

United States District Court,
W.D. Michigan, Southern Division.

WHIRLPOOL CORPORATION and Whirlpool Patents Company,
Plaintiffs and Counter-Defendants.

v.

LG ELECTRONICS, INC,
Defendant and Counter-Claimant.

LG ELECTRONICS, U.S.A., INC,
Defendant and Counter-Claimant.

GENERAL ELECTRIC COMPANY,
Defendant and Counter-Claimant.

No. 1:04-CV-100

Nov. 8, 2005.

OPINION

BELL, Chief J.

Plaintiffs Whirlpool Corporation and Whirlpool Patents Company (collectively "Whirlpool") brought this Action against Defendants LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively "LG"), and General Electric Company ("GE"), seeking injunctive relief and damages for patent infringement. This matter is currently before the Court for claim construction pursuant to *Markman v. Westview*, 517 U.S. 370, 372 (1996).

I.

Whirlpool is the owner of U.S. Patent No. 6,212,722 (filed July 13, 1999) entitled "Apparatus and Method for Rolling Clothes in an Automatic Washer" (the '722 Patent"), and U.S. Patent No. 4,784,666 (filed Aug. 8, 1986) entitled "High Performance Washing Process for Vertical Axis Automatic Washer" ("the '666 Patent"). Both patents cover automatic clothes washers. In this action Whirlpool asserts that the Profile Harmony washer made by LG and sold by GE infringes certain claims of the '722 Patent and the '666 Patent.

The patents relate generally to vertical axis or top loading washing machines and to washing methods that use less water than conventional methods. In the '722 Patent clothes move in an inverse toroidal rollover patten. That is, instead of the conventional movement of the clothes down the center axis and outward at the bottom of the machine in the same direction as the fluid motion, the movement of the clothes in the '722 Patent is up the center axis and outward at the top of the machine and against the toroidal fluid motion in the wash chamber. The inverse toroidal pattern allows clothes to be washed in less wash liquid.

The '666 Patent uses an initial spin washing operation using a low water-to-cloth ratio, followed by a second

more conventional washing operation during which the basket is substantially filled with water and mechanical agitation is applied to the clothes. During the initial spin washing operation a detergent solution is applied to the clothes, and the clothes are spun in the wash basket. Very little water is required during the spin wash and no mechanical agitation is applied to the clothes.

The parties submitted a joint status report regarding claim construction in which they outlined the claim language to be construed. (Docket # 103).

II.

Although a patent frequently includes a number of features including an abstract, background, drawings, a written description and claims, claim construction analysis begins with the words of the claim. *TI Group Automotive Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C.*, 375 F.3d 1126, 1134 (Fed.Cir.2004). During claim construction the court's analytical focus "must begin and remain centered on the language of the claims themselves for it is that language that the patentee chose to use to 'particularly point [] out and distinctly claim[] the subject matter which the patentee regards as his invention.' 35 U.S.C. s. 112, para. 2." *Brookhill-Wilk 1, LLC. v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 (Fed.Cir.2003) (quoting *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed.Cir.2001)).

Claim construction is a matter of law within the exclusive province of the court. *Markman*, 517 U.S. at 372; *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed.Cir.1998). "As a general rule, terms in a patent claim receive their plain, ordinary, and accepted meaning within the community of those of ordinary skill in the relevant art." *Leggett & Platt, Inc. v. Hickory Springs Mfg. Co.*, 285 F.3d 1353, 1357 (Fed.Cir.2002). The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources including the claims themselves, dictionaries and treatises, the written description, the drawings, and the prosecution history. *Brookhill-Wilk*, 334 F.3d at 1298. "[C]laim terms are presumed to be used consistently throughout the patent, such that the usage of a term in one claim can often illuminate the meaning of the same term in other claims." *Research Plastics, Inc. v. Federal Packaging Corp.*, 421 F.3d 1290, 1295 (Fed.Cir.2005).

Claims must be read in view of the specification, of which they are a part, but it is improper to read a limitation from the specification into the claims. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 904 (Fed.Cir.2004). The problem presented by many cases, "is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims." *Id.* at 905 (quoting *E-Pass Techs., Inc. v. 3 Com Corp.*, 343 F.3d 1364, 1369 (Fed.Cir.2003)). Although patent claims should be interpreted so as to cover preferred embodiments disclosed in the specification, patent claims are not limited to the preferred embodiments. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed.Cir.2002).

