United States District Court,
D. Nebraska.

SENIOR TECHNOLOGIES, INC,
Plaintiff.
v.
R.F. TECHNOLOGIES, INC,
Defendant.

July 26, 1999.

Owner of patents for "wanderer monitoring system" sued manufacturer of competing devices for infringement, and defendant challenged validity of patents. The District Court, Kopf, J., held that: (1) patents were not infringed, either literally or under doctrine of equivalents; (2) patents were not invalid on grounds of prior disclosure, public use, or prior sale; and (3) plaintiff was not guilty of inequitable conduct in obtaining patents.

Judgment for defendant on infringement claims and for plaintiff on counterclaims.

4,682,155, 5,268,670. Construed and Ruled Valid and Not Infringed.

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James M. Bausch, Shawn D. Renner, Cline, Williams Law Firm, Lincoln, NE, Jane C. Schlicht, Raymond D. Jamieson, Cook, Franke Law Firm, Milwaukee, WI, for defendants.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

KOPF**, District Judge.**

This is a patent infringement suit in which Plaintiff claims Defendant has infringed two of its patents, the " '155 Patent" and the " '670 Patent." FN1 Defendant claims the '155 Patent is invalid under 35 U.S.C. s. 102, and that both the '155 and '670 Patents are unenforceable due to inequitable conduct before the U.S. Patent and Trademark Office. (Filing 250, Order on Final Pretrial Conference, at 7-8.) I now issue my findings of fact and conclusions of law pursuant to Fed.R.Civ.P. 52(a).FN2

FN1. These numbers refer to U.S.Patent No. 4,682,155 ('155 Patent) and U.S.Patent No. 5,268,670 ('670 Patent).

FN2. Any findings of fact more appropriately characterized as conclusions of law shall be so construed, and

any conclusions of law more properly deemed findings of fact shall be so construed.

I. FINDINGS OF FACT

1. The products at issue in this case relate to patient or resident departure monitoring systems, also known as wanderer monitoring systems. Wanderer monitoring systems are used in nursing homes, hospitals, assisted living centers, and other care facilities to monitor patients or residents who have a tendency to wander due to Alzheimer's Disease or other forms of dementia. The products are used in health care facilities, particularly in nursing homes, to provide an alarm when a resident attempts to leave the facility, thereby alerting the staff so the resident can be located and returned to the facility. (Tr. 86-90.)

2. The Plaintiff, Senior Technologies, Inc. ("STI"), is a Nebraska corporation engaged in the manufacture and sale of the "WanderGuard" wanderer monitoring system. (Filing 250, Order on Final Pretrial Conference, at 2; Tr. 288, 300-301.)

3. The Defendant, R.F. Technologies, Inc. ("RFT"), is a Wisconsin corporation engaged in the business of designing, engineering, manufacturing, and selling a variety of medical monitoring equipment, including wanderer monitoring systems which it sells under the trademark "Code Alert." (Filing 250, Order on Final Pretrial Conference, at 2; Tr. 946-47.) The RFT products at issue following this court's ruling on Defendant's motion for judgment as a matter of law FN3 are the CA600, CA9000, CA9100, and the CA9120. (Tr. 921-940.)

FN3. The court explained in detail its findings and conclusions related to Defendant's motion for judgment as a matter of law on a number of Code Alert systems about which no witnesses offered testimony. (Tr. 921-940.) The court found insufficient evidence on the record to enable it to conclude that Plaintiff established a case of infringement as to the devices dismissed.

A. The Patents and Pertinent Prosecution History

4. John Shirley is the named inventor of U.S.Patent No. 4,682,155 (the " '155 Patent"). (Ex. 1.) STI acquired rights to, and ultimately ownership of, the '155 Patent through a series of licenses and assignments. (Exs. 34, 63, 217; Tr. 143-44, 146-52, 301-04, 307, 311-12.) John Brasch and Alan Cross are the named inventors of U.S.Patent No. 5,268,670 (the " '670 Patent"). (Ex. 54.) STI acquired ownership of the '670 Patent pursuant to an assignment from the inventors. (Ex. 59 at Bates No. 771618.)

5. The '155 Patent has two independent claims: Claims 1 and 6. Claim 1 discloses:

A security sensing system for monitoring the passage of persons through a door or like opening comprising:

a transmitter module for installing on persons to be monitored, a sensing module for installing adjacent to a door opening to be monitored, and *means responsive to the opening of the door to enable the sensing module to respond to the signal transmitted by the transmitter module to produce an output response,* and alarm means energizable in response to the production of the output response to produce an alarm condition,

the transmitter module including a housing having a transmitter circuit, a source of power for the transmitter circuit and transmitter antenna means installed therein,

the sensing module including a receiving circuit and associated sensing means located adjacent to the door opening to be monitored, and

said means responsive to the opening of the door including *means to enable the receiving circuit in the sensing module whereby the receiving circuit can respond to signals transmitted by the transmitter module to produce a response for energizing the alarm means*.

(Ex. 1 (emphasis added).)

6. At issue in Claim 1 of the '155 Patent (as noted above by the italicized language) is whether the RFT CA9000, CA9100, CA9120, and CA600 have (1) a "means responsive to the opening of the door to enable the sensing module to respond to the signal transmitted by the transmitter module to produce an output response"; (2) a "sensing module including a receiving circuit and associated sensing means located adjacent to the door opening to be monitored"; and (3) a "means to enable the receiving circuit in the sensing module whereby the receiving circuit can respond to signals transmitted by the transmitter module to produce a response for energizing the alarm means." (Tr. 1429-1434; Ex. 509.)

7. Claim 6 of the '155 Patent discloses:

Means to monitor a doorway of a nursing home or other institution in order to produce an alarm when certain residents try to pass there through comprising

a transmitter device including a mounting band therefor to be worn on the wrist of the residents to be monitored, said transmitter device having a housing with a modulating circuit, a transmitter radiator and a battery source located therein,

a receiving device for mounting adjacent to the doorway including a housing and a receiving circuit therein, a signal sensor operatively connected to the receiving circuit, means for supplying power to the receiving circuit, *means to enable the receiving circuit,* and an output for the receiving circuit,

an alarm producing device operatively connected to the output of the receiving circuit, and

said means to enable including switch means operatively connected to the receiving circuit, said switch means being mounted in association with the doorway and having a first condition when the doorway is open and a second condition when the doorway is closed, the first condition of the switch means operating to enable the receiving circuit.

(Ex. 1 (emphasis added).)

8. At issue in Claim 6 of the '155 Patent is whether the RFT CA9000, CA9100, CA9120, and CA600 have (1) a "receiving device for mounting adjacent to the doorway including a housing and a receiving circuit therein"; (2) a "means to enable the receiving circuit"; and (3) "means to enable including switch means operatively connected to the receiving circuit." (Tr. 1435-38; Ex. 509.)

