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## United States Court of Appeals for the Federal Circuit

00-1089, -1090

SENIOR TECHNOLOGIES, INC.,

Plaintiff-Appellant,

v.

R. F. TECHNOLOGIES, INC.,

Defendant-Cross Appellant.

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DECIDED: March 12, 2001

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Before CLEVINGER, Circuit Judge, SMITH, Senior Circuit Judge,\* and BRYSON, Circuit Judge.

CLEVINGER, Circuit Judge.

Senior Technologies, Inc. ("Senior Tech") appeals a decision of noninfringement in favor of one of its competitors, R.F. Technologies, Inc. ("R.F. Tech") upon the conclusion of a bench

trial by the United States District Court for the District of Nebraska. See Senior Tech., Inc. v. R.F. Tech., 58 F. Supp. 2d 1076 (D. Neb. 1999). R.F. Tech cross-appeals the district court's ruling on the issues of claim definiteness, invalidity, inequitable conduct, and attorneys' fees. Because the district court's conclusion of noninfringement was correct with respect to each of R.F. Tech's Code Alert products, and since it did not commit reversible error in its treatment of any of the remaining issues, we affirm.

I

Senior Tech is the holder of U.S. Patent No. 4,682,155 ("the '155 patent"), entitled "Personnel Security System," which issued on July 21, 1987. The '155 patent is generally directed to a wanderer monitoring system which can be used in nursing homes, hospitals, assisted living centers, and other care facilities to monitor patients or residents who have a tendency to wander. The invention provides for the sounding of an alarm when a resident attempts to leave the facility, thereby alerting staff members so that appropriate action can be taken.

Two independent claims of the '155 patent, claims 1 and 6, are alleged by Senior Tech to be infringed by products made by R.F. Tech. These claims read in relevant part with emphases added to highlight the disputed terms:

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

[1] a transmitter module for installing on persons to be monitored, [2] a sensing module for installing adjacent to a door opening to be monitored, and [3] 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 [4] alarm means energizable in response to the production of the output response to produce an alarm condition,

....

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.

'155 patent, col. 8, line 57 through col. 9, line 13 (emphasis added).

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

a transmitter device . . . .

a receiving device for mounting adjacent to the doorway including [1] a housing and a receiving circuit therein, [2] a signal sensor operatively connected to the receiving circuit, [3] means for supplying power to the receiving circuit, [4] means to enable the receiving circuit, and [5] 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 . . . the switch means operating to enable the receiving circuit.

'155 patent, col. 9, lines 31-53 (emphasis added).

In general terms, the invention of the '155 patent begins with a transmitter, typically worn on the wrists or ankles of a person being monitored. The transmitter continuously transmits a signal that, if within range, can be received by the antenna of a fixed unit mounted near a door opening. Contained within the housing of the fixed unit is what the '155 patent refers to as "a receiving circuit." The function of the receiving circuit is to take the signal picked up by the antenna, and, depending on whether or not the door being monitored is open, generate an output signal that sounds an alarm.

R.F. Tech engages in the business of designing, engineering, manufacturing, and selling a variety of medical monitoring equipment, including wanderer monitoring systems. Since 1992, it has sold wanderer monitoring systems under the trademark "Code Alert." Four models of the Code Alert products are the subject of this suit: the CA9000, CA9100, CA9120, and CA600.

All of the Code Alert products associated with this litigation involve transmitters to be worn by those persons being monitored. In addition, the CA9000, first introduced in 1992, included an antenna mounted near a doorway, a control unit containing a microprocessor and additional circuitry, and a door switch connected to the control unit's microprocessor. The CA9100, introduced in 1994, differed from the CA9000 in that the circuitry located originally in the control unit was removed and placed in the antenna mounted near the door. The microprocessor, however, remained in the control unit. The CA9120 and the CA600, introduced in 1995 and 1998 respectively, possessed the same relevant features as the CA9100 for purposes of this appeal.

## II

An infringement analysis is "a two-step process in which we first determine the correct claim scope, and then compare the properly construed claim to the accused device to determine whether all of the claim limitations are present either literally or by a substantial equivalent." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1247-48, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998). We review the first step of claim construction without deference to the district court. Id.; Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455, 46 USPQ2d 1169, 1173 (Fed. Cir. 1998) (en banc). When infringement is tried to the bench, we review the second step of comparing the properly construed claim to the accused device for clear error. See Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1141, 42 USPQ2d 1589, 1592 (Fed. Cir. 1997).

