] *Chore-Time*, 255 F. Supp. at 1020, 150 U.S.P.Q. (BNA) at 426.

of patent prosecution practice do not involve the practice of law.[19] The dispute in *Zenith* concerned discovery of over 1,600 documents related to patent prosecution that passed between an inventor, non-lawyer employees of a corporate patent department, inside and outside counsel, and others. Chief Judge Leahy ruled that almost all the documents were discoverable, holding that "[e]ssentially, attorneys and employees of defendants' patent departments are engaged in a type of non-legal work to which the attorney-client privilege protection and 'work product' exemption do not attach."[20] The *Zenith* court found that an attorney acts as a lawyer within the meaning of the attorney-client privilege only in two circumstances involving patents: (i) in applying rules of law to confidential facts, and (ii) in preparing appeals before the Court of Customs and Patent Appeals (CCPA) and other courts of record. The court then listed instances where it believed a patent attorney fails to act as a lawyer for purposes of the attorney-client privilege, such as when drafting patent applications or representing clients in interference proceedings.[21]

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[19] *Id.* at 794, 101 U.S.P.Q. (BNA) at 318. *See also* American Cyanamid Co. v. Hercules Powder Co., 211 F. Supp. 85, 87, 135 U.S.P.Q. (BNA) 235, 237-38 (D. Del. 1962) (following *United Shoe* and *Zenith* in finding that disclosure made to an attorney in a corporate patent department is disclosure to one who spends his time primarily on patent "business" and not "law," and holding several memoranda concerning prior art and infringement issues not protected under the attorney-client privilege).

[20] *Zenith*, 121 F. Supp. at 793, 101 U.S.P.Q. (BNA) at 317.

[21] The court stated:

> [Patent lawyers] do not "act as lawyers" when not primarily engaged in legal activities; when largely concerned with technical aspects of a business or engineering character, or competitive considerations in their companies' constant race for patent proficiency, or the scope of public patents, or even the general application of patent law to developments of their companies and competitors; when making initial office preparatory determinations of patentability based on inventor's information, prior art, or legal tests for invention and novelty; when drafting or comparing patent specifications and claims; when preparing the application for letters patent or amendments thereto and prosecuting same in the Patent Office; when

(4) the privilege has been (a) claimed and (b) not waived by the client.[12]

This basic formulation is often cited in cases discussing the attorney-client privilege,[13] especially in cases involving the attorney-client privilege in the context of discovering patent materials. The important features of the privilege gleaned from this definition are that it applies to (1) confidential communications (2) between a client and his attorney (or the attorney's agent) (3) in obtaining legal services.[14] However, because patent matters are in a "unique field of the law,"[15] application of the

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[12] *Id.* at 358-59, 85 U.S.P.Q. (BNA) at 6. As in other contexts, the attorney-client privilege is waivable in patent litigation. For example, the attorney-client privilege is waived by one accused of willful infringement who claims reliance on a noninfringement opinion of counsel. *See* Thorn EMI N. Am., Inc. v. Micron Technology, Inc., 837 F. Supp. 616, 620-21, 29 U.S.P.Q. (BNA) 1872, 1875 (D. Del. 1993); Mushroom Assoc. v. Monterey Mushrooms Inc., 24 U.S.P.Q.2d (BNA) 1767, 1770 (N.D. Cal. 1992). The present exposition, though, assumes that the attorney-client privilege is not waived.

[13] *See* 4 JAMES W. MOORE ET AL., MOORE'S FEDERAL PRACTICE ¶ 26.11[2] at 26-178 (2d ed. 1994).

[14] Although the court in *United Shoe* ultimately held documents prepared by members of a corporate patent department discoverable, 89 F. Supp. at 357, 85 U.S.P.Q. (BNA) at 6, this article shows that this view is no longer consistent with current law. The court reasoned that the preparation of patent documents relates to the practice of "business" and not to the practice of "law." Thus, the requirement calling for communication by a lawyer and the requirement calling for the provision of legal services were not met, and the attorney-client privilege failed to protect the documents from discovery. *Id.* at 360-61, 85 U.S.P.Q. (BNA) at 8. Many modern cases, however, reject this view and embrace the view that the preparation of some materials associated with the prosecution before the PTO of a client's patent application calls for legal analysis. *See infra* notes 41-48 and accompanying text.

