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

SENIOR INDUSTRIES,
INC. Plaintiff/Counter-Claim Defendant.
v.
THOMAS AND BETTS CORPORATION, Diamond Communications Products Inc. and Sachs Communications, Inc,
a/k/a/ Sachs Worldwide Company Defendants/Counter-Claim Plaintiffs.

Sept. 28, 2001.

MEMORANDUM OPINION AND ORDER

GUZMAN**, J.**

I) *INTRODUCTION*

Senior Industries, Inc. ("Senior Industries") brought this patent infringement action against Thomas and Betts Corporation, Diamond Communications Products, Inc. and Sachs Communications, Inc. a/k/a SACHS WORLDWIDE COMPANY ("Defendants"), alleging that Defendants infringed Senior Industries Patent Nos 4,993,960; 5,006,074 and 5,160,271 (" '960, '074, and '271 patents.") respectively.

All three of these patents describe electrical grounding clamps that attach to a metal electric meter box/enclosure with the capability to provide a mechanical and electrical connection to the meter box. This electrical connection is to provide an expedient grounding means for a telephone interface box. The '271 patent, in addition, provides a support to mount the telephone interface box as well as to provide a grounding means. The patents are asserted against two of the Defendant's product lines. Specifically, Thomas and Betts' (Diamond Industries, Inc.) "40-200X METER BOX GROUND CLAMP" which is available in a series of sizes, and Defendant's "SC51-X BONDING AND GROUNDING HARDWARE" which is available in a variety of configurations. The 40-200X product line allegedly infringes all three of Senior Industries asserted patents; the SC51-X product line allegedly infringes only the '960 patent.

The parties submitted claim construction briefs in which 23 claims are in dispute. The '960 patent has a total of nine disputed claims; independent claim 1 with its dependent claim 2, independent claim 4 with its dependent claims 5 and 8, and independent claim 10 with its dependent claims 11, 13, and 14. The '074 patent has a total of thirteen asserted claims in two groups; independent claim 1 with its dependent claims 2, 3, 5, 6, 7, 8, 10, 11, and 12, and independent claim 15 with its dependent claims 18 and 21. The '271 patent has one asserted claim, independent claim 26. Accordingly, the court now considers the proposed claim construction.

The asserted patents by Senior Industries and the accused infringing Defendants' products provide an economical way to ground a building's auxiliary residential electrical systems such as telephones and cable

television systems through a existing ground system that was established for the building's main electrical service. Usually the main electrical service is grounded through a dedicated grounding rod or connected to the residential water service piping, provided that it is electrically conductive (i.e. not a plastic pipe system). Alternatively, the telephone service and/or the CATV service could provide its own dedicated ground rod or direct connection to the water piping system. However, this would require additional material costs and installation time that would ultimately be a burden on the building owner either by a higher initial installation fee or through higher periodic service fees. Both parties products provide the means to make a mechanical and electrical connection to a metal meter box.

Senior Industries' three patents describe either a fixed sized or an adjustable C-shaped clamp that can straddle a meter box and has a special clamping screw that can securely attached this clamp both mechanically and electrically to the meter box. The '960 patent describes a fixed length strap clamp, the '074 patent describes an adjustable strap-clamp which is adjustable in course graduations and the '271 patent describes an adjustable strap-clamp that is adjustable in fine graduations. The '271 patent additionally has a bracket to support a telephone interface box.

Defendants' products, the 40-200X series and the SC51-X series provide a similar function. The 40-200X series is an adjustable C-shaped clamp that is available in a variety of lengths and has four adjustable positions. This product similarly attaches to an electrical meter box by straddling its top, bottom or side to provide a mechanical and electrical connection to the meter box. The SC51-X series of products are designed to attach to a corner, end, or flange of a meter box and similarly provide an electrical and mechanical connection to an electrical meter box to allow the auxiliary electrical systems to be grounded. A significant feature of all of the products is that they are attached or connected to the electrical meter box by not penetrating the metal. They are designed to penetrate only an exterior coating of the electrical box that may be non-conductive to insure a positive electrical connection. As an alternative to this clamp, a serviceman could punch or drill a hole in the electrical meter box and attach his ground wire by a normal self-tapping or sheet-metal screw; but, this would subject the serviceman to the risk of an electric shock if his punch or drill touches an energized wire enclosed in the meter box. Moreover, any penetration or holes in the electric meter box would be a path for moisture to enter the box that could cause a possible corrosion or an electric short circuit problem.

II) *ANALYSIS*

I. Standard for Claim Construction

A patent infringement analysis requires two steps: proper construction of the asserted claim and a determination of whether the accused method or product infringes the asserted claim as properly construed. Vitronics Corp. v. Conceptronic, Inc. 90 F.3d 1576, 1581-82 (Fed.Cir.1996). In determining the proper construction of a claim, "the court should look first to the intrinsic evidence of record, *i.e.* the patent itself, including the claims, the specification, and if in evidence the prosecution history." Id. at 1582. The court should begin with the language of the claims themselves, which defines the bounds of claim scope. York Products., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed.Cir.1996). Claim terms are to be given their ordinary meaning and accustomed meaning. Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999). There are two instances in which a court may be compelled to give the definition of a term a meaning other than the ordinary and accustomed one. First, a patentee may choose to be his own lexicographer by clearly stating the special definition of the term in the patent specification or file history. Id. at 990. The second arises when the terms chosen by the patentee "so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used."

Id. Ambiguities in a claim should be construed against the patentee, given the applicant could have prevented the ambiguities through clearer claim drafting. Hoganas AB v. Dresser Indus., 9 F.3d 948.

The court next looks to the patent specification to aid in defining the terms used in the claims. The specification contains a written description of the invention that must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Vitronics, 90 F.3d at 1582. Consequently, the specification is "always highly relevant to the claim construction analysis" and "is usually dispositive; it is the single best guide to the meaning of a disputed term" *Id*.

Third, the court also may consider the prosecution history of the patent, if in evidence. *Id*. The prosecution history can and should be used to understand the language in the claim, but it cannot be used to "enlarge, diminish, or vary" the terms in the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed.Cir.1995)(*en banc), aff'd* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

Intrinsic evidence is "the most significant source of the legally operative meaning of the disputed claim language" and, ordinarily, the intrinsic evidence, alone, is sufficient to resolve any ambiguities and determine the meaning of a disputed claim term. Vitronics, 90 F.3d at 1582-83. When the intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence, *e.g*. expert testimony, for the purposes of claim construction. Id. at 1583.

We may, however, rely on extrinsic evidence to interpret claims if claim language "remains genuinely ambiguous after consideration of the intrinsic evidence." Bell & Howell Document Management Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed.Cir.1997). Extrinsic evidence may be considered only to assist in the court's understanding of the patent, not to vary or contradict the term of the claims. Markman, 52 F.3d at 981. For example, extrinsic evidence may be helpful in explaining the meaning of technical terms of art that appear in the patent and prosecution history. *Id*. Opinion testimony of experts and the inventor, however, should be treated with "utmost caution" and may only be relied upon if the patent documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms. Such instances rarely, if ever, occur. Vitronics, 90 F.3d at 1585. Having set forth the relevant standards, we now construe the disputed claim terms.

II. Claim Interpretation

'960 PATENT

'960 PATENT **CLAIM 1**

Claim 1 of the '960 patent is an independent claim that reads as follows as:

[a] A system for grounding a telephone system and an electrical power system,

comprising:

[b] an electrical utility box for the electrical power system;

[c] a ground mechanism;

[d] a first electrical conductor connecting the ground mechanism to the utility box for electrically grounding the utility box;

[e] a clamping device connected to the utility box,

[f] and having securing means for penetrating the outer surface of the utility box without penetrating the inside of the utility box; and,

[g] a second electrical conductor for connecting the clamping device to the ground connection for the telephone system,

[h] whereby, the ground mechanism for the electrical power system serves the dual purpose of grounding the telephone system.