In properly determining the scope and meaning of a claim, it is well-settled that the court should first look to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the written description and, if in evidence, the prosecution history. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80, 34 USPQ2d 1321, 1329-30 (Fed. Cir. 1995). Such intrinsic evidence is the most significant source for determining the operative meaning of disputed claim language. Among these sources, the claim language itself is always the starting point of claim construction. See *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985, 989, 50 USPQ2d 1607, 1610 (Fed. Cir. 1999). Terms in the claim are to be given their ordinary and accustomed meaning to a person of ordinary skill in the relevant art. See *Renishaw*, 158 F.3d at 1249, 48 USPQ2d at 1121. However, an exception arises when either "a different meaning is clearly set forth in the specification or where the accustomed meaning would deprive the claim of clarity." *Northern Telecom Ltd. v. Samsung Elec. Co.*, 215 F.3d 1281, 1287, 55 USPQ2d 1065, 1069 (Fed. Cir. 2000); see also *Johnson Worldwide*, 175 F.3d at 990, 50 USPQ2d at 1610. Furthermore, one may look to the written description to define a term in the claims, for "a claim must be read in view of the specification of which it is a part." *Renishaw*, 158 F.3d at 1248, 48 USPQ2d at 1120. However, one should avoid reading a limitation into a claim from the written description, and, in so doing, restricting its scope unduly. *Id.* Finally, statements and amendments contained in the prosecution history can often inform one's construction of a claim, particularly if they were made for reasons of patentability. See *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 862-63, 20 USPQ2d 1252, 1262 (Fed. Cir. 1991) (affirming the use of prosecution history to construe a claim).

To infringe, an accused device must embody every limitation in the claim, either literally or under the doctrine of equivalents. See *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1316, 51 USPQ2d 1590, 1593 (Fed. Cir. 1999); see also *American Permahedge v. Barcana, Inc.*, 105 F.3d 1441, 1445, 41 USPQ2d 1614, 1618 (Fed. Cir. 1997). However, the application of the doctrine of equivalents is limited by the doctrine of prosecution history estoppel, which bars a patentee from asserting as an equivalent subject matter previously surrendered during the prosecution of the patent application. *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579, 34 USPQ2d 1673, 1679 (Fed. Cir. 1995). Furthermore, a narrowing amendment made for any reason related to the statutory requirements for a patent will trigger prosecution history estoppel with respect to the amended claim element. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, No. 95-1066, 2000 U.S. App. LEXIS 29979, at \*16 (Fed. Cir. Nov. 29, 2000) (*en banc*). Finally, when a claim amendment creates prosecution history estoppel, there is no range of equivalents available for the amended claim element. *Id.* at \*25.

## A

The first issue is whether the district court correctly treated the phrase "receiving circuit" in its claim construction and in its comparison of the construed claims to the accused device.

Senior Tech's lead argument on appeal is that the district court erred in "construing" the receiving circuit so as to encompass circuitry in the accused Code Alert products which (1) produces no output signal to energize an alarm, and (2) is not connected to a door switch, an interpretation "which contradicts language explicitly recited in the claims themselves." Senior Tech contends that the district court should not have excluded the Code Alert microprocessor from the part of the accused product that would be compared against the "receiving circuit" limitation in the '155 patent. Technically, Senior Tech's contention is not an attack on the district court's claim construction. Rather, the challenge relates to the second step of the infringement analysis, namely, that the district court committed clear error in its comparison of

the construed claims to the accused device. Hence, the district court's construction of "receiving circuit" as it relates to claims 1 and 6 of the '155 patent is not in genuine dispute, and need not be reviewed by us.

In defining "receiving circuit" and its functions in terms of Fig. 4 of the specification, the district court made the following findings:

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. In Fig. 4, the receiv[ing circuit] extends to the left of the point where resistor 136, diode 138, and the unnumbered relay contact directly above the connect. 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.

Senior Tech, 58 F. Supp. 2d at 1082.

