

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

**LEGGETT & PLATT INCORPORATED,**  
Plaintiff.

v.  
**HICKORY SPRINGS MANUFACTURING COMPANY,**  
Defendant.

**Sept. 5, 2000.**

### ***MEMORANDUM OPINION AND ORDER***

**CASTILLO, J.**

Leggett & Platt Incorporated ("L & P") brought this patent infringement action against Hickory Springs Manufacturing Company ("Hickory"), alleging that Hickory sells bedding foundations that infringe L & P's Patent No. 5,052,064 ("the '064 patent"). FN1 The parties submitted claim construction briefs in which they disagree about the meaning of the term "support wires" used in the '064 patent. FN2 Accordingly, on August 3 and 10, 2000, we conducted a *Markman* hearing and subsequently received post-*Markman* hearing briefs from both parties. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed.Cir.1995) (*en banc*), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). For the reasons set forth below, the Court adopts Hickory's proffered construction of the term "support wires."

FN1. Leggett also claims tortious interference with contract and misappropriation of trade secret in its amended complaint.

FN2. Although, at the *Markman* hearing and in its post-hearing brief, L & P maintained that "support wires" is the sole term to be construed, Hickory, contrary to its earlier representations, argued that several other terms in the disputed claims needed to be defined. For reasons explained further below, we limit our claim construction solely to the term "support wires."

### **BACKGROUND**

#### **I. The '064 Patent**

The '064 patent, entitled "Stackable Bedding Foundation," was issued on October 1, 1991, to L & P, as the assignee of the named inventors Robert C. Hagemester, Steven E. Ogle, and Thomas J. Wells. The patent examiner never rejected any of the claims in light of prior art nor requested that any of the claims be changed or modified. The '064 patent teaches and describes a stackable bedding foundation which can be "nested" because its support wires have peaks and valleys along their lengths for ease of shipping and

storage. The '064 patent contains five claims. To date, L & P has asserted claims 4 and 5 against Hickory's allegedly infringing stackable bedding foundation (Patent No. 5,967, 499).

## 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 Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572 (Fed.Cir.1996). Claim terms are to be given their ordinary 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, 951 (Fed.Cir.1993).

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 claim. *Markman*, 52 F.3d at 980.

Intrinsic evidence is "the most significant source of the legally operative meaning of 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 terms of the claims. *Markman*, 52 F.3d at 981. For example, extrinsic evidence may be helpful in explaining the meaning of technical terms and 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 term.

## II. Claim Interpretation

The dispute between the parties lies in the construction of Claims 4 and 5 of the '064 patent. Claim 4 reads as follows:

A nestably stackable assembly for use in a bedding foundation comprising a rectangular border wire having two parallel sides and two parallel ends, transversely-spaced, parallel, and longitudinally-extending support wires parallel to said border wire sides and having ends connected to said border wire ends, said support wires being formed so as to be generally corrugated along their lengths, said corrugatedly formed support wires having peaks and valleys, said peaks being flattened at their tops, said flattened peaks being generally coplanar with a plane defined by said border wire, said valleys being vertically displaced beneath and intermediate of said flattened peaks, and longitudinally-spaced, parallel, and transversely-extending upper connector wires parallel to said border wire ends and having ends connected to said border wire sides, said upper connector wires being connected intermediate of their ends along their lengths to said flattened peaks of said support wires.

The language of Claim 5 is nearly identical to that of Claim 4, with the exception of additional language in Claim 5 that is not in dispute. Neither party suggests that the term "support wires" has a different meaning in Claim 4 versus in Claim 5, and our construction of the term will apply to both claims. *See Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579 (Fed.Cir.1995) (disputed terms must be construed within the context of the patent claim as a whole, and must be interpreted consistently throughout the claims of a patent).