9. During the prosecution history of the '155 Patent, Claims 1 and 6 were amended. Specifically, in the amendment to Claim 1, the applicant added the term "sensing module" and expressly defined it as including

the receiving circuit. Likewise, the description of the receiving device mounted adjacent to the doorway in Claim 6 was amended to include "a receiving circuit therein." (Ex. 513, Amendment Dated 1/27/87, at 2-3; Tr. 240-41.)

10. The '670 Patent, which is an improvement to the '155 Patent, has two independent claims: Claims 1 and 6. Claim 1 of the '670 Patent discloses:

A method of generating an alert signal comprising the steps of:

generating a first signal when an unauthorized subject is in a first region within seven feet of a monitored passageway;

generating a second signal upon satisfaction of a second condition that indicates the likelihood of the subject passing through the passageway;

displaying a first indication if the first signal is present and a second indication if the second condition occurs;

the step of generating a first signal including the step of transmitting a signal from the subject to a receiver.

(Ex. 54 (emphasis added).)

11. Claim 6 of the '670 Patent provides:

A security system comprising:

first means for generating a first signal when an unauthorized subject is within seven feet of a passageway;

second means for generating a second signal upon satisfaction of a second condition that indicates the likelihood of the subject passing through the passageway; and

third means for displaying a first indication if the first signal is generated and for displaying a second indication upon the generation of the second signal;

said first means for generating a first signal including means for transmitting a signal from the subject to a receiver.

(Ex. 54 (emphasis added).)

12. At issue is whether the signal light on the face of the control unit for the CA9120 and CA600 meets the above italicized elements of Claims 1 and 6. (Tr. 1453-1458.) STI also accused the CA9100 of having a signal light on the face of the control unit. However, as demonstrated at trial, the CA9100 does not have a signal light on the face of the control unit. (Tr. 1455.)

13. During the prosecution history of the '670 Patent, the claims were originally rejected over prior art. (Tr. 1449; Ex. 59.) To distinguish the prior art, the applicant's attorney argued that the claimed combination in Claims 1 and 6 "permits a nurse monitoring a central station to be alerted to a wanderer about to leave

without being unduly alarmed by other circumstances." (Tr. 1453; Ex. 59, Amendment Dated 1/18/93, at 7.)

B. Operation of the '155 Device

14. Claims 1 and 6 of the '155 Patent disclose a personnel monitoring device which includes a transmitter, a sensing module mounted adjacent to the door, a means to enable the receiving circuit in the sensing module, and an alarm means. (Ex. 1, col. 8, ll. 60-68; col. 9, ll. 34-46.)

15. The receiving circuit disclosed in the '155 Patent which is located in the sensing module consists of the AM radio, signal limiter, tone decoder, initial power turn-on delay, low-frequency filter, output stage, and lead 67. (Ex. 1, Fig. 3; Tr. 1271-73.) In Fig. 4 FN4, the receiver extends to the left of the point where resistor 136, diode 138, and the unnumbered relay contact directly above the connect. (Ex. 1, Fig. 4; Tr. 1271-73.) The principal function of the receiving circuit 14 is to accept an input signal received from the wanderer's transmitter, process its signal in the successive stages of the receiver, and deliver that signal through the transistor 112 to an output stage to produce a response to energize the alarm. (Tr. 1278.) The function of the two-stage audio filter in Fig. 4 is to extract from noise a single frequency tone between 770 to 990 Hz. (Tr. 2008.) One stage removes components at frequencies less than 770 Hz, while the other stage removes components at frequencies above 990 Hz. (Tr. 2008-09.) The two-stage audio filter simply looks for a single sinusoid 900 Hz wave. (Tr. 2014.)

FN4. Figure 4 of the '155 Patent is attached to these Findings of Fact and Conclusions of Law.

16. When the door is closed, the input circuit to the transistor 112 is short-circuited and that short circuit has two effects: it disconnects the base of the transistor to the emitter of transistor 112 and it short-circuits the output of the two-stage audio filter 106 through resistor 108, thereby electronically disrupting and disabling the receiving circuit by disconnecting part of the receiving circuit from the remainder of the receiving circuit. (Tr. 1276-77; Ex. 1, col. 8, ll. 19-23; Ex. 639.) The door switch electrically disconnects the left-hand part of the receiving circuit from the right-hand part of the receiving circuit. (Tr. 2006.) While the left hand is still operating, the right hand is inoperable, or disabled. (Tr. 1278.) The transistor 112 can receive no signal when the door is closed. (Tr. 1278-1279.)

C. Operation of the '670 Device

17. Claims 1 and 6 of the '670 Patent disclose a pre-alert device which displays a light and alarms when a wanderer is within seven feet of a monitored door when the door is closed to give caregivers at a monitoring station warning of a possible departure. (Ex. 54; Tr. 557-58, 1453.)

D. Operation of RFT's Code Alert Products

18. In 1992 RFT first manufactured and sold its CA9000 wanderer monitoring device. The CA9000 consists of a transmitter and receive antennae which are mounted adjacent to a door, a control unit which includes a receiving circuit and a microprocessor that analyzes the signals, and a door switch. (Tr. 1135-44.) The transmitter operates at a frequency of 65.5 Khz and sends an eight-bit coded signal which is detected by a receive antenna mounted near the door. (Tr. 1137-38.) The signal is sent to the receiver in the control unit where it is demodulated and then sent to the microprocessor. (Tr. 1142.) The receive antenna and receiver continuously receive signals and the microprocessor continuously analyzes received signals to determine if a valid signal from a transmitter is received and if a monitored door is open. (Tr. 1143-44.) If the

microprocessor determines that it has received an eight-bit coded signal at 65.5 Khz, it then checks to see if the door is open. (Tr. 1143-44.) If the door is open, the microprocessor activates an alarm. (Tr. 1144.)

19. In 1994 RFT introduced the CA9100. Beginning with this model, RFT removed the receiver from the control unit and placed it in the antenna mounted near the door. (Tr. 1151.) Inside both the receiver and the control unit are lights which illuminate upon the detection of "noise," meaning other RF signals that can interfere with the operation of the system. (Tr. 1152.)

20. In 1995 RFT introduced the CA9120, a model which included a modified control unit with an amber signal light on its face. (Tr. 1013.) The amber signal light serves a diagnostic purpose and takes the place of an oscilloscope.FN5 The amber signal light flickers if noise is present or a transmitter is within range, advising of the necessity to adjust the system. However, the flickering signal light is not discernable from any appreciable distance, and noise or a transmitter within range would not create a display at a nurse's station. (Tr. 1034-35; 1455.) Before 1996, the signal light was inside the control unit, requiring maintenance persons to remove the cover periodically to check the light for noise. (Tr. 1152-56.)

FN5. An oscilloscope is an instrument that allows one to view the time and amplitude of electronic signals. (Tr. 1156.)

