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

NEWELL OPERATING COMPANY,
Plaintiff.
v.
INTERCROWN USA and Intercrown Enterprise, Ltd., d/b/a Intercrown USA,
Defendants.

May 5, 2008.

Jason G. Harp, Richard Jerold Hoskins, Schiff Hardin LLP, Chicago, IL, for Plaintiff.

Bryan Hunt Opalko, Lynn J. Alstadt, Buchanan Ingersoll & Rooney PC, Pittsburgh, PA, Donald Quirk Manning, Mcgreevy Williams, P.C., Rockford, IL, for Defendants.

REPORT AND RECOMMENDATION OF SPECIAL MASTER REGARDING CLAIM CONSTRUCTION

ROBERT L. HARMON, Special Master.

Plaintiff Newell contends that defendants (collectively "Intercrown") have infringed Newell's U.S. Patent No. 5,642,595 (the '595 patent), which discloses and claims a window covering support rod system that includes a decorative end finial and a structural arrangement for holding the finial in an open end of a tubular rod. Intercrown denies infringement and interposes various affirmative defenses. A jury is demanded.

In an Order of Reference dated March 31, 2008, the Court appointed the undersigned as Special Master (SM) pursuant to Rule 53, FRCP. The specific purpose of the reference was to have the SM provide a recommended construction of the claims of the '595 patent. Under the express terms of the Order, the SM has "all of the powers described in Rule 53 of Fed.R.Civ.P., to conduct an evidentiary hearing on the record to hear and recommend to the Court the resolution of all issues of interpretation of the claims of the patent in suit, as provided for in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995), *aff'd.,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996)," and "is not limited by any prior ruling of Judge Kapala or Magistrate Mahoney."

On January 31, 2008, Intercrown filed a motion for summary judgment of noninfringement. On April 3 it provided the SM with a copy of its summary judgment papers. Page 5-10 of its memorandum supporting the summary judgment motion set forth Intercrown's position on how claim 1 of the '595 patent should be construed. On April 4 Newell submitted papers setting out its position on claim construction; on April 17 Intercrown filed a response and on April 28 Newell filed a response. FN1 Thereafter, the SM circulated a draft of this report. Upon full consideration of all matters raised in those papers, this report is respectfully submitted in response to the Court's directive to recommend a construction of the claims of the ' 595 patent

in suit.

FN1. In order to simplify reference to the briefs, the SM has adopted the following convention: Newell's initial memorandum (NM) and responsive brief (NR) and Intercrown's initial summary judgment memorandum (IM) and responsive brief (IR).

GOVERNING LEGAL PRINCIPLES

The Legal Framework for Claim Construction

Proper claim construction necessarily precedes a determination of whether the claims read on the accused devices or methods for infringement purposes. FN2 Indeed, claim construction will normally control the remainder of the decisional process,FN3 for it is axiomatic that the claims must be construed in the same way for infringement that they are for determining validity.FN4

FN2. E.g., Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 3 USPQ2d 1109, 1112 (Fed.Cir.1987)

FN3. Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1 USPQ2d 1593, 1597 (Fed.Cir.1987).

FN4. E.g., Intervet America, Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 12 USPQ2d 1474, 1476 (Fed.Cir.1989).

In its *Markman* decision the Supreme Court held that interpretation of patent claims is a question for the court, while application of properly construed claims to determine infringement is a question for the finder of fact, in this case the jury. In discharging its *Markman* responsibility, the court must inevitably decide what the scope of the underlying evidentiary inquiry will be. The Federal Circuit explained this decisional process in Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 39 USPQ2d 1573 (Fed.Cir.1996). Ordinarily, the court should confine itself, if possible, to an examination of the intrinsic patent documents: the patent itself and its prosecution history. In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim element. In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. Only if there is still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the court resort to extrinsic evidence such as expert testimony. And even if the judge decides to hear all possible evidence before construing the claims, expert testimony inconsistent with the intrinsic evidence should be accorded no weight. Extrinsic evidence in general, and expert testimony in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language. Nor may it contradict the import of other parts of the specification. Nor may the inventor's subjective intent as to claim scope, when unexpressed in the patent documents, have any effect.

In its 2005 en banc decision in Phillips v. AWH Corp.,FN5 the Federal Circuit emphatically reaffirmed its adherence to the fundamental principles of *Markman* and *Vitronics*. In so doing, the court summarized and restated the basic guidelines for interpreting a patent claim:

FN5. 415 F.3d 1303, 75 USPQ2d 1321, 1325 (Fed.Cir.2005).

1. The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation. That starting point is based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art. Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.FN6

FN6. 415 F.3d 1303, 75 USPQ2d at 1326.

2. In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. In such circumstances, general purpose dictionaries may be helpful. In many cases that give rise to litigation, however, determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art. Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean. Those sources include the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.FN7

FN7. 415 F.3d 1303, 75 USPQ2d at 1327.

3. In light of the statutory directive that the inventor provide a "full" and "exact" description of the claimed invention, the specification necessarily informs the proper construction of the claims. It is therefore entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims. Not only does the specification provide a concordance for the claims, but the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs. In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive.FN8

FN8. 415 F.3d 1303, 75 USPQ2d at 1328-29.

4. Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent. Furthermore, like the specification, the prosecution history was created by the patentee in attempting to explain and obtain the patent. Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes. Nonetheless, the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of

prosecution, making the claim scope narrower than it would otherwise be.FN9

FN9. 415 F.3d 1303, 75 USPQ2d at 1329.

5. Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises. Extrinsic evidence in general is less reliable than the patent and its prosecution history in determining how to read claim terms, for several reasons. First, extrinsic evidence by definition is not part of the patent and does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning. Second, while claims are construed as they would be understood by a hypothetical person of skill in the art, extrinsic publications may not be written by or for skilled artisans and therefore may not reflect the understanding of a skilled artisan in the field of the patent. Third, extrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence. The effect of that bias can be exacerbated if the expert is not one of skill in the relevant art or if the expert's opinion is offered in a form that is not subject to cross-examination. Fourth, there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that could be brought to bear on any claim construction question. In the course of litigation, each party will naturally choose the pieces of extrinsic evidence most favorable to its cause, leaving the court with the considerable task of filtering the useful extrinsic evidence from the fluff. Finally, undue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the indisputable public records consisting of the claims, the specification and the prosecution history, thereby undermining the public notice function of patents. In sum, extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence. Nonetheless, because extrinsic evidence can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean, it is permissible for the district court in its sound discretion to admit and use such evidence. In exercising that discretion, and in weighing all the evidence bearing on claim construction, the court should keep in mind the flaws inherent in each type of evidence and assess that evidence accordingly.FN10

FN10. 415 F.3d 1303, 75 USPQ2d at 1329-30.