Given this definition of "receiving circuit" and its functions, we must turn to the district court's comparison of the '155 patent's "receiving circuit" with a corresponding part in the accused products. After reviewing the evidence before the district court, we are convinced that it committed clear error when it failed to include the microprocessor within the relevant portion of the Code Alert products that ought to be compared against the '155 patent's "receiving circuit."

In its opinion, the district court labeled, without any explanation, the circuitry preceding the microprocessor in the Code Alert device as "a receiving circuit." See Senior Tech, 58 F. Supp. 2d at 1083 (Finding of Fact No. 18). However, the district court's own findings indicate that the principal functions of the receiving circuit are to (1) accept an input signal received from a transmitter of a monitored person, (2) process its signal in successive stages, and (3) deliver that signal to an output stage to produce a response to energize an alarm. The above functions indicate that the microprocessor, whose output is connected to an alarm, should have properly been included in the portion of the accused device that would be compared against the "receiving circuit" in the '155 patent.

Therefore, the district court erred by not including the microprocessor in its comparison of the accused device with the construed "receiving circuit." When the functions of the microprocessor are properly understood, and the claim is read on those functions, the presence of the microprocessor in the accused device provides no ground for noninfringement of the claims.

We must, however, also determine whether the district court's conclusion of noninfringement can be affirmed on alternative grounds present in the record before us. See MEHL/Biophile Int'l Corp. v. Milgraum, 192 F.3d 1362, 1366, 52 USPQ2d 1303, 1306 (Fed. Cir. 1999) ("[A] ppellees always have the right to assert alternative grounds for affirming the judgment that are supported by the record." (quoting Datascope Corp. v. SMEC, Inc., 879 F.2d 820, 822 n.1, 11 USPQ2d 1321, 1322 n.1 (Fed. Cir. 1989))).

## B

Another issue before the district court was whether the '155 patent disclosed a limitation of a single housing within which lies the receiving circuit. As a matter of law, we conclude that both claims 1 and 6 do include such a limitation.

Claim 1 describes a monitoring system that includes a "sensing module for installing adjacent to a door opening to be monitored." This sensing module, according to the claim, "includ[es] a receiving circuit and associated sensing means." Furthermore, claim 1 mentions a "means to enable the receiving circuit in the sensing module . . ." (emphasis added). Based on the language of the claim, one must conclude that the receiving circuit must be contained within the sensing module. This position is consistent with the text and figures in the written description. Although the specification refers to the physical sensing module as a "housing," it is clear that the receiving circuit is located within it:

The switch 168 is connected by leads 170 and 172 to a housing 174 in which the receiver circuit 14 is located. The housing 174 has an output cable 176 which connects it to a remote nursing station . . . .

'155 patent, col. 8, lines 8-11. Furthermore, the prosecution history reveals that, in order "to clarify ambiguities," claim 1 was amended such that "the receiving circuit" would be specifically located "in the sensing module." Hence, the claim language, specification, and prosecution history all indicate that the receiving circuit must be contained within the housing of the sensing module.

Claim 6 similarly describes a monitoring system that requires "a housing and a receiving circuit therein." According to the plain meaning of the claim language, claim 6 clearly states the requirement of a separate housing structure within which lies a receiving circuit. Moreover, the same passage from the specification mentioned above confirms this interpretation in that the "switch 168 is connected by leads 170 and 172 to a housing 174 in which the receiv[ing] circuit is located." *Id.* (emphasis added). Finally, the prosecution history reveals that originally, claim 6 merely listed "a housing" and "a receiving circuit" as the first two of several elements comprising the "receiving device." Had the claim been left unamended, one could argue that the claim language contains no requirement for the receiving circuit to be located within a housing. The list, however, was specifically amended to combine the first two elements into one by changing the language to read "a housing and a receiving circuit therein." Faced with such an explicit amendment, the appellant cannot now argue that claim 6 does not require a housing within which lies a receiving circuit. Thus, the claim language, the specification, and the prosecution history all indicate that claim 6 is limited to a device in which a receiving circuit is located within a housing.