The parties disagree on the construction of elements [b], [c], [d], [e],[f] [g], and [h]. With respect to element [b] Senior Industries argues that "an electric utility box for electrical power" should be interpreted to mean "an enclosing structure (e.g., a box or cabinet), which holds components of electrical power equipment (e.g. a meter) and can also conduct electricity." Thomas and Betts, on the other hand, asserts that the term "an electrical utility box for electrical power" is limited to an electrically conductive hollow box enclosure (e.g. for mounting electrical power equipment). We look to the claim language, the specification and the prosecution history for an understanding of this element.

The claim language references "an enclosing structure." This language suggests that the box is hollow. Furthermore, the specification discloses an electric utility box as a metal box enclosure of rectangular shape which mounts a power meter. (See Exhibit A, Col. 3, lines 40-45). The specification notes that "while the system is illustrated in connection with an electric utility box, it will be apparent that the novel clamp 30 can be used any time an electrical and mechanical connection is to be made to a metal box enclosure." (See Exhibit A. Col. 4, lines 48-52). With respect to the metal box being hollow, this limitation was brought into the patent by an amendment by Senior Industries (See Amendment B, p.4). The meaning of the term "electrical utility box" is unambiguous in light of the intrinsic evidence. The written descriptions and the history lead us to conclude that the electrical utility box is hollow as Thomas and Betts asserts. Therefore, the proper construction for element [b] is "an electrically conductive hollow box enclosure (e.g. for mounting electrical power equipment).

Element [c]-a ground mechanism is also disputed. Thomas and Betts interprets this element to be "an elongated ground rod sunk into the ground" while Senior Industries suggests the proper interpretation to be "a structure (such as a rod or pipe-possibly including several elements) which makes an electrical connection with the earth (i.e., the "ground"), such that dangerous voltages cannot build up in the electrical power system." The proposed constructions are really not in conflict. Senior Industries interpretation is more descriptive and clearly tracks the language in the specification. For example, the specification states the following:

Whether the utility box has an overhead feed or an underground feed, the metal box itself must be electrically connected to ground G through a suitable grounding system. For example, a conduit 16 holds a large size grounding wire 18 which is connected through a clamp 20 to an elongated grounding rod 22 sunk into the ground G.

(the '960 patent, col. 3, lines 51-57 (Ex. A.)).

This passage from the patent specification confirms that the inventor intended the terms to be accorded their ordinary meaning. Furthermore, an examination of the prosecution history supports the notion that the ground mechanism is not limited to a ground rod, as the amendments that were made to Claim 1 include the change in the original words "ground rod" to "ground mechanism". This substitution of the broader term "mechanism" for the narrower term "rod" confirms that the inventors intent was to cover grounding mechanisms, and not just grounding rods. (See Exhibit H; 7/12/90 Amendment C, pp. 1 and 4). As such, the proper construction of element [c] is "a ground mechanism which makes an electrical connection with earth" and is not limited to a sunken ground rod.

Element [d] is described as "a first electrical conductor connecting the ground mechanism to the utility box for electrically grounding the utility box." Senior Industries puts forth that the correct interpretation of this element is "a structure (possibly including several elements such as grounding wire and a clamp), which can transmit electricity from the utility box to the ground mechanism so as to ground the utility box." Thomas and Betts argues that "a ground wire connected at one end to the ground rod and at the other end to the meter box enclosure." Senior Industries interpretation is supported by the language of the specification. The specification states the following:

For example, a conduit 16 holds a large size grounding wire which is connected through a clamp 20 to an elongated grounding rod 22 sunk into the ground G. Typically, this grounding rod 22 may be six feet or more in length and is located within three feet or other close proximity to the base of the building. Ground wire 18 is then connected to a grounding bracket (not illustrated) within the electric box in a known manner.

(The '960 patent, col. 3, lines 54-62).

This passage confirms that the inventor intended the claim terms to be accorded their ordinary meaning and the specification supports Senior Industries interpretation of such. Therefore, Senior Industries's more descriptive claim construction shall be applied to element [d].

The term "clamping device," element [e] of Claim 1, is a major area of dispute between the parties. Thomas and Betts asserts that this term is limited to the embodiment described in the patent specification which describes an elongated C-shaped clamp. Senior Industries argues that a broader construction should be afforded to the clamping device based upon the ordinary meaning of the claim language. More specifically, Senior Industries claims that the proper interpretation of a clamping device connected to the utility box is "a clamp (possibly including several elements) having parts which (i) mechanically fasten the clamp to the utility box and (ii) electrically connect the clamp to the utility box".

Normally, an element in a patent claim should have its broadest meaning and not be limited to the embodiment in the specification, but the term "clamping device" is a vague and ambiguous term without adequate structure for one skilled in the art to ascertain what Senior is claiming. One may be his own lexicographer and define an ambiguous term in the patent specification or prosecution history. Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1578, (Fed.Cir.1996) Hence, one interpreting a vague or ambiguous claim must refer to intrinsic evidence to ascertain the intended definition of the term. The "clamping device" term lacks adequate structure for one skilled in the art to fully understand what Senior Industries is claiming.

Looking to the specification and file history, it is clear that the intent of this element was to embody an elongated C-shaped clamp wherein the base is longer than one of the sides of the metal box enclosure and having a pair of opposed arms so that the arms are connectable to the box on opposite sides. The specification reads as follows:

More specifically, the clamping device comprises an elongated C-shaped clamp which connects to the opposite sides of the utility box.

(Col. 2, lines 28-30).

It is a further object of this invention to provide an improved clamping device which is connectable to a metal box enclosure on opposite sides of the box and having a securing means for penetrating the outer surface of the box without penetrating the inside of the box, and including mechanism to prevent the inadvertent movement of the clamp while being clamped.

(Col. 3, Lines 3-9).

A clamp 30 having an elongated base 32 is mechanically and electrically connectable to utility box 10. The elongated base 32 is larger than one of the sides of the box so as to extend beyond the box side. A pair of arms then extend from the ends of the [b]ase to engage and clamp the box there between, as will be apparent.

(Exhibit A, Col. 4, lines 23-28)

Referring to Figs. 3-8, the novel clamp 30 can be considered an elongated C-shaped or U-shaped clamp and includes a first arm or side portion 36 and a second arm or side portion 38 extending upwardly from a common, elongated base 32.

(Exhibit A, Col. 4, lines 56-60).

Furthermore, in every figure of the patent in which the clamp appears, it is shown as an elongated C-shaped clamp having arms which are positioned on opposite sides of the metal box and the prosecution history reveals the elongated base to be substantially longer than the length of the arms. (Exhibit B, Amendment B, p.4). Therefore, it is proper to limit this term to the embodiment described in the specification. The term "clamping device" shall be defined in accordance with Thomas and Betts' construction "as an elongated C-shaped clamp wherein the base is longer than one of the sides of the hollow metal box enclosure and having a pair of opposed arms so that the arms are connectable to the box on opposite sides of the box. The base of the clamp is substantially longer that the arms".

The "securing means" term in element [f] is disputed between the parties. The parties agree that this element is written in a "means-plus-function" format. A "means-plus-function" claim recited in general terms is a "means" for performing a precisely stated function without identifying the particular structure, material, or acts of the claimed invention. The statute 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.