More recently, the Federal Circuit has clarified that any articulated definition of a claim term ultimately must relate to the infringement questions that it is intended to answer.FN11 As it said in a 2006 decision:

FN11. E-Pass Tech. Inc. v. 3Com Corp., 473 F.3d 1213, 81 USPQ2d 1385, 1389 (Fed.Cir.2007).

This court, of course, repeats its rule that "claims may not be construed with reference to the accused device." [Citing earlier cases.] As noted earlier, that rule posits that a court may not use the accused product or process as a form of extrinsic evidence to supply limitations for patent claim language. Thus, the rule forbids a court from tailoring a claim construction to fit the dimensions of the accused product or process and to reach a preconceived judgment of infringement or noninfringement. In other words, it forbids biasing the claim construction process to exclude or include specific features of the accused product or process. The rule, however, does not forbid awareness of the accused product or process to supply the parameters and

scope of the infringement analysis, including its claim construction component. In other words, the "reference" rule accepted in [earlier cases] does not forbid any glimpse of the accused product or process during or before claim construction. [Citing cases.] In light of these principles, if the litigants cannot themselves inform a trial court of the specific issues presented by the infringement inquiry-that is, issues of the breadth of the claim construction analysis and the most useful terms to facilitate that defining process-then a trial court may refer to the accused product or process for that context during the process.FN12
FN12. Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 78 USPQ2d 1382, 1389 (Fed.Cir.2006).

The guidelines set out above have conditioned the methodology employed in this proceeding. The parties have submitted extrinsic evidence, and the SM has been willing, within reason, to consider all such evidence, including extrinsic evidence available to the SM in the form of dictionaries and encyclopedias. In the end, however, apart from whatever benefit this evidence may have provided in gaining an understanding of the technology at hand, it has not been relied upon in construing the claims, unless expressly so indicated.FN13

FN13. See Mantech Environmental Corp. v. Hudson Environmental Serv. Inc., 152 F.3d 1368, 47 USPQ2d 1732, 1737 (Fed.Cir.1998), where the Federal Circuit held that "the district court was legally correct both in admitting and accepting the testimony of the parties' expert witnesses 'for the purpose of background in the technical area at issue,' * * * and then basing its claim construction solely upon intrinsic evidence. Although this information always may be admitted by the trial court to educate itself about the patent and the relevant technology, the claims and the written description remain the primary and more authoritative sources of claim construction. Thus, they always must be considered and where clear must be followed." See also Key Pharm. Inc. v. Hercon Labs. Corp., 161 F.3d 709, 48 USPQ2d 1911 (Fed.Cir.1998).

The SM is also mindful of the admonition of the Federal Circuit that "claim construction is not an obligatory exercise in redundancy," and that it is unnecessary to repeat or restate every claim term in order to comply with the *Markman* directive that claim construction is a matter for the court. FN14 Such an approach would carry the very real potential of confusing rather than enlightening the jury.FN15 Thus, where terms are expressly defined in the patent specification, it is sufficient simply to refer the jury to that definition; the court can decide at the time of trial whether explanatory technical testimony would be necessary or, indeed, helpful at all. And where a term is not defined or used in a special way in the specification, and is otherwise unambiguous, the jury should be instructed to give the term its ordinary meaning and will presumably require no additional assistance.

FN14. United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 41 USPQ2d 1225, 1236 (Fed.Cir.1997).

FN15. For example, repeatedly instructing a jury that an ordinary English word does not really mean what they think it does, but instead has the meaning of some synonym, can only cause confusion. If they meant not the one but the other, why did the inventors and their attorneys not use the other? This is a question no jury should have to concern itself with.

It is also important to understand that claim construction is an obligation of the court that is independent of

the views asserted by the adversary parties.FN16 Very recently, however, the Federal Circuit has made it clear that when the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it. A determination that a claim term "needs no construction" or has the "plain and ordinary meaning" may be inadequate when a term has more than one "ordinary" meaning or when reliance on a term's "ordinary" meaning does not resolve the parties' dispute.FN17

FN16. Exxon Chem. Patents Inc. v. Lubrizol Corp., 64 F.3d 1553, 35 USPQ 1801, 1802 (Fed.Cir.1995).

FN17. *02 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.,* ---F.3d ---- (Fed. Cir.App. Nos.2007-1302, -03, -04, April 3, 2008), slip op. at 15, 18.

Among them, the parties have requested consideration and construction of several, but not all, of the terms of claims 1-5 of the '595 patent. The SM has considered each claim as a whole, and each element of each claim, and has recommended a specific interpretation of those terms and phrases, and only those terms and phrases, that require construction. Accordingly, to the extent various claim terms are not addressed in this report, it may be assumed that the SM is recommending that they be grouped in the category of claim elements that need no construction. Similarly, this report is not to be viewed as reflecting an acceptance or endorsement by the SM of any proposed construction of either party, unless it expressly so states.

The Timing of the Inquiry

In *Phillips v. AWH,* the Federal Circuit explained that "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application" FN18 (in the present case, February 20, 1996). At first glance, this approach may seem inconsistent with the undoubted principle that the prosecution history is an important source of intrinsic evidence in interpreting claims because it is a contemporaneous exchange between the applicant and the Examiner. The public has the right to rely on an applicant's remarks made in seeking allowance of claims.FN19 These transactions always take place after-sometimes long after-the effective filing date of the patent application. But the prosecution history of the patent can be given full play by simply viewing it as would a hypothetical person of ordinary skill in the art who, though reading it later, was basing an understanding of it upon knowledge of the scope and content of the prior art as it existed at the time of invention. The claim construction analysis in this report has been conducted, therefore, by seeking to understand what the claims would have meant to a person of ordinary skill in the art, having knowledge of the art as it existed as of February 20, 1996.

FN18. Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321, 1326 (Fed.Cir.2005).

FN19. Desper Prods. Inc. v. Qsound Labs. Inc., 157 F.3d 1325, 48 USPQ2d 1088, 1096-97 (Fed.Cir.1998).

Expert Witness Opinions

Intercrown cites (IM 10) the expert report of Dr. Robert Sturges (Ex. 16 in support of Intercrown's motion for summary judgment), who has a PhD in mechanical engineering. Newell cites, throughout its memorandum, the affidavit of Dr. Mark Viz, who has a PhD in theoretical and applied mechanics. Both of

these experts appear well qualified to express opinions in this technological field. Neither of them, however, really shed much light on the inquiry at hand. They tend to espouse the "party line," in that they make assertions that support their respective sides of the controversy,FN20 but without much factual analysis.FN21 While this may be permissible under Rule 705 of the Federal Rules of Evidence, it is not particularly helpful in the claim construction exercise, where the court is obliged to make factual findings underlying the legal question of how the claims are to be construed.

