United States District Court,
N.D. Illinois, Eastern Division.

Ole K. NILSSEN,
Plaintiff.
v.
MOTOROLA, INC., et al,
Defendants.

Jan. 7, 2000.

Owner of electronic ballast patents sued competitor for infringement. The District Court, Shadur, Senior District Judge, construed claims.

Claims construed.

4,677,345, 4,819,146, 5,013,974, 5,047,690, 5,189,342, 5,214,356, 5,341,067, 5,416,386, 5,432,409. Cited.

Harry J. Roper of Roper & Quigg, Chicago, IL, for Plaintiff.

James M. Amend, P.C., Brian D. Sieve, Michael A. Parks and Marcus E. Sernal of Kirkland & Ellis, Chicago, IL, for Defendants.

MEMORANDUM OPINION AND ORDER

SHADUR**, Senior District Judge.**

In September 1996 Ole Nilssen ("Nilssen") brought this multipatent infringement action against Motorola, Inc. and its subsidiary Motorola Lighting, Inc. (collectively "Motorola"). FN1 Because Nilssen's Complaint alleged that Motorola had infringed 14 of his patents involving a host of claims, the parties agreed (and this Court confirmed that agreement by an appropriate order) to reduce those claims to a representative sample for the purposes of discovery and trial.

FN1. This action is a spinoff from Nilssen's now-disposed-of action (93 C 6333) that had asserted several claims against Motorola stemming from its alleged theft of trade secrets.

Two "short" years later the parties reached an agreement on that score, and this Court approved their stipulation on June 11, 1999. Nine United States patents serve as the sample: Nos. B1 4,677,345; 4,819,146; 5,013,974; 5,047,690; 5,189,342; 5,214,356; 5,341,067; 5,416,386; and 5,432,409 (collectively the "patents in suit"). FN2 All of the patents in suit relate to electronic ballasts, with a total of 13 claim elements in dispute.

FN2. This opinion will refer to each of the patents in suit by its last three digits. For example, Patent No. 4,819,146 will be cited as the " '146 Patent." As for the applicable statutory law, all citations to paragraphs of 35 U.S.C. s. 112 will simply take the form "Paragraph-."

Nilssen and Motorola have aligned themselves in typical patent litigation fashion: Nilssen asserts willful infringement, while Motorola claims that Nilssen's patents are invalid and that there was no infringement. This opinion takes the first step in the two-step analysis required to determine whether a patent claim has been infringed: construing the claims to determine their scope and meaning (see Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), *aff'g* 52 F.3d 967 (Fed.Cir.1995)(en banc)). To that end the parties have exchanged claim charts and each side has submitted a full set of claim construction memoranda. FN3

FN3. This opinion refers to Nilssen's and Motorola's initial briefs as "N. Mem.-" and "M. Mem. -" and to their respective responses as "N. Resp.-" and "M. Resp.-". Citations to other submissions will also use the "N." and "M." designations.

[1] [2] This Court is thus ready to determine the meaning and scope of each of the 13 sample claim elements as a matter of law.FN4 But first a brief overview of the relevant technology is necessary to set the stage for the skirmish that follows. Also, because the parties proffer many of the same arguments in support of their respective positions, a review of claim construction principles (though extensive in nature) will obviate the need for needless repetition in the discussion that follows.FN5

FN4. Pursuant to *Markman,* this Court construes the claims as a matter of law before the factual application of those claims to the accused products can take place. It should also be added as to two of the patents in suit (the '409 and the '690 Patents) that, while the Court is respectful of Judge Kennelly's ruling construing some of the claims in those patents in Nilssen v. Magnetek, Inc., 1999 WL 982966 (N.D.Ill.1999) and of the "importance of uniformity in the treatment of a given patent" (Markman, 517 U.S. at 390, 116 S.Ct. 1384), it is not compelled to reach the same conclusions. Those claims too will receive an independent review to ensure fairness to the parties in this litigation.

FN5. This Court particularly appreciates the parties' efforts (as needed in all complex patent cases) to take technical and sometimes impenetrable jargon-what would otherwise be pure gibberish to a layman-and "dumb it down" by explaining that terminology in more comprehensible terms.

Electronic Ballasts

Electronic ballasts are a means of starting and powering fluorescent lights. Conventional 60 hertz ("Hz") alternating current ("AC") powers an electronic ballast that comprises three parts that stand between the power supply and the fluorescent lamp: a rectifier, an inverter and an output stage. Current flows to the rectifier, which converts the AC voltage into direct current ("DC") voltage. That voltage is then "inverted" (reconverted to AC voltage) at the high frequency of 30,000 Hz. Then at the output stage the voltage is "conditioned" and raised to the level necessary to ignite the fluorescent lamps. Because more power is

needed to ignite the lamps than for continued operation, the electronic ballast reduces and stabilizes the voltage once the lamps are ignited.

At issue here are a whole set of claims from the patents in suit, all involving the inverter stage. Three types of inverters are relevant to those claims: the full-bridge inverter, the half-bridge inverter and the push-pull inverter. As Judge Kennelly explains in Nilssen v. Magnetek, 1999 WL 982966, at (N.D.Ill.1999):

A "full bridge" inverter includes four transistors connected together in two parallel circuits, each of the parallel circuits including two transistors connected in series. A "half bridge" inverter includes two transistors connected in series. A "push-pull" inverter includes two transistors in parallel circuits.

Claim Interpretation

[3] [4] [5] Because a major purpose of patent law is to provide notice of what has been removed from the public domain for the life of the patent, the interpretive process is essentially limited to intrinsic evidence: the claim, the specification and the prosecution history (see, e.g., Burke, Inc. v. Bruno Independent Living Aids, Inc., 183 F.3d 1334, 1340 (Fed.Cir.1999)). While "it is improper to rely on extrinsic evidence" such as expert testimony (Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996)), a judge "may also rely on dictionary definitions when construing claim terms, so long as that definition does not contradict any definition found in or ascertained by a reading of the patent documents" (id. at 1584 n. 6). Vitronics, id. at 1582 also teaches that courts should construe claim language from the point of view of a person of ordinary skill in the field at the time of the invention.