35 U.S.C. s. 112, para. 6.

Thus, the scope of a means-plus-function claim is strictly limited to the "corresponding structure, material or acts" described in the specification, and equivalents of that structure. *Id. see also* WMS Gaming, Inc. v. International Game Technology, 184 F.3d 1339, 1347 (Fed.Cir.1999). Kemco Sales Inc. v. Control Papers Co., 208 F.3d 1352, 1360 54 U.S.P. Q.2d 1308, 1313 (Fed.Cir.2000) explains the following:

Section 112, paragraph 6 provides that a patentee may define the structure for performing a particular function generically through the use of a means expression, provided that it disclosed specific structure(s) corresponding to that means in the patent specification. *See* 35 U.S.C. section 112, Para 6 (1994); Atmel, 198 F.3d at 1380-82, 53 USPQ 2d at 1229-31 (holding that the structure supporting a means-plus-function limitation must be disclosed in the specification); Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042, 25 U.S.P.Q.2d 1454 (Fed.Cir.1993)("The applicant must describe in the patent specification some structure which performs the specified function.") As such, we have referred to Section 112, paragraph 6 as embodying a statutory *quid pro quo*. *See e.g. Atmel,* 198 USPQ2d at 1381, 53 USPQ2d 1896, 1900 (Fed.Cir.1997)("Th[e] duty to link or associate structure to function is the *quid pro quo* for the convenience of employing Section 112, Para. 6"). If a patentee fails to satisfy the bargain because of a failure to disclose adequate structure, the claim will be rendered invalid as indefinite under section 112, paragraph 2. *See* In re Donaldson Co., 16 F.3d 1189, 1195, 29 U.S. P.Q.2d 1845, 1850 (Fed.Cir.1994)(*en banc*).

Kemco, at 1313.

In other words, although an applicant can choose "means-plus-function" claim language rather than specifically describing the structure of his invention, the scope of the "means" for performing the stated function must be limited to the structure he specifically disclosed in the specification, and equivalents thereof.

The structure linked to the "securing device" in the '960 patent specification describes a threaded bolt with a special end surface to form the mechanical and electrical connection to the metal box. The best mode or preferred embodiment described in the patent specification is a fine threaded bolt with a special end that has a pointed center that extends past the end surface to prevent the clamp from walking. The outer edge (periphery) of the end surface has an abrading surface comprised of ridges and grooves to mill through any paint corrosion or other non-conducting coating on the surface of the metal box. The center point is designed to penetrate the box's surface, but not to "punch" through the metal. This special bolt is threaded though one of the clamp's ends that has internal threads to accommodate it. Stated differently, the securing means for the clamp "includes a serrated end surface which will abut and abrade the painted surface of the utility box and additionally includes a projecting point which prevents the clamp from moving or "walking" off the surface of the utility box as the system is secured to the box." (Exhibit A, Col. 2 lines 30-36).

As previously concluded the element of a "clamping device" as properly construed includes a C-shaped clamp having an elongated base such that the base is substantially longer than the arms which extend from the base. The arms are positioned adjacent opposite sides of the utility box. Although Senior Industries references in the specification at line 7 of Col. 5 that this is only "one embodiment" of a securing means, neither the specification nor the figures disclose or illustrate an alternative embodiment in which the

securing device is located in a position other than a threaded hole formed in an arm of the C-shaped clamp. The specification further discusses the special end surface of the bolt with reference to Figs. 5-7 which states the following:

The terminal or free end of 54 of bolt 48 has a special end surface 56. Centerpoint 58 is generally cone-shaped. However, center point 58 extends for a relatively short length past end surface 56. Center point 58 is used to prevent inadvertent movement or "walking" of the clamp 30 as it is being secured. The edge end surface 56, best illustrated in Figs. 5-7, is formed with an abrading surface 60 comprising grooves 62 and 64. Depending on the hardness of the material to which the clamp is to be applied, however, conventional machining techniques used in the fabrication of bolts may provide an abrading surface of sufficient roughness to grin through the material of the box. Likewise, other penetrating end surfaces are usable including scoring or cutting. Alternatively, a knife-like edge (not shown) may be provided, such as disclosed in the inventor's co-pending application Serial No. 116, 899, filed November 3, 1987 and entitled "CLAMP," the disclosure of which is hereby incorporated by reference into this application.

(Exhibit A. Col. 5, lines 22-43).

Thus, a proper interpretation of the claim element "securing means" in view of the teachings in the specification is a bolt positioned within an opening in an arm extending outwardly from the elongated base member, the bolt having two distinct structures, an abrasive end surface that has been formed with sufficient roughness to grind through the surface of the metal utility box and a cone-shaped center point for penetrating the outside of the utility box without penetrating the inside of the utility box. The clamp is secured to the box by the bolt extending through one arm and the other arm contacting the utility box on an opposite side thereof. "Means" is not to be construed to require all of the structure disclosed in the specification for the preferred and/or alternate embodiments. All that is required is the amount of structure necessary to perform the claimed function. General Electric Co. v. United States, 215 Ct.Cl. 636, 572 F.2d 745 (Ct.Cl.1978). The specification also mentions other penetrating end surfaces as usable including scoring or cutting or a knife-like edge, and these end surfaces are described in sufficient detail to enable one skilled in the art to know what alternative embodiment could be used. Therefore, the proffered claim construction by Thomas and Betts shall be followed.

With respect to element [g] or the "second electrical conductor element" the issue is whether the correct interpretation has this conductor or wire serving as a ground for a telephone system or an electrical power system in general. Senior Industries denies that its patent was limited to a telephone system and points to language in the specification which provides that "the electrical connection can be for purposes of grounding or any other purposes for which an electrical connection is to be made to a metal, electrically conductive, box enclosure" (Patent '960, Column 4, lines 52-55). More specifically, Senior Industries contends that the proper interpretation of Claim 1 does not require that the reference to "telephone system" to be construed as a claim limitation for literal infringement because it is merely a reference to a representative environment in which the "system for grounding of Claim 1 can be used." Conversely, Thomas and Betts argues that the preamble reference is a limitation and the whereby clause in element [h] supports the telephone limitation system.

The specification reveals that the second electrical conductor is simply a ground wire. The ground wire is connected at one end to the C-shaped clamp which is mechanically and electrically mounted to the utility box. The other end of the ground wire is connected to the telephone system, i.e. the telephone interface box. (Exhibit A, Col. 2, lines 21-27 and Col. 4, lines 31-37). We conclude that this statement in the specification

cannot be used to broaden what was claimed, "the ground connection for the telephone system."

Senior Industries' argument that the patent specification evidences that the patent specification is for a "system of grounding" in general, is unsupported by language in the specification which we find to be vague at best. The specification does not go on to suggest which other systems the clamp could be applied to and the fact that the patent office did not reject Claim 1 in view of U.S. Patent No. 4,776,808 to Davidson is not outcome determinative. Why would the Patent Office reject a clamp with respect to a telephone systems based upon a patent dealing with conduit clamping pertaining to coaxial cables of a Community Antenna Television system?

A patentee is only entitled to what he specifically claimed in the patent and not what may be referenced in the specification. If a patentee omits to claim what he discloses in the specification, this information becomes public knowledge by the well established rule, "subject matter disclosed but not claimed, in a patent specification is dedicated to the public." Maxwell v. Baker, 86 F.3d 1098, 1106 (Fed.Cir.1996), Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed.Cir.1991). Hence, the second electrical conductor shall be strictly interpreted to what was claimed, specifically grounding a telephone system. The Thomas and Betts claim construction shall be followed for element [g].

'960 PATENT **CLAIM 2**

Dependent Claim 2 of Senior's '960, which relies on Claim 1 reads as follows:

[a] The system of Claim 1 wherein the electric utility box is generally rectangular and includes side surfaces which enclose the box,

[b] the clamping device compriing an elongated base longer than one of the side surfaces with a pair of arms extending from the ends of the base, the arms being located adjacent opposing sides surfaces of the box,

[c] one of the arms mounting the securing means for penetrating the adjacent outer side surface of the utility box.