When it is reasonably possible to do so, a claim that is amenable to more than one construction should be construed to preserve its validity. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed.Cir.2001). However, when the claim's language embraces prior art, the claim cannot be construed contrary to its plain language merely to preserve its validity. *Id.*

The claims can not [*sic*] be rewritten by the court to avoid the impact of newly discovered prior art, for the role of "claim construction" is to describe the claim scope as it was intended when examined and obtained by the applicant, not as it might have been limited upon a different record of prosecution and prior art.

Id. "[W]e construe the claim as written, not as the patentees wish they had written it." *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed.Cir.2004).

A claim element may be drafted in means-plus-function format:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

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

When a means-plus-function limitation is at issue, the court must "construe that limitation, thereby determining what the claimed function is and what structures disclosed in the written description correspond to the 'means' for performing that function." *Kemco Sales, Inc. v. Control Papers Co., Inc.* 208 F.3d 1352, 1360 (Fed.Cir.2000). If a patentee fails to disclose adequate structure, the claim will be rendered invalid as indefinite under section 112, paragraph 2. *Id.* at 1360-61.

The public should not be required to guess as to the structure for which the patentee enjoys the right to exclude. The public instead is entitled to know precisely what kind of structure the patentee has selected for the claimed functions, when claims are written according to section 112, paragraph 6.

Medical Instrumentation and Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1220 (Fed.Cir.2003).

Although paragraph six statutorily provides that one may use means-plus-function language in a claim, one is still subject to the requirement that a claim "particularly point out and distinctly claim" the invention. Therefore, if one employs means-plus-function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112.

In re Donaldson Co., Inc., 16 F.3d 1189, 1195 (Fed.Cir.1994) (en banc). "[S]tructure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim. This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing s. 112, para. 6." *B. Braun Medical, Inc. v. Abbott Laboratories*, 124 F.3d 1419, 1424 (Fed.Cir.1997).

In identifying the function of a means-plus-function claim, a claimed function may not be improperly narrowed or limited beyond the scope of the claim language. Conversely, neither may the function be improperly broadened by ignoring the clear limitations contained in the claim language.

Lockheed Martin Corp. v. Space Systems/Loral, Inc., 324 F.3d 1308, 1319 (Fed.Cir.2003) (citation omitted).

"[F]ailure to disclose adequate structure corresponding to the recited function in accordance with 35 U.S.C. s. 112, paragraph 1, results in the claim being of indefinite scope, and thus invalid, under 35 U.S.C. s. 112, paragraph 2." *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1376 (Fed.Cir.2001) (citing *In re Dossel*, 115 F.3d 942, 945 (Fed.Cir.1997)).

"Because the claims of a patent are afforded a statutory presumption of validity, overcoming the presumption of validity requires that any facts supporting a holding of invalidity must be proved by clear and convincing evidence." Budde, 250 F.3d at 1376.

III.

With respect to the '722 Patent the Court is required to construe the terms "above" and "dragged," and to determine what, if any, corresponding structure has been disclosed for four means-plus-function claims.
FN1

FN1. The parties' joint status report (Docket # 103) identifies the following disputed terms in the '722 Patent for construction by the Court:

-> "above" in Claims 1-3, 6, 8-11, 13, 14, 16, 17, 25, 28;

-> "dragged" in Claims 1, 2, 6, 8, 10, 17, 18, 25, 28; and

-> "drag forces" in Claims 14, 19.

The joint status report also indicates that the definition of the corresponding structures for the following means-plus-function recitals in Claims 27-29, 31 require construction by the Court:

-> "means for supplying a quantity of wash liquid into the wash chamber sufficient to wet the cloth items but insufficient to cause the cloth items to lose frictional engagement with the impeller as the impeller oscillates" in Claims 27, 28, 29;

-> "means for oscillating the impeller such that the cloth items directly above the impeller are dragged in an oscillatory manner" in Claim 28;

-> "means for impeding the angular movement of the cloth items disposed along the periphery of the impeller such that relative angular motion is created between the cloth items disposed along the periphery of the impeller and the cloth items disposed immediately above the impeller" in Claim 28; and

-> "means for balancing the forces applied to the cloth items above the impeller and the forces applied to

cloth items disposed along the periphery of the impeller such that relative angular motion is created between the cloth items above the impeller and the cloth items disposed along the periphery of the impeller wherein cloth items are driven to move along an inverse toroidal path in the wash basket" in Claim 28.