### A. "Support Wires"

The parties ask the Court to construe the term "support wires" found in the disputed claims. L & P argues that "support wires" can be made from a single, continuous piece of wire, and can also be fashioned from "more than one wire welded together." (R. 49, Pl.'s Post- *Markman* Hr'g Br. at 1.) Under L & P's suggested definition, any number of wires, once welded together in some manner, becomes a single "wire," which in turn can qualify as a "support wire," as used in the '064 patent. Hickory, on the other hand, asserts that the term "support wires" is limited to formation from a continuous strand of wire. Hickory acknowledges that a continuous strand of wire can be formed from shorter segments of wire, if they are butt welded, end to end. (R. 50, Def.'s Post- *Markman* Hr'g Br. at 2.) In contrast, according to Hickory, pieces of wire welded together, not at their ends, but at a different location such that the finished welded combination of wires has more than two ends, cannot qualify as a continuous strand of wire.

References in this opinion to L & P's proposed construction of support wires ("more than one wire welded together") do not include wires butt welded end to end because both parties agree that such a construction could be used to make "support wires." Instead, where we discuss L & P's proffered definition, we will be focusing on the viability of a construction that encompasses pieces of wire joined somewhere other than at their ends, as that is the crux of the disagreement between the parties' proposed claim constructions. We begin our claim construction by looking at the patent.

### 1. Claim Language

The claim language, on its face, does not specify whether the term "support wires" would include, as L & P urges, "more than one wire welded together." (R. 49, Pl.'s Post-*Markman* Hr'g Br. at 1 .) However, the claim language does use "support wires" in the plural. The plain meaning of the claim language thus requires that there be more than one discrete "support wire." *See* Superior Fireplace Co. v. Majestic Prods. Co., 92 F.Supp.2d 1001, 1010 (C.D.Cal.2000) (finding that term "rear walls" requires at least two rear walls); Thomson Consumer Elecs., Inc. v. Innovatron, S.A., 43 F.Supp.2d 26, 32 (D.D.C.1999) (construing term "corresponding contact surfaces" to be "more than one contact surface, but not necessarily all contact surfaces"). Use of the plural "support wires" in the claims casts doubt on L & P's proposed construction, *i.e.* that any number of wires welded together creates a single wire. Under L & P's definition, all the welded wires contained in the entire '064 product would be considered only a *single* wire. In fact, although we do not rely on it, we note that L & P's own expert witness specifically stated that all the wires in the '064 invention constituted only a single wire. (Hr'g Tr. at 126, lines 6-13, Dr. Creighton.) Such a construction would run counter to the claim language which requires more than one support wire. In addition, although, as explained below, we will not construe other terms in the patent, we question how such a support wire (*i.e.* made up of every wire in the structure) could comply with the limitations of the support wires. For example, how could a single wire be "transversely spaced"? "parallel"?

## 2. Specification

We next look to the specification, which describes two preferred embodiments of the '064 invention. The '064 patent makes clear that other embodiments are possible, and the claims should not be limited to the preferred embodiments. In construing claims, we may not read a limitation into a claim from the written description, *i.e.* the specification. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed.Cir.1998). On the other hand, use of the term " 'preferred' does not of itself broaden the claims beyond their support in the specification." *Wang Lab., Inc. v. America Online, Inc.*, 197 F.3d 1377, 1383 (Fed.Cir.1999). In this case, the written description and the drawings lead us to conclude that "support wires" are made from continuous strands of wire, as Hickory asserts.

First, the written description contains references to a number of other wires, *e.g.* a border wire and connector wires, and each type of wire is individually identified as a separate wire. Importantly, even where the specification teaches that a wire is welded to another wire, each of the original wires maintains its individual name and separate identity. For example, the specification teaches that the "support wires" are welded to the "upper connector wires," yet both types of wire are individually identified; the upper connector wires do not become part of the "support wires" simply because they are welded to them. ('064 Patent, col. 3, lines 3-5.)

Furthermore, if we were to adopt L & P's proposed construction that a wire can be made up of any number of pieces welded together in some fashion, the '064 invention would be nearly impossible to construct. The Patent Statute is clear that the specification must contain a written description of the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the same." 35 U.S.C. s. 112, para. 1. If a "wire" could consist of any number of wires welded in any manner, a person skilled in the art would have an infinite number of choices to make in attempting to construct the '064 invention. FN2

FN2. We note that L & P's construction of the term "support wires" would seemingly encompass any grouping of welded wires, so long as one could trace a path in the tangle of wires that could comply with the rest of the limitations. We do not believe that the patent laws were intended to afford such far-reaching

protection.

