United States District Court,
E.D. Wisconsin.

SCHREIBER FOODS, INC,
Plaintiff.
v.
BEATRICE CHEESE, INC. and Kustner Industries, S.A,
Defendants.
SCHREIBER FOODS, INC,
Plaintiff.
v.
GREAT LAKES CHEESE CO., INC., Great Lakes Cheese of La Crosse Wisconsin, Inc., and Great Lakes Cheese of Wisconsin, Inc,
Defendants.

No. 97-C-11, 97-C-566

Aug. 7, 1998.

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DECISION

ADELMAN**, J.**

This infringement case involves patents regarding machinery for packaging individually-wrapped slices of processed cheese. On August 3, 1998, I held a " *Markman* hearing" FN1 regarding interpretation of claim language in the two patents at issue, U.S. Patent Number 5,440,860 (the '860 patent) and U.S. Patent Number 5,701,724 (the '724 patent). The parties dispute only a few terms used repeatedly throughout the claims and written descriptions of the specifications; they agreed to use one claim from each of the patents as representative of how the disputed terms are used.

FN1. Named after Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

I. LEGAL FRAMEWORK FOR CLAIM INTERPRETATION

The claims set forth at the end of a patent define the scope of protection given to an invention. Markman v. Westview Instruments, Inc., 517 U.S. 370, 373, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). A case alleging patent infringement involves two steps: the proper construction of an asserted claim and a determination as to 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). Claim construction is a question of law to be decided by the court. Markman, 517 U.S. at 391. The court-interpreted claim is then presented to the jury, which will decide infringement, i.e. whether the claim elements are present in the defendants' machines and processes. *See* id. at 377.

Several rules of thumb guide a court's interpretation of claims. First, the court construes the meaning of the claim language initially by reference to three "intrinsic" sources of evidence: the claims themselves, the accompanying specification (which includes the preferred embodiment of the claimed invention), and, if in evidence, the prosecution history. Vitronics, 90 F.3d at 1582. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language. *Id*. The specification, particularly, is the single best guide to the meaning of a disputed term, as it contains a written description of the invention that must be clear enough to enable those of ordinary skill in the art to make and use it. *Id*. The prosecution history, which is the complete record of all the proceedings before the Patent and Trademark Office regarding the patent in issue, may limit the interpretation of claims by excluding any interpretation that was disclaimed during prosecution in order to obtain claim allowance. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.1995).

Extrinsic evidence, such as expert testimony, can also be used by the judge, but generally is of secondary importance and used only to familiarize the court with the terminology of the art to which the patent is addressed. When an analysis of intrinsic evidence alone resolves any ambiguity regarding a disputed claim term, it is improper to rely on extrinsic evidence. Id. at 1583. Dictionaries and technical treatises, although extrinsic evidence, are given special treatment, however. Judges are free to consult such resources at any time to better understand the technology involved and determine the meaning of claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the intrinsic patent documents. Id. at 1584 n. 6.

Second, the terms in a claim are given their ordinary and accustomed meaning to one skilled in the art unless it appears from the patent and prosecution history and other claims that the terms were used differently by the inventors. Id. at 1582. Inventors are allowed to be their own lexicographers, but any special definitions must clearly be stated in the specification or prosecution history. *Id*. Words defined in the specification must be given the same meaning when used in the claims. Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632 (Fed.Cir.1987), *overruled on other grounds by* Cardinal Chem. Co. v. Morton Int'l, Inc., 508 U.S. 83, 113 S.Ct. 1967, 124 L.Ed.2d 1 (1993).

Third, the claims are to be read in light of the specification. Vitronics, 90 F.3d at 1582. The claims should be interpreted so that a patentee's preferred commercial embodiment of the claimed invention falls within the claim. Id. at 1583. It is a rare case where a claim is interpreted such that the preferred embodiment disclosed in the specification falls outside the claim's scope. *Id*. Such an interpretation would require highly persuasive evidentiary support. *Id*.