A. "Dragged" and "drag forces"

Whirlpool contends that the term "dragged" should be construed to mean "pulled with friction." Defendants contend that "dragged" should be defined as "to move by force."

The Oxford English Dictionary Online defines drag as:

To draw or pull (that which is heavy or resists motion); to haul; hence to draw with force, violence, or roughness; to draw slowly and with difficulty; to trail (anything) along the ground or other surface, where there is friction or resistance.

Webster's Third New International Dictionary, Unabridged defines "drag" as "to pull along by main force: draw slowly or heavily." The American Heritage Dictionary of the English Language (4th ed.) defines "drag" as "To pull along with difficulty or effort."

Whirlpool contends that friction is part of the defining characteristic of drag. The '722 Patent specification supports Whirlpool's construction:

However, when the impeller 40 oscillates, the frictional engagement between the impeller 40 and the cloth items in the lower transfer zone LTz adjacent the impeller 40 creates forces on the cloth items in the lower transfer zone LTz such that cloth items in the transfer zone LTz are dragged along with the impeller 40.

'722 Patent, col. 5 ll. 60-65 (emphasis added).

However, if wash liquid is introduced to a degree that the cloth items are allowed to float in the wash basket 42, the impeller 40 will not sufficiently frictionally engage the cloth items to drag the cloth items along an arc-like path.

'722 Patent, col. 8 ll. 51-55 (emphasis added).

According to Defendants, Whirlpool is attempting to narrowly interpret the term "drag" to require frictional engagement to avoid invalidity over prior art, even though this narrow concept was specifically included in certain dependent claims, and intentionally excluded from most of its claims. The term "frictional engagement" is found in dependent claims 4, 6, 9, 10, 19, 27, and 29. Defendants contend that if the concept of friction was already part of the understanding of "drag" in independent claims 1, 8, 17, 25, and 28, then the introduction of the term "frictional engagement" in the dependent claims would be rendered redundant and superfluous. *See* 35 U.S.C. s. 112 para. 4 ("a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed").

It would be improper to interpret claims in a manner rendering recitations in other claims (the dependent claims) redundant or superfluous. *See* AK Steel Corp. v. Sollac, 344 F.3d 1234, 1242 (Fed.Cir.2003)

("Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend."). However, the Court does not agree with Defendants' contention that Whirlpool's incorporation of "friction" into the definition of "dragged" would render any of the dependent claims redundant or superfluous.

The dependent claims have other limitations over the independent claims besides the insertion of the concept of "frictional engagement." Claim 1 recites that "cloth items above the impeller are dragged in an oscillatory manner along with the impeller." '722 Patent, Claim 1 (emphasis added). Where the term "frictional engagement" is used in Claims 4, 6, 9, 10, 19, 27, and 29, it is not used as an alternative way of describing how the clothes are moved. Instead, the dependent claims describe controlling the water level such that the clothes will not "lose" frictional engagement with the impeller. For example, Claim 4 recites "supplying a quantity of wash liquid into the wash chamber sufficient to wet the cloth items but insufficient to cause the impeller to lose frictional engagement with the cloth items." '722 Patent, claim 4 (emphasis added). This stated desire to prevent loss of "frictional engagement" between the impeller and the clothes implies that such frictional engagement already existed in the independent claims. Accordingly, the use of the term "frictional engagement" in the dependent claims supports Whirlpool's position that the term dragged means "pulled with friction."

The abstract for the '722 Patent also supports Whirlpool's proposed construction of the term:

The method includes loading cloth items into the wash chamber and then supplying a quantity of wash liquid into the wash chamber sufficient to moisten the cloth items but insufficient to cause the cloth items to lose frictional engagement with the impeller as the impeller oscillates.

'722 Patent, abstract (emphasis added). The clear import of the language is that there must be frictional engagement between the cloth and the impeller so that the cloth will be dragged. Thus, it is appropriate to define dragged to mean "pulled with friction."

Defendants also object to Whirlpool's definition of drag because they contend Whirlpool is referring to friction that causes something to move, when in fact the dictionary definition of drag uses the term friction to describe a force that resists movement.