The appellant nevertheless contends that it was improper for the district court to "construe claim 6 as requiring a separate sensing module and receiving circuit that are contained in a single housing." The appellant, however, misinterprets the thrust of the district court's conclusion. As we read its opinion, the district court was not requiring a separate sensing module and a receiving circuit to be contained within a single housing. Rather, it was merely noting that the receiving circuit in the accused product did not literally infringe claim 6 because it was not contained in the housing of the "sensing module" (*i.e.*, the housing of the "receiving

device"). Perhaps the district court could have been more precise in its choice of words when it used the phrase, "housing of the sensing module," rather than, more accurately, "housing of the receiving device." However, given the fact that "sensing module" is not mentioned anywhere in the claim, we can justifiably conclude that the district court was not attempting to import an additional limitation of a "separate sensing module." Rather, it was simply referring to the housing of the "receiving device" in claim 6. Furthermore, the context clearly shows that the district court was addressing the infringement issue as to claim 6, not claim 1. Hence, we find no inconsistencies between the district court's statements and an interpretation of claim 6 that requires a "receiving device" that includes "a housing and a receiving circuit therein."

Having properly construed claims 1 and 6 to require a single housing within which lies a receiving circuit, we must review the district court's comparison of the construed claim to the accused device. As to claim 1, the district court found that "the accused products do not have a sensing module with the components described in the claim . . . ." Senior Tech, 58 F. Supp. 2d at 1089. As to claim 6, the district court concluded that the Code Alert products did not literally infringe because "the receiving circuit which responds to signals to produce a response is not contained in the housing of the sensing module." Id.

Contrary to the district court's determination, the CA9000 model could arguably meet the single housing requirement since the microprocessor and the preceding circuitry can be found in the same housing (i.e., the control unit). However, in the CA9100, CA9120, and CA600, the circuitry preceding the microprocessor was removed and placed in the antenna unit mounted near the door, while the microprocessor remained in the control unit. As discussed above, both the microprocessor and the preceding circuitry corresponds to the limitation of "receiving circuit" in the '155 patent. By splitting the microprocessor and the preceding circuitry between two housings (i.e., the control unit and the antenna unit), these Code Alert products ceased to literally embody the single housing limitation of claims 1 and 6.

As far as infringement under the doctrine of equivalents is concerned, both claims 1 and 6 were amended to overcome a rejection under 35 U.S.C. § 112, ¶ 2 (1994). Claim 1 was amended such that the receiving circuit is "in the sensing module," whereas claim 6 was amended to involve "a housing and a receiving circuit therein." Therefore, infringement under the doctrine of equivalents with regard to the CA9100, CA9120, and CA600 models is precluded. See Festo Corp., 2000 U.S. App. LEXIS 29979, at \*25.

In light of the foregoing analysis, we can immediately affirm the district court's finding of noninfringement of claims 1 and 6 with respect to the CA9100, CA9120, and CA600. However, since the CA9000 could arguably meet the single housing requirement, we must continue to determine whether this last remaining model could be found to infringe either claim 1 or 6.

## C

A limitation not clearly addressed by the district court was the location of the "associated sensing means" in claim 1. As a matter of law, we conclude that the "associated sensing means" in claim 1 must be located within the same housing as the receiving circuit.

As discussed above, we have already construed claim 1 to contain a limitation that requires the receiving circuit to be contained within the housing of the sensing module. Since the sensing module is defined as "including a receiving circuit and associated sensing means," there is no reason for us not to conclude that the associated sensing means must also be

contained within that same housing. The written description in the specification reinforces this view by providing that the associated sensing means, comprised of two ferrite inductors, be "connected to a jack 86 for an external sensor . . . ." '155 patent, col. 6, lines 59-63. This language implies that the associated sensing means must be "internal," as opposed to an "external sensor." Finally, the only indication of anything remotely similar to an external associated sensing means can be found in the illustrations in the '155 patent, where an elongated sensing strip is shown to be connected to the sensing module in Figures 6 and 7. However, the specification makes clear that the sensor strip is used in an alternative embodiment of the invention for a double door opening. '155 patent, col. 8, lines 24-36. This alternative embodiment is described in dependent claim 4 as:

The security sensing system of claim 1 wherein the door opening accommodates two door members and the sensing module is located adjacent to the door opening and includes an elongated sensing member mounted extending transversely across at least one of the door members in the door opening.