Claim 2 is dependent on claim 1; therefore it is limited by the way Claim 1 is construed. Elements [a] and [c] must be interpreted consistently with Claim 1 thus the same interpretation of electric utility box and one of the arms includes a threaded hole for mounting of the threaded bolt having the special end surface are construed identically with Claim 1. Because the structure of the "clamping device" was found to be vague and ambiguous in the construction of Claim 1 we look to the intrinsic evidence to assist in its interpretation with respect to Claim 2. We construed that the "clamping device" as an elongated C-shaped clamp of which its base is longer than the sides of the hollow metal box it will attach to. The main issue of conflict between Senior Industries and Thomas and Betts proposed construction is whether the clamping devise is composed of one or two pieces to form the elongated base. Because the dependent claim is limited by its independent claim, and "clamping device" has been construed by the court in light of the patent specifications, the structure of the term "clamping device" with a base being comprised of "two members" is more than was disclosed by the patentee. To conclude that the base structure is comprised of more than one member is not supported by the specification or the diagram of the clamp. Moreover, the fact that Senior Industries specifically sought a separate patent for a two-piece base adjustable clamping device in their '074 patent provides further support through the extrinsic evidence that Senior Industries only had in mind a one piece

base, grounding clamp for its '960 patent. If the claim is to be read to have a two piece base it should have expressly stated that in the claims, hence any ambiguities in claim term will only allow a narrower interpretation consistent with what is supported by intrinsic evidence, specifically the patent specifications, drawings, and file wrapper. Therefore, the C-shape clamping device shall be given its ordinary meaning and be concluded to be a one piece base. Accordingly, the Thomas and Betts claim construction shall be followed for element [b].

'960 PATENT **CLAIM 4**

Claim 4 of the '960 patent is an independent claim that reads as follows:

[a] A system for grounding a telephone system and an electrical power system, comprising:

[b] an electrical utility box for the electrical power system;

[c] a ground mechanism;

[d] a first electrical conductor connecting the ground mechanism to the utility box for electrically grounding the utility box;

[e] a clamping device with a portion having a threaded opening adjacent the box,

[f] and a threaded bolt movable within the threaded opening and having an abrasive end surface for abutting and abrading the outer surface of the box as the bolt is rotated for penetrating the outer surface of the utility box without penetrating the inside of the utility box, and

[g] a second electrical conductor for connecting the clamping device to a ground connection for the telephone system,

[h] whereby the ground mechanism for the electrical power system serves the dual purpose of grounding the telephone system.

Claim 4 is essentially identical to Claim 1 except elements [e] and [f] in Claim 4 have more structure. Accordingly elements [a]-[d] and [g] and [h] are construed identically to the previously construed elements in Claim 1. The limitation which differs from Claim 1 recites:

a clamping device with a portion having a threaded opening adjacent the box and a threaded bolt movable within the threaded opening and having an abrasive end surface for abutting and abrading the outer surface of the utility box without penetrating the inside of the utility box.

The "clamping device" element is expanded in Claim 4 to include a "portion having a threaded opening adjacent to the box" to accept the "securing means" as construed in Claim 1. Claim 4 does not use the term "securing means" that was used in Claim 1, but actually describes the means. The means is a threaded bolt with an abrasive end to penetrate the outer surface of the metal box while not completely penetrating through the box.

The prosecution history reveals that this claim was originally a dependent claim on Claim 1, but was

modified to an independent claim which includes all of the elements of Claim 1, while specifically deleting the "securing means" language to specifically claim that means. Therefore, the added limitation is that the clamping device includes a threaded opening adjacent the box and a threaded bolt movable within the threaded opening. The threaded opening is made in an arm of the clamp which extends from the elongated base to position the bolt adjacent the metal box.

Element [f] describes the structure of the securing means as a threaded bolt, threaded into the threaded opening of the clamp, that has an abrasive end for abutting and abrading the outer surface of the electrical meter box. Since this element is not claimed in a means plus function format it will not be limited to the embodiment described in the specifications. Looking to the specification, the bolt is described as having a "special end surface 56 as illustrated in Figs. 5-7 [which] is formed with an abrading surface 60 comprising grooves 62 and ridges 64. (Exhibit A, Col. 5, lines 30-32). The specification also states that, depending on the hardness of the metal box, "conventional machining techniques used in fabrication of bolts may provide an abrading surface of sufficient roughness to grind through the material of the box. (Exhibit A. Col. 5, lines 32-36). The abrading surface designated in the figures is described as follows:

Abrading surface 60 mechanically scrapes the paint or other coating covering the box, and also penetrates dirt and/or corrosion from the outside surface of utility box 10 ... The point 58, which first penetrates the box, holds the bolt 48 against inadvertent movement of "walking" as abrading surface 60 is grinding or digging into the surface of the box.

(Exhibit A, Col. 5, lines 49-57).

This element has a specific structure to be broadly interpreted as any threaded device with an abrasive end that will penetrate the outer surface of a metal enclosure to achieve an electrical connection while not completely penetrating through the interior of the metal enclosure. Therefore, element [f] shall be construed in accordance with Thomas and Betts as "a threaded bolt having an abrasive end surface formed by grooves and ridges or an abrading surface that has been formed with sufficient roughness to grind through an outer surface of the metal box as the bolt is rotated".

'960 PATENT **CLAIM 5**

Claim 5 of Senior Industries' '960 patent is dependent on claim 4, and reads as follows:

The system of Claim 4 wherein the threaded bolt has a center point extending outwardly beyond the abrasive end surface to abut the outer surface of the box before the abrasive end surface makes contact.

Claim 5 which is a dependent claim of independent Claim 4 is held to the limitations of that claim. The specification states:

A center point 58 extends outwardly from end surface 56. Center point 58 is generally cone-shaped. However, center point 58 may be of various shapes. Preferably, as illustrated in Fig. 5, center point 58 extends for a relatively short length past end surface 56. Center point 58 is used to prevent inadvertent movement or "walking" of the clamp 30 as it is being secured.

(Exhibit A, Co. 5, lines 22-29).

We construe the threaded bolt with an abrasive end as a sufficient structure for a person with ordinary skill in the art to understand what is being claimed. We must be consistent with the interpretation in the independent claim as we analyze this dependent claim. The threaded bolt with an abrasive end in Claim 4, element [f], has a broad interpretation and is not limited to the preferred embodiment disclosed in the patent specification. Claim 5 narrows the structure of that element of Claim 4 to have a leading end at its axial center that extends outward from the abrasive surface to engage the surface of the utility box before the abrasive end surface makes contact. This center point could be of any reasonable shape, such as a tip segment of a cone or a top segment of a ball that extends beyond the abrasive surface. The ordinary reading of the claim supports this interpretation. Therefore, this claim will be construed as a threaded bolt which has an axial center that extends outward from the abrasive end surface to engage the surface of the utility box before the abrasive end surface makes contact. This center point could be any reasonable shape such as a tip of a cone segment, top segment of a ball, or any reasonably equivalent shaped tip that extends beyond the abrasive surface. Senior Industries' claim construction shall be followed allowing any reasonable shape of an axial center point that extends past the abrading surface.

'960 PATENT **CLAIM 8**

Claim 8 of Senior's '960 patent is a dependent claim of independent Claim 4 and reads as follows:

The system of claim 4 wherein the clamping device includes a second portion substantially parallel and opposing the first portion, the second portion having a point extending outwardly therefrom toward the first portion to abut the outer surface of the box whereby the point serves to prevent the second portion from moving across the outer surface as the clamping device is being secured to the box.

There is little difference in the proposed claim construction proffered by the parties regarding claim 8. Claim 8 being a dependent claim is limited to the limitation of Claim 4. The point or cone tip section would be on the C-shaped clamp arm directly opposite the arm that accommodates the threaded bolt with the abrasive surface and center point. The function of this point is to abut or in other words to engage into the metal box, but not to penetrate through the box with the purpose to prevent the C-shaped clamp from moving or walking about relative to the metal box. The interpretation based on the ordinary meaning of the claim terms should be acceptable to both parties. The proper claim construction is therefore "the C-shaped clamp includes a pair of arms, generally parallel, such that the arm opposite the one in which the bolt is mounted includes a cone shaped point or equivalent, on an inner surface for contacting the outer surface of the box in order to prevent the arm from moving across the box as the bolt securing the clamp is being tightened."