Nevertheless, claims are not to be interpreted by adding limitations appearing only in the specification. Particular embodiments appearing the specification may not be read into the claims when the claim language is broader than such embodiments. Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d

1048, 1054 (Fed.Cir.1994). In other words, although it is "entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim .... this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1998).

And finally, claim terms must be defined to preserve internal coherence of the patent; a term can be defined only in a way that comports with the instrument as a whole. Markman, 517 U.S. at 389.

II. COURT INTERPRETATION OF DISPUTED TERMS

The parties dispute three terms or "families" of terms: (1) "continuous" or "continuous slice"; (2) "folding" or "folding a continuous web"; and (3) "hermetic", "hermetic seal", or "hermetically sealed". They agree that claim 1 of the '860 patent and claim 14 of the '724 patent are claims representative of the usage of all disputed terms. Copies of the text of those claims is attached at the end of this Decision for ease of reference.

A. "Continuous"

The only dispute about the term "continuous" involves whether its modification of "slice" (claim 1 of the '860 patent) or "flat ribbon" (claim 14 of the '724 patent) of cheese or food product means the slice or ribbon of cheese or food product has no interruptions or variations in thickness.

Plaintiff contended in its reply memorandum regarding claim interpretation that "continuous" refers to the uninterrupted, nonsegmented nature of the food slice. Pl.'s Reply Mem. at 1. While that definition seems reasonable enough at first, at oral argument plaintiff's counsel advanced the theory that the related definition of "continuous slice" may include even a ribbon of cheese and surrounding wrapper that has been crimped, cleated or otherwise pressed at certain intervals to remove most of the cheese from the sealing areas but where a thin layer of cheese nevertheless remains. (This type of crimping occurs, for instance, when using machinery based upon a prior art patent, U.S. Patent Number 3,542,570 (the Bush patent).)

That construction goes too far. In fact, plaintiff in its opening brief on claim interpretation conceded as much. At that time Schreiber contended merely that a "continuous slice" is one "formed by the step of flattening the cheese-filled tube, after long sealing but before cross sealing," Pl.'s Mem. on Claim Interp. at 18, and that "a slice is continuous within the claim language so long as the food has been flattened but not yet cross-sealed into a plurality of individual slices," id. at 19. Plaintiff thus conceded that as used in the patents, a continuous slice or continuous flat ribbon is indeed flat, with no transverse indentations.

The language of the patents themselves indicates that a "continuous slice" is flat and that cross-sealing ends the continuous slice and creates individual slices. For instance, claim 1 of the '860 patent states that a "continuous slice of the food item" is formed by "flattening the web," '860 Patent at col. 12 lines 46-47, and that a plurality of cross-seals at the cross-sealing zones forms "hermetically sealed slices of the food item," id. at col. 12 lines 57-63 (emphasis added). *See also* id. at col. 14 lines 58-60 ("flattening the web with the inserted food item such that a continuous slice of the food item is formed"), col. 15 lines 3-9 (cross-seals create slice *s* of the food item). The specification indicates that after passing through the cross-sealing station "[t]he web now includes a plurality of slices of cheese," id. at col. 5 lines 29-30, and that the pressure exerted in the cross-sealing zones by opposing "jaws" "results in a slice of cheese to be defined between adjacent contacting zones of the web.... The slices of cheese are defined in the section between the jaws," id. at col. 8 lines 51-53, 58-59.

The parties have not proffered any special definition of "continuous" as used in patent law or the art involved. In normal parlance "continuous" means uninterrupted and "flat" or "flattened" means just that-here, parallel top and bottom surfaces with no bumps, divots, cross-creases or cross-sealing. For purposes of the definition of "continuous", I see no difference between a cross-sealing mechanism that eliminates "substantially all" of the food product from the cross-sealing zones (as described in the patents at issue) and a mechanism that creates a cross-indentation or seal that eliminates all but a thin layer of the food product for purposes of making slices separate or discontinuous. If a college student asked her buddy to pass her a slice of pizza she would not get the whole pie just because Dominos failed to cut all the way through the crust. Likewise, telling the butcher you would like to purchase one brat does not mean she gives you what looks like twelve links just because the casing-containing small amounts of sausage when twisted at the ends of each link-has not been severed between them.