Whirlpool denies that it is employing friction to refer to the force that causes movement. The '722 Patent recites that the cloth items are dragged in an oscillatory manner along with the impeller, i.e., they are pulled with friction in an oscillatory manner by the impeller, in contrast to movement by liquid force or fluid force which would not involve friction or dragging.

Defendants' suggested definition of "to move by force" does not include the resistance or difficulty that is implied in the term drag and it is inconsistent with the premise in the patent specification that there is some frictional engagement that would be lost when too much wash liquid is added. Accordingly, the Court will construe "dragged" as "pulled with friction" and "drag forces" as "forces that pull with friction."

B. "Above"

Whirlpool contends that the term "above" should be construed to mean "on top of." Defendants contend that the term "above" should be construed to mean "over." Both definitions are found in the dictionary. For example, the Oxford English Dictionary Online defines "above" as "Directly over, vertically up from; on or

over the upper surface; on the top of, upon, over." Accordingly, the Court must determine which definition best matches the term as it is used in the context of the patent. *Home Diag., Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1358-59 (Fed.Cir.2004).

Whirlpool contends that its proposed construction of "above" to mean "on top of" best matches the term as used in the context of the patent because the patent specification repeatedly and consistently refers to cloth items "above" the impeller as being in direct contact and in frictional engagement with the impeller. For example,

The motion of cloth items within the wash chamber is created by direct contact between an oscillating impeller and the cloth items supported above the impeller.

'722 Patent, col. 2 ll. 43-45 (emphasis added).

This inverse toroidal rollover pattern is created by direct contact between the oscillating impeller and the cloth items supported above the impeller.

'722 Patent, col. 3 ll. 3-5 (emphasis added).

However, when the impeller 40 oscillates, the frictional engagement between the impeller 40 and the cloth items in the lower transfer zone....

'722 Patent, col. 5 ll. 60-63 (emphasis added).

Defendants contend "above" should be construed according to its ordinary meaning of "over." Defendants contend that Whirlpool's attempt to narrowly construe "above" to mean "on top of" is an effort to imply contact and frictional engagement between the impeller and the cloth items and is designed to respond to Defendants' prior art defenses. Defendants contend these efforts must fail because the specifications cannot be used to limit the claims. In addition, Defendants contend that the word "above" should not be given two different meanings within the same patent. Claim 3 refers to "free liquid in which the cloth items can be suspended in above the impeller." '722 Patent, Claim 3, col. 12 ll. 16-17. Defendants note that cloth items cannot be suspended "on top of" the impeller, and that this is a further basis for defining "above" as over.

The Court agrees that the reference in Claim 3 to "liquid in which the cloth items can be suspended in above the impeller," indicates a use of "above" that does not necessarily mean on top of or in physical contact with the impeller. Furthermore, Claim 2 recites "a lower transfer zone immediately above the impeller" and Claim 6 recites "less than the quantity of wash liquid at which the cloth items lose frictional engagement with the cloth items directly above the impeller." If "above" were to be construed to mean "on top of" it would render the terms "directly" and "immediately" superfluous.

In contrast to the difficulties met when "above" is construed to mean "on top of," construing "above" as "over" is appropriate in all contexts in the patent. There may be other terms used in the patent that suggest touching between the clothes and the impeller, but the use of the term "above" does not. It appears that the term "above" was used in its broad and most common form to mean "over," and that it is narrowed in the claims through its association with other terms such as dragged, frictional engagement, directly, and immediately. Accordingly, the Court will construe "above" as "over."

C. Means-plus-function claim recitations

In Claims 27-29 and 31 Whirlpool uses "means for" language. Defendants contend that none of these claims can be interpreted as a matter of law because there is insufficient description of the corresponding structure in the patent.

With respect to each of Defendants' arguments, Whirlpool contends that the argument is not an issue for claim interpretation, but rather should be raised in summary judgment on validity because the argument calls for extrinsic evidence regarding what is known by an expert in the field, which is improper to consider at this stage of the litigation.