FN20. "Extrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321, 1330 (Fed.Cir.2005).

FN21. "[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." *Id*.

Nonetheless, the SM has carefully considered the written statements of both experts, in an effort to gain an understand of the technology at hand that is as complete as possible. Again, the SM has not specifically relied upon these extrinsic sources of evidence unless explicitly so indicated in the analysis that follows.

Other Extrinsic Evidence

Both parties refer to dictionaries to bolster their arguments. The SM has also independently surveyed several such references; the results of that survey are laid out in the attached Appendix.FN22 In addition, the SM has in a few instances consulted the online encyclopedia, *Wikipedia,* in order to obtain some appreciation for how certain technical terms are used in a particular field; all such instances are identified herein.

FN22. If these dictionary definitions illustrate anything, it is that such general purpose reference sources tend to lack consistency in both approach and definition. Their major flaw as a reliable source of evidence is that there usually exists, in one or another of them, a version that will provide some support for a party's position.

Person of Ordinary Skill in the Art

Intercrown has made no effort to define the level of ordinary skill in this art as of 1996 (or any other time, for that matter). Newell's Dr. Viz, on the other hand, expresses the opinion (without supporting evidence) that "one of ordinary skill in the art of simple mechanical devices has training in engineering mechanics or comparable experience in designing simple mechanical devices." (Viz Affidavit, para. 7)

The SM feels comfortable in observing that the technology, as reflected in the '595 patent, is not very sophisticated. A look at a physical sample of the accused system confirms this observation. This is not meant to denigrate the skill level possessed by those actually working in this field; it is entirely possible that they may be overqualified (certainly Drs. Viz and Sturges can be so described). But the SM has concluded that Dr. Viz's assessment is not unreasonable: a college degree, while desirable, would not be a necessity to enable a worker in this field to attain an ordinary level of skill. Accordingly, several years experience in the design and manufacture of window covering support rod systems, or some engineering education coupled with a lesser period of experience, would adequately inform a person to achieve ordinary skill in this art.

THE PATENT IN SUIT

The '595 patent in suit issued July 1, 1997 on an application filed February 20, 1996. In general, it discloses and claims a window covering support, e.g., a drapery or curtain rod. The technology is uncomplicated, and a good appreciation can be obtained simply by reading the abstract of the patent:

A finial support arrangement is provided for window coverings and the like, including a hollow ended support rod or tube, a support sleeve lodged within the rod, and a decorative finial supported in and by the sleeve. The finial includes a support post that is force or interference fitted into the sleeve. The sleeve, in turn, is force or interference fitted into the tube. The sleeve is made of a material that is softer than the support post and may be deformed during insertion of the post. The arrangement is particularly useful for supporting cast or wrought metal finials in rigid support tubes or rods, and alleviates the need for close tolerances on either the tube interior diameter or the support post outer diameter that would otherwise be needed to provide the desired interference fit.

In a telephone conference on April 7, 2008, the parties agreed that only claims 1-5 are being asserted in this case. They have requested construction of certain terms appearing (highlighted in bold typeface) in claims 1 and 3, which read as follows:

1. A window covering support comprising in combination:

a hollow support tube terminating in open ends;

a pair of decorative finials, one of the decorative finials being supported within each end of the support tube, each finial including a decorative portion and a **generally cylindrical support post** extending from the decorative portion into an end of the support tube; and

a pair of support sleeves, one of the support sleeves being lodged within each end of the support tube intermediate the support tube and the support post of a respective finial, the support sleeves being **compressed** by the support tube and the finial support posts to maintain a *tight fit* therebetween and thereby to support and retain the finial on the support tube.

3. The window covering support of claim 1, wherein the finial support posts are metal posts and the support sleeves are made of a material softer than the support posts, and wherein the finial support posts **interference fit** with the support sleeves.

The SM has independently considered the remaining limitations of each of claims 1-5, and has concluded that no additional terms require construction, with the exception of "tight fit" which appears in claim 1 and is italicized.

It is well to note that claim 1, while typical of combination claims that recite a collection of mechanical elements, does have at least one distinctive feature: it describes the claimed "window covering support" in an assembled configuration. Thus, the claim requires that a "decorative finial" be "supported" within each end of the support tube; that the "support sleeves" be "lodged" within each end of the support tube; and that the "support sleeves" be "compressed by the support tube and the finial support posts." It should also be noted that claim 3, being dependent upon claim 1, includes all of the limitations of claim 1 and must be

viewed as though it were an independent claim.FN23 By the same token, dependent claims 2, 4 and 5 include the limitations of claim 1. Accordingly, the SM's recommendations as to construction of the contested claim limitations appearing in claim 1 apply to claims 2-5 as well unless otherwise indicated.

FN23. See *Kloster Speedsteel AB v. Crucible Inc.,* 793 F.2d 1565, 230 USPQ 81, 83, 88 (Fed.Cir.1986).

As we have seen, the fundamental sources of intrinsic evidence in the claim construction exercise are the claim language, the patent itself, and the written history of the transactions that occurred in the PTO during the prosecution of the patent application. The prosecution of the '595 patent was remarkably uneventful. The application was received in the PTO February 20, 1996 (NOC 00901).FN24 In an initial office action (NOC 00942) mailed August 22, 1996, the examiner allowed all of the fifteen claims in the application, with the exception of claim 13, which was rejected on the basis of an apparent typographical error. Claim 13 was indicated as allowable pending correction of the error. (NOC 00943) By an amendment dated November 21, 1996, the applicants corrected the error in claim 13 (NOC 00947), and claims 1-15 were duly allowed by Notice of Allowance mailed January 17, 1997. (NOC 00953) There were, during this entire process, no remarks or actions by either the examiner or the applicants that would shed any light on the meaning of the contested claim terms, with the possible exception of the examiner's formal "Reasons for Allowance" (NOC 00944). In those Reasons, the examiner demonstrated his understanding of claim 1 as requiring "support sleeves which fit tightly within the support rod and tightly around the support post of the finial." This understanding has little or no impact on the construction of the contested claim terms, however, inasmuch as the claim language itself calls for the support sleeves to "maintain a tight fit" between the support tube and the finial support posts. The examiner was essentially parroting the claim language rather than providing any definitional guidance. Accordingly, the prosecution history of the ' 595 patent need not be considered further in construing the claims.

FN24. Newell has submitted a copy of the file history in pdf format; the pages are separately numbered, beginning with NOC 00901 and ending 00957.