21. The CA600, which also has the exposed signal light, was introduced in 1998 to be a value alternative to the CA9120. (Tr. 1013, 1037.)

E. Contrast Between Patented Devices and Code Alert Products

22. The door switch (the means responsive to the opening of the door) in RFT's Code Alert products is connected to the microprocessor, not the receiving circuit. (Tr. 1283-84.) The control unit, which contains the microprocessor, is a separate module not found in the system described in the '155 Patent and should be located at a distance of 10 feet from the door opening. (Ex. 635B, at 14 & Ex. 635L, at 10.)

23. The door switch is not used in any of the Code Alert devices to enable the sensing module or the receiving circuit to respond to the signal transmitted by the transmitter module to provide an output response or to produce a response for energizing the alarm means. (Tr. 1432, 1434-35.)

24. In contrast to Fig. 4 of the '155 Patent, the door switch in the Code Alert systems is used in conjunction with a resistor and a voltage source to generate a voltage signal. (Tr. 2003.) The signal generated by the door switch in conjunction with the resistor and the voltage source enters the microprocessor on a different terminal than the signal that is generated by the transmitter on the wanderer's wrist. (Tr. 2004.) In contrast, in Fig. 4 of the '155 Patent, the door switch physically connects to the same terminal as the signal coming from the wanderer's transmitter. (Tr. 2004.)

25. The sensing module in the Code Alert products provides an output response to the signal transmitted by the transmitter unit, regardless of whether the door is opened or closed. The Code Alert products use a microprocessor, not a receiving circuit, to respond to the transmitted signals and to send an alarm. (Tr. 1303, 1143-44.)

26. The microprocessor in the Code Alert products performs AND functions and uses AND gates to perform

its functions, including the function of sounding an alarm. (Tr. 2006-07, 2020.) The function of the AND gate in the Code Alert microprocessor is to switch paths within it so that a received input signal is switched through to an output terminal or it is switched somewhere else inside the AND gate. (Tr. 2022.) The transistors in the microprocessor which are connected together to form an AND gate are switches. (Tr. 2005.) By definition, an AND gate is a switch device which steers a signal one way or another, but it does not disconnect the signal. (Tr. 2006-07.) There is no electrical interruption between the AND gate and the transistor. (Tr. 2022.)

27. The AND gate in the Code Alert microprocessor has two independent input signals or voltages, in contrast to transistor 112 in Fig. 4 of the '155 Patent, which has only one input terminal. (Tr. 2006.) A voltage signal is applied at each of the two independent input terminals in the AND gate in the microprocessor. One signal is used to switch a transistor or equivalent within the AND gate so that it transmits or it does not transmit the second input, which would be the signal received from the wanderer's transmitter. (Tr. 2006.)

28. There is no electrical interruption in the Code Alert microprocessor, as there is in the device disclosed in the '155 Patent. In the microprocessor, there is a switching action that occurs that determines whether a received signal will be sent to a transistor or not, but the switching action is controlled by two independent voltage signals entering the AND gate. (Tr. 2021.) In contrast, in Fig. 4 of the '155 Patent, there is only one electrical signal present at any time on the input to transistor 112, and that electrical input signal is effectively removed from the circuit when the door switch is closed because the door switch short-circuits the current coming from audio filter 106 through the resistor to the right of it. (Tr. 2021.)

29. The audio filter 106, door switch 168, and transistor 112 in the '155 Patent do not perform an AND function and the transistor 112 is not an AND gate. (Tr. 1270-71.) An AND gate requires two binary inputs to which two binary signals are applied. (Tr. 1266-69.) Transistor 112 is an analog device that has only one input terminal, not two. (Tr. 1270.) Further, the audio filter's output is the input to the transistor 112. Since the audio filter is an analog device, it produces an analog output, not a binary output. (Tr. 1271.) Further, the door switch emits no signal. (Tr. 1284-85, 2021.) Therefore, transistor 112 is not an AND gate because it does not have two binary inputs to which two binary signals are applied. (Tr. 1270-71.) For the controller module in the Code Alert products to be disabled and enabled by the door switch as the receiving circuit in the '155 Patent is, the door switch must be disconnected and reconnected at the microprocessor's input terminal, which receives the signal generated by the transmitter on the wanderer's wrist, so that when the door switch is closed, the signal is short-circuited to ground, thus altering the electric circuit in the Code Alert systems in the same way the receiving circuit shown in Fig. 4 of the '155 Patent is structurally changed by the activation of the door switch. (Tr. 2002-2003.) The effect of this alteration would be to prevent the transmitted signal received from the wanderer from entering the microprocessor, just as the door switch in Fig. 4 prevents the signal from entering transistor 112. (Tr. 2003.)

30. The microprocessor in the Code Alert systems does not substantially perform the functions of the audio filter in Fig. 4 of the '155 Patent. The input signal to the audio filter is an analog signal. The input to the microprocessor is a digital or binary signal. For the Code Alert microprocessor to perform the functions of the audio filter in Fig. 4, two additional components must be added to the microprocessor: first, an analog-to-digital converter to allow conversion of the analog signal at the input of the audio filter to digital form in order to allow the microprocessor to function; and second, a multi-bit input port. (Tr. 2007 & 2009.) Neither device is disclosed in the '155 Patent.

31. The microprocessor in the Code Alert products is not the substantial equivalent of the audio filter 106 and transistor 112 in the '155 Patent for the reasons stated in the above paragraph, and because the hardware and software in the Code Alert products operate differently than the hardware and software that would be required to operate the Code Alert products reconfigured to perform the same functions as the audio filter and transistor in the '155 Patent. (Tr. 2013-17.) Specifically, the hardware of a digital filter would periodically sample the analog input signal. (Tr. 2011-13.) In contrast, the microprocessor in the actual Code Alert products is conducting other business internally, noting the time each burst of carrier is received from the transmitter. (Tr. 2013.) Once the microprocessor receives eight bursts, it examines the times at which those bursts arrived and reaches a decision as to whether those times are correct to qualify as a valid signal. (Tr. 2013.) In terms of software, a digital audio filter takes input samples at intervals of 500 millionths of a second. (Tr. 2016.) In contrast, the Code Alert system takes a sample as each new burst arrives.

F. 35 U.S.C. s. 102(b) ***& Inequitable Conduct***

32. John Shirley applied for the '155 Patent on January 13, 1986, making the "critical date" for purposes of invalidity analysis January 13, 1985. (Ex. 1.) In early June 1984, inventor John Shirley, Louis Schrieber, and Sid Martin, all of whom had entered an agreement to manufacture and market a wanderer monitoring system, installed such a system at the Evergreen nursing facility in Creve Coeur, Missouri, for field testing. (Tr. 173-76, 266.) The success of the system was reported in a July 5, 1984, article appearing in the *St. Louis Post-Dispatch,* which stated: "A wristwatch-size radio transmitter is fixed to the patient's arm or leg. When the patient approaches a door, the transmitter's signal is picked up by a special receiver attached to the door. When the door is opened, an alarm is sounding in a nursing station...." (Ex. 522.)