The doctrine of claim differentiation requires us to consider the "elongated sensing member" found in claim 4 and the "associated sensing means" found in claim 1 to be distinct from one another. Otherwise, one or the other would be rendered superfluous. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998) (holding that under the doctrine of claim differentiation, a claim should not ordinarily be construed in a manner that renders a related dependent claim superfluous). Hence, we conclude that although alternative embodiments may involve external sensor strips, the "associated sensing means" in claim 1 must be contained within the same housing as the receiving circuit.

Having construed claim 1 so as to require the "associated sensing means" to be located within the same housing as the receiving circuit, we return to the sole remaining accused product, the CA9000, to determine whether the district court's determination of noninfringement was correct. It is undisputed that the CA9000's antenna, the only part in the accused product that corresponds to the "associated sensing means" in claim 1, is not contained within the same housing as the receiving circuit. As found by the district court, the antenna was mounted adjacent to the door, whereas the part of the accused product corresponding to the '155 patent's "receiving circuit" was located in a control unit mounted elsewhere. Hence, the antenna and receiving circuit are not literally contained within the same housing as required by claim 1.

Furthermore, we find that an attempt to expand the scope of claim 1 under the doctrine of equivalents to encompass the accused devices, which have antennae located outside of the receiving circuit's housing, would eviscerate the construed limitation that they be contained within the housing. Hence, by requiring the "associated sensing means" to be contained within the same housing as the receiving circuit, claim 1 excludes from its scope antennae located outside of the housing. See, e.g., Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581, 1582-83, 37 USPQ2d 1365, 1372, 1373-74 (Fed. Cir. 1996) (holding that a device "with only two offset distances" was "specifically excluded from the scope of the claims" because the relevant claim had been construed to require the "offset distance [to] take on at least three values"). Therefore, Senior Tech cannot utilize the doctrine of equivalents to reach the Code Alert products, and we must affirm the district court's conclusion of noninfringement of CA9000, both literally and under the doctrine of equivalents, with regards to claim 1.



We are, however, not finished with the issue of infringement. We must determine whether the CA9000 can be found to infringe claim 6 of the '155 patent, which requires us to address the last claim construction issue.

#### D

The remaining issue of claim construction relates to the phrase "to enable the receiving circuit" in both claims 1 and 6. The language in the two claims contains subtle differences, and hence, will be analyzed separately. In short, we construe claim 1 to disclose an embodiment in which only the receiving circuit's output is enabled ("partial enablement"), whereas claim 6 discloses an embodiment in which the entire receiving circuit is enabled ("total enablement"), including its receiving function.

The district court construed "enable" so that both claims 1 and 6 "disclose a receiving circuit that can receive signals when the door is open, but cannot when the door is closed." Senior Tech, 58 F. Supp. 2d at 1088. We conclude that the district court's construction was correct as to claim 6, but not as to claim 1.

Claim 6 contains the language "to enable the receiving circuit" in two places. '155 patent, col. 9, lines 43-44, 53. However, in each instance, the phrase exists in bare form and is not qualified by additional limitations. The situation is strikingly different with claim 1. There, as in claim 6, phrases containing the critical word "enable" appear twice. However, in each instance, the phrase is qualified by additional limitations. In the first mention, "to enable the sensing module" is qualified by "to respond to the signal transmitted by the transmitter to produce an output response." Id., col. 8, lines 63-66 (emphasis added). In the second mention, "to enable the receiving circuit in the sensing module" is qualified by "whereby the receiving circuit can respond to signals transmitted by the transmitter module to produce a response . . . ." Id., col. 9, lines 9-12. Hence, by virtue of the plain language of the claims, what is being enabled in claim 1 appears to be different than what is being enabled in claim 6.

The specification likewise seems to imply that the receiving circuit can be "enabled" in two different ways. On the one hand, the schematic in Figure 4 and the corresponding description support the notion that the invention involves partial enablement, i.e., that part of the receiving circuit can constantly receive signals, but another part must be "enabled" to respond and to produce an output response. On the other hand, the specification contains several passages clearly indicating that the invention involves total enablement. That is, unless the receiving circuit has been "enabled," it is inoperative with respect to all of its functions--receiving signals, responding to them, or producing an output response. Although the apparent inconsistencies in the specification gives us cause for some concern, we are persuaded that we should attempt to construe the claims to preserve the patent's validity. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1557, 37 USPQ2d 1609, 1617 (Fed. Cir. 1996) ("When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity."). Hence, in an attempt to reconcile the internal inconsistencies of the patent specifications, we construe claim 1, with its additional limitations, to require partial enablement, whereas claim 6, with its unqualified language, to require total enablement.