'960 PATENT **CLAIM 10**

Claim 10 of the '960 patent is an independent claim that reads as follows:

[a] A clamping device for mechanical and electrical connection to a metal box, comprising:

[b] an elongated base which spans the box and having a pair of arms extending from ends of the base for positioning the arms adjacent opposite sides of the box, the elongated base being substantially longer than the length of the arms,

[c] one of the arms being engageable with the adjacent side of the box,

[d] the other of the arms including a threaded opening and a threaded bolt moveable therein into engagement with the adjacent side of the box;

[e] first means on an end of the threaded bolt for abrading the outer surface of the side of the box to penetrate the outer surface without penetrating the inside of the hollow box,

[f] and the end of the threaded bolt includes second means for preventing the clamping device from inadvertent movement across the sides of the box as the threaded bolt is being tightened.

Elements [b] through [d], not including the preamble can be construed from the ordinary meaning that a person with ordinary skill in the art attaches to them. The construction proffered by both parties on these elements are essentially identical except for the elongated base structure and whether the second arm or portion of the C-shaped clamp that is threaded has a threaded bolt inserted therein. The analysis of the elongated base should be similar to Claims 1 and 2 above in which we referenced the specification to assist us in interpenetrating the vague term. The structure described in the specification is a single elongated piece and not a base structure that could infer a two or multiple piece base. The fact that Senior Industries '074 patent specifically addresses a two-piece base structure is clear evidence that Senior Industries did not have the intent or belief that a two or multiple piece base structure was claimed in the '960 patent. Regarding the threaded bolt, the claim language in element [d] expounds a threaded bolt therein the threaded opening of the clamp arm.

Elements [e] and [f] are written in a means-plus-function format and both parties agree in this format. Pursuant to 35 U.S.C. s. 112 para. 6, when one expresses a function in a claim, the structure is limited to what is disclosed in the specification. Therefore, the "first means" of element [e] shall be construed the same way we construed "securing means" in accordance with Thomas and Betts proffered interpretation of Claim 1, element [f], above. The structure was determined as a threaded bolt with a special end that has a center point that extends past the end surface to prevent the clamp from "walking". The end surface has an abrading surface comprising of ridges and grooves, or an abrading surface made by conventional machining techniques of sufficient roughness to mill through any paint, corrosion, or other non-conductive coatings on the surface of the metal box. The center point is designed to penetrate the box's outer surface, but not "punch" through the inner surface of the metal box.

The second means referenced in element [f] describes a function to prevent inadvertent movement or "walking" about the side of the metal box while the threaded bolt is being adjusted so as to tighten the clamp on the metal box. As with other means-plus-function claims we must look to the patent specification to establish the structure. The structure described is the aforementioned bolt in element [e] with specific emphasis on the center point describing the structure of the "securing means" encompassing the function of both element [e] and [f]. Therefore, the structure described for the "securing means" in Claim 1, element [f] will be applied to our construction of elements [e] and [f] collectively for Claim 10. Thus, the proper construction of the "second means" in element [f] in view of the teachings in the specification is a bolt positioned within an opening in an arm extending outwardly from the elongated base member, the bolt having two distinct structures, an abrasive end surface that has been formed with sufficient roughness to grind through the surface of the metal utility box and a cone-shaped center point for penetrating the outside of the utility box without penetrating the inside of the utility box.

'960 PATENT **CLAIM 11**

Claim 11 of the '960 patent is dependent claim on independent Claim 10 and reads as follows:

The clamping device of Claim 10 wherein the arm engageable with its adjacent side of the box includes additional means for preventing the clamping device from inadvertent movement across the sides of the box as the threaded bolt is being tightened.

This claim is also written in a means-plus-function format that describes the desired function of preventing the clamping device from inadvertent movement or "walking" as the threaded bolt is tightened. The specification discloses two structures to accomplish this function where the arm opposite the threaded bolt would have a cone shaped point or have an arm inclined or bent more toward the threaded bolt arm so the edge of the arm can penetrate or indent the metal box to prevent "walking". Both parties appear to be in agreement with this interpretation in their briefs, except for the disagreement as to the shape of the point in the arm opposite the threaded bolt. A cone-shaped point or its equivalent, as described in the '960 patent Col. 5, lines 58-63, shall be the construction of the means to prevent "walking".

'960 PATENT **CLAIM 13**

Claim 13 of the '960 patent is dependent on independent Claim 10 and reads as follows:

The clamping device of claim 10 wherein the second means for preventing inadvertent movement comprises a center point on the end of the threaded bolt extending outwardly beyond the abrading end surface to abut the outer surface of the box.

There is little dispute between the parties in construing this claim. The claim provides sufficient structure to the "second means" by interpreting the ordinary meaning in the claim. This is not a means-plus-function claim even though the term "means" is expressly stated in the claim, because the claim provides a sufficient definition to the claimed structure. And since this is not a means-plus-function claim we are not required to limit the structure to what is disclosed in the specification. The only difference in the parties interpretations is in their construction concerning the shape of the point; a "cone" shaped center point verses a "tip of a cone" which extends past the abrading end surface. Consistent with Claim 11, the construction of this claim shall include the reference to a cone shaped center point or an equivalent thereof.

'960 PATENT **CLAIM 14**

Claim 14 of the '960 patent is dependent on independent Claim 10 and reads as follows:

The clamping device of claim 10 wherein an additional means for preventing inadvertent movement is on the arm engageable with its adjacent side of the box and comprises a point formed on the engageable arm which abuts the outer surface of the box.

This claim too, is not a means-plus-function claim even though the term "means" is expressly stated in the claim, because the claim provides a sufficient definition to the claimed structure. And since this is not a means-plus-function claim we are not required to limit the structure to what is disclosed in the specification. As with the prior dependent claim, Claim 13, there is little dispute over construction other than the "tip of the cone" language Senior Industries uses in their construction verses Thomas and Betts construction using "cone shaped center point" language. Therefore, to be consistent with Claims 11 and 13 the proper construction shall read "cone shaped center point", or an equivalent thereof.

'074 PATENT **CLAIM 1**

Claim 1 of the '074 patent is an independent claim that reads as follows:

[a] An adjustable clamping device for mechanical and electrical connection to the sides of a conductor which may have a variety of different widths, comprising:

[b] a base spanning the conductor, said base having two separate elongated members, each member having an arm extending from one end of the base member positionable adjacent one side of the conductor;

[c] one of the arms including a threaded opening and a threaded bolt moveable therein for engagement with its adjacent side of the conductor,

[d] the threaded bolt having an abrading surface for abrading the side of the conductor to penetrate the outer surface thereof; and

[e] adjustment means for varying the length of the base within a predetermined range of lengths by securing the members to each other at a plurality of different positions

[f] whereby the clamping device is adjustable for different width conductors.

Elements [b] through [d] of this independent claim are drafted clearly enough to provide adequate structure; in other words, the ordinary meaning of the claim interpreted by a person of ordinary skill in the art would clearly convey the structure claimed. Consequently, these elements need not be limited to the embodiment disclosed in the specification. The main issue of difference in construing element [b] between the parties is whether the base is comprised of "two" or "at least two" elongated members. The ordinary language of the claim expressly states two members. It is not necessary to inject the claim's transition word "comprising" upon the construction of the individual elements. The definition of the open transition word "comprising" implies that the claimed device has at least two elements claimed. It is not necessary or required to impose the transitional language on the construction of each of the claim's elements. Therefore, element [b] shall be construed as two members.

The parties also substantially agree on the construction of element [c], except Thomas and Betts would like to add the limitation of "end surface." This is not expressly stated in the claim element, but can be inferred from element [d] which gives the structure to the threaded bolt. The proper construction would be only to read the ordinary language of each element, because the "all elements rule" requires each element of a claim to be separately identified on an accused device in an infringement suit. Therefore, Senior Industries claim interpretation is the correct interpretation.

Element [d] is a major point of contention between the parties. Thomas and Betts argues to limit the construction to the structure established by claim [4] of the '960 patent; however, we did not accept their interpretation because element [f] of claim 4 has sufficient structure to construe the meaning of the "threaded fastener" element. This element was not claimed as a means-plus-function format in either the '074 patent or the '960 patent; therefore, we will not be limited to the construction of the preferred embodiment in the patent specification. The proper construction is Senior Industries' interpretation.