33. In early to mid-fall of 1984, the wanderer monitoring system was also installed at the Clayton on the Green nursing home in Missouri. The administrator of that facility, Catherine Bono, understood that the facility would not pay for the system, and that adjusting and "testing" of the system were being performed by the product's inventor and his partners, who had permission to enter and leave the facility as they wished in order to perform system adjustments. (Filing 319B, Dep. Catherine Bono, at 8-12, 37; Tr. 266.)

34. Inventor John Shirley did not add a door switch to his invention until March or April of 1985. (Tr. 107-111, 228.) Ms. Bono, administrator of the Clayton on the Green facility, testified that she believed the early units installed at her facility required a door to open for an alarm to sound. (Filing 319B, Dep. Catherine Bono, at 13-15.) However, Ms. Bono also testified that at times the units alarmed *before* the door opened. (Id. at 41.) Mr. Shirley's testimony and a demonstrative video shown during trial depicted how an early unit lacking a door switch could appear to sound an alarm when the door was opened. (Ex. 35; Tr. 128.) The receiver of the unit had a gain control which could be adjusted so that a person wearing a transmitter did not actually cause an alarm until that person was at or through the door, but creating the appearance that the opening of the door triggered an alarm. (Tr. 128-130.) This evidence weighs heavily against finding that operations like those described in the newspaper article or described by Ms. Bono indicate use of a door switch prior to the critical date. This conclusion is confirmed by Dr. Murphy, the defendant's expert witness, who testified that the circuit of Fig. 4 of the '155 Patent appeared to have been originally designed to operate without a door switch (Tr. 1286), as stated by Mr. Shirley. (Tr. 90, 99-101, 107-112.)

35. Inventor John Shirley did not disclose to the '155 Patent examiner the installation of the early wanderer monitoring systems at the Evergreen and Clayton on the Green nursing homes, or the existence of the July 5, 1984, newspaper article appearing in the *St. Louis Post-Dispatch*. (Tr. 228-29.) Mr. Shirley's omissions

were material because they would have disclosed the existence of a device that was closer to the invention claimed in the '155 Patent than any of the prior art, and a reasonable patent examiner therefore would have wanted to review such information in considering whether to allow the issuance of the patent. (Tr. 1499; Exs. 15, 18, and 19.) However, because it is unclear that Mr. Shirley knew about the existence of the newspaper article during the pendency of the patent application, or, even if he did, that he appreciated its potential significance, Mr. Shirley had no intent to deceive the U.S.Patent and Trademark Office. (Tr. 228-29.)

II. CONCLUSIONS OF LAW

Plaintiff asserts that the defendant's Code Alert products which remain at issue in this lawsuit infringe Claims 1, 2, 6, and 8 of the '155 Patent and Claims 1 and 6 of the '670 Patent.

A. Literal Patent Infringement

1. One who makes, uses, or sells another's patented invention within the United States is liable for infringement. 35 U.S.C. s.s. 154, 271(a).

[2] 3. Literal infringement requires a two-step analysis: "(1) a proper construction of the claim to determine its scope and meaning, and (2) a comparison of the properly construed claim to the accused device or process." Conroy v. Reebok Int'l Ltd., 14 F.3d 1570, 1572 (Fed.Cir.1994); Dolly, Inc. v. Spalding & Evenflo Companies, Inc., 16 F.3d 394, 397 (Fed.Cir.1994). The first step is a question of law; the second is a question of fact. Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed.Cir.1985). The first step requires the court to look at the claim language, the patent's specification, and the prosecution history. Arachnid, Inc. v. Medalist Mktg. Corp., 972 F.2d 1300, 1302 (Fed.Cir.1992).

[5] 5. "One who does not infringe an independent claim cannot infringe a claim dependent on (and thus containing all the limitations of) that claim." Wahpeton Canvas Co., Inc. v. Frontier, Inc., 870 F.2d 1546, 1552 n. 9 (Fed.Cir.1989).

[6] 6. 35 U.S.C. s. 112(6) applies in analyzing literal infringement where there is means-plus-function claim language. This section provides: "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." "In order to meet a means-plus-function limitation, an accused device must (1) perform the identical function recited in the means limitation and (2) perform that function using the structure disclosed in the specification or an equivalent structure." Kearns v. Chrysler Corp., 32 F.3d 1541, 1548 n. 8 (Fed.Cir.1994), *cert. denied,* 514 U.S. 1032, 115 S.Ct. 1392, 131 L.Ed.2d 244 (1995).

[7] 7. "In the context of section 112 ... an equivalent results from an insubstantial change which adds nothing of significance to the structure, material, or acts disclosed in the patent specification. A determination of section 112 equivalence does not involve the equitable tripartite test of the doctrine of equivalents. As this court has stated, the sole question under section 112 involves comparison of the structure in the accused device which performs the claimed function to the structure in the specification." Valmont Industries, Inc. v. Reinke Mfg. Co., Inc., 983 F.2d 1039, 1043 (Fed.Cir.1993) (internal punctuation and citations omitted).

[8] 8. "Generally, a number of factors may be considered when determining the scope of a means-plus-function limitation, including the language of the claim, the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony." In re Hayes Microcomputer Products, Inc. Patent Litigation, 982 F.2d 1527, 1543 (Fed.Cir.1992) (internal punctuation and citation omitted).

1. Claim Construction

[9] [10] [11] [12] 9. Claims are construed based on the actual claim language, the specification, the file history, and, if necessary, extrinsic evidence. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979-80 (Fed.Cir.1995), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The standard applied is what one reasonably skilled in the art at the time of the invention would have understood the term to mean. Id. at 986. The claims establish the limits or boundaries of the patent while the specification, of which the claims are a part, contains a written description of the invention that would enable one of ordinary skill in the art to make or use the invention. Claims must be read in view of the specification of which they are a part. Id. at 979. "For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." *Id*. Looking to a patent's specification to aid a court's interpretation of a term in a claim is an appropriate practice. Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1578 (Fed.Cir.1996).

[13] 10. Likewise, the Court has broad power to look as a matter of law to the prosecution history of the patent in order to ascertain the true meaning of language used in patent claims. Markman, 52 F.3d at 979. The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.), *cert. denied,* 516 U.S. 987, 116 S.Ct. 515, 133 L.Ed.2d 424 (1995).

11. Claims 1 and 6 of the '155 Patent present two claim construction issues: (1) whether the claims disclose a sensing module which must be mounted adjacent to the door and which must include both the antenna *and* the receiving circuit that receives signals and responds to those signals to produce an alarm, and (2) whether "means to enable the receiving circuit" discloses a receiving circuit capable of receiving signals from the transmitter when the door is open, but incapable of receiving signals when the door is closed.