Whirlpool is correct in its assertion that the question of "[w]hether or not the specification adequately sets forth structure corresponding to the claimed function necessitates consideration of that disclosure from the viewpoint of one skilled in the art." *Budde*, 250 F.3d at 1376. Nevertheless, this does not mean that a court could never find a means-plus-function claim invalid during claim construction. It merely means that the court must apply the presumption of validity, that the court cannot assume it knows what one skilled in the art knows, and that to find a claim invalid at this stage it must appear by clear and convincing evidence that there has been no disclosure in the patent of the corresponding structure. As noted in *Budde*:

For a court to hold that a claim containing a means-plus-function limitation lacks a disclosure of structure in the patent specification that performs the claimed function, necessarily means that the court finds the claim in question indefinite, and thus invalid. Because the claims of a patent are afforded a statutory presumption of validity, overcoming the presumption of validity requires that any facts supporting a holding of invalidity must be proved by clear and convincing evidence. Thus, a challenge to a claim containing a means-plus-function limitation as lacking structural support requires a finding, by clear and convincing evidence, that the specification lacks disclosure of structure sufficient to be understood by one skilled in the art as being adequate to perform the recited function.

250 F.3d at 1376-77 (citations omitted).

1. "*Means for supplying ... wash liquid*"

Claims 27 and 29 both recite the following:

means for supplying a quantity of wash liquid into the wash chamber sufficient to wet the cloth items but insufficient to cause the cloth items to lose frictional engagement with the impeller as the impeller oscillates.

('722 Patent, Claims 27 and 29).

Whirlpool contends that the inlet nozzle and the flow valve disclosed in the specifications of the '722 Patent are the structures corresponding to the "means for supplying ... wash liquid." The specifications provide:

A flow valve 52 controls the inlet of wash liquid into the washer 30. Wash liquid is sprayed into the wash basket 42 through an inlet nozzle 54.

'722 Patent, col. 4 ll. 46-49. The inlet nozzle and flow valve may be sufficient to satisfy the means-plus-function recital in Claim 28 which merely calls for a "means for supplying a quantity of wash liquid into the wash chamber sufficient to wet the cloth items." However, the function described in Claims 27 and 29 is

more complicated than simply adding water. The function requires a means for determining when the quantity of liquid introduced is "sufficient to wet the cloth items but insufficient to cause the cloth items to lose frictional engagement."

Whirlpool did not address the structure that corresponds to this function in either of its briefs. However, during oral argument Whirlpool identified the following language in the specifications to address these more detailed claims:

As can be appreciated, some system must be provided for controlling the amount of water inlet into the washer. There are many existing systems which provide for indirect control of the wash liquid supplied by sensing the size of a load in a wash basket and then supplying an amount of water into the washer in accord with the sensed load size.

'722 Patent, col. 8 ll. 61-66. Although Whirlpool has suggested existing systems which control an amount of water, Whirlpool has not linked any system to the function of limiting the amount of water to the need to maintain frictional engagement with the impeller.

Whirlpool contends that this claim limitation at issue is an elementary feature that is known to those in the art. Whirlpool contends that a flow valve controls the water and stops the water flow after the cloth items are sufficiently wet. The Court is satisfied that flow valve controls are well understood by persons of skill in the art of washing machines in relation to supplying wash liquid to the wash chamber. However, the prior art Whirlpool relies on for structure are high fill machines, not low fill machines. Whirlpool has not identified any previous art utilizing a flow valve that would measure when the quantity of water is "sufficient to wet the cloth items but insufficient to cause the cloth items to lose frictional engagement with the impeller." Whirlpool ignores this complicated function and has identified no structure in the specifications that would be known to one skilled in the art of washing machines that would accomplish this measurement.

Contrary to Whirlpool's assertion, it is not "obvious" that when a sufficient quantity of wash liquid has been introduced, the inlet nozzle and the flow valve will stop supplying the wash chamber with wash liquid. Whirlpool has not disclosed how a specific level of liquid will be determined. An inlet nozzle and flow valve alone cannot accomplish the recited function.

Defendants have shown by clear and convincing evidence that the specification lacks disclosure of sufficient structure.

2. "Means for oscillating the impeller"

Claim 28 discloses the following:

means for oscillating the impeller such that the cloth items directly above the impeller are dragged in an oscillatory manner....

'722 Patent, Claim 28.

Whirlpool contends that "a power transmission device and motor, and, alternatively, a direct drive type power transmission system" as described in the specifications is the corresponding structure that not only

oscillates the impeller but also does so in a manner that causes the clothes directly above the impeller to be dragged in an oscillatory manner. The specifications provide:

The present invention may be embodied in an automatic washer, as shown in FIG.4, where there is shown an automatic washer 30 having an outer tub 32 which is disposed and supported within a cabinet structure 34. A power transmission device 36 is provided below the tub for rotatably driving a[n] impeller 40 and a wash basket 42.... Drive power is transmitted from a motor 44 to the power transmission device 36 via belt 46. Alternatively, the present invention could readily be employed in an automatic washer which employed a direct drive type power transmission system.