The specification also clearly refers to "support wire ends," which must be attached to the border wire, and describes that the "ends 14 ... are crimped around the ends 12, 12 of the border wire 10." ('064 Patent, col. 2, lines 57-59.) FN3 The only support wire ends described in the specification are attached to the border wire. Common sense dictates that the support wire ends are attached to opposite sides of the border wire. The specification does not mention any additional ends that are not attached to the border wire, which would give credence to L & P's proffered construction that a "support wire" can be composed of multiple wires welded together and, consequently, have any number of ends.

FN3. The specification also refers to "support wire" in the singular: "the support wire ends 14[are] crimped around the border wire 10." ('064 Patent, col. 3, lines 13-15.)

Finally, the drawings in the specification strongly suggest that a support wire must be a continuous wire. The support wires, referred to with the numeral 13, are shown in the drawings as continuous wires stretching from one side of the border wire to the opposite side.

Although we recognize that we cannot read limitations into the claims from the specification or drawings, we also are cognizant that the specification is "highly relevant" and serves as the "single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582. In this case, the specification and drawings provide no indication that the inventor intended the term "support wires" to encompass any number of wires, so long as they are welded together in some fashion as L & P suggests. *See Quality Semiconductor, Inc. v. Pericom Semiconductor, Inc.*, No. C-95-01785 MHP, 1998 WL 118186, at \*3 n. 1 (N.D.Cal. Mar. 2, 1998) ("[T]he specifications and accompanying diagrams of the '062 patent provide no indication that the inventor intended the term 'a transistor' to encompass several transistors connected in parallel [as the plaintiff asserts].") The specification of the '064 patent supports Hickory's proposed definition of "support wires" as being continuous strands or multiple wires butt welded, end to end.

### **3. Prosecution History**

The '064 patent application was granted without any amendments. The examiner, in his Statement of Reasons for Allowance, cited three prior art patents and explained that there are three main differences between the '064 product and prior art: (1) the modular springs of the prior art do not extend from one boxspring end to the other as does the claimed product, instead they extend from side to side of the boxspring; (2) the modular springs in the prior art "are not connected to the border wire at their ends as claimed, instead the modular spring ends are connected to the supporting base frame of the boxspring"; and (3) "the transverse grid wires of the prior art are not connected to the upper portions of the modular springs, instead they only contact the springs." (R. 16, Pl.'s Claim Construction Br., Ex. 3, Examiner's Statement of Reasons for Allowance of '064 Patent.) None of these reasons explicitly addresses whether "support wires" can be made from two or more wires welded together.

L & P argues that the prior art cited by the examiner supports its proffered construction of "support wires." First, L & P cites the Valoff patent (No. 4,069,525) and contends that it teaches that a support wire can be made by welding multiple wires together. The reference in Valoff, however, is to a border wire and not to a support wire. Furthermore, the Valoff patent specifically teaches that the wires making up the border wire

are "welded at their ends to form in effect a continuous rectangle." (Valoff Patent, col. 3, lines 55-56.) As noted above, Hickory does not dispute that welding pieces of wire, end to end ( *i.e.* butt-welding), forms a continuous wire. Hickory *does* dispute, however, that wires joined not at their ends but elsewhere constitute a support wire. Contrary to L & P's assertion, Valoff does not support such a construction.

L & P also argues that the Schulz patent (No. 4,377,279) teaches that support wires can be made from multiple wires welded together. The Schulz patent, however, refers to "support *members*" not to "support *wires*." Although L & P submits extrinsic evidence in an attempt to demonstrate that support wires have the same meaning as support members, FN4 review of such extrinsic evidence is not necessary to determine the claim construction in this case, and we will not rely on it.

FN4. L & P's extrinsic evidence includes the reference in Hickory's allegedly infringing patent (No. 5,967,499) to the support wires in the '064 patent as "support modules." In addition, L & P relies on Dr. Stoll's testimony that "support wires" are sometimes referred to as support legs, members, or modules. ( *See* R. 49, Pl.'s Post- *Markman* Hr'g Br. at 8 n. 12; Hr'g Tr. at 187.)

Hickory also asks us to consider extrinsic evidence to help understand the prosecution history. Hickory argues that, according to its expert, the examiner looked only at prior art with support members that were planar specifically because he considered the application for the '064 patent to be concerned only with two-dimensional support wires. The examiner, however, never stated that he was considering the prior art patents because they contained planar (and not three-dimensional) support members and certainly never stated that the support wires must be two-dimensional. Here again, we will not rely on Hickory's extrinsic evidence.

The meaning of the term "support wires," as used in the '064 patent, is unambiguous in light of the intrinsic evidence. Therefore, it is unnecessary and, in fact, would be improper for us to rely on extrinsic evidence for claim interpretation. *Vitronics*, 90 F.3d at 1583. *See also* *Real v. Bunn-o-matic Corp.*, 100 F.Supp.2d 844, 847 (N.D.Ill.2000).

## **B. L & P's Extrinsic Evidence**

L & P spent the bulk of its time at the *Markman* hearing and in its post-hearing brief discussing extrinsic evidence. Because the intrinsic evidence in this case demonstrates that the term "support wires" as used in the '064 patent is unambiguous, we will not rely on the extrinsic evidence but will only briefly note that L & P submitted extrinsic evidence in the form of expert witness testimony and physical evidence ( *e.g.* a series of "wires" formed from one or more individual wires). We find, in any event, that this subjective extrinsic evidence is not entitled to any weight because it is not supported by any objective evidence. L & P provides no documentary evidence that wires are made from multiple wires welded together. *See* *Quality Semiconductor*, 1998 WL 118186, at \*4 ("something more than simple assertions provided by the inventor and a single expert are required to create or establish the presence of an ambiguity").

## **III. Additional Elements in the Disputed Claims**

Both parties' pre- *Markman* hearing briefs focused only on the meaning of "support wires." FN5 As a result, in our April 5, 2000 Order, we specifically stated that "[w]e expect the parties will, in accord with their written representations, limit their presentations to the term 'support wires.'" (April 5, 2000 Order at 1.) We are disappointed that Hickory has shifted gears and, in spite of their earlier representations, now urges us to construe a number of additional terms found in Claims 4 and 5.

FN5. To be precise, L & P's first claim construction brief attempted to define the term "generally corrugated," but Hickory, in its response, asserted that "the primary issue is the meaning of 'support wires,'" (R. 20, Def.'s Claim Construction Br. at 1), and therefore focused its brief solely on its proffered claim construction of that one term.

We decline to construe any additional terms at this point for a number of reasons. First, L & P asserts, and we agree, that allowing claim construction of additional terms would prejudice L & P, which prepared for the *Markman* hearing based on Hickory's prior representations and our Order focusing claim construction only on the term "support wires." Hickory had ample opportunity to alert both the Court and L & P of their changed position that they sought construction of additional terms but did not do so.

In addition, Hickory earlier admitted that at least some of the elements, which Hickory now argues are in dispute, are contained in their product. These admissions are binding for purposes of claim construction. *See Evans Medical Ltd. v. American Cyanamid Co.*, Nos. 98-1446, 98-1459, 1999 WL 594310, at \*6 (Fed.Cir. Aug. 9, 1999) (construing a claim, in part, based on the plaintiff's response to an interrogatory, which it considered a "binding admission"). Finally, in view of our construction of the term "support wires" in Hickory's favor, there is no need to construe any additional terms.

For the foregoing reasons, we limit our claim construction to the term "support wires" and adopt Hickory's definition: " 'support wires' require that the wire be a continuous strand of wire" which may be formed "by butt-welding, end to end, shorter segments of wire." (R. 50, Def.'s Post- *Markman* Hr'g Br. at 2.)

## CONCLUSION

The disputed term "support wires" is construed as stated above. This case is hereby set for a status hearing on September 20, 2000 at 9:30 a.m. for the express purpose of discussing how to effectively proceed with this litigation in view of this decision. The parties are also again urged to reconsider their final settlement positions.

N.D.Ill.,2000.

Leggett & Platt Inc. v. Hickory Springs Mfg. Co.

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