[14] 12. With regard to the first issue, in the amendment to Claim 1, the applicant added the term "sensing module" and expressly defined it as *including* the receiving circuit. Likewise, the description of the receiving device mounted adjacent to the doorway in Claim 6 was amended to include "a receiving circuit therein." In the prior art section of the '155 Patent, the "receiver unit" and "receiver module" are identified as being "located on or adjacent to the door or doorway." (Ex. 1, col. 1, ll. 56-57; col. 2, ll. 6-7.) The specification includes similar references. (Ex. 1, col. 6, ll.43-47.) "Receiver" and "sensing module" are used interchangeably in the specification. (Ex. 1, col. 3, l. 54; col. 4, l. 27, 143; col. 5, ll. 60-61; col. 6, ll. 58-59.) Based on the amendments and definitions given in the '155 Patent, the sensing module disclosed in the claims requires that the receiving circuit which responds to the signals and produces a response be inside of the sensing module, and the sensing module be mounted adjacent to the door.

13. The specification, likewise, defines the term "enable." At col. 8, ll. 13-16, the '155 Patent states: "When the door is closed the receiver circuit is *incapable* of receiving signals from the transmitters but when the door is open it *can* receive such signals." (Emphasis added, numerical references omitted.) At col. 8, ll. 19-22, the patent describes how the receiving circuit is disabled: "When the door is closed, the switch 168 (see

also FIG. 4) is not actuated (closed) and will short between the base and the emitter of the transistor 112. This prevents the transistor 112 from energizing the relay 124." Also at col. 4 the specification states:

It should be noted that with the present system a resident equipped with a transmitter module can move as close as he or she wants to an unauthorized door so long as the door is not opened without the receiver module being enabled to receive the transmitted signal. In other words *there must be some movement of a door member to operate switch means in the circuit of the receiver before the receiver will be able to receive a signal and produce a response for sending to the nurse's station*. If some door movement were not required then every time a resident equipped with a transmitter module 10 came close to a door a signal would be received and a response sent and this would be undesirable.

(Emphasis added). In addition, at col. 1, ll. 55-58, the prior art is distinguished over the invention and the transmitter modules are described as "continuously transmit[ing] omnidirectional signals that are received by a receiver unit located on or adjacent to the door or doorway, but only when the door is opened by a person so equipped."

[15] 14. Based on the language in the specification of the '155 Patent, the court concludes that Claims 1 and 6 of the '155 Patent disclose a receiving circuit that can receive signals when the door is open, but cannot when the door is closed. The receiving circuit is enabled by the door switch when the door is open and disabled by the door switch when the door is closed.

[16] 15. The issue raised by Claims 1 and 6 of the '670 Patent is the location of the first display which serves as the pre-alert. The prosecution history, however, resolves the issue. Claims 1 and 6 of the original application for the '670 Patent were rejected as obvious over prior art. In order to distinguish the prior art, the applicant's attorney argued that the claimed combination "permits a nurse monitoring a central station to be alerted to a wanderer about to leave without being unduly alarmed by other circumstances." (Ex. 516, at 7.) The claims were then allowed. By virtue of this argument, the patentee relinquished any right to a device that may display a first indication at a location other than a central monitoring station. This conclusion is consistent with the specification which states, "an alert signal is given by the first signal means on the monitoring station. Thus, persons at the central station will pay close attention waiting for an alarm signal." (Ex. 54, col. 5, ll. 56-59 (numerical references omitted).)

16. Based on the prosecution history of the '670 Patent, Claims 1 and 6 of the '670 Patent disclose a pre-alert display which displays a light at a remote location when a monitored person wearing a transmitter is within seven feet of the monitored door when the door is closed in order to give a caregiver advance notice that a monitored person may open the door and leave.

2. Literal Infringement Analysis

a. The '155 Patent

[17] 17. As stated above, Claims 1 and 6 are written in "means-plus-function" format. Such claims are "construed to cover the corresponding structure, ... described in the specification and equivalents thereof." 35 U.S.C. s. 112(6). To find literal infringement, the fact finder must determine whether the accused device performs an identical function to the one recited in the means-plus-function clause. If the identical function is performed, the fact finder then determines whether the accused device utilizes the same structure or materials described in the specification or their equivalents. Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1211-12 (Fed.Cir.1998).

[18] 18. The door switch (the means responsive to the opening of the door) is not used in any of the four Code Alert devices at issue to enable the sensing module or the receiving circuit to respond to the signal transmitted by the transmitter module to provide an output response or to produce a response for energizing the alarm means. (Tr. 1312-14, 1434-35.) Rather, the sensing module in the accused products provides an output response to the signal transmitted by the transmitter unit, whether the door is open or closed. (Tr. 1303.) In addition, the door switch is utilized in cooperation with a separate control module, not found in the system described in the '155 Patent, which may be located at an arbitrary distance from the door opening. (Tr. 1430-32.) Therefore, the accused products do not have a sensing module with the components described in the claim located adjacent to the door, and the sensing module in the Code Alert products which is adjacent to the door does not perform the claimed functions. Further, in the CA9000, only an antenna, not the receiver, is adjacent to the door. (Tr. 1303, 1313.) Since the door switch does not perform the identical function recited in the means-plus-function clauses, the Code Alert systems cannot infringe. Further, the Code Alert control unit is not the same or equivalent to the receiver disclosed in the patent. Because not all elements of Claim 1 of the '155 Patent are present in the accused device, the CA9000, 9100, 9120, and 600 products do not literally infringe Claim 1.

[19] 19. Likewise, the CA9000, 9100, 9120, and 600 do not literally infringe Claim 6 because (1) the receiving circuit which responds to signals to produce a response is not contained in the housing of the sensing module, and (2) the door switch is connected to the control module, not the receiving circuit, and the door switch functions to provide a signal to a computing unit, not to enable the receiving circuit. (Tr. 1316-17, 1436-37.) Again, the door switch does not perform the identicalfunction, and the control unit is not the same or equivalent to the receiver disclosed in the '155 Patent. Therefore, these devices do not literally infringe since not all elements are present in the accused devices.

20. Simply put, I conclude that there is no literal infringement of the '155 Patent because the patent refers to "enabling" the circuit to receive a signal, such that no portion of the transmitter signal is received by the transistor that activates the alarm when the door is closed due to an electrical block between the transistor and the audio filter. This is in contrast to the Code Alert products' microprocessor, in which the transistor that fires the relay that activates the alarm receives a *portion* of the digital signal when the door is closed. Thus, the patented and accused products are literally different. This conclusion is consistent with General Elec. Co. v. Nintendo Co., Ltd., 179 F.3d 1350, 1353-56 (Fed.Cir.1999), in which the court, interpreting a means-plus-function claim, found that disruption of a signal path in the patented invention was not the same as bypassing the signal path, as in the accused system. In the '155 Patent, the signal path is electronically disrupted by the door switch. In the accused products, the microprocessor switches signals from one path to another. As in *General Electric,* identical functions are not performed.