DISCUSSION

Tight Fit

This term, which appears in claim 1 (and, by dependency, claims 2-5), requires construction principally because of the presence in claim 3 of the term "interference fit." There is a risk that the jury might be confused by the presence, in a single claim (claim 3, by dependency) of a requirement that a "tight fit" for the support sleeves be maintained between the support tube and the finial support posts, and a further requirement that there be an "interference fit" between the support posts and the support sleeves. That confusion could well lead to the erroneous conclusion that a "tight fit" must necessarily be an "interference fit," even in claims 1, 2, 4, and 5, which do not use the word "interference." This would be a clear violation of the doctrine of claim differentiation.

The doctrine of claim differentiation creates a presumption that each claim in a patent has a different scope. Thus, a claim interpretation that would result in one claim having the same scope as another claim is presumptively unreasonable.FN25 The doctrine is typically invoked to preclude the reading of a limitation from a dependent claim into a parent independent claim. FN26 The present case presents a classical illustration of how the doctrine should work. The ' 595 patent's only definition of "tight fit" (indeed, its only

mention of the term, outside the claims) is found in this passage: "The support sleeves are compressed by the support tube and the finial support posts to maintain a tight fit, such as a friction, interference or pressure fit, therebetween and thereby to support and retain the finial on the support tube." (C2L8-12) This intrinsic evidence clearly supports the presumption that the required "fit" in independent claim 1 is of a different scope than that of dependent claim 3. The latter requires the "tight fit" to be an "interference fit" while the former does not; the "tight fit" required by claim 1 may alternatively be a "friction fit" or a "pressure fit." Indeed, there may well be other mechanical "fits" (in addition to those recited as examples in the patent) that meet the term "tight fit" in that they satisfy the claimed function of "support[ing] and retain[ing] the finial on the support tube." FN27

FN25. See Beachcombers v. Wildewood Creative Prods., Inc., 31 F.3d 1154, 31 USPQ2d 1653, 1659 (Fed.Cir.1994).

FN26. A good example is found in Karlin Tech. Inc. v. Surgical Dynamics Inc., 177 F.3d 968, 50 USPQ2d 1465 (Fed.Cir.1999).

FN27. According to the '595 patent specification: "As will be appreciated by those skilled in the art, once installed, finial 10 is solidly supported in tube 14 by virtue of the tight fits between the tube inner wall surface 38 and the outer surface 28 of sleeve 12 and between the inner surface 30 of sleeve 12 and the outer surface 20 of support post 18. By providing sufficient engagement lengths between these surfaces, the arrangement described above may be adapted for supporting finials having considerable weight." (C3L60-67)

Accordingly, it is recommended that "tight fit" in claims 1, 2, 4, and 5 be construed as follows: A tight fit is not limited to an interference fit (as that term is later construed herein), but also can be a friction fit, or a pressure fit, or any other surface-to-surface contact that serves to support and retain the finial on the support tube. But in claim 3 the tight fit must be an "interference fit" (as that term is later construed herein).

Compressed

Newell argues that "compressed," in the context of the '595 patent, means "[a]cted on by forces that are on opposite surfaces of a medium where the forces act inwardly towards the surfaces, causing some degree of deformation." (NM 7) Intercrown requests that "compressed" be construed as "the condition of a sleeve that has been deformed by an increase in the sleeve's interior diameter by insertion of a support post into the sleeve while the sleeve is lodged in a tube." (IR 10) As can be seen, the parties are in agreement that some deformation of the support sleeve is comprehended by the word "compressed" and the SM agrees.FN28 Otherwise, neither of the proposed definitions is appropriate. Newell's suffers from complexity, in that it introduces new terms like "medium" and "opposite surfaces" and "forces act[ing] inwardly," all of which would seem themselves to call for addition interpretation. Also, the term "some degree" introduces an unnecessary note of uncertainty. Intercrown's is plain misleading, in that the sleeve may well be deformed by a *decrease* in its *outer* diameter *as* the sleeve is being inserted in a tube.

FN28. This conclusion is fully supported by the '595 patent specification: "[B]ecause support sleeve 12 is

preferably made of a material that is softer than support post 18, sleeve 12 may be deformed during installation of finial 10. This feature of the arrangement is particularly useful for mounting cast or wrought metal finials in rigid tubes or rods, alleviating the need for close tolerances on the finial support post. Moreover, because sleeve 12 may be somewhat elastically deformed during installation of finial 10, finial 10 may be force or interference fitted into tube 14, removed therefrom, and subsequently replaced without plastically deforming either tube 14 or support post 18 in a manner that would gradually deteriorate the desired fit therebetween." (C4L1-12)

Outside of claim 1, the only use of the word "compressed" in the '595 patent is: "The support sleeves are compressed by the support tube and the finial support posts to maintain a tight fit, such as a friction, interference or pressure fit, therebetween and thereby to support and retain the finial on the support tube." (C2L8-12) This passage clearly describes compression in terms of the result achieved, which is a "tight fit." It should also be recalled that claims 1-5 recite the claimed combination in its assembled configuration, not as a list of unassembled parts. This means that the word "compressed" can only be defined properly when the parts are viewed in assembled condition.

Accordingly, it is recommended that "compressed" in claims 1-5 be construed as follows: Compressed describes the deformed condition of the support sleeve after it has been inserted into the support tube and has had the support post inserted into it. No particular degree of deformation of the sleeve is required, except that it must be sufficient to maintain a "tight fit" (as that term was previously construed herein) between the parts.

Interference Fit

Newell proposes that this limitation be construed as follows:

A fit in which one mating part is forced into an opening in the other mating part, with the consequent mating of the two parts being maintained by the constant interference or friction between the two parts. This is particularly effective where the inserted part is larger than the receiving part. (NM 7)

Intercrown urges that the term be construed as "a fit in which one mating part is pressed into an opening in another mating part, with the mating of the two parts being maintained by friction between the two parts." (IR 11) Neither of these proposals misses the mark by much, as will be seen. Indeed, there is little difference between them, and they agree, as does the SM, that the mating of two parts in maintained by friction between them.FN29

FN29. Newell uses the phraseology "interference or friction." This circular definition must of course be rejected, inasmuch as we are trying to define "interference" itself.