'722 Patent, col. 4 ll. 31-42. Whirlpool contends that the means for oscillating the impeller is an elementary feature to people skilled in the art.

The parties have agreed that the term "oscillating" means moving the impeller back and forth and that "an oscillatory manner" is a back and forth manner. (Jt. Status Rpt. Concerning Claim Construction at 2). Defendants do not quarrel with Whirlpool's assertion that it has adequately disclosed a structure for moving the impeller back and forth. Defendants note, however, that the function claimed does not only involve oscillation of the impeller. It recites a means for oscillating the impeller "such that the cloth items directly above the impeller are dragged in an oscillatory manner." Defendants contend that Whirlpool's reference to a generic power transmission device alone cannot accomplish the claimed function of dragging the cloth items.

Defendants have not produced clear and convincing evidence that the disclosure regarding the structure for dragging the cloth items is insufficient. Dragging clothes back and forth as the impeller is moved back and forth is undoubtedly a familiar concept to people skilled in the art of washing machines. It does not appear to be a particularly unique or complex function that would require further description. The Court is satisfied that the patent adequately discloses the corresponding structure to achieve this function. If there is any question about whether this disclosure is sufficient to one skilled in the art of washing machines, that is a question of fact for summary judgment rather than for claim construction.

3. "Means for impeding the angular movement of the cloth items"

Claim 28 discloses:

means for impeding the angular movement of the cloth items disposed along the periphery of the impeller such that relative angular motion is created between the cloth items disposed along the periphery of the impeller and the cloth items disposed immediately above the impeller....

'722 Patent, Claim 28.

Whirlpool contends that "a plurality of protrusions" is the corresponding structure that performs the function of impeding the angular movement of the cloth items. The specifications provide:

The shape of the wash basket 42 may have some impact on the above stated basic operating principle. Specifically, it appears important to set up forces which have a tendency to hold the cloth items in the lower drop zone Dz, stationary. To that end, a plurality of protrusions 70 are provided along the bottom corner of the wash basket 42. While these protrusions 70 are not required, it is believe[d] that they increase the

resistance to angular or rotational motion of the cloth items 20 in the drop zone Dz, such that the cloth items in the drop zone Dz, do not move with the impeller in an arc-like path thereby setting up the radially inward motion.

'722 Patent, col. 7 ll. 13-25 (emphasis added). *See also* '722 Patent, figures 9, 10, 12-15.

Again, Defendants note that the function referenced in Claim 28 is not merely a means of impeding the angular movement of the cloth items as Whirlpool suggests. Rather, a more complex function is described:

means for impeding the angular movement of the cloth items disposed along the periphery of the impeller such that relative angular motion is created between the cloth items disposed along the periphery of the impeller and the cloth items disposed immediately above the impeller.

'722 Patent, Claim 29, col. 16 ll. 32-36. Defendants contend that a generic plurality of protrusions alone cannot accomplish this claimed complex function. Protrusions in the wash basket that simply keep clothes distributed along the periphery of the basket are well known in the prior art. However, the issue is not simply whether the structure impedes angular movement of the cloth items, but whether it impedes their movement in such a manner that "relative angular motion is created between the cloth items disposed along the periphery of the impeller and the cloth items disposed immediately above the impeller."

There is no question that the patent specification recites a structure for accomplishing this function. Whether or not the recited structure is alone sufficient to accomplish the recited function is a matter that would require extrinsic evidence from an expert. This Court cannot say, as a matter of law, that the recited structure is insufficient. Accordingly, the Court will accept Whirlpool's assertion that a plurality of protrusions is the corresponding structure. Any factual issues regarding the sufficiency of this disclosure from the point of view of an expert can be addressed in a summary judgment motion on the issue of invalidity.

4. "Means for balancing the forces"

Claim 31 discloses:

means for balancing the forces applied to the cloth items above the impeller and the forces applied to cloth items disposed along the periphery of the impeller such that relative angular motion is created between the cloth items above the impeller and the cloth items disposed along the periphery of the impeller wherein cloth items are driven to move along an inverse toroidal path in the wash basket.

'722 Patent, Claim 31.

Whirlpool contends that the structure