21. The court further finds no literal infringement of dependent Claims 2 and 8 of the '155 Patent.

b. The '670 Patent

[20] [21] 22. The CA9120 and CA600 do not literally infringe Claims 1 or 6 the '670 Patent because the signal light displayed on the face of the control unit does not constitute a first indication displayed at a nurse's station when an unauthorized subject is in a first region within seven feet of a monitored passageway. (Tr. 1333, 1454-56, 1458-59.) The CA9120 and 600 devices produce an indication at the nurse's station *only* when the door is open. Therefore, not all elements are literally present in the accused devices. Because neither the CA9000 nor the CA9100 have a status light on the outside of their control

units, these products do not literally infringe the '670 Patent.

B. Patent Infringement Under the Doctrine of Equivalents

[22] 23. A device may infringe under the doctrine of equivalents if it is demonstrated that each and every element or limitation of a claim is present in the accused device by a substantial equivalent which performs substantially the same function in substantially the same way to reach substantially the same result. Augustine Medical, Inc. v. Gaymar Indus., Inc., 181 F.3d 1291, 1303-04 (Fed.Cir.1999).

[23] [24] 24. The doctrine of equivalents is not a license to erase or ignore the structural or functional limitations of a patent claim on which the public is entitled to rely in avoiding infringement. Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581-82 (Fed.Cir.1996). The doctrine of equivalents should not be employed to rewrite claims. *See* London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed.Cir.1991).

1. The '155 Patent

[25] 25. The accused products use a microprocessor, not a receiving circuit, to respond to signals and send an alarm. The sensing module in the accused devices outputs the signal received from the transmitter at all times, whether the door is open or closed. This output signal is processed in the microprocessor, which checks to see whether the door is open or not after verifying that a valid eight-bit coded signal at 65.5 Khz has been received. If so, the microprocessor activates the alarm, thus the microprocessor is used to perform elaborate signal processing not disclosed in the patent, and not as a receiving circuit. The microprocessor processes signals whether the door is open or not.

26. To establish that RFT's microprocessor is a substantial equivalent of the '155 receiving circuit, STI makes two arguments. First, STI argues the audio filter 106, door switch 168, and transistor 112 of the '155 Patent perform an AND function and that transistor 112 is an AND gate, just as the microprocessor in the Code Alert systems performs AND functions and uses AND gates to perform its functions, including the function of sounding an alarm. (Tr. 502-03.) STI's argument fails for several reasons. First, an AND gate requires two binary inputs to which two binary signals are applied. Transistor 112 has only one input terminal, not two. (Tr. 1270.) Second, the audio filter's output is the input to transistor 112. Yet, the audio filter is an analog device which produces an analog, not binary, output. (Tr. 1271.) Further, the door switch in the '155 Patent emits no signal. Transistor 112 is not an AND gate, because it does not have two binary inputs to which two binary signals are applied. (Tr. 1270.) Therefore, the Code Alert microprocessor and '155 receiving circuit do not function in substantially the same way by substantially the same means.

27. Second, STI argues that the Code Alert microprocessor is the substantial equivalent of the audio filter 106 and transistor 112 of Fig. 4 to the '155 Patent. (Tr. 1985-88.) However, STI's argument fails because the Code Alert microprocessor could perform the function of the audio filter only if an analog-to-digital converter were added to convert the analog signal to digital form, and a multi-bit input port were added to the microprocessor. (Tr. 2007-10.) Neither device is disclosed in the '155 Patent. Further, Dr. Murphy's testimony at trial contrasted the different functioning of the hardware and software of the actual Code Alert products versus the functioning of the Code Alert products if they were converted to perform the functions of the audio filter and transistor. (Tr. 2009-2017.)

28. In essence, the way in which the Code Alert system operates is much different than the operation of the plaintiff's system. In particular, the digital code that Plaintiff says is equivalent to the analog tone is

materially different because it is less likely to trigger a false alarm. An analog signal, like the transmitter signal in the plaintiff's device, can exist as interference coming from another source, causing the false alarm. That same condition is substantially less likely to occur with a digital signal. Thus, the Code Alert system does not perform in substantially the same way because the inherent differences between analog signals and digital signals provide an inherently different product that results not from mere improvements to the plaintiff's systems, but from inherent changes in the type of signal that generates the alarm. Here, the focus is on the type of signal that generates the alarm and the type of receiver necessary to process the signal, and both the signal and the equipment that process the signal are inherently different and perform in substantially different ways. Therefore, the CA9000, 9100, 9120, and 600 do not infringe Claims 1 or 6 of the '155 Patent under the doctrine of equivalents because they do not function in substantially the same way by using substantially the same means.

29. Again, as in *General Elec. Co. v. Nintendo Co., Ltd.,* the receiving circuit and microprocessor do not perform equivalent functions. *Id.,* at 1356.

2. The '670 Patent

[26] 30. The CA9120 and CA600 do not infringe Claims 1 or 6 of the '670 Patent under the doctrine of equivalents because the signal light in the Code Alert products does not perform substantially the same function of displaying an alert at a central location that warns when a monitored person is within seven feet of a monitored passageway. (Tr. 1487-89.) Specifically, if a wanderer is near the door, the flickering yellow light at the box near the door in the Code Alert products does not serve substantially the same function as the constant red alert on the nurses' panel in Plaintiff's product.

[27] 31. Since neither the CA9000 nor CA9100 have a signal light on the face of the control unit, neither device infringes the '670 Patent under the doctrine of equivalents.

C. Patent Validity

1. 35 U.S.C. s. 102(b)

[28] 32. A patent is presumed valid and the party asserting invalidity must overcome the presumption by clear and convincing evidence establishing facts which support the conclusion of invalidity. 35 U.S.C. s. 282; Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 1177 (Fed.Cir.1993).

33. Under 35 U.S.C. s. 102(b), an inventor loses the right to obtain a patent if the invention is the subject of a printed publication, is placed in public use, or is on sale in the United States more than one year prior to the date of the application for the patent.

[29] 34. To be considered a s. 102(b) reference, the item must sufficiently describe the claimed invention to have placed the public in possession of it. Paperless Accounting, Inc. v. Bay Area Rapid Transit System, 804 F.2d 659, 665 (Fed.Cir.1986); Carella v. Starlight Archery & Pro Line Co., 804 F.2d 135, 139 (Fed.Cir.1986). The disclosure must be such as will give possession of the invention to the person of ordinary skill. Paperless Accounting, Inc., 804 F.2d at 665. *See* Struthers Scientific & Int'l Corp. v. Rappl & Hoenig Co., 453 F.2d 250, 255 (2d Cir.1972) (description in printed publication for purposes of 35 U.S.C. s. 102(b) must "impart to the person of ordinary skill sufficient information which, coupled with the disclosures of the prior art, would enable him to devise the invention without further genuine inspiration or undue experimentation.").