The '595 patent provides some insight into the intended meaning of "interference fit." The abstract decribes "a support post that is force or interference fitted into the sleeve. The sleeve, in turn, is force or interference fitted into the tube." The specification, in describing the preferred embodiment of the invention, refers to "friction, interference or pressure fit" to compress the sleeve between the support tube and the finial support post. (C2L8-10) The support sleeves have "inner surfaces configured to engage the support posts in an interference fit." (C2L22-23) Reading on, the

finial support post is pressed into the support sleeve to establish an interference fit between the support post and the support sleeve. * * * (C2L32-34) Outer surface 28 of sleeve 12 is preferably dimensioned with respect to inner surface of tube 14 to provide some degree of force or interference fit therebetween. * * * Outer surface 20 of post 18 is preferably dimensioned with respect to inner surface 30 of sleeve 12 to provide a force or interference fit therebetween. * * * (C3L44-55) Moreover, because sleeve 12 may be somewhat elastically deformed during installation of finial 10, finial 10 may be force or interference fitted into tube 14, removed therefrom, and subsequently replaced without plastically deforming either tube 14 or support post 18 in a manner that would gradually deteriorate the desired fit therebetween. (C4L7-12)

In addition, method claims 12-15 describe the step of "pressing the finial support post into the support sleeve to establish an interference fit between the support post and the support sleeve."

As can be seen from the Appendix, *Wikipedia* describes the classical example of an interference fit: the forcing of a bearing onto a slightly oversized shaft. This concept is certainly consistent with the usage found in the patent. The specification repeatedly describes the fit between the support post and the support sleeve as a "force or interference fit." This means that the support post must be inserted by force into the support sleeve, resulting in sufficient friction between the two parts to maintain their mating.

The principal difference between the definitions offered by the parties is that Newell would simply require that the post and sleeve be "forced" together, while Intercrown would require further that the force be applied by pressing the parts together, i.e., "one mating part is pressed into an opening in another mating part." Intercrown's proposal is too narrow, for there may well be other means of applying the necessary force besides "pressing." The '595 patent, in describing the preferred embodiment, occasionally refers to pressing the support post into the support sleeve. But nowhere in the patent, save the specific language of method claims 12-15, is there any statement that would imply that pressing is the required or only technique that can be used to achieve the necessary force to obtain sufficient friction to maintain the mating of the parts.

That said, there is a necessary qualification on Newell's proposal to simply use the word "forced." One way to force two mating parts together is by the use of threads. Certainly such a technique would provide the necessary friction to maintain the mating of the parts. But the question remains, as recognized by Newell (NM 18), would the use of threads in this context fall within what a person of ordinary skill in the art at the time would have understood as achieving an "interference fit"? This question must be answered in the negative. There is, to be sure, ample evidence for the existence and recognition of what might be termed an "interference fit" in the field of pipe fittings.FN30 But in that field the fittings are usually metal, and there are mating, preformed threads on both the male and female parts. The ' 595 patent provides no support for achieving the necessary degree of friction between the two parts by making them of metal and screwing them together with preexisting threads, or even by threads on just one of them. To put it another way, the patent provides no support for the type of interference fit that is recognized in the pipe fitting industry.

FN30. A brief entry in *Wikipedia* reveals that there is a U.S. national pipe thread standard for tapered (NPT) or straight (NPS) threads used to join pipes and fittings. Although standard NPT fittings usually require tape or sealant to prevent leaks, there is a variant (NPTF) whose threads are the same basic shape but with crest and root heights adjusted for an interference fit, eliminating the spiral leakage path. *Available at* http://en.wikipedia.org/wiki/National_pipe_thread. Indeed, the SM has had hands-on experience with interference fits in connection with pipe fittings for well drilling, both oil and water.

In his affidavit (para. 23), Dr. Viz advances the opinion that "[a] threaded fastener, such as a screw, and a sleeve into which the threaded fastener is inserted is an example of an interference fit between a male and female member * * * if the outer diameter of the threads of the fastener is larger than the inner diameter of the sleeve. In this case, the fastener and sleeve form an interference fit when mated." He cites no evidence in support of this conclusion. Dr. Sturges does not really address this question squarely in his report, and when he approaches it tangentially, he, like Dr. Viz, provides no evidentiary support. In the claim construction section of his report, he concludes that references to the term "interference" appearing in the deposition of one of the inventors "refer to the explicit post/sleeve/rod interaction, which is absent in a threaded joint" (p. 9). In the infringement section of his report, he opines that the insertion of a screw does not result in an interference fit.FN31 The SM has himself conducted a brief independent search (largely on the Internet), and has found no evidence that a person of ordinary skill in the art at hand would understand a screw inserted into a sleeve as providing an "interference fit" as that term is used in the ' 595 patent.

FN31. Inasmuch as infringement is not an issue presently before the SM, the SM is not relying on this opinion or, for that matter the specific claim construction opinions of either expert. The fact that they are advanced without evidentiary support makes them unhelpful, and leaves the SM with a degree of skepticism that renders them unreliable for this claim construction inquiry.

Accordingly, it is recommended that "interference fit" in claim 3 be construed as follows: An interference fit is a fit in which one mating part (the support post) has been forced into an opening in another mating part (the support sleeve), with the mating of the two parts being maintained by friction between the two parts. A threaded support post that has been screwed into a support sleeve, although it may create sufficient friction to maintain the mated relationship of the parts, has not been "forced" into the opening of the support sleeve within the meaning of this definition.

Generally Cylindrical Support Post

Intercrown advances the following construction for this element:

a structure with straight sides and a uniform cross section along its length that is able to be pressed into an opening having a uniform cross section along its length to create an interference fit. A screw is not a "generally cylindrical support post." (IM 5; IR 1-2)

Newell offers this definition:

an elongated mechanical element that is generally cylindrical in shape, though it may deviate from the perfectly cylindrical, and that supports or maintains the finial on the end of the curtain rod. (NM 7)

Neither of these proposals works. Newell's is faulty primarily because, as Intercrown points out (IR 2), it is circular: it simply repeats the phrase "generally cylindrical" and then observes that such a shape may deviate from the "perfectly cylindrical." Intercrown's proposal is even less acceptable, in that it introduces concepts, such as "straight sides and a uniform cross section," that are at odds with the teaching of the intrinsic patent document itself. Moreover, it incorrectly requires an interference fit between the post and the sleeve; as discussed above in connection with the term "tight fit," such a construction would be error. It also

comprehends structure pertaining to the support sleeve, in that it requires that the post be "able to be pressed into an opening having a uniform cross section along its length." Finally, there is no basis in the intrinsic evidence for excluding a screw from the definition of a "generally cylindrical support post."

Outside the claims, the '595 patent uses the word "cylindrical" in the following passages: "The finials are supported in the open ends of the tube and each include[s] a decorative portion and a generally cylindrical support post extending from the decorative portion into an end of the support tube." (C2L2-5) "Support post 18 has a generally cylindrical external surface 20 terminating in a tapered tip 22." (C3L4-6) The support sleeve is also said to have a "hollow, cylindrical wall portion" (C3L20), and the support tube "includes a generally cylindrical side wall" (C3L35-36).