Elements [e] and [f] are written in a means-plus-function format, therefore the construction of these claims will be narrowly limited to the structure disclosed in the specification. The claim language in element [e] states that the function of the "adjustment means" is "for varying the length of the base within a predetermined range of lengths, whereby the clamping device is adjustable for different width conductors." The '074 patent specification states:

While the system is illustrated in connection with an [sic] utility box 22, it will be apparent that the novel clamp 10 can be used anytime an electrical and mechanical connection is to be made to a conductor such as a hollow metal box enclosure. The system has particular utility to form an electrical ground to a conductor which is painted or otherwise coated with a non-conducting layer. An intimate electrical connection must be formed to the box. Such a box may have a wide range of physical dimensions.

(Exhibit B Col. 3, lines 53-64).

* * *

The length of the base 16 can be varied within a predetermined range of lengths so that clamp 10 can be secured to boxes 22 with widths falling within a wide range of lengths.

(Exhibit B. Col. 5, lines 43-36).

The point of dispute between the parties with respect to element [e] is the term "adjustment means." Both parties agree that this element is written in the means-plus-function format. The element only describes the function; the corresponding structure must be read from the patent specification pursuant to 35 U.S.C. s. 112 para. 6. Also, any structure described must be enabling in accordance with 35 U.S.C. s. 112 para. 1.

The specification describes two elongated members to form the C-shaped clamp. One member has a series of holes. The second member has a tab and a hole that can mate-up to the first member by aligning the tab and threaded hole to a pair of holes in the first member. After the holes in the first member are aligned, a bolt is inserted through the top member and threaded into the lower member to form a C-shaped clamp of a certain length. Other desired lengths can be obtained by matching the second member to a different pair of holes in the first member. The specification also makes reference to an alternative means by "other releasable means, such as clips and the like may be used." Therefore, the correct construction of "adjustment means" shall not be limited to the use of a tab and a threaded hole between the two members or as alternatively described in the specification, the tab can be substituted for a second threaded hole and the two elongated members can be fastened together by two bolts. Furthermore the specification states:

Alternate arrangements are possible so long as two spaced securing means as formed between the elongated base members to thereby keep the members in alignment once interconnected.

(Exhibit B. Col. 6, lines 26-29).

The proper interpretation of "adjustable means" is one which includes other reasonable connectors (such as clips and equivalents) to secure the elongated members together at varying positions depending on the width of the conductor. Therefore, a person skilled in the art could enable the specification of attaching the members of the base with clips or equivalents. Hence, the Senior Industries interpretation of "adjustment

means" shall be followed.

'074 PATENT **CLAIM 2**

Claim 2 is a dependent claim that relies on Claim 1 and is held to all of the limitations of Claim 1. Claim 2 reads as follows:

The adjustable clamping device of claim 1 wherein the adjustable means establishes a plurality of discrete, predetermined lengths, and means for selecting different ones of the discrete, predetermined lengths in order to correspond with different width conductors.

The parties agree that the claim is written in a means-plus-function format. The proffered construction by both of the parties is essentially identical. The only minor difference is whether the adjustment is achieved by a plurality of "holes" or the "equivalent of holes." Since there is no specific structure in the specification that discloses something other than "holes," it would not be proper to allow any equivalents in the claim construction. Therefore, Thomas and Betts interpretations shall be applied.

'074 PATENT **CLAIM 3**

Claim 3 is dependent on Claim 1 and is held to all of the limitations of Claim 1. Claim 3 reads as follows:

The adjustable clamping device of Claim 1 wherein each of the members has a hole for receiving the securing means therein when the holes are aligned with each other.

The disputed term between the parties, "securing means" must be interpreted in a mean-plus-function format. The claim does not specifically recite the function, but it can be implied from the independent Claim 1. The function is to connect the two elongated members together through the holes that are aligned between the two members to achieve the desired length of the C-shaped clamp. The structure described in the preferred embodiment is a bolt to connect or join the two members of the base. The specification also discloses other alternative means as "other releasable securing means, such as clips and the like, may be used" (Exhibit B. Col. 5, lines 37-39). A person skilled in the art would be able to enable these alternative means to permit this to be structure under means-plus-function. Therefore, the claim interpretation offered Senior Industries shall be applied.

'074 PATENT **CLAIM 5**

Claim 5 is dependent on Claim 3 which is dependent on Claim 1. Therefore, Claim 5 will be held to the limitations of both Claims 3 and 1. Claim 5 reads as follows:

The adjustable clamping device of Claim 3 wherein one of the members has a second hole and the other of the members has a tab formed thereon, with the second hole and the tab being positioned so that upon securing of the members, a portion of the tab rests within the second hole.

The parties construction of Claim 5 is essentially the same, the exception being that Thomas and Betts objects to Senior Industries use of the term "joined" instead of "secured" together referring to the two elongated members. The ordinary meaning of the claim supported by the patent specification will give the proper construction. A dependent claim should be construed in conjunction with the claim it depends upon and any construction should not add any ambiguities. The claim language and specification do not support a

claim construction where the base members are merely joined. Therefore, the proper construction is that the tab on one of the elongated members can extend through one of the plurality of holes in the other elongated member when the members are secured together. Accordingly, the Thomas & Betts claim construction shall apply.

'074 PATENT **CLAIM 6**

Claim 6 is dependent on Claim 3, which is dependent on independent Claim 1. Therefore, Claim 6 will be held to the limitations of both Claim 3 and Claim 1. Claim 6 reads as follows:

The adjustable clamping device of claim 3 wherein one of the members has a plurality of holes, each of which is movable in alignment with the hole on the other member to select a different, discrete length for the base.

The parties agree on the construction of Claim 6; therefore, no additional analysis is required by the court.

'074 PATENT **CLAIM 7**

Claim 7 is dependent on Claim 6, which is dependent on dependent Claim 3 and independent Claim 1. Therefore, Claim 7 will be held to the limitations of Claims 6, 3, and 1. Claim 7 reads as follows:

The adjustable clamping device of claim 6 wherein the length of the threaded bolt is greater than the individual discrete adjustment increments selectable for the base to provide a continuous range of adjustment for different width conductors.

The parties basically agree in their construction of Claim 7. The proper construction will be held to be that the threaded bolt has to be longer than the spacing between the adjustment holes to insure engagement of the threaded bolt to the conductor (metal box).

'074 PATENT **CLAIM 8**

Claim 8 is dependent upon Claim 1 and is limited to all of Claim 1's limitations. Claim 8 reads as follows:

The adjustable clamping device of claim 1 wherein the end of the threaded bolt includes means for preventing the clamping device from inadvertent movement across the sides of the conductor as the threaded bolt is being tightened.

Claim 8 is written in a means-plus-function format with the specific function of preventing the clamping device from inadvertent movement across the sides of the conductor as the threaded bolt is being tightened. In accordance with 35 U.S.C. s. 112 para. 6 the structure to accomplish the purported function is limited to what is disclosed in the patent specification.

With respect to the means for preventing inadvertent movement of the clamp during the tightening of the threaded bolt, the specification states:

The terminal or free end 78 of bolt 70 has a special end surface 80. A center point 82 extends outwardly from end surface 80. Center point 82 is generally cone-shaped. Preferably, as illustrated in FIG. 9, center point 82 extends for a relatively short length past end surface 80. Center point 82 is used to prevent

inadvertent movement or "walking" of the clamp 10 as it is being secured.

(Exhibit E. Col. 7, lines 11-17)

* * *

As head 72 of bolt 70 is turned to secure clamp 10 to utility box 22, center point 82 contacts utility box 22 before the abrading surface 84 and first begins to penetrate the outside surface of utility box 22.

(Exhibit E, Col.7, lines 30-33).

* * *

The center point 82, which first penetrates the box, holds the bolt 70 against inadvertent movement or "walking" as abrading surface 84 is grinding or digging into the surface of the box.

(Exhibit E, Col. 7, lines 39-43).