[30] 35. Public use includes " 'any use of [the claimed] invention by one who is under no limitation, restriction or obligation of secrecy to the inventor.' " Baxter Int'l, Inc. v. COBE Laboratories, Inc., 88 F.3d 1054, 1058 (Fed.Cir.1996) (quoting In re Smith, 714 F.2d 1127, 1134 (Fed.Cir.1983)), but "the existence of a confidentiality agreement is not dispositive of the public use issue." Tone Brothers, Inc. v. Sysco Corp., 28 F.3d 1192, 1200 n. 8 (Fed.Cir.1994), *cert. denied,* 514 U.S. 1015, 115 S.Ct. 1356, 131 L.Ed.2d 214 (1995). " 'The use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as [a public] use.' " Baxter Int'l, Inc., 88 F.3d at 1059 (quoting City of Elizabeth v. American Nicholson Pavement Co., 97 U.S. 126, 134, 24 L.Ed. 1000 (1877)).

[31] [32] 36. "[T]he on-sale bar applies when two conditions are satisfied before the critical date. First, the product must be the subject of a commercial offer for sale.... Second, the invention must be ready for patenting." Pfaff v. Wells Electronics, Inc., 525 U.S. 55, 119 S.Ct. 304, 311-12, 142 L.Ed.2d 261 (1998). In *Pfaff,* the first part of the test was satisfied by a purchase order. *Id.* at 312. Similarly, the Federal Circuit, applying the *Pfaff* test, found the on-sale bar test satisfied by record evidence of a signed purchase agreement before the critical date. Weatherchem Corp. v. J.L. Clark, Inc., 163 F.3d 1326, 1333 (Fed.Cir.1998). Other definitions of what qualifies as clear and convincing evidence of a sale offer include: "a specific and definite offer for sale of a successfully tested device, such as that evidenced by a completed contract for sale, that embodies every limitation of the later patented invention as claimed prior to the critical date and that sale is clearly for commercial purposes," Evans Cooling Systems, Inc. v. General Motors Corp., 125 F.3d 1448, 1451 (Fed.Cir.1997), *cert. denied,* 522 U.S. 1115, 118 S.Ct. 1050, 140 L.Ed.2d 113 (1998); "the sale or offer was primarily for profit rather than for experimental purposes," Kolmes v. World Fibers Corp., 107 F.3d 1534, 1540 (Fed.Cir.1997) (internal punctuation and citation omitted); and "a sale made on ordinary commercial terms," Mahurkar v. Impra Inc., 71 F.3d 1573, 1577 (Fed.Cir.1995). Inferences of a sale or offer to sell, even if likely, are insufficient to meet the clear and convincing burden of proof. Intel Corp. v. U.S. Int'l Trade Comm'n, 946 F.2d 821, 830 (Fed.Cir.1991).

37. An instructive explanation of what fails to constitute a sale offer was given by the Federal Circuit in overturning an invalidity finding of a district court in Continental Can Co. USA, Inc. v. Monsanto Co., 948 F.2d 1264, 1269 (Fed.Cir.1991) (internal citations omitted):

The district court reasoned that this project "called for the eventual marketing of the Marcus bottles once all technical difficulties were resolved," and on this basis held that the Marcus bottles were on sale. This holding was in error, for the "on sale" bar of s. 102(b) does not arise simply because the intended customer was participating in development and testing.

[33] 38. As in the situation before this Court, making preparations for the sale of a claimed invention does not invoke the on-sale bar without a showing by clear and convincing evidence that an actual sale or definite offer to sell before the critical date occurred. Intel Corp., 946 F.2d at 830.

[34] 39. With regard to the 1984 *St. Louis Post-Dispatch* article describing the early high frequency prototype system that was installed in the Evergreen nursing home in Missouri as being a publication sufficient to invalidate the '155 Patent under 35 U.S.C. s. 102(b), the Court finds that the *Post-Dispatch* article does not sufficiently describe the system such that a person of ordinary skill could devise the invention without undue experimentation.

[35] 40. Installation of the wandering monitoring system at the Missouri nursing homes prior to the critical date for "testing" does not constitute a public use under 35 U.S.C. s. 102(b) sufficient to invalidate the '155 Patent. (Tr. 107-11, Test. of John Shirley; Filing 319B, Dep. Catherine Bono, at 37.) Baxter Int'l. Inc., 88 F.3d at 1058-60.

[36] 41. The court also finds there is not clear and convincing evidence of an offer or sale of the patented system before the critical date of January 13, 1985. No system in existence prior to the critical date had a door switch or other "means responsive to the opening of the door," which is a necessary element of the claims of the '155 Patent. Further, there was no evidence of a purchase order, amount paid, contract for sale, or sale or offer made primarily for profit. The Court finds that RFT has failed to meet its burden of demonstrating a pre-critical date sale or offer of the patented invention by clear and convincing evidence, and therefore RFT has failed to invalidate the '155 Patent pursuant to 35 U.S.C. s. 102(b).

2. Inequitable Conduct

[37] [38] 42. The defense of inequitable conduct before the United States Patent and Trademark Office ("PTO"), if proven, renders all the claims of the patent in suit unenforceable for the life of the patent. J.P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc., 747 F.2d 1553, 1560 (Fed.Cir.1984), *cert. denied,* 474 U.S. 822, 106 S.Ct. 73, 88 L.Ed.2d 60 (1985). Establishing the defense of inequitable conduct requires proof by clear and convincing evidence that inequitable conduct by the applicant or those connected with the application occurred during the application process of the patent in question. Both the elements of intent and materiality must be proven by clear and convincing evidence. Braun, Inc. v. Dynamics Corp. of America, 975 F.2d 815, 822 (Fed.Cir.1992); J.P. Stevens & Co., Inc., 747 F.2d at 1559.

[39] 43. Inequitable conduct "includes failure to disclose material information, or submission of false material information." J.P. Stevens & Co., Inc., 747 F.2d at 1559.

[40] 44. To be guilty of inequitable conduct, one must have intended to act inequitably. Braun, Inc., 975 F.2d at 822; FMC v. Manitowoc Co., Inc., 835 F.2d 1411, 1415-17 (Fed.Cir.1987). "A holding of inequitable conduct requires ... proof of intent to deceive or mislead, and does not flow simply from failure to meet the requirements of patentability. Culpable conduct is required, such as intentional concealment of the best mode under the mask of a fictitious mode." Engel Indus., Inc. v. Lockformer Co., 946 F.2d 1528 (Fed.Cir.1991) (citations omitted).