One thing seems clear. Neither party is contending that the term "generally cylindrical" contemplates any significant departure from a circular cross section (taken on a plane perpendicular to the longitudinal axis of the support post). This would be contrary to the explicit teaching of the '595 patent:

[W]hile in the preferred embodiment illustrated post 18 is round in cross section, it could have any cross sectional shape, such as square or diamond shaped. (C3L9-12)

* * * *

While the embodiments illustrated in the Figures and described above are presently preferred, it should be understood that these embodiments are offered by way of example only. The invention is not intended to be limited to any particular embodiment, but is intended to extend to various modifications that nevertheless fall within the scope of the appended claims. For example, while the mating surfaces of tube 14, sleeve 12 and post 18 generally conform to one another to provide the fits described, these surfaces have any desired radial shape. Moreover, it may be desirable in certain cases to provide discontinuous or intermittent surfaces on some or all of these members, such as surfaces having star or splined cross sections. (C4L13-25)

This caveat clearly describes possible departures from the preferred embodiment shown. For one thing, it permits the surfaces, including the post surface, to have "any desired radial shape." This expands the disclosure beyond the circular radial shape of an ordinary right circular cylinder. For example, the post can have a "square or diamond shaped" or "star or splined" cross section. But in using the phrase "generally cylindrical support post" in the claims, the inventors excluded posts with square or diamond-shaped cross sections; indeed, they excluded posts that do not have a circular cross section.FN32

FN32. Although mathematicians may well be comfortable with cylindrical shapes other than the classical right circular cylinder, there is no evidence that persons of ordinary skill in this art would understand the word, as it is used in the context of the '595 patent, to mean anything other than a circular cylinder.

This is not to say that the cross section must be a perfect circle in the mathematical sense, any more than a cylinder need be perfect in that sense. As Newell points out (NM 9), the Federal Circuit has recognized the modifier "generally" as broadening the scope of the term it modifies, provided the term was not otherwise limited in the specification or prosecution of the patent. In one case, the term "generally parallel" was held to envision some amount of deviation from exactly parallel.FN33 Indeed, terms of approximation such as "generally" need not be construed with mathematical precision.FN34

FN33. Anchor Wall Sys. Inc. v. Rockwood Ret. Walls Inc., 340 F.3d 1298, 67 USPQ2d 1865, 1873-74 (Fed.Cir.2003).

FN34. North Am. Container Inc. v. Plastipak Pkg'g Inc., 415 F.3d 1335, 75 USPQ2d 1545, 1554 (Fed.Cir.2005) (holding that "generally convex" normally allows for some concave points on a wall as long as the majority of points are convex).

Intercrown cites *The Concise Oxford Dictionary of Current English* for its definition of a cylinder as "a uniform solid or hollow body with straight sides and a circular section." (IM 6) This definition seems quite consistent with those set forth in the Appendix. But it begs the question of whether "generally cylindrical" excludes a structure that does not have straight sides and a uniform cross section "along its length," as contended by Intercrown. That question is answered by the '595 patent specification rather than dictionaries. The description of the preferred embodiment is replete with statements to the effect that the support post is "provided with * * * a tapered tip for facilitating its insertion into the support sleeve" (C2L37-38; C3L5-6; C3L56) and claims 4 and 14 actually claim such a tip. In the face of this intrinsic teaching, construing "generally cylindrical" to require straight sides and a uniform cross section "along the length" of the post would violate the well established rule that a claim construction that would exclude the preferred embodiment shown in the patent "is rarely, if ever, correct." FN35

FN35. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 39 USPQ2d 1573, 78 (Fed.Cir.1996). See also Nellcor Puritan Bennett Inc. v. Masimo Corp., 402 F.3d 1364, 74 USPQ2d 1351, 1355 (Fed.Cir.2005) (that a particular construction would have the effect of placing all the embodiments of the invention outside the scope of the claims is powerful evidence that the construction is incorrect); Hoechst Celanese Corp. v. BP Chem. Ltd., 78 F.3d 1575, 38 USPQ2d 1126, 1130 (Fed.Cir.1996) (it is unlikely that an inventor would define the invention in a way that excludes the preferred embodiment or that those skilled in the art would read it that way). Adoption of Intercrown's "along its length" argument would obviously exclude the cylindrical post described as the preferred embodiment, owing to its tapered tip. Indeed, all additional disclosed embodiments (diamond, splined, star, square) would be excluded because they do not have a circular cross section and are therefore not cylindrical.

Intercrown apparently feels that the adoption of its proposed "straight sides and uniform cross section" construction would preclude a threaded post. But this argument does not hold up under close analysis. As indicated above, the '595 patent specification permits various surfaces, including the post surface, to be "discontinuous or intermittent." The specific examples given are "star or splined cross sections," but there is no indication that the inventors intended to exclude other possibilities, such as the intermittent surface provided by screw threads. A cylindrical screw certainly has "discontinuous or intermittent surfaces" (i.e., the screw threads). Moreover, it is unclear to the SM what Intercrown means by "straight sides." Certainly one holding a screw before one's eyes sees that the shank of the screw has straight sides, and the outer edges of the threads appear to describe a straight line. Further, the cross section of a screw is indeed "uniform" along its length. Such a section will show a circle that represents the shank, and a dot or other short line or mark that represents the passage of the thread through the plane of the section.FN36

FN36. The position of the mark will depend upon where, along the longitudinal axis of the screw, the section is taken. The size of the mark will depend upon the size and conformation of the threads. If the

screw is tapered, the size of the circle will become smaller as sections are taken in the area of the taper, but the cross-sectional shape will remain the substantially the same.

Intercrown contends that Newell has "disclaimed any construction in which 'generally cylindrical support post' reads on a screw." (IR 7) It argues that "[e]ven if one skilled in the art, as Newell suggests, would understand from the disclosure that a screw could be used in place of the generally cylindrical support post, that subject matter is unclaimed and therefore dedicated to the public." But the cases Intercrown cites FN37 in support of its disclaimer theory do not deal with claim construction. Rather, they explicate the disclosure-dedication rule, which "limits application of the doctrine of equivalents, much in the same way as prosecution history estoppel. Under both doctrines, resort to the doctrine of equivalents is precluded based on actions of the patentee during prosecution evincing a surrender or dedication of subject matter." FN38 Thus, "when a patent drafter discloses but declines to claim subject matter * * * this action dedicates that unclaimed subject matter to the public. Application of the doctrine of equivalents to recapture subject matter deliberately left unclaimed would 'conflict with the primacy of the claims in defining the scope of the patentee's exclusive right.' " FN39

FN37. Toro Co. v. White Consol. Indus. Inc., 383 F.3d 1326, 72 USPQ2d 1449 (Fed.Cir.2004); Johnson & Johnston Assoc. Inc. v. R.E. Service Co., 285 F.3d 1046, 62 USPQ2d 1225 (Fed.Cir.2002) (en banc).