[15] Vernitron Medical Prods., Inc. v. Baxter Lab, Inc., 186 U.S.P.Q. (BNA) 324, 325 (D.N.J. 1979) ("In the field of patents, the subject is complicated somewhat because it is not unusual to have patent attorneys engaged as full-time employees of the client, and because clients and their patent attorneys sometimes engage the services of 'patent agents' to assist them in processing a matter. A further complication arises from the fact that at the stage of preparing and processing a patent application, an attorney admitted to the general practice of law is not authorized to act for the

II. ATTORNEY-CLIENT PRIVILEGE

A. *What Is This Thing We Call Privilege?*

The attorney-client privilege provides absolute immunity from discovery of certain confidential communications between a client and his attorney. In the federal courts, it is embodied in Rule 26 of the Federal Rules of Civil Procedure, which provides that the scope of discovery is limited to matters which are relevant and "not privileged."[6]

In most instances, the rules of discovery and the rules of evidence are distinct. Discovery rules are intended to permit broad inquiry into relevant matters, and discovery of information not admissible as evidence is permitted if such discovery reasonably appears to lead to the discovery of admissible evidence.[7] For privileges, however, this distinction is not present. The scope of protection from discovery of privileged material is coextensive with the scope of admissible evidence. Information privileged from discovery is privileged from admission into evidence.[8]

However, in the federal court system, a statutory formulation of the scope of "privilege" does not exist. Instead, the Federal Rules of Evidence provide that privileges are governed by the principles of the common law.[9] Thus, it is these common law principles of privilege that

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[6] FED. R. CIV. P. 26(b)(1).

[7] *Id.*

[8] *See* United States v. Reynolds, 345 U.S. 1, 6 (1953) (holding that the term "not privileged," as used in discovery under the Federal Rules of Civil Procedure, refers to "privileged" as understood in evidence law).

[9] Although the Supreme Court recommended enumeration of specific evidentiary privileges in its proposed rules of evidence, including the attorney-client privilege, Congress rejected such a statutory formulation. *See* H.R. REP. NO. 650, 93d Cong., 2d Sess. (1974), *reprinted in* 1974 U.S.C.C.A.N. 7075, 7082. Instead, Congress enacted a single rule for evidentiary privileges, Rule 501, which states that privileges "shall be governed by the principles of the common law as they may be interpreted by the courts of the United States in the light of reason and experience." FED. R. EVID. 501.

I. INTRODUCTION

When Herman Melville wrote *Bartleby the Scrivener*,[1] it is unclear whether he intended Bartleby as a patent practitioner. However, prior to the Supreme Court's seminal decision in *Sperry v. Florida ex rel. Florida Bar*,[2] many courts viewed patent practitioners with the same peculiarity as that ascribed to young Bartleby, seeing them not as lawyers but as mere scriveners or conduits for the transmittal of information from an inventor to the PTO.

No one credibly could dispute that, in litigating a patent suit in federal court, a patent attorney's practice of law mirrors that of attorneys who litigate other types of lawsuits. As a general principle, the applicability of the attorney-client privilege and work-product doctrine to activities carried out and materials prepared in the course of litigating a patent lawsuit in federal court is unassailable. However, courts historically have questioned the applicability of this principle to many pre-litigation aspects of a patent attorney's or patent agent's practice, including drafting patent applications, making determinations of patentability of an invention, or analyzing issues of infringement.[3]

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[1] HERMAN MELVILLE, *Bartleby the Scrivener, in* THREE STORIES WITH WOOD ENGRAVINGS BY GARRICK PALMER 13 (London, Folio Soc'y ed., 1967) (1856). Of the young scrivener, Melville wrote: "[A]n interesting and singular set of men, of whom, as yet, nothing that I know of, has ever been written—I mean, the law-copyists, or scriveners. I have known very many of them, professionally and privately, and, if I pleased, could relate divers histories, at which good-natured gentlemen might smile, and sentimental souls might weep. But I waive the biographies of all other scriveners, for a few passages in the life of Bartleby, who was a scrivener, the strangest I ever saw or heard of." *Id.*

[2] 373 U.S. 379, 137 U.S.P.Q. (BNA) 578 (1963). *Sperry* held, *inter alia*, that a person registered as a patent agent with the United States Patent and Trademark Office (PTO), but not a member of a state bar, practices law when prosecuting patents before the PTO. *Id.* at 383, 221 U.S.P.Q. (BNA) at 389.

[3] "Patent attorneys are those who are admitted to practice before any United States Court, or the highest court of a State or territory. Patent agents are those not so admitted." Vernitron Medical Prods., Inc. v. Baxter Lab., Inc., 186 U.S.P.Q. (BNA) 324, 325 (D.N.J. 1975). To prosecute a patent application before the PTO, a patent attorney or agent must be specially admitted to do so. 37 C.F.R. § 1.31 (1993). General

PREFACE

We are pleased to resume the publication of the AIPLA Quarterly Journal after a short hiatus. You will note the change in the "look and feel" of the Journal—from a change in color and format to a change in editorial direction and structure. Most significantly, we now have, in addition to the Editor in Chief, an Editorial Board of intellectual property experts selected from the AIPLA membership as well as a dedicated national student Publication Staff. This editorial structure combines the talents of AIPLA professional and student members to provide our readership with useful and provocative articles on a wide range of intellectual property topics of current interest to the practicing bar. Further, in order to meet our mission, that of providing an outstanding journal designed to promote an open exchange of intellectual insight and debate on issues of intellectual property law, we welcome article submissions from all individuals interested in intellectual property issues.

We thank you for your indulgence during the period of publication hiatus and we hope you find that the Journal reflects your interests. We welcome your suggestions to improve the Journal and to better serve your needs.

Joan E. Schaffner, Editor in Chief

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