[41] [42] 45. "[O]ne who alleges a 'failure to disclose' form of inequitable conduct must offer clear and convincing proof of: (1) prior art or information that is material; (2) knowledge chargeable to applicant of that prior art or information and of its materiality; and (3) failure of the applicant to disclose the art or information resulting from an intent to mislead the PTO. That proof may be rebutted by a showing that: (a) the prior art or information was not material (e.g., because it is less pertinent than or merely cumulative with prior art or information cited to or by the PTO); (b) if the prior art or information was material, a showing that applicant did not know of that art or information; (c) if applicant did know of that art or information, a showing that applicant did not know of its materiality; (d) a showing that applicant's failure to disclose art or information did not result from an intent to mislead the PTO." FMC Corp., 835 F.2d at 1415.

[43] 46. Even if the *Post-Dispatch* article was material, RFT has not shown by clear and convincing evidence that Mr. Shirley, the inventor of the '155 Patent, had any culpable intent in failing to bring the *Post-Dispatch* newspaper article to the attention of the examiner handling the patent application, or that he

appreciated the materiality of the article. Mr. Shirley clearly remembered that the initial units, including the one referred to in the *Post-Dispatch* newspaper article, were not sold or offered for sale. Moreover, he knew that the units described in the article had no door switches, as did the device he sought to patent. Further, RFT presented no evidence establishing that other persons owing a duty to the Patent Office both were aware of the newspaper article and appreciated its potential significance.

47. RFT has failed to establish inequitable conduct with regard to the prosecution of the '670 Patent as well.

D. Attorneys' Fees

48. The court does not find this case to be "exceptional" within the meaning of 35 U.S.C. s. 285 such that an award of reasonable attorneys' fees to the prevailing party is warranted.

III. CONCLUSION

For the reasons discussed above, I conclude that (1) Defendant has not infringed Plaintiff's U.S.Patent No. 4,682,155 or Plaintiff's U.S.Patent No. 5,268,670; (2) U.S.Patent No. 4,682,155 is not invalid under 35 U.S.C. s. 102; and (3) RFT has failed to show inequitable conduct before the United States Patent and Trademark Office sufficient to declare U.S.Patent No. 4,682,155 and U.S.Patent No. 5,268,670 unenforceable.

IT IS ORDERED:

1. Judgment shall be entered against Plaintiff, and in favor of Defendant, on Plaintiff's infringement claims for the reason that Defendant has not infringed Plaintiff's U.S.Patent No. 4,682,155 or Plaintiff's U.S.Patent No. 5,268,670. On Defendant's counterclaims against Plaintiff, judgment shall be entered against Defendant and in favor of Plaintiff for the reasons that U.S.Patent No. 4,682,155 is not invalid under 35 U.S.C. s. 102 and RFT has failed to show inequitable conduct before the United States Patent and Trademark Office sufficient to declare U.S.Patent No. 4,682,155 and U.S.Patent No. 5,268,670 unenforceable.

2. Judgment shall be withheld pending Magistrate Judge Piester's resolution of Plaintiff's application (filing 312) for fees pursuant to Judge Piester's prior order (filing 283).

ATTACHMENT

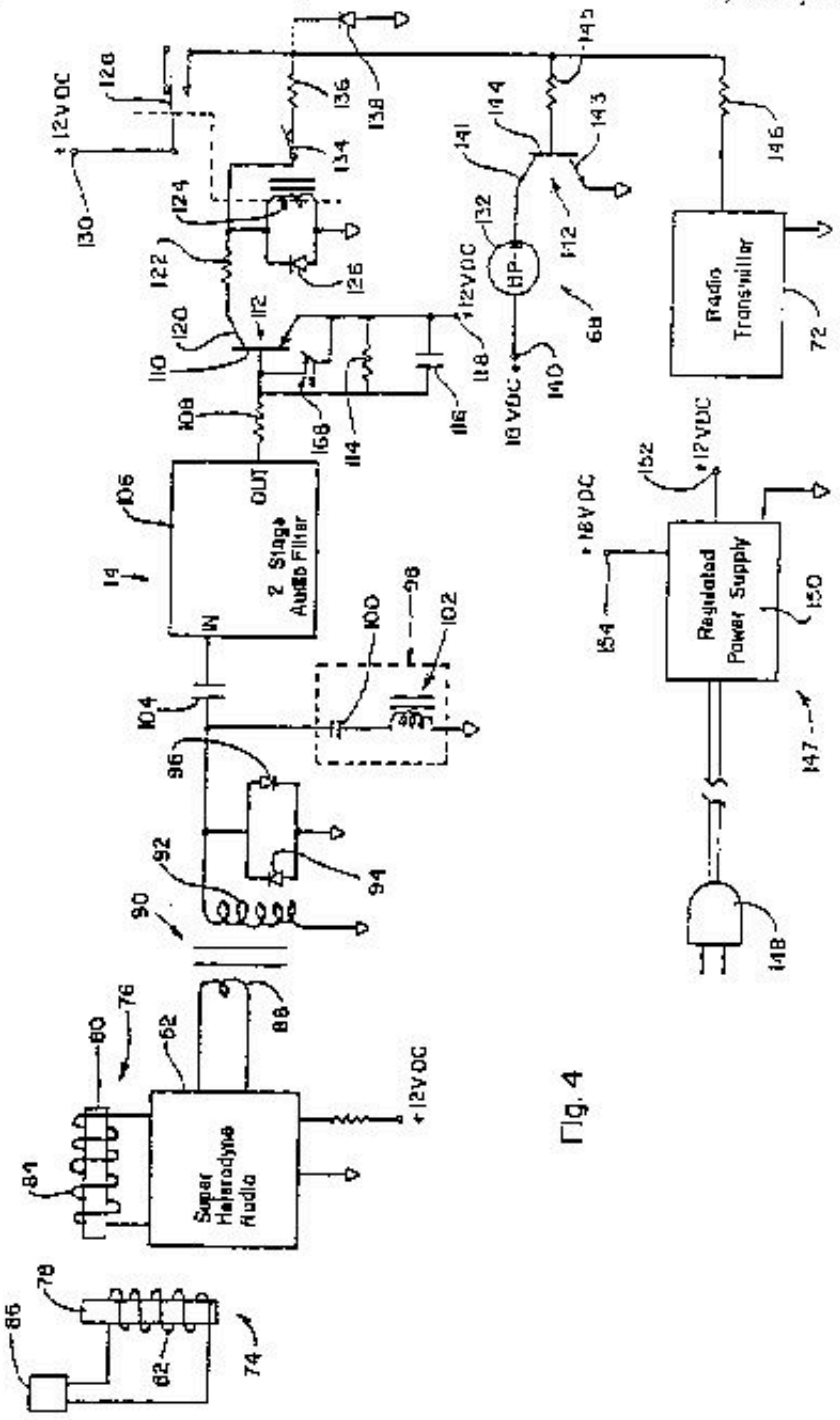

Fig. 4