FN38. Toro Co. v. White Consol. Indus. Inc., 383 F.3d 1326, 72 USPQ2d 1449, 1452 (Fed.Cir.2004).

FN39. Johnson & Johnston Assoc. Inc. v. R.E. Service Co., 285 F.3d 1046, 62 USPQ2d 1225, 1230 (Fed.Cir.2002) (en banc).

We are not addressing the issue of infringement under the doctrine of equivalents in this exercise; we are addressing proper legal construction of the claim language. It is possible that Intercrown may have meant to invoke a line of cases that deal with the impact, upon claim construction, of words of manifest restriction or exclusion that are sometimes found in the specification of a patent. As indicated above, such an inquiry is recognized as part of the Federal Circuit's protocol for claim construction.FN40 But the SM has found no such language in the '535 patent. Nowhere does it purport to exclude a screw as an example of a generally cylindrical support post. It is simply silent on the possibility of employing a screw as the support post.

FN40. See discussion accompanying note 8, supra.

The definitions of a screw quoted in the Appendix are quite varied, but they do not exclude a cylinder and, taken as a whole, embrace a cylindrical shape. *Wikipedia* defines a screw this way:

A screw used as a threaded fastener consists of a cylindrical shaft, which in many cases tapers to a point at one end, and with a helical ridge or thread formed on it, and a head at the other end which can be rotated by some means. The thread is essentially an inclined plane wrapped around the shaft. The thread mates with a complementary helix in the material. The material may be manufactured with the mating helix using a tap, or the screw may create it when first driven in (a self-tapping screw). (*Available at* http://

en.wikipedia.org/wiki/Screw)

This definition paints an apt word picture of what most folks-lay persons, mechanics, and judges alike-would recognize as an ordinary wood or sheet metal screw (tapered) or even a bolt or machine screw (not tapered). There is no evidence that indicates that a person of ordinary skill in this art would have a different understanding of what is meant by a screw.

Intercrown devotes several pages of its responsive brief (IR 3-7) to an analysis of a Northern District of Illinois decision, *Fenton Golf Trust v. Cobra Golf Inc.*,FN41 which it contends reflects facts that are strikingly similar to those in the present case. In that case, the patent (which was directed to a golf club) disclosed a structure the cross section of which could "be generally cylindrical, elliptical or other form in shape." Claim 4 in suit was directed to an elliptical cross section. Claim 3 called for a cylindrical cross section, while claim 9 did not specify a shape but instead set a range of possible dimensions for the structure; claims 3 and 9 were not at issue from an infringement standpoint. The accused infringing structure was somewhat tear-shaped. In refusing to construe "elliptical" broadly enough to include the accused shape, Judge Pallmeyer observed:

FN41. 52 USPQ2d 1273 (N.D.Ill.1999).

Taken together with claims 3 and 4, claim 9 appears to be a catch-all to cover those irregularly-shaped hosel cross sections which are not either elliptical (claim 4) or cylindrical (claim 3). The existence of a claim with catch-all language would seem to be inconsistent with the notion that the term elliptical is intended to describe a broad spectrum of irregularly-shaped cross sections.FN42
FN42. *Id*. at 1277.

Intercrown points out that, in the '595 patent, claim 1 calls for a "generally cylindrical support post" while independent claim 6 simply specifies a "metallic support post" without mentioning shape. From this it reasons that claim 6 "is a 'catch-all' claim for support posts that may or may not be generally cylindrical." But this effort to bootstrap the present case into one resembling *Fenton* is logically unsound. Claim 6 of the '595 patent defines the support post by specifying what it is *made of,* not its *shape*. The claims that were compared by Judge Pallmeyer all had to do with cross-sectional shape and dimension, not material.

Moreover, even if it were possible to find some glimmer of support in the "catch-all" claim approach illustrated in *Fenton,* that decision is not on point. It is important to understand the difference. In *Fenton* the patentee was arguing that the term "elliptical" covered structures that were clearly not elliptical; in other words, that an irregular, tear-drop shape was "elliptical." In the present case, no one contends that "generally cylindrical" does not require a circular cross section. Manifestly, the term excludes cross sectional shapes that are clearly not circular, such as stars, diamonds, splines, and squares, just to name the alternatives expressly disclosed in the '595 patent. What is contended, however, and correctly so, is that a tapered screw does have a circular cross section and thus cannot be excluded from the definition of "generally cylindrical support post ."

Intercrown's remaining assertions are easily disposed of. It cites to the deposition of one of the inventors, James Daniels, for the proposition that "a screw cannot be pressed into the sleeve." (IM 7) However, Mr. Daniels' actual testimony in that regard was "Yeah. I can push it some way-some part of the way in."

(Daniels deposition taken October 15, 2007, p. 134, lines 16-17) Moreover, as we have seen in the discussion of "interference fit," there is no warrant for a conclusion that pressing is the required or only technique that can be used to achieve the necessary force to obtain sufficient friction to maintain the mating of the parts. Intercrown also cites the Sturges report, indicating that "he explains that a person of ordinary skill in the art would not have interpreted 'generally cylindrical support post' to include a screw." (IM 10) But that is not at all what Dr. Sturges says in his report. Rather, he limits himself very carefully to this statement: "For one of skill in the art * * * the literal structure of a cylinder is distinct from a taper, a helix, or a screw in shape ." (Ex. 16 to Intercrown's motion for summary judgment, p. 6) This opinion does not address whether a "generally cylindrical support post," as that term is used in the claims, would exclude a tapered screw. And it appears to ignore repeated indications that the support post shown in the patent is "provided with * * * a tapered tip for facilitating its insertion into the support sleeve" (C2L37-38; C3L5-6; C3L56) and claims 4 and 14 actually claim such a tip.FN43

FN43. Dr. Sturges even seems to quarrel with the inventors' use of the word "tapered" to describe the distal end of the support post. He says that "[c]ontrary to the inventor's use of the term, a 'taper' is known to one of ordinary skill in the art as a means for securing two parts together, rather than facilitating assembly. Parts which have structural features that facilitate assembly are referred to as 'leads' or 'chamfers'." (Ex. 16, p. 7) Intercrown picks up on this theme, suggesting that "the structure that the '595 patent refers to as a 'tapered tip' is actually a 'chamfered tip'." IR 3 n. 1) This approach ignores the legal maxim that an inventor may be his or her own lexicographer. Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321, 1329 (Fed.Cir.2005) ("[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs."). The '595 patent uses the word "chamfer" only once (in describing the end of the support sleeve as having a "tapered or chamfered tip" (C3L22-23)), and the word "lead" not at all. But when it describes the end of the support post, it uses the word "tapered." It thereby signifies that the word "tapered," as used in the context of *the invention disclosed in this patent,* means that the end of the support is configured to facilitate insertion into the sleeve.