Senior Industries' proposed construction that the center point be of any shape is incorrect. As Figures' 8 and 9 reveal it is the entire structure of the center point, i.e. both the "cone wall" and the "tip of the cone" which corresponds to the function of preventing walking. Therefore, the proper construction of claim 8 is an axial cone shaped center point on the end of the threaded bolt that engages the side of the conductor and prevents movement or "walking" as the threaded bolt is being tightened. There is no reason to provide any additional limitations regarding the abrading surface because it performs a separate and independent function.

'074 PATENT **CLAIM 10**

Claim 10 is dependent on independent Claim 1 and is held to all of Claim 1's limitations. Claim 10 reads as follows:

The adjustable clamping device of Claim 1 including anti-movement means for preventing the clamping device from inadvertent movement across the sides of the conductor as the threaded bolt is being tightened.

Claim 10 is written in a means-plus-function format with the specific function to prevent the clamping device from inadvertent movement across the sides of the conductor as the threaded bolt is being tightened. In accordance with 35 U.S.C. s. 112 para. 6 the structure required to accomplish the purported function is limited to what is described in the patent specification. The proper construction encompasses three separate structures to achieve the claimed function: (1) the axial cone shaped center point on the end of the threaded bolt, (2) the cone shaped center point in the C-shaped clamp arm directly opposite the arm with the threaded bolt, and (3) an alternative to the structure described in (2) as the arm being inclined or angled toward the bolt so the inner edge will dig-in or engage into the conductor to prevent "walking".

With respect to the cone-shaped point on the arm, the specification states:

In FIGS 3,5, and 6, a second, cone-shaped point 90 is formed on an inner surface 44 which extends

outwardly towards second side portion 14.

(Exhibit E, Col. 7, lines 46-49).

* * *

As clamp 10 is being tightened to utility box 22, second point 90 penetrates the outer surface of the utility box 20, thereby preventing walking.

(Exhibit E, Col. 7, lines 60-62).

Similar to the cone-shaped center point on the threaded bolt, the lead line for reference numeral 90 (the cone-shaped point on the arm) points to the entire cone-shape; not just the tip of the cone. Likewise the lead lines in Figures 3 and 5 also point to the "cone wall" portion of the point 90. The proper claim construction is essentially Senior Industries', but the axial point on the end of the threaded bolt and the arm opposite the threaded bolt should be limited to only a cone shaped center point and not a point of any shape.

With respect to the alternate structure to prevent walking, i.e. the arm being inclined toward the bolt, the specification states:

Alternatively, as illustrated in FIG. 10, the side portion 12' is inclined at an angle so

that the upper, innermost edge 92 will engage the box and dig in sufficiently to prevent walking. Contact edge 92 may comprise a knife edge, or alternatively, a serrated edge. Contact edge 92 functions to prevent inadvertent movement when the clamp 10 is being tightened.

(Exhibit B, Col. 7, lines 65-68; Col. 8, lines 1-3).

The claim language and specification supports a construction that the anti-movement means refers to (1) an axial cone shaped point on the end of the threaded bolt, (2) a cone shaped point on the arm directly opposite the arm with the threaded bolt, or alternatively, (3) the arm opposite the arm with the threaded bolt is inclined at an angle so that the upper, inner most edge, which has a serrated or knife edge, will engage the metal box to prevent walking of the clamp as it is being tightened.

'074 PATENT **CLAIM 11**

Claim 11 is dependent on Claim 10, which is dependent on independent Claim 1. Therefore, Claim 11 will be held to all the limitations of both claims 10 and 1. Claim 11 reads as follows:

The adjustable clamping device of claim 10 wherein the anti-movement means comprises a center point on the end of the threaded bolt extending outwardly beyond the abrading end surface.

Senior Industries proposed interpretation that the "center point" be construed as a "tip of a cone" is unsupported by the patent specification. The claim appears to be in a means-plus-function format, but it does not expressly state any function. However, it adequately expresses a structure. Therefore, the structure expressed in the claim will define the claim's construction. The construction shall read as a threaded bolt

with an axial cone-shaped center point extending beyond the abrading or abrasive end surface. This is in agreement with Thomas and Betts interpretation.

'074 PATENT **CLAIM 12**

Claim 12 is dependent on Claim 10, which is dependent on independent Claim 1. Therefore, Claim 12 will be held to all of the limitations of both Claim 10 and Claim 1. Claim 12 reads as follows:

The adjustable clamping device of claim 10 wherein the anti-movement means comprises a point formed on one of the pairs of arms extending to abut the side of the conductor.

The parties essentially agree on the construction of claim 12. The claim appears to be in a means-plus-function format, but it does not expressly state any function. However, it adequately expresses a structure. The construction shall read that the arm of the C-shaped clamp opposite the arm that accommodates the threaded bolt shall have a cone-shaped point to penetrate and engage into the conductor to prevent "walking" as the threaded bolt is being tightened against the conductor. The claim construction proffered by Thomas and Betts shall apply to this claim.

'074 PATENT **CLAIM 15**

Claim 15 of the '074 patent is an independent claim that reads as follows broken down into elements:

[a] An adjustable ground clamp for mechanical and electrical connection to the sides of a conductor which is to be grounded, comprising:

[b] a first elongated base member terminating in an end portion extending at an angle generally less than or equal to 90 ~from the first elongated base member;

[c] a second elongated base member overlapping said first base member and terminating in an end portion extending at an angle generally less than or equal to 90 ~from the second elongated base member;

[d] adjustment means for interconnecting the overlapped elongated base members at different positions to adjust the distance between the end portions to each be positioned closely adjacent a side of the conductor; and

[e] ground means mounted on one of the end portions and moveable into engagement with its adjacent side of the conductor for abrading the adjacent side surface to form an intimate electrical ground connection therewith.

Claim 15 is an independent claim. The parties agree on the construction of elements [b] and [c]; therefore, there is no need for the court to address these elements. However the parties disagree as to the construction of element [d], thus the court needs to address the interpretation of the "adjustment means". Both parties agree that the construction of "adjustment means" as set forth for Claim 1 of the '074 patent should be applied to this element. As determined in Claim 1 element [e], this is a means-plus-function claim; therefore, in accordance with 35 U.S.C. s. 112 para. 6 the structure to accomplish the desired function is limited to what is enabled in the specification. The best mode or preferred embodiment of the "adjustment means" for connecting the two elongated members to form the adjustable clamp consists of a member with a series of holes and the other member with a tab and a threaded hole that are connected together by a

threaded bolt. Alternatively, two bolts, or two tabs can be used to connect the two elongated pieces together in lieu of a bolt and a tab. (Patent '074, Column 6, lines 21-30) Also, we found in Claim 1 element [e] that other reasonable means that could be enabled by a person skilled in the art would apply as an "attachment means" Therefore, Senior Industries interpretation shall apply to "adjustment means".

Element [e] is also written in a means-plus-function format and is in dispute between the parties regarding the proper construction of "ground means". The function described in the claim is "for abrading the adjacent side surface to form an intimate electrical ground connection therewith". The structure to form this claim is limited to what is disclosed in the specification. Therefore, the "ground means" will be construed as a threaded bolt positioned within a threaded opening in an arm extending outwardly from the elongated base member, the bolt having two distinct structures, an abrasive end surface that has been formed with sufficient roughness to grind through the surface of the utility box and a cone-shaped center point for penetrating the outside of the utility box without penetrating the inside of the utility box.

'074 PATENT **CLAIM 18**

Claim 18 is dependent on independent Claim 15, and is held to all of Claim 15's limitations. Claim 18 reads as follows:

The adjustable ground clamp of claim 15 wherein one of the base members has a hole formed therein, and the other base members has a tab formed therein and extending into the hole.

The parties are in dispute as to the location of the tab on one of the elongated members. Senior Industries contends that the tab is a projection anywhere along the elongated member that can fit into a selected hole in the mating elongated member. Thomas and Betts construes the tab as a partial extension of the elongated member that is bent up. Once again the court will rely on the intrinsic evidence of the patent specification to determine the proper definition of "tab."