Although the court does not need to rely on extrinsic evidence, I note that even if there were ambiguity at this point, the prior art Bush patent reflects the same understanding,FN2 indicating that even in the art of individual cheese slice wrapping, a crimp across the flattened cheese generally forms discrete slices. *See, e.g.,* Defs.' Statement of Claim Interp., Ex. 5 (Bush patent) at col. 2 lines 20-23 ("The crimper transversely seals the product-filled tube at longitudinally spaced intervals to form the tube into a chain of discrete product-containing packets"), col. 5 lines 27-32 (a series of individually wrapped cheese-sealed slices may remain connected together "if it were desired to accordion-fold a plurality of slices together"), col. 5 lines 55-57 (claim for a method of crimping "while leaving a thin film of product at the intervals which seals said tube and divides said tube into a chain of closed discrete packets completely filled with hot cheese product").

FN2. Prior art can often help to demonstrate how a disputed term is used by those skilled in the art. Vitronics, 90 F.3d at 1584. It is more objective and reliable than expert testimony, and is accessible to the public. Id. at 1585. As prior art is extrinsic evidence, however, reliance upon it is unnecessary, and indeed improper, when the disputed terms can be understood from a careful reading of the public record. Id. at 1584. My decision rests on intrinsic evidence rather than the extrinsic prior art Bush patent. I note the Bush patent's language only to show that even if there were an ambiguity in the intrinsic evidence, extrinsic evidence would lead me to the same definition of "continuous slice".

Defendants, though, assert that a "continuous slice" or "continuous flat ribbon" means "a long ribbon of flattened cheese without any interruptions or variations in thickness." But except for possible adjustments to the belts described in the specifications for flattening the web, which may be adjusted to alter the thickness of flattened ribbons, the defendants' definition is the correct construction There cannot be any interruptions or variations in thickness in a "continuous slice" and thus when clamps, cleats, or jaws are used to create separations or indentations, individual and discontinuous slices are created.

Therefore, I define "continuous" as used in "continuous slice" or "continuous flat ribbon" to mean a length of flattened food product without any interruptions. "Flattened" means what it says. Any creasing or cross-sealing across the width of the web of film and food product, which pushes out some of the food product from that cleated or cross-sealed zone even if a thin layer of food product remains (such as the result from the cleats or jaws indicated in the Bush patent) creates an interruption that results in separate or discontinuous slices or ribbons.

B. "Folding"

The patents at issue talk of a "web" created by a length of plastic film formed longitudinally into a tube and into which hot cheese or other food product is piped. The claims include language regarding "folding" the web or forcing the web into a "folded condition."

Plaintiff contends that any dispute over these terms has been waived by defendants because in correspondence and discussions between the parties prior to briefs regarding claim interpretation defendants indicated that only the "continuous" and "hermetic" disputes needed resolution by the court. The "folding" issue first appeared in defendants responsive brief regarding claim interpretation and plaintiff thus asserts it has been "sandbagged." Defendants weakly argue that "folding" can be considered part and parcel of the "continuous" discussion. While that is a long stretch, I will interpret this term nevertheless. Even though the issue was first raised in defendants' brief, plaintiff has had ample opportunity to address the term and have the last written say in its reply brief-and it did so. In addition, plaintiff discussed the term extensively at oral argument. At this point the matter has been fully presented to the court and I choose to address the merits.

There is no dispute that one type of fold for a web is a "v-fold." Unlike the other terms in contention between the parties, "v-folding" is defined in the specifications. Both patents state:

As used herein, the term V-folded condition refers to a length of material which has been folded over onto itself so as to form what may subsequently be identified as a front sheet and a rear sheet which are joined by the fold at the bottom, so as to approximate the letter "V" in cross section.