Although the district court erred in its construction of claim 1 so as to require total enablement of the receiving circuit, we conclude that it was harmless error in light of our earlier conclusion that none of the Code Alert products could be found to infringe claim 1. On the other hand,

even though the district court's construction of the enablement limitation was proper with respect to claim 6, we must still decide whether its subsequent determination of noninfringement as to that claim was correct.

There is no dispute that in all of the Code Alert products, the circuitry preceding the microprocessor can continuously receive signals. See Senior Tech, 58 F. Supp. 2d at 1083 ("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."). Hence, the structure in the accused products corresponding to the "receiving circuit" in the '155 patent does not have to be "enabled," as claim 6 requires, in order to receive transmitted signals. Therefore, it cannot be said that the district court committed clear error when it concluded that the CA9000, along with the rest of the Code Alert products, did not infringe Claim 6, either literally or under the doctrine of equivalents. Therefore, we affirm the district court's conclusion of noninfringement of claim 6 with respect to the remaining Code Alert product, the CA9000.

### III

With respect to the cross-appeal issues, R.F. Tech challenges the district court's conclusion on the issues of claim definiteness, invalidity, inequitable conduct, and attorneys' fees.

#### A

R.F. Tech's claim definiteness argument is based on the fact that the specification appears to contain some internal inconsistencies. Whether the claim definiteness requirement is met in a particular patent is freely reviewable on appeal as a question of law. Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). As discussed above, we have resolved the inconsistencies by pointing out the different requirements of the respective "enablement" limitations in claims 1 and 6. Therefore, as a matter of law, we hold that the specification does not fail to satisfy the claim definiteness requirement as codified in 35 U.S.C. § 112, ¶ 2 (1994).

#### B

R.F. Tech also challenges the district court's finding that it failed to prove by clear and convincing evidence that the '155 patent was invalid pursuant to 35 U.S.C. § 102(b) (1994).

Pursuant to 35 U.S.C. § 102(b), an inventor is not entitled to patent his invention if it is described in 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 application for the patent. Whether an invention was described in a printed publication, in public use, or on sale within the meaning of section 102 (b) is a question of law that this court reviews de novo. See Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 549, 16 USPQ2d 1587, 1591 (Fed. Cir. 1990). Factual findings underlying the district court's legal conclusion, on the other hand, are subject to the clearly erroneous standard of review. Fed. R. Civ. P. 52(a). A conclusion that a section 102(b) bar invalidates a patent must be based on clear and convincing evidence, Manville Sales, 917 F.2d at 549, 16 USPQ2d at 1591, and must be drawn in light of the "totality of the circumstances." Id. at 549, 16 USPQ2d at 1591; Moleculon Research Corp. v. CBS, Inc., 793

F.2d 1261, 1266, 229 USPQ 805, 808 (Fed. Cir. 1986).

The printed publication at issue is a St. Louis Post-Dispatch article, published on July 5, 1984, generally describing an early high frequency prototype system that was installed in a nursing facility. According to the article, "[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 . . . ." Senior Tech, 58 F. Supp. 2d at 1085. The article does no more than give a general description of the basic functionality of a wanderer system. We discern no error in the district court's finding "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." Senior Tech, 58 F. Supp. 2d at 1093.

The district court also determined in its findings of fact that the inventor "did not add a door switch to his invention until March or April of 1985." Id. at 1086. Although there was conflicting testimony from the parties' witnesses, we cannot say that the district court clearly erred in its finding. Given that door switches were not added until March or April of 1985, the prototype systems that were installed in nursing homes prior to the critical date lacked door switches. Therefore, the invention disclosed by the '155 patent was not in public use nor on sale pursuant to section 102(b).

### C

R.F. Tech likewise challenges the district court's finding that it failed to establish inequitable conduct with regard to the prosecution of the '155 patent.

At issue is the patentee's failure to disclose two potential prior art references: (1) the St. Louis Post-Dispatch article, dated July 5, 1984, which reported the success of a prototype system in a field test, and (2) the fact that early versions of the claimed invention were installed in two nursing homes prior to the critical date of January 13, 1985.