The claim language contains nothing from which its terms would be understood by one skilled in the art to be accorded any other meaning than their ordinary meaning. Although in the '074 patent, column 6, line 1, the specification expressly defines the tab as "formed at the end portion 62 of the first elongated member 50," it also goes on to describe an alternative means of connecting the two members together in column 6, lines 20-26. Since this is not a means-plus-function claim we are not required to limit the structure to what is disclosed in the specification as the preferred embodiment. In addition, there is no prosecution history limiting the ordinary interpretation or meaning of Claim 18 or its terms. Therefore, Claim 18 shall be construed to have a tab at the end of the elongated portion that is bent upright (i.e. 90 ~to the elongated member), or alternatively, two tabs spaced apart so as to secure the two elongated members together once interconnected as was disclosed in the specification.

'074 PATENT **CLAIM 21**

Claim 21 is dependent on independent Claim 15 and is held to all of Claim 15's limitations. Claim 21 reads as follows:

The adjustable ground clamp of claim 15 including means for preventing at least one of the end portions from inadvertent movement across the side of the conductor as the ground means is being secured to the conductor.

Both parties agree that Claim 21 should be interpreted the same as Claim 10 in the '074 patent. Both of these claims are written in a means-plus-function format. The function is to prevent the inadvertent movement of the clamp while it is being tightened. As we determined in Claim 10, the structure that is described in the specification consists of three parts: (1) the axial cone shaped center point on the end of the threaded bolt, (2) the cone shaped center point in the C-shaped clamp arm directly opposite the arm with the threaded hole, and (3) as an alternative to the structure described in (2), the arm opposite the threaded bolt arm being inclined or angled toward the bolt arm so the upper edge, which has a knife edge or serrated edge, will dig-in or engage into the conductor to prevent "walking." The proper claim construction is essentially Senior Industries', but the axial point on the end of the threaded bolt and the arm opposite the threaded bolt should be limited to only a cone shaped center point and not a point of any shape.

'271 PATENT

'271 PATENT **CLAIM 26**

Only Claim 26 of the '271 patent has been asserted by Senior Industries against some of the alleged infringing products. Claim 26 of the '271 patent is also the subject of a motion for summary judgment which must be decided subsequent to this ruling. Claim 26 of the '271 patent is an independent claim that reads as follows:

[a] A clamp device for mechanical and electrical connection to the sides of a conductor which is to be grounded, comprising:

[b] a base spanning the conductor, said base having first and second overlapping elongated members, in linear alignment with each other, each member having an arm extending from one end of the base member positionable adjacent one side of the conductor;

[c] said first member having at least one hole, and said second member having a plurality of overlapping holes along its elongated length, where the alignment of each of the plurality of holes with the one hole of said first member determines a different discrete distance of said arms from each other;

[d] securing means receivable through the hole of said first member and any of the plurality of holes of said second member for interconnecting said first and second members; and

[e] ground means mounted on one of the end portions and moveable into engagement with its adjacent side of the conductor for abrading the adjacent side surface to form an intimate electrical ground connection therewith.

Element [b] is interpreted essentially the same by the parties except Senior Industries' interpretation calls for "at least two members" to form the base," while Thomas and Betts' interpretation calls for specifically a "two piece base". The literal reading of element [b] only states "first and second overlapping members" which would imply only two members. The specification defines the structure of the invention as follows:

The length of base 30 can be varied within a predetermined range of lengths so that adjustable clamp 24 can be secured to electric utility boxes 16 in a wide range of varying widths. Specifically, first elongated member 34 has a plurality of holes in addition to and including hole 38. As best seen in Fig. 5, these holes, generally indicated by reference numeral 46, are formed along the same linear path and are each capable of receiving bolt 42 therethrough. Preferably, each of the holes 46 slightly overlaps with its adjacent hole or

holes. When any one of holes 46 (including hole 38) is aligned with hole 40 and bolt 42 is received in the aligned hole to secure the first and second elongated members 34 and 36 together, a discrete length for base 30 is formed. Because holes 46 are slightly overlapping, they create a plurality of discrete but finely graduated, predetermined lengths of base 30.

(Exhibit G, Col. 5, lines 41-56).

Obviously, the specification only refers to two distinct members to form the base. The analysis here is similar to that of Claim 1 of the '074 patent; thus there is no need to impose the claim's transition word "comprising" upon the construction of an individual element. Hence, the claim shall be interpreted as a two piece base structure. Therefore Thomas and Betts interpretation with respect to element [a] shall apply.

The parties are not in agreement over the construction of element [c]. The main area of contention lies in their interpretation of "plurality of overlapping holes along the elongated length of the second member." Accordingly, it would be understood by those skilled in the art reading the patent specification that the invention was directed to an adjustable clamp having at least two, and preferably many contiguous overlapping holes to provide a range of finely graduated widths of the clamp base. The proper construction supported from the patent specification is that the plurality of overlapping holes in the second member is a series of contiguous overlapping holes to provide for fine adjustment. Senior Industries' proposed construction states "a pair of overlapping holes that are separated by a fixed distance" is not supported by the intrinsic evidence. The '271 patent was distinguished from the '074 patent in the invention disclosure statement filed with the '271 patent application to the U.S. Patent and Trademark Office, as an invention to provide for fine adjustment while the '074 patent provided course adjustment. The '271 patent specification does alternatively provide for an embodiment of the plurality of holes not to be overlapping, but separated by a fixed distance. The distance must be substantially smaller than the distance provided between the holes in the '074 patent to distinguish the fine verses course adjustments between the two C-shaped clamps. The proper interpretation of the alternative is a fixed distance between each hole, and not a fixed distance between a pair of overlapping holes. Therefore, the proper construction of element [c] is a second member that has a contiguous series of overlapping holes or alternatively a contiguous series of individual holes that may be spaced apart by a small distance to provide a fine adjustment for the C-shaped clamp which is in accordance with Thomas and Betts interpretation.

Element [d] is in a means-plus-function format with "securing means" referring to the function of connecting the two elongated members of the clamps together. The structure allowed in this claim is what is enabled by the patent specification. The specification clearly describes a bolt, which passes through the member with the plurality of holes and threaded in a hole in the mating member that has a hole with internal threads to accommodate the bolt. Alternatively, a bolt and nut arrangement may be used to connect the two members provided that the hole in the mating member does not have threads. Another alternative means to connect the two members is by a clip. The specification does not completely describe how to use a clip, but one skilled in the art would be to enable a "securing means" by using a clip. Therefore, the proper construction of a "securing means" shall be interpreted as we interpreted "adjustment means" in the '074 patent Claim 1, element [e] and shall include reasonable connectors (such as clips and equivalents) to secure the elongated members together at varying positions depending on the width of the conductor. A person skilled in the art could enable the specification of securing the members of the base with clips or equivalents. Therefore, Senior Industries claim interpretation shall be applied.

Element [e] addresses the "ground means" for the clamp. It is written in a means-plus-function format. The

described function is to abrade "the adjacent side surface to form an intimate ground connection therewith." In accordance with 35 U.S.C. s. 112 para. 6 we must look to the specification to determine the structure that was disclosed to accomplish the desired function. The patent specification makes reference to what was disclosed in patent '074, hence we shall construe this element consistent with our construction of element [e] of Claim 15 of the '074 patent. In the construction of the '074 patent, we held that "ground means" shall be construed consistent with "securing means" in the '960 patent Claim 1 element [f]. Therefore, the "ground means" will be construed as a threaded bolt positioned within a threaded opening in an arm extending outwardly from the elongated base member, the bolt having two distinct structures; (1) an abrasive end surface that has been formed with sufficient roughness to grind through the surface of the utility box, and (2) a cone-shaped point for penetrating the outside of the utility box without penetrating the inside of the utility box. This is essentially the construction proffered by Thomas and Betts.

III) ***CONCLUSION***

The asserted claims of the patent in suit have been construed by the court as a matter of law using the established practice of claim construction.

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