'860 Patent at col. 1 lines 28-33; '724 Patent at col. 1 lines 26-31. The term arises initially in the patents' discussions of prior art, and a v-fold is used in the preferred embodiment. *See* '860 Patent at col. 3 lines 15-21, col. 4 lines 51-57; '724 Patent at col. 3 lines 10-14, col. 4 lines 42-45.

The claims themselves, though, do not include the "v" before "folding". Plaintiff contends that the claims themselves use the broader terms "folding" or "folded condition" and that limiting the claims to the v-fold from the specifications runs afoul of the rules of claim construction. According to plaintiff, the terms "folding" and "folded condition" as used in the claims instead mean broadly "to lay one part over another part. These claim terms do not require that the longitudinal web be folded into a "V" shape." Defendants, on the other hand, argue that "folding" as used in the claims indeed means creating a "v-fold."

I agree with defendants. The reason lies mainly in the express language of the claims in the '860 patent itself. Claim 1 states in pertinent part:

A process for packaging a food item formed into a soft mass wherein the food item is wrapped in individual slices comprising:

folding a continuous web of heat-sealable thermoplastic material into folded condition including a fold, a folded longitudinal first side and an open longitudinal second side, the web on one side of the fold defining a front sheet and the web on the other side of the fold defining a rear sheet[.]

'860 Patent at col. 12 lines 30-38; *see also* id. at col. 14 lines 45-50 (similar language in claim 10). Comparing this language to the definition for "v-fold" shows that the two folds are the same. Claim 1 speaks of only one fold, with the film on one side of the fold constituting a front sheet and the film on the other

side constituting a rear sheet-the same as the v-fold definition. In addition, the fold results in one edge of the web being closed at the fold and the other side remaining open-the only way this can occur is with a v-fold.

Claim 3 similarly discusses

arranging the web of thermoplastic material to have a front sheet and a rear sheet in folded condition, wherein the front and rear sheets each have an outer surface and an inner sealing surface, and wherein the web in folded condition has a folded longitudinal first edge and an open longitudinal second edge[.]

Id. at col. 13 lines 3-9. And claim 5 indicates that the folded web includes "a front sheet and a rear sheet joined by a fold at a bottom longitudinal edge, and having an open top longitudinal edge...." Id. at col. 13 lines 54-56. Again, these descriptions are nothing more than the definition of "v-fold" itself. Thus, even though the claims do not use the label "v-fold", the type of folding described is the very same thing.

The language used in the claims of the '724 patent is broader, indicating merely that the web of film is folded longitudinally (claim 14), or folded such that the web then has two edges that can be sealed together and front and rear sheets (claims 1 and 3). Under this language, a web could be folded, for instance, in two places creating one front sheet and two rear flaps that are then sealed together. But plaintiff does not contend that "folding" has any different meaning between claim 1 of the '860 patent and claim 14 of the '724 patent-and could not. A claim term should be given the same meaning wherever it is used in patents with common ancestry. *See* AbTox, Inc. v. Exitron Corp., 131 F.3d 1009, 1010 (Fed.Cir.1997). The '724 patent is a continuation of the '860 patent. By definition, a continuation adds no new matter and is akin to an amendment of a prior application. Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc., 98 F.3d 1563, 1579 (Fed.Cir.1996) (Mayer, J., concurring in the judgment); *see* 37 C.F.R. s. 1.53(d). It is based solely on the disclosure of the parent application. Applied Materials, 98 F.3d at 1579 (citing *Manual of Patent Examining Procedure* s. 201.07 (6th ed.1995)).