Accordingly, it is recommended that "generally cylindrical support post" be construed as follows: A structure extending from the finial and inserted into the support sleeve. The cross-section of the structure is circular throughout most of its length. But the size of the circular cross-section need not be uniform throughout the length of the structure; this means, for example, that the structure may be tapered. This definition does not exclude a screw.

APPENDIX

CYLINDER

Encarta(R) World English Dictionary, North American Edition, available at *http://encart a.msn.com/encnet/features/dic tionary/DictionaryResults.aspx? refid=1861602247*

1. object shaped like tube: an object or shape with straight sides and circular ends of equal size

The Compact Oxford English Dictionary of Current English, available at *http:// www.as koxford.com/concise_oed/cylinder?view=uk*

1 a three-dimensional shape with straight parallel sides and a circular or oval cross section

Wiktionary, available at *http://en.wiktionary.org/w iki/cylinder? rdfrom=Cylinder & redirect=no*

1. (*geometry*) A surface created by projecting a closed two-dimensional curve along an axis intersecting the plane of the curve.

When the two-dimensional curve is a circle, the cylinder is called a *circular cylinder*. When the axis is perpendicular to the plane of the curve, the cylinder is called a *right cylinder*. In non-mathematical usage, both *right* and *circular* are usually implied.

Infoplease Dictionary, available at *http://dictionary.infoplease.com/cylinder*

8. (in a screw or cylindrical gear) an imaginary cylindrical form, concentric to the axis, defining the pitch or the inner or outer ends of the threads or teeth

Cambridge Dictionary of American English, available at *http:// dictionary.cambridg e.org/define.asp? key=cylinder*1+0 & dict=A*

a solid that has long straight sides and circular ends of equal size

POST

Encarta(R) World English Dictionary, North American Edition, available at *http://encart a.msn.com/dictionary_1861737777/post.html*

1. upright pole: a pole of wood or metal fixed in the ground in an upright position, serving as a support, marker, or place for attaching things

The Compact Oxford English Dictionary of Current English, available at *http:// www.askoxford.com/concise_oed/post_1?view=uk*

noun 1 a long, sturdy, upright piece of timber or metal used as a support or a marker

Wiktionary, available at *http://en.wiktionary.org/wiki/post# Noun*

1. A long dowel or plank protruding from the ground; a fence post; a light post

Infoplease Dictionary, available at *http://dictionary.infoplease.com/post*

1. a strong piece of timber, metal, or the like, set upright as a support, a point of attachment, a place for displaying notices, etc

Cambridge Dictionary of American English, available at *http:// dictionary.cambridge.org/define.asp? key=post*1+0 & dict=A*

a vertical pole stuck in the ground, usually to support something or to mark a position

SCREW

Encarta(R) World English Dictionary, North American Edition, available at *http://encart a.msn.com/dictionary_1861709485/definition.html*

1. threaded fastener inserted into material: a piece of metal with a tapering threaded body and grooved head by which it is turned into something in order to fasten things together

The Compact Oxford English Dictionary of Current English, available at *http://www.askoxford.com/concise_oed/screw?view=uk*

2 a cylinder with a spiral ridge or thread running round the outside that can be turned to seal an opening, apply pressure, adjust position, etc.

Wiktionary, available at *http://en.wiktionary.org/wiki/Screw*

A (usually) metal fastener consisting of a conical, threaded tip, possibly a cylindrical, threaded body, and possibly an unthreaded cylindrical portion between the threaded part the [*sic*. and] the larger head; it is twisted directly into a solid piece of softer material, or into a pre-drilled hole slightly smaller than the outside diameter of the threads

Infoplease Dictionary, available at *http://dictionary.infoplease.com/screw*

1. a metal fastener having a tapered shank with a helical thread, and topped with a slotted head, driven into wood or the like by rotating, esp. by means of a screwdriver.

2. a threaded cylindrical pin or rod with a head at one end, engaging a threaded hole and used either as a fastener or as a simple machine for applying power, as in a clamp, jack, etc. Cf. bolt

Cambridge Dictionary of American English, available at *http:// dictionary.cambridge.org/define.asp? key=screw*1+0 & dict=A*

a thin piece of metal, usually with a pointed end and a flat top shaped to hold a tool, that is forced into wood or metal by turning, and is used esp. to join two pieces or to hold something in place

COMPRESS

Encarta(R) World English Dictionary, North American Edition, available at *http://encart a.msn.com/encnet/features/dic tionary/DictionaryResults.aspx? refid=1861599214*

to make something smaller by applying pressure or a similar process, or become smaller in this way

The Compact Oxford English Dictionary of Current English, available at *http:// www.as koxford.com/concise_oed/compress?view=uk*

1 flatten by pressure; force into less space. 2 squeeze or press (two things) together

Wiktionary, available at *http://en.wiktionary.org/w iki/compress? rdfrom=Compress & redirect=no*

To make smaller; to press or squeeze together, or to make something occupy a smaller space or volume

Infoplease Dictionary, available at *http://dictionary.infoplease.com/compress*

1. to press together; force into less space

Cambridge Dictionary of American English, available at *http:// dictionary.cambridg e.org/define.asp? key=compress*1+0 & dict=A*

to press (something) into a smaller space

INTERFERENCE FIT

Wikipedia, available at *http://en.wikipedia.org/wiki/Interference_fit*

An **interference fit** (sometimes called a **press fit**) is a fastening between two parts which is achieved by friction after the parts are pushed together, rather than by any other means of fastening. For metal parts in particular, the friction that holds the parts together is often greatly increased by compression of one part against the other, which relies on the tensile and compressive strengths of the materials the parts are made from. Typical examples of interference fits are the press fitting of shafts into bearings or bearings into their housings and the attachment of watertight connectors to cables. An interference fit also results when pipe fittings are assembled and tightened.

An interference fit is generally achieved by shaping the two mating parts so that one or the other (or both) slightly deviate in size from the nominal dimension. The word *interference* refers to the fact that one part slightly interferes with the space that the other is taking up. For example: A shaft may be ground slightly oversize, and the hole in the bearing (through which it is going to pass with an interference fit) may be ground slightly undersize. When the shaft is pressed into the bearing, the two parts interfere with each other's occupation of space; the result is that they plastically deform slightly, each being compressed, and the interface between them is one of extremely high friction-so high that even large amounts of torque cannot turn one of them relative to the other; they are locked together and they turn in unison.

N.D.Ill.,2008.
Newell Operating Co. v. Intercrown USA

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