It is inequitable conduct to withhold material information from a patent examiner or to submit false material information with the intent to deceive or mislead the examiner into granting a patent. Molins PLC v. Textron, Inc., 48 F.3d 1172, 1178, 33 USPQ2d 1823, 1826 (Fed. Cir. 1995). Inequitable conduct is an equitable issue committed to the discretion of the district court. Therefore, we review the district court's determination for abuse of discretion. See Elk Corp. v. GAF Bldg. Materials Corp., 168 F.3d 28, 30, 49 USPQ2d 1853, 1855 (Fed. Cir. 1999). The determination of inequitable conduct requires a two-step analysis. The first step requires the trial court to determine (1) whether the withheld reference meets a threshold level of materiality, and (2) whether the evidence shows a threshold level of intent to mislead the PTO. See Baxter Int'l, Inc. v. McGaw, Inc., 149 F.3d 1321, 1327, 47 USPQ2d 1225, 1228-29 (Fed. Cir. 1998); Halliburton Co. v. Schlumberger Tech. Corp., 925 F.2d 1435, 1439, 17 USPQ2d 1834, 1838 (Fed. Cir. 1991). These threshold issues must be proven by clear and convincing evidence, and the district court's determinations concerning them are reviewed under the clearly erroneous standard and will not be disturbed unless this court has a "definite and firm conviction that a mistake has been committed." Elk Corp., 168 F.3d at 30, 49 USPQ2d at 1855; see also Kingsdown Med. Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 872, 9 USPQ2d 1384, 1389 (Fed. Cir. 1988) (en banc).

The district court determined that both references met the required threshold level of

materiality. However, it concluded that the inventor had no intent to deceive the PTO because it was "unclear that [the inventor] 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." Senior Technologies, Inc., 58 F. Supp. 2d at 1086. R.F. Tech offers as evidence the inventor's knowledge of the existence of prior systems based on having installed them and urges us to find intent based on the materiality of the omissions. Since "[i]nequitable conduct' is not, or should not be, a magic incantation to be asserted against every patentee," nor is an "allegation established upon a mere showing that art or information having some degree of materiality was not disclosed," FMC Corp. v. Manitowoc Co., 835 F.2d 1411, 1415, 5 USPQ2d 1112, 1115 (Fed. Cir. 1987), we do not find that the evidence offered by R.F. Tech is sufficient to conclude that the district court abused its discretion in finding no inequitable conduct.

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R.F. Tech's last contention relates to the award of reasonable attorneys' fees under 35 U.S.C. § 285 (1994). The prevailing party must prove the existence of an "exceptional" case by clear and convincing evidence under section 285, a question of fact that we review under the clearly erroneous standard. See Hoffmann-La Roche Inc. v. Invamed Inc., 213 F.3d 1359, 1365, 54 USPQ2d 1846, 1850 (Fed. Cir. 2000). We find, as did the district court, that R.F. Tech has not offered sufficient evidence to persuade us that we are dealing with an "exceptional" case that would warrant the award of reasonable attorneys' fees.

## COSTS

No costs.

## FOOTNOTES:

\* Senior Judge Smith heard oral argument in this case but because of illness was unable to participate in the disposition. This case was decided by the remaining judges in accordance with Fed. Cir. R. 47.11.

[1] The district court recognizes this notion in its findings of fact number 16, where it states, "[t]he door switch electrically disconnects the left-hand part of the receiving circuit from the right-hand part of the receiving circuit. While the left hand is still operating, the right hand is inoperable, or disabled." Senior Tech, 58 F. Supp. 2d at 1082-83. Hence, while it is apparent that "transistor 112 can receive no signal when the door is closed," id., the receiving circuit as a whole can indeed receive signals transmitted by the transmitters worn by the wanderers.

[2] In its written description, the '155 patent indicates in no less than four passages that the receiving circuit cannot receive signals from the transmitter until the door is open. See '155 patent, col. 1, lines 55-58; col. 3, lines 52-55; col. 4, lines 39-44; col. 8, lines 14-16. Hence, the textual language of

the written description indicates that the device is unable to receive signals without it being first enabled.