Schreiber charges that the '724 patent examiner expressly found the broader "folding" language of the '724 patent claims to be fully disclosed by the '860 patent. The comments referenced by plaintiff,FN3 however, mention "folding" generally and are not a specific discussion of "folding" versus "v-folding". And the examiner's rejection of plaintiff's amendment deleting the "v-" in "v-folding" in the specification is far more powerful evidence that the examiner believed both patents limited "folding" to v-folds. *See* Pl.'s Reply Mem., Ex. H (Examiner's 1/3/97 Office Action Summary) at 3-4. Moreover, Schreiber acquiesced in the rejection by canceling the amendment, thus disclaiming the interpretation now advanced. *See* Defs.' Statement of Claim Interp., Ex. 9 at 4.

FN3. The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: an apparatus and process for packaging a food item into hermetically sealed individual slices comprising providing and feed a web, folding a web,....

Pl.'s Reply Mem., Ex. H (Examiner's 1/3/97 Office Action Summary) at 4-5.

C. "Hermetic Seal"

The claims and specifications repeatedly use the terms "hermetic seal" or "hermetically sealed" in discussing the web's longitudinal seal, the cross-seals between slices, and the individual packages of cheese. Both

parties believe I should start with the definition of "hermetic seal" found in the Glossary of Packaging Terms:

hermetic seal.	A seal that will exclude air and will be leakproof at normal temperatures and atmospheric pressures.

The Packaging Institute, U.S.A., *Glossary of Packaging Terms: Standard Definitions of Trade Terms Commonly Used in Packaging* at 82 (5th ed.1979). Defendants, though, assert that I also need to construe "hermetic", which is defined in the same glossary as "[a]irtight or impervious to air or fluids," and that both terms mean *absolutely* airtight or impervious to air. (They contend that Schreiber's machinery and processes do not in fact create hermetic seals because the thermoplastic film used in fact is not absolutely airtight-it does allow air molecules and vapors in minute amounts to pass through it.) Schreiber proposes that the terms be interpreted to mean merely that all open edges are sealed together to minimize the entry of air and leakage under normal conditions.

Each use of "hermetic" in the claims and specifications is in specific reference to seals produced by the claimed process and machine-in other words, hermetic is not used alone but instead is used in "hermetic seal" or "hermetically sealed." Interpretation of "hermetic" standing alone, then, is unnecessary.

Use of the term "hermetic seal" must be made in light of the specification and preferred embodiment. As stated above, a claim interpretation that excludes the preferred embodiment is rarely, if ever, correct. Vitronics, 90 F.3d at 1583. Defendants' interpretation of "hermetic sealed package" as an absolute barrier to all air molecules would result in no embodiment disclosed in Schreiber's patents falling within the claims. The patents disclose plastic, heat-sealable films such as polypropylene, polyethylene, polyester/Mylar, cellophane, polycarbonates, and acrylic nitriles, *see* '860 Patent col. 7 lines 64-68, col. 8 lines 1-28, all of which the parties agree are permeable to some air molecules. If the term "hermetic seal" means what the defendants say, there is no support in the specification for it, as the specification fails to disclose any heat-sealable plastic films that do not allow the passage of trace gasses. Thus, because defendants' definition would exclude the preferred embodiment, it would take a great deal of convincing for me to define "hermetically sealed" as requiring an absolute air and vapor barrier. The defendants have not met such a heavy burden.

The Schreiber patentees distinguished their invention from prior art that used an overlay flap to close the wrapper on one side and a "cheese seal," in which a thin layer of cheese holds the wrapper layers together, at the side seams. *See, e.g.,* '860 Patent at col. 1 lines 33-37 (describing flap), col. 1 lines 47-56 (describing cheese seal), col. 11 lines 43-50 (comparing claimed invention to prior art). The patent specifications explain that one problem with the cheese seal and overlay flap was the entry of-air into the package, lessening shelf life. *See, e.g.,* '860 Patent col. 1 lines 57-64 (describing problems with cheese seal), col. 2 lines 12-15 (describing problems with flap). The patents at issue are directed to improving the sealing of the individual slices by having each open edge sealed shut. The patents' "hermetic seals" are contrasted with the prior art seals throughout the specifications. Relative to the cheese seal the seal described in the claims at issue excludes a substantially greater amount of air. "Hermetic seal" as used in the patents refers to the seals made at the open edges of the thermoplastic film, not to the barrier quality of the plastic itself. The small amount of permeability inherent in the packaging material disclosed thus should not be dispositive regarding the definition of "hermetic *seal*."