Here the parties engage in a semantic tug of war: Motorola insists that the specification defines and limits the disputed terms, while Nilssen insists that the claim language alone should be given its commonly understood meaning. Resolving that debate hinges on distinguishing a limitation drawn from the specification from a definition of the claim language by itself. In that respect Vitronics, 90 F.3d at 1582 explains that the words of a claim should first be considered to assess the text's "ordinary and customary meaning." If a "patentee...choose[s] to be his own lexicographer and use terms in a manner other than their ordinary meaning, [he may do so] as long as the special definition of the term is *clearly stated* in the patent specification or file history" (*id.*)(emphasis added). Thus the specification should be reviewed "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning" (*id.*) FN6 In other words, "[t]he specification acts as a dictionary when it expressly defines terms or when it defines terms by implication" (*id.*). Finally, because "[t]he specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it,...the specification is highly relevant to the claim construction analysis.... [U]sually, it is...the single best guide to the meaning of a disputed term" (*id.*).

FN6. According to Paragraph 1, "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art...to make and use the same." On the other hand, Paragraph 2 requires that claims "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention."

[6] So when the claim language has a commonly understood meaning and the specification is not acting as a dictionary, the reader should go no further than the claim language.FN7 That is so even if the claim

language is broader than the relevant specification. Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed.Cir.1989)(emphasis in original), in part quoting E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1988), explains:

FN7. As Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed.Cir.1999) (citations omitted) has put it:
Our case law demonstrates two situations where a sufficient reason exists to require the entry of a definition of a claim term other than its ordinary and accustomed meaning. The first arises if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. The second is where the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used.

[T]his court has consistently adhered to the proposition that courts cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is *meant* by a word *in* a claim "is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." FN8
FN8. See also Burke, 183 F.3d at 1340:
Consistent with the principle that the patented invention is defined by the claims, we have often held that limitations cannot be read into the claims from the specification or the prosecution history.

Thus the specification is not relevant to *claim* construction if it "in no way sheds light on either the meaning of the term to the inventor, or the common meaning of the term to one of skill in the art" (Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed.Cir.1998)).FN9

FN9. Comark, 156 F.3d at 1186 observes:
[T]here is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.

[7] Throughout its memoranda Motorola asserts that various specifications "define" less specific claim language. But as the above discussion demonstrates, specifications do not always limit a claim's terms-instead they are employed as a reference only when they explicitly or implicitly "define" a term or when the claim language is unclear. Of course, to the extent that Nilssen's position prevails to give rise to a broader reading of a claim, Motorola's charge of invalidity may become easier to establish.FN10

FN10. This analysis is not at odds with the principle often repeated in such cases as Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed.Cir.1999) (citations and quotations omitted) that "claims should be so construed, if possible, as to sustain their validity."

Means-Plus-Function Limitations

[8] Another central issue as to 9 of the 13 claim elements is whether they are governed by Paragraph 6:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

"Means-plus-function" claims thus define an invention's scope by function rather than by structure. WMS Gaming, Inc. v. International Game Technology, 184 F.3d 1339, 1347 (Fed.Cir.1999)(quotation marks and citations omitted) explains the consequences of a claim element being governed by Paragraph 6:

We have stated that for a means-plus-function limitation to read literally on an accused device, the accused device must employ means identical to or the equivalent of the structures, material, or acts described in the patent specification. The accused device must also perform the identical function as specified in the claims.

Consequently whether Paragraph 6 applies is often dispositive of a patent infringement action. Motorola argues that 9 of the 13 sample claims are in means-plus-function form, while Nilssen disputes that contention.

[9] [10] *Al-* Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318 (Fed.Cir.1999) prescribes, for purposes of Paragraph 6 coverage or noncoverage, that "if the word 'means' appears in a claim element in combination with a function, it is presumed to be a means-plus-function element...." And that presumption follows because (in an almost tautological sense from the " *means*-plus-function" formulation) "[t]he word 'means' is 'part of the classic template for functional claim elements' " (Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1302 (Fed.Cir.1999), quoting Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed.Cir.1997)). That presumption is overcome (1) if the "claim element that uses the word 'means' ... recites no function corresponding to the means" or (2) if the "claim element ... recites sufficient structure or material for performing" the claimed function (Rodime, 174 F.3d at 1302). Conversely, as Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1257 (Fed.Cir.1999) (citations omitted) teaches, a claim element without the word "means" is presumed to fall outside of Paragraph 6 unless the element "nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function."

As that formulation suggests, a key element in the analysis is the ascertainment of what structure is necessary to perform the function specified in the claim element under consideration. Personalized Media Communications, L.L.C. v. International Trade Comm'n, 161 F.3d 696, 704 (Fed.Cir.1998) dictates that "[i]n deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficient definite structure to avoid the ambit of s. 112, para. 6."

For example, in dealing with a claim without the word "means," Personalized Media, 161 F.3d at 704-05 (citation and footnotes omitted) held as to the claim limitation "digital detector":

[T]he term "detector" is a sufficient recitation of structure. "Detector" is not a generic structural term such as "means," "element," or "device"; nor is it a coined term lacking a clear meaning, such as "widget" or "ram-a-fram." Instead, ... "detector" had a well-known meaning to those of skill in the electrical arts connotative of structure, including a rectifier or demodulator.... Moreover, neither the fact that a "detector" is defined in terms of its function, nor the fact that the term "detector" does not connote a precise physical

structure in the minds of those of skill in the art detracts from the definiteness of structure. Even though the term "detector" does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as "detectors."

Similarly, Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) determined that the claim language "detent mechanism defining the conjoint rotation of said shafts..." did not trigger Paragraph 6. Though "detent" was functionally derived, Greenberg, 91 F.3d at 1583 observed that the term:

denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms. It is true that "detent" does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as "clamp" or "container."

[11] When a claim element *does* use the term "means," Paragraph 6's reference to whether it does so "without the recital of structure...in support thereof" still calls for focusing on what if anything is said in that claim element about structure. Thus Sage Prods., 126 F.3d at 1427-28 says that to rebut the presumption that Paragraph 6 applies, enough of a statement of "structure, material, or acts within the claim itself [is required] to perform entirely the recited function." FN11 For instance,Cole v. Kimberly-Clark Corp., 102 F.3d 524, 530-32 (Fed.Cir.1996) held that a claim element that began with "perforation means" FN12 fell outside of the strictures of Paragraph 6, in part because the element had "such a detailed recitation of structure" (*id*. at 531). Also, Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir.1991)(emphasis in original) construed a claim element incorporating the word "means" as coming within the bounds of Paragraph 6 because the "recited structure tells only what the [means] *does,* not what it *is* structurally." FN13

FN11. Although *Sage Products* addressed a claim element that included the word "means," the opinion's reference to what structure is needed to perform the recited function "entirely" is equally applicable to a claim element that does not employ the word "means" but is potentially in means-plus-function format despite the word's omission. Suppose for example that a claim element specifies three functions, while the only structure referred to there provides support for just two of the three functions. In that situation Paragraph 6 governs the claim element, irrespective of whether the word "means" does or does not appear in that element.

FN12. That disputed claim element, which related to disposable diapers that had perforated sides so that they could be torn and removed without pulling over the child's legs, read in full:
perforation means extending from the leg band means to the waist band means through the outer impermeable layer means for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user.

FN13. As Laitram, 939 F.2d at 1536 emphasizes, the "recitation of some structure in a means plus function element does not preclude the applicability of section 112(6)."

One final note on this subject: From its very nature the term "structure" ordinarily refers to something physical. In the realm of electronics, of course, what is being transported in the figurative sense-electrical

current-is without tangible dimension. It is consequently necessary to be wary when citing cases that deal with tangible structures (*Personalized Media, Greenberg, Cole* and the like) as authorities whose formulations of the operative rules should apply here. With the foregoing total background, this opinion now turns to the claim elements at issue.

"Source Means" in the '146 Patent***s Claim 19***

[12] Claim 19 of the '146 Patent includes this language:

[a] source means having AC terminals and being operative to provide an AC voltage thereat.

Because the word "means" is present, the presumption is that the claim is in means-plus-function form. Here the claim is in purely functional language ("being operative to provide..."), except possibly for the use of the word "source."

In that respect Nilssen contends that "source" is a structural term denoting a device that is a source of power. Even so, "source of power" alone is hardly a sufficient structural recitation to remove the claim from the presumed ambit of Paragraph 6. Cole, 102 F.3d at 531 is not to the contrary, because the presumption in that case was overcome by the claim element's "precise structural character." There is no way that, as N. Mem. 18-19 attempts to argue, the word "source" amounts to a detailed recitation of structure that overcomes the claim element's functional language. Indeed, the definition offered by N. Mem. 18-"[a]ny device that produces electrical energy"-is purely functional and denotes no structure whatever.FN14 Nor does the claim's added description of the "source means" as "having AC terminals" serve to convert the imprecision of the term "source means" into a term of "precise structural character."

FN14. N. Mem. 18 uses the definition for the term "power supply" and equates that term with "source."

Hence this Court concludes that the "source means" element of claim 19 in the '146 Patent is in means-plus-function form.FN15 As such, claim 19 is limited to the structure set forth in the corresponding specification and its equivalents.

FN15. See, e.g., Unidynamics Corp. v. Automatic Prods. Int'l, Ltd., 157 F.3d 1311, 1318-19 (Fed.Cir.1998), holding that the claim limitation "spring means tending to keep the door closed" was in means-plus-function form because, though "spring" was a structural term, it did not sufficiently connote a specific structure to perform the claimed function.

But Unidynamics, 157 F.3d at 1319 warns that the "[s]tructure disclosed in the specification...is only 'corresponding' structure to the claimed means under s. 112, para. 6 if the structure is clearly linked by the specification or the prosecution history to the function recited in the claim." Because the parties to this action dispute whether that function is clearly linked to a particular structure in the specification (see N. Resp. 20-21 and M. Mem. 9-10), and because the record is not fully developed on this point, a brief hearing is needed to decide exactly what portion of the specification corresponds with the claim.FN16

FN16. As the rest of this opinion reveals, this is the sole claim for which a *Markman* hearing will be necessary. Neither Nilssen nor Motorola should regard that hearing as an opportunity to reargue any other

claims.

"Circuit Means" in the '690 Patent'***s Claim 17***

[13] Round two of this 13-round bout involves claim 17 of the '690 Patent:

A circuit means connected between the inverter output terminals and the lamp terminals, thereby to provide lamp operating voltage to the lamp terminals; the circuit means having a pair of auxiliary output terminals at which is provided a cathode heating voltage.

In this instance the stated function is "to provide lamp operating voltage to the lamp terminals." Again the issue is whether enough structure is cited to perform that function to overcome the presumption of Paragraph 6 applicability.

To negate that presumption Nilssen points to CellNet Data Sys., Inc. v. Itron, Inc., 17 F.Supp.2d 1100, 1107 (N.D.Cal.1998) and its finding "that those skilled in the art would understand the term 'circuit means' as a structural rather than a means-plus-function element." That conclusion rests on the dictionary definition of "circuit" as connoting the generic structure of "the combination of a number of electrical devices and conductors that, when connected together to form a conducting path, fulfill a desired function such as amplification, filtering, or oscillation" (id. at 1111, quoting *Penguin Dictionary of Electronics* (hereafter " *Penguin*")(2d ed.1988)). In addition, the court noted that the location of the "circuit means" was specified in the claim (17 F.Supp.2d at 1111, citing Cole, 102 F.3d at 531). Claim 17 also specifies the location of the circuit means: "connected between the inverter output terminals and the lamp terminals."

Motorola seeks to counter with Relume Corp. v. Dialight Corp., 63 F.Supp.2d 788, 802 (E.D.Mich.1999), which decided that the claim language "adaptive clamp circuit means" was in means-plus-function form. But because the *Relume* plaintiff did not dispute that construction, the court was deprived of an opposing viewpoint that might perhaps have highlighted terms of art in the claim that could communicate sufficient structure to overcome the presumption.

Nonetheless this Court would be wholly unpersuaded by *CellNet* (and hence by Nilssen) if "circuit means" were the only relevant language in the claim element. Although its own days as a highly trained technician (and in one instance as the author of a modest invention) during the formative-nay, primitive-days of airborne radar have so faded into the dim past as to render any possible claim by this Court to being even moderately "skilled in the art" a serious Rule 10b-5 violation, it takes no electronic sophistication at all to understand that electrical circuits are virtually infinite in number. It is not that "circuit" is nongeneric-it is rather that it is *so* generic that by itself it conveys no sense of structure at all. To say simply that an electrical circuit will be inserted into another circuit to accomplish a stated function is to afford the skilled reader no sense whatever of the structure of that insertion.

Unsurprisingly, M. Mem. 16-18 (emphasis in original) states that claim 17 should be limited by the specification because "the *only* structure disclosed in the specification for providing operating voltage to the lamp terminals...is an *inductor* ...with auxiliary windings...." That contention is not at odds with the admonition in Comark, 156 F.3d at 1186 that "limitations from the specification are not to be read into the claims," for that caveat applies to claims that fall on the other side of the "fine line" described in *Comark, id.*

That argument by Motorola is a bit oversimplistic, because it glosses over the operative language in the claim element that cuts back the otherwise generic and uninformative scope of "circuit means" somewhat by describing it as "having a pair of auxiliary output terminals at which is provided a cathode heating voltage." But unlike the situation in Cole, 102 F.3d at 531, where the element at issue carried with it "such a detailed recitation of its structure, as opposed to its function," here the quoted partial description of the "circuit means" just does not supply enough structure "to perform entirely the recited function" (as is required by such cases as Sage Prods., 126 F.3d at 1427-28). In that respect the situation is much akin to that described in the preceding section, where the reference to a "source means" as "having AC terminals" was not enough to provide a sufficient recitation of structure to take the claim out of Paragraph 6's coverage.

This Court therefore holds that claim 17 of the '690 Patent is also in means-plus-function form.FN17 And unlike the claim referred to in the preceding section, no further hearing is required to fine-tune its meaning.

FN17. This is one of two issues on which this Court respectfully differs with its colleague Judge Kennelly (Magnetek, 1999 WL 982966, at *8-*9).

"***Output Means*** **" *in*** the '409 Patent***s Claim 36***

[14] Claim 36 of the '409 Patent includes an:

output means connected with the AC output terminals; the output means having lamp output terminals adapted to connect with a gas discharge lamp.

As N. Mem. 21 asserts, Paragraph 6 does not cover that claim element because it describes *only* structure and not function. M. Mem. 29 is unpersuasive in contending that the claim element does describe a function of providing "output from the AC terminals to a lamp." M. Resp. 15 pins its hopes on the word "output," arguing that the word is sufficiently functional to signal a means-plus- *function* element. But Motorola is at a loss to elaborate on that supposed functionality without employing words foreign to the claim element. Indeed, even if that functionality appeared elsewhere in the patent, it would be improper to import that function into the specific claim element at issue (see Rodime, 174 F.3d at 1303).

Consequently, because it states no function, claim 17 of the '409 Patent is not in means-plus-function form. Instead the claim language is construed to mean exactly what it says: an output means connected with the AC output terminals and having lamp output terminals adapted to connect with a gas discharge lamp.FN18

FN18. This tracks Judge Kennelly's ruling in Magnetek, 1999 WL 982966, at *8.

"***Inverter Circuit***" ***in*** the '356 Patent***s Claim 5***

None of the remaining claim elements for which Paragraph 6 is at issue contains the word "means." Thus the presumption at work as to those remaining claim elements is that, absent other controlling factors, Paragraph 6 does not apply. This opinion turns then to an analysis of whether any such other controlling factors call for a different result in each situation.

Claim 5 of the '356 Patent involves:

an inverter circuit connected between the DC terminals and the lamp terminals; the inverter circuit being operable to supply an alternating lamp voltage across the lamp terminals....

One threshold issue is whether Nilssen is bound by his assertion before the Patent and Trademark Office ("PTO") that the quoted element is a means-plus-function limitation. And of course it requires no citation to support the Federal Circuit's regular repetition of the proposition that a patent's prosecution history is relevant to claim construction.

In an effort to escape the impact of his own representations to the PTO (quoted hereafter in this section of the opinion), Nilssen says that those representations were made before In re Donaldson Co., 16 F.3d 1189, 1193-94 (Fed.Cir.1994) had expressly overruled the earlier caselaw that had countenanced the PTO's practice of not applying Paragraph 6 during its patent examination process.FN19 But that is a truly bizarre notion, essentially amounting to:

FN19. See In re Alappat, 33 F.3d 1526, 1540-41 (Fed.Cir.1994), explaining the impact of *Donaldson* on the PTO.

Don't hold me to what I told the PTO in order to get my patent issued over the examiner's prior rejection of my claims. After all, if the PTO's perceived role vis-a-vis Paragraph 6 had been different then (as the Federal Circuit decided it to be nearly a decade later), I might not have found it necessary to make that representation.
[15] Patent prosecution is a serious business-an effort to obtain what was a 17-year monopoly when the Nilssen representation was made to the PTO. Little wonder that the courts early developed the concept of "file wrapper estoppel": the principle that a representation made by an inventor to induce the PTO to grant such a monopoly binds the inventor later, when the construction of the issued patent is in dispute (see, e.g., Cole, 102 F.3d at 531-32).

Here is what Nilssen (acting pro se, it may be noted) wrote in a PTO Appeal Brief (M. Mem. Ex. 10, emphasis in original) in an effort to overcome the examiner's 35 U.S.C. s. 112 rejections:

Again using claim 1 as an example, it is clear that the claimed invention is expressed in claim 1 as a combination of two elements, both of which are expressed in the well-accepted format of MEANS AND FUNCTION.

* * * * * *

The second element of claim 1 describes an " *inverter circuit* " (a *means*) together with its *function* (to provide a sinusoidal output voltage at a pair of AC output terminals, etc.) and its *connections* (one of its AC output terminals being connected with one of the AC input terminals, etc.).

When interpreted in light of the specification, there is no doubt in Applicant's mind but that claim 1 is clearly understandable by a person having ordinary skill in the art.

Trying to blunt the devastating impact of those statements, N. Resp. 6 attacks "Motorola's use of the file history [as] highly misleading" because of the later advent of *Donaldson*. That is simply nonsense-what is material is that *Nilssen himself* expressly labeled "inverter circuit" as a *means* in what he himself

acknowledged to be a means-plus-function claim element, and that he expressly went on to urge the examiner to "interpret[ ][that claim] in light of the specification."

[16] This Court will not permit Nilssen to disavow his own position deliberately undertaken before the PTO just because he now perceives it to his advantage to reverse that position-to frame a metaphor in terms of the current dispute, to make an attempt to shift from DC to AC.FN20 It really makes no difference whether conventional analysis might perhaps have produced a different view: Nilssen has set his own terms in this respect, just as a patentee may elect to be his or her own lexicographer, and he will be held to that choice. This Court construes claim 5 of the '356 Patent just as Nilssen himself had urged-that is, in light of the corresponding specification.FN21

FN20. That metaphor has been chosen rather than its converse-from AC to DC-because the latter is accomplished by a rectifier, and there is nothing of rectitude in what Nilssen has sought to do in this respect.

FN21. It would seem that this ruling-based as it is on taking Nilssen at his own word-also dispatches Nilssen's other arguments based on *Motorola's* "effort to read limitations from the specification into the claims" (N. Resp.4-10). Nilssen's own invitation to the same effect should, it would appear, extend to the specification as included in the issued patent. If this Court is viewed as mistaken in that premise, it will no doubt hear an anguished scream from Nilssen's counsel.

"Inverter-Type Power Supply" in the '342 Patent***s Claims 3 and 5***

[17] Claims 3 and 5 of the '342 Patent include this language:

an inverter-type power supply that is connected with the DC output terminals and operative to provide a high-frequency AC voltage between a first inverter output terminal and an inverter reference terminal.

Functionally that claim "provide[s] a high-frequency AC voltage...." Structurally that function is accomplished by "an inverter-type power supply... connected with the DC output terminals...."

Though functionally derived, "inverter" has a well-understood meaning in the art (expressed, e.g., in *Standard Handbook for Electrical Engineers* (hereafter " *Handbook* ") 22-105 (Donald G. Fink & H. Wayne Beaty eds., 13th ed.1993) as "a power converter in which the normal direction of power flow is from a dc source to an ac load"). In short, "inverter" is an industry term of art that describes a structure (even though, to be sure, "inverter" is a generic term-note the three types described at the outset of this opinion-the term describes a particular kind of circuit and is plainly not as devoid of substantive content (that is, structure) as the term "circuit" alone).

Indeed, though it is entirely true that "inverter" alone does not necessarily "call to mind a *single* well-defined structure" (Greenberg, 91 F.3d at 1583 (emphasis added)), the very fact that the claim uses the term "inverter-type" strongly suggests that inventor Nilssen did not intend to limit himself to a single species of inverter. Instead the claim's "inverter-type" locution would normally appear to incorporate, quite deliberately, more than one kind of inverter, rather than being limited by a single example in the specification.

In those terms alone the text of claims 3 and 5 would seem to fall outside the boundaries of Paragraph 6. And if that were so, the M. Mem. 21 position that the specification limits the claim language would fail for the reasons discussed earlier.

But M. Mem. 23-24 also contends that the prosecution history reveals that Nilssen himself limited his claim to a "full-bridge inverter." As stated earlier, Cole, 102 F.3d at 531 is exemplary of many cases (see also, e.g., Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed.Cir.1997)) teaching that Nilssen is to be "bound by [his] representations to the PTO during the prosecution of" his patent. Yet N. Resp. 31 offers an extraordinarily puzzling response to Motorola's argument, reproduced here in its entirety:

Motorola also cites the prosecution history in an effort to prop up its proposed definition. This is dealt with in a previous section at pp. 6-9, which establishes that the term "inverter" is not limited to a full-bridge inverter.

That cross-reference is to Nilssen's response to the prosecution history issue regarding claim 5 of the '356 Patent, which has not only been found wanting on *that* issue but is also quite irrelevant in the present context (it is after all entirely possible that an inventor may choose to use the same term in different ways in two different patents).

As far as this Court is concerned, then, Nilssen has left Motorola's prosecution history argument (M.Mem.23-24) wholly unanswered in any substantive way. And the detailed nature and bulk of both sides' submissions refutes the notion that Nilssen's failure to provide any real explanation stemmed from any lack of opportunity to do so. This Court is therefore constrained to treat the claim elements at issue (claims 3 and 5 of the '342 Patent) as limited to a full-bridge inverter.

"***Adjustment Input***" ***in*** the '356 Patent***s Claim 4***

[18] Claim 4 of the '356 Patent relates to an inverter circuit that:

has an adjustment input operable, in response to receiving an adjustment action, to adjust the magnitude of the lamp current by way of adjusting the frequency of the alternating lamp voltage.

Although that claim element is clearly functional in tone, Nilssen urges that it also recites sufficient structure-more specifically an "adjustment input," where "input" is defined this way (*Penguin* at 269):

(1) The signal or driving force applied to a circuit....

(2) The terminals at which this signal is applied.FN22

FN22. [Footnote by this Court] In the context of the claim element at issue, definition (2)(the "terminals") is plainly inapplicable. Consequently the discussion here will focus only on definition (1).

On Motorola's part, M. Mem. 14 asserts that the claim element is in means-plus-function format because "a function is recited without a structure to perform that function." To support that position M. Mem. 14 relies on Mas-Hamilton Group, Inc. v. LaGard, Inc., 156 F.3d 1206, 1213 (Fed.Cir.1998), which found a claim was in that format because "even though the catch phrase ['means'] is not used, the limitation's language

does not provide any structure." According to Motorola, the claim element at issue here suffers from the same vice that was described in *Mas-Hamilton, id.:*

The limitation is drafted as a function to be performed rather than definite structure or materials.

Is "adjustment input" such a "definite structure," as Nilssen would have it? One clue to the answer lies in N. Mem. 24's not-so-subtle shift in the meaning of that term:

An "adjustment input" is simply an input that is adjustable. Accordingly, the "adjustment input" limitation has a reasonably well known meaning in the art.

Not so-for the plain reading of the claim element that has been quoted at the outset of this section adverts to an input that *adjusts* the lamp current (a statement of the input's *function*), rather than to the fact that the input itself is "adjustable" in order to perform that function.FN23

FN23. After all, the claim element did not employ the more normal adjectival locution, if Nilssen's restatement of its meaning were accurate, of referring to "an *adjustable* input."

In plain meaning terms, then, the only possible candidate for a "structure" referred to in the claim element is "input." And although Nilssen is correct in stating that "input" is a common term-"widely known in the art of electronics" (N. Mem.24)-that does not at all suffice. Greenberg, 91 F.3d at 1583, reconfirmed by Mas-Hamilton, 156 F.3d at 1213-14, requires that the term under scrutiny must be widely known "as the name for a structure." It can scarcely be gainsaid that "input" is essentially as broadly generic in those terms as the term "circuit"-neither of those terms qualifies as a "definite structure" that satisfies the standard prescribed by the caselaw.

As with the other claim elements that have failed to avoid the impact of Paragraph 6, the claim element now at issue "will be construed to cover the corresponding structure...described in the specification and equivalents thereof" (the statutory prescription). N. Mem. 23-24 and N. Resp. 24-25 say nothing to counter Motorola's characterization of the specification's description, which therefore prevails.

"Adjustment Input Electrically Isolated" in the '356 Patent'***s Claim 5***

[19] M. Mem. 14-15 asserts that the isolated adjustment input structure for this claim element is limited to a rotary knob because the "adjustment input" is to be "electrically isolated from the power line terminals." That contention is based on Nilssen's response to a PTO office action in which he limited the claim element to a specification that recites "a manually rotatable external knob" as the structure for electrically isolating the adjustment input ('356 Patent col. 3, lines 50-56).

Because that language is not qualified or constrained in any respect, Nilssen has expressly limited that element of his claim, so that prosecutorial estoppel applies.FN24 This Court therefore construes the "adjustment input electrically isolated" language of Claim 5 in the '356 Patent to mean "a manually rotatable external knob."

FN24. This issue was not even discussed in Nilssen's initial memorandum, and N. Resp. 24 devoted only a single sentence to the question.

"***Power Conditioning Circuit*" *in* the '067 Patent's ***Claim 32***

[20] Claim 32 of the '067 Patent includes (emphasis added):

a power conditioning circuit having (i) power input terminals connected with the AC terminals, and (ii) power output terminals connectable with the lamp terminals; the power conditioning *being functional,* as long as the lamp terminals are indeed connected with the power output terminals, *to properly power the gas discharge lamp;* the power conditioning circuit being further characterized by:

(a) including a transistor having a pair of transistor output terminals across which exists a transistor output voltage whose magnitude varies in accordance with a periodic waveform...and

(b) having a pair of DC terminals between which exists a DC voltage whose absolute magnitude is substantially constant and distinctly higher than the peak absolute magnitude of the AC power line voltage.

M. Mem. 20 asserts that this is framed as a purely functional claim-a "power conditioning circuit...being functional to... properly power the gas discharge lamp...." N. Mem. 14-15 responds by stating, and Motorola does not dispute (see M. Mem. 20-21 and M. Resp. 7-8), that the claim element's subparagraph (a) describes the inverter and its subparagraph (b) describes the rectifier, both of which are included in the circuit.

But the flaw in Nilssen's position is that those elements (well known as they are to persons skilled in the art) do not form the *totality* of the power conditioning circuit-as the claim element itself states, that circuit *includes* those elements but is not said to *comprise* only those elements. Not only is that the normal reading of the word "include" rather than "comprise," FN25 as well as the obvious fact that the entire circuit must include more than those two elements, but the matter is made doubly clear by Nilssen's use of "comprises" in the corresponding specification when he says "[t]he power supply also comprises a voltage doubler and rectifier..." (col. 3, lines 29-30).

FN25. Experience teaches that if there is one word in the English language that patent lawyers know how to use, it is "comprise"-in sharp contrast to the mine run person, who is far more likely to say incorrectly that "Illinois is comprised of 102 counties" than to employ the correct usage: "Illinois comprises 102 counties."

That being the case, it appears that the disclosed structural elements-the inverter and rectifier alone-do not suffice "to perform *entirely* the recited function" (Sage Prods., 126 F.3d at 1428). And to repeat, as counseled in such cases as Cole, 102 F.3d at 531, "merely because an element does *not* include the word 'means' does not automatically prevent that element from being construed as a means-plus-function element."

So this Court construes claim 32 of the '067 Patent to be in means-plus-function form, without the factors that might take the claim out of the purview of Paragraph 6. This Court therefore treats that claim in conjunction with the related specification.

"***Rectifier Circuitry*" *in* the '067 Patent's ***Claim 4***

[21] Another disputed claim from the '067 Patent is its claim 4, which includes as an element:

rectifier circuitry connected with the AC terminals and operative to provide a substantially constant DC supply voltage across a pair of DC terminals.

Nilssen says (and Motorola does not quarrel with the proposition) that "rectifier" has a well known meaning in the relevant art and cites its definition in *Penguin* at 479: "[a] device that passes current only in the forward direction and can therefore be used as an a.c. to d.c. converter." That definition goes on to elaborate on the typical structure of a rectifier. While Nilssen uses the term "rectifier" not as a noun on its own but as an adjectival noun modifying "circuitry," this Court finds unpersuasive Motorola's extensive efforts (M.Resp.8-11) to convert that difference in terminology into a difference in analysis.

Just as this opinion has indicated earlier that "inverter" alone would qualify as a sufficient designation of "structure" to satisfy the cases that rely on that factor to take a claim element out of the constraints imposed by Paragraph 6, this Court views "rectifier" alone as equally sufficient to that end. And for that purpose "rectifier circuitry" is really synonymous with "rectifier." Accordingly the use of "rectifier circuitry" in claim 4 of the '067 Patent does not trigger means-plus-function treatment, and that claim element limitation is not subject to Paragraph 6.

"Rectifying and Filtering Circuitry" in the '067 Patent***s Claim 21***

[22] At long last, the final round of the means-plus-function battle royale involves this language from claim 21 of the '067 Patent:

rectifying and filtering circuitry connected with the AC terminals and operative to provide a substantially constant DC supply voltage across a pair of DC terminals;...

Here M. Mem. 16-17 and M. Resp. 11 advance essentially the same conceptual arguments as to "rectifying and filtering circuitry" that were found wanting as to "rectifier circuitry" in the preceding section of this opinion. Those arguments are no more convincing here, and the same result follows.

That means "rectifying and filtering circuitry" will be construed consistently with the commonly understood meaning of those terms. Once again Paragraph 6 does not come into play.

Remaining Claim Elements

That is not, however, "The End of the Affair." FN26 Disputes remain as to three claim elements that the parties have agreed do not implicate Paragraph 6. Even so, the parties' respective claim construction arguments tread upon already well-worn ground to a substantial extent.

FN26. Apologies to Graham Greene.

"Inductor Means" in the '409 Patent***s Claims 9, 16 and 37***

[23] Claims 9, 16 and 37 of the '409 Patent FN27 pose the question of how broadly or narrowly the phrase "inductor means" should be construed. FN28 N. Mem. 26 says that "inductor" has a commonly understood meaning in the art and points to its dictionary definition (*Handbook* 2-10):

FN27. Motorola cites to different numbers-to claims 9 and 36-as those at issue. That difference is due only to the tendency of patent claims to refer back to the language of prior claims. This is thus not problematic because, of course, it is the language that is at issue.

FN28. It is undisputed that the inductor is connected between the source of DC voltage and the inverter's input terminals.

An inductor is a circuit element whose behavior is described by the fact that it stores electromagnetic energy in its magnetic field.

* * * * * *

In its most elementary form, an inductor is formed by winding a coil of wire-often copper-around a form that may or may not contain ferromagnetic materials.

Though that does fairly describe the universe of inductors as such, it wholly ignores (just as Nilssen's arguments blithely ignore-see both N. Mem. 27-28 and N. Resp. 27-28) Nilssen's conduct before the PTO during the '409 Patent' s prosecution. In response to the PTO examiner's objection that the claim at issue represented no patentable advance because it was obvious in light of prior art that employed other types of inductors, Nilssen argued that *his* "inductor means" was different-that "the direction of the inductor coils in [the prior art] arrangement... is exactly opposite of the way the two coils are arranged in the claimed invention." And that latter reference was to the description in the specification.

Thus Nilssen himself urged on the PTO (indeed, more than once) the use of the specification to ascertain the meaning of "inductor means" in his invention. That calls into play the teaching of Vitronics, 90 F.3d at 1582 (emphasis added):

The specification acts as a dictionary when it expressly defines terms used in the claims or *when it defines terms by implication*.

And what Motorola now plumps for as the meaning of the term "inductor means" draws directly on *that* Nilssen-dictated "dictionary"-the specification-rather than one the more generic *Handbook*.

Thus Nilssen's generalized attempt to fall back on the general aversion to reading limitations from a specification into a claim is out of place here. Motorola asks that Nilssen be taken at his word, which he gave when it was in his interest to obtain the benefit of the patent he now seeks to sue upon, and this Court honors that request. "Inductor means" will be construed in the manner contended for by Motorola.FN29

FN29. For a second time this opinion has parted company with Judge Kennelly's Magnetek opinion, 1999 WL 982966, at *7. But that opinion makes no reference to Nilssen's PTO representations referred to here in the text-and in the absence of that factor, this Court would also have reached the same conclusion as Judge Kennelly.

"Inverter Circuit" in the '409 Patent***s Claims 9 and 37***

[24] Both claims 9 and 37 of the '409 Patent call for an "inverter circuit" that is characterized as "having a pair of transistors series-connected between" the first terminal and the second terminal. Here too N. Mem. 27-28 argues that the meaning of "inverter circuit" is clear to a person skilled in the relevant art, while M. Mem. 25-26 looks to the specification to limit that reference to a "full-bridge inverter circuit." Motorola's narrowing construction can prevail only if the specification explicitly or implicitly defines "inverter circuit" as one of the full-bridge variety (four transistors connected together in two parallel circuits).

But the specification language that Motorola cites is not definitional, either explicitly or implicitly. That language, in the Details of Operation section of the '409 Patent, reads:

The operation of the full-bridge inverter circuit of FIG. 1 may be explained as follows.

That section then goes on to call the Fig. 1 inverter circuit a "full-bridge inverter" once again.

Those references, rather than defining the "inverter circuit" term, simply describe the layout in one of Nilssen's illustrations. Indeed, in the '409 Patent's Summary of the Invention section (also part of the specification, which in most contexts Motorola has stressed as *narrowing* the corresponding claim elements), Nilssen states (emphasis added):

In its preferred embodiment, the present invention includes an inverter circuit having a pair of DC input terminals and *at least two* periodically conducting *transistors* series-connected between an auxiliary negative terminal and an auxiliary positive terminal.

This is an instance in which Motorola can't have it both ways-if the earlier-quoted language really meant that the only inverter circuit referred to in the claim required *four* transistors (the full-bridge type), the Summary's reference to "at least two... transistors" would be rendered meaningless.

M. Mem. 25 seeks help from a statement in Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed.Cir.1998):

When the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term.

But as already indicated, the differing references to the number of transistors within the same specification can scarcely be said to define one of those references as controlling "without ambiguity." And it is of course conventional wisdom that the "preferred embodiment" of an invention (that is how Fig. 1, which depicts a full-bridge inverter, is described) does not conclusively define the invention's scope-as Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479 (Fed.Cir.1998) has put it:

It is a truism that a claim need not be limited to a preferred embodiment.

In sum, the "inverter circuit" limitation in claims 9 and 37 of the '409 Patent will be given the meaning ascribed to it by a person skilled in the relevant art. That means it will not be limited to a particular species of inverter, the full-bridge type.FN30

FN30. This conforms to Judge Kennelly's reading in Magnetek, 1999 WL 982966, at *6-*7.

"Frequency-Dependent Impedance Means" in the '345 Patent***s Claim 24***

[25] Finally (deep sigh) this opinion turns to claim 24 of the '345 Patent. That claim includes:

[a] frequency-dependent impedance means connected in circuit between the AC voltage output and an AC current output *operable to connect with the lamp;* the frequency-dependent impedance means including a tank circuit having an inductor and a capacitor.

It is agreed that the "frequency-dependent impedance means" is a tank circuit having a capacitor and an inductor. In dispute is whether or not that tank capacitor-inductor combination is connected directly to the lamp.FN31

FN31. Unlike other claims at issue in this opinion, "frequency-dependent impedance means" is expressly defined in the patent's specification ('345 Patent col. 7, lines 24-30) (emphasis added):
When a frequency-dependent impedance means, *that is, an inductor or a capacitor,* is connected in circuit with the AC voltage output of the inverter, change in the transistor inversion frequency will modify the impedance of the frequency-dependent impedance means and correspondingly modify the inverter output.

Although that definition is framed in disjunctive terms, the parties agree that the claim itself calls for both a capacitor and an inductor (N. Mem.30-31, M.Mem.24-25).
Although Nilssen contends that the language of the claim is clear and does not expressly require a direct connection, that view is produced by the somewhat wishful lens through which Nilssen's counsel has examined the claim language. Instead this Court's conclusion stems from the very absence of any clear directive in the language of the claim-what causes Nilssen to prevail is the fact that the claim is not precisely phrased on that score, thus calling for a look at the specification.

In that respect, even a review of Motorola's argument reveals that the specification does not at all show that language as being limited to a direct connection. Three diagrams in the '345 Patent illustrate different methods of connecting the tank capacitor-inductor combination to the lamp-and two of those diagrams ('345 Patent Figs. 5 and 8) depict a circuit element interposed between that combination and the lamp simpliciter.FN32 To escape the obvious impact of those illustrations, M. Resp. 22 contends as to Fig. 5 that the inductor is connected "directly" to the "load" (which Motorola implicitly equates to the "lamp" without saying so) and as to Fig. 8 that "the auxiliary windings of inductor 123 (denoted as 128, 129) are directly connected to the lamp's cathodes (denoted as 126 and 127)."

FN32. Photocopies of Figs. 5 and 8 are attached to this opinion.

But neither of those diagrams depicts the tank capacitor (respectively 52 and 128 in Figs. 5 and 8) and inductor (respectively 51 and 123) as directly connected to the element labeled "lamp" (respectively 71 and 124).FN33 Essentially Motorola conflates the "load" with the lamp for Fig. 5 purposes and treats the auxiliary windings as the inductor for Fig. 8 purposes (as the text accompanying Fig. 8 states).

FN33. Note that items 72-73 and 126-127 respectively, as the electrodes connecting the circuit to the lamp, would provide a "direct" connection from the tank capacitor-inductor combination to the lamp.

But Motorola tellingly does not (as it indeed cannot) contest the existence of the additional circuit elements, 74 and 52 in Fig. 5, and perhaps 131 in Fig. 8. As to those additional capacitors, Nilssen's specification states ('345 Patent col. 7, line 306 and col. 8, lines 25-32)(emphasis supplied):

(1) The load 26' consists of a gas discharge lamp 71 having electrodes 72, 73 and connected in series with a capacitor 74. The combination of lamp 71 and *capacitor 74* is connected in parallel with a *capacitor 52*'....

(2) The lamp 124 has a pair of cathodes 126, 127 connected across the capacitor 122 for supply of operating voltage.... In addition, the inductor 123 comprises a pair of magnetically-coupled auxiliary windings 128, 129 for electrically heating the cathodes 126, 127, respectively. A *small capacitor 131* is connected in series with lamp 124.

In those terms the proposed M. Resp. 23 construction of "a tank inductor and/or capacitor connected in circuit directly between the inverter section of the ballast and the lamp" is a non-starter because it is at odds with the just-quoted specification. As for the depiction in Fig. 5, just as with the col. 7 text quoted above, it plainly does not equate the "load" (designated 26') with the "lamp" (designated 71)-instead the "load" comprises *both* the "lamp" and the cited capacitors. And although the inductor (designated 51') is indeed connected directly to the *load,* whichever of the parallel circuit paths from the inductor to the *lamp* is chosen has a capacitor (52' or 74) in between the two. As for Fig. 8, it might perhaps be argued that the magnetic coupling (windings 128 and 129) could be viewed as a direct circuit connection with the lamp (designated 124), though that would seem an undue stretch of the concept of being "connected in circuit directly"-instead the more normal reading would appear to limit that direct connection to the one that passes through the capacitor (designated 131).

But it is enough that the Fig. 5 depiction clearly negates the reading advanced by Motorola. Because that embodiment is inconsistent with Motorola's proposed interpretation, this Court rejects that interpretation (see Vitronics, 90 F.3d at 1583 and cases cited there).

Conclusion

This opinion has construed each of the representative claims as a matter of law, with a single exception requiring a further hearing for fine-tuning purposes. At this point the case is ready for that hearing and then the second phase of a patent case: a jury determination on the issues of infringement and invalidity. For scheduling purposes a status hearing is set for 9 a.m. January 13, 2000.

Fig. 5

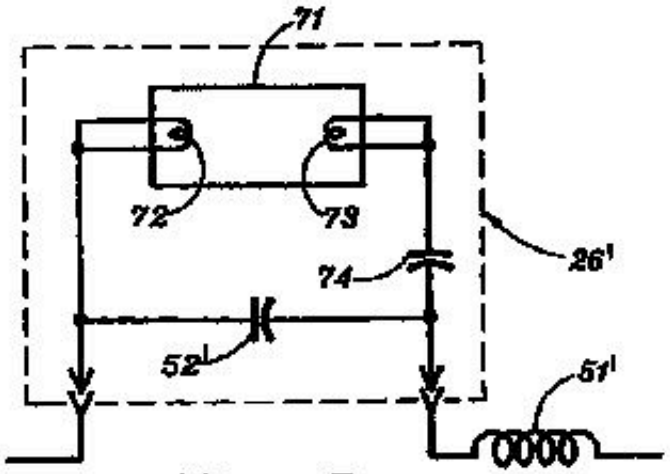

Fig. 5

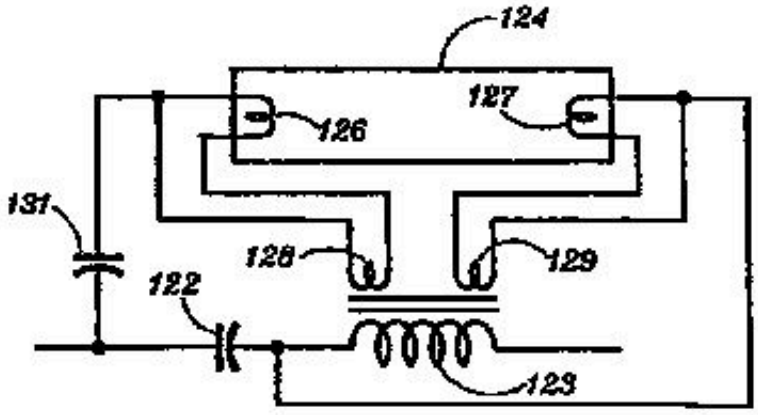

Fig. 8

N.D.Ill.,2000.
Nilssen v. Motorola, Inc.