Those skilled in the food packaging art-as the patent examiner is assumed to be-should recognize that the films disclosed in the Schreiber patents are semi-permeable and thus permit passage of minute amounts of gas over time. FN4 As a result, construing the claims in conjunction with the specifications, those of ordinary skill would readily understand the term "hermetic seal" as used in the claims to mean that the cheese slice is sealed from the environment to the extent the thermoplastic materials permit. Interpretation of the term "hermetic seal" in this manner preserves the patent's internal coherence. "Hermetic seal" thus means a seal that will exclude air and will be leakproof at normal temperatures and atmospheric pressures to the extent the thermoplastic materials disclosed in the specification allow.

FN4. It is interesting to note that the Bush patent also referred to wrapping material as being airtight when it is not. The Bush patent indicates that a "film suitable for use as a wrapper for cheese should be *moisture proof and gas proof* ... for example, a Saran coated cellophane...." Defs.' Statement of Claim Interp., Ex. 5 (Bush patent) at col. 3 lines 18-21 (emphasis added). The parties' extrinsic evidence shows that Saran, like the thermoplastic materials mentioned in the patents at issue, is permeable to gasses. *See, e.g.,* Pl.'s Oral Argument Binder at 113.

U.S. Patent No. 5,440,860 Claim 1

A process for packaging a food item formed into a soft mass wherein the food item is wrapped in individual slices comprising:

folding a continuous web of heat-sealable thermoplastic material into folded condition including a fold, a folded longitudinal first side and an open longitudinal second side, the web on one side of the fold defining a front sheet and the web on the other of the fold defining a rear sheet;

continuously moving the web in a forward direction;

forming a longitudinal hermetic seal along the open longitudinal side of the web in folded condition to define a continuous tubular web, the longitudinal hermetic seal being formed in a continuous manner as the web is continuously moved forward;

inserting the soft mass food item into the tubular web;

after the food item is inserted, flattening the web to form a continuous slice of the food item disposed between front sheet and the rear sheet of the web; urging the front and rear sheets of the web together at predetermined intervals to define cross-sealing zones by applying sufficient pressure at the cross-sealing zones to remove substantially all of the food item from between the front and rear sheets, the cross-sealing zones extending from the first longitudinal side to the second longitudinal side of the web; and

forming a plurality of hermetically sealed cross-seals at the cross-sealing zones while the web is continuously moved forward by heating the web at the cross-sealing zones for a period of time sufficient to hermetically seal the web together across the cross-sealing zones, to form hermetically sealed slices of the food item.

U.S. Patent No.: 5,701,724 Claim 14:

A process for automatically and continuously packaging a cheese formulation into hermetically sealed individual slices, comprising the steps of:

providing a continuous web of heat-sealable plastic material extending lengthwise with opposing edge portions;

folding the web longitudinally;

sealing the edge portions of the web to form a longitudinal hermetic seal, thereby defining a continuous tube;

introducing the cheese along the web;

flattening the tube after the cheese is inserted to form a continuous flat ribbon of the cheese disposed within the flattened tube;

urging portions of the flattened tube together at predetermined intervals to define a plurality of cross-sealing zones, and applying sufficient pressure at the cross-sealing zones to eliminate substantially all of the cheese from the cross-sealing zones; and

heating the cross-sealing zones for a period of time and at a temperature sufficient to hermetically seal the cross-sealing zones to form with the longitudinal hermetic seal, hermetically sealed individual packages entirely enclosing the individual slices of the cheese;

wherein the web is continuously moved in the forward direction during the steps of folding, sealing the edge portions, flattening the tube and sealing the cross-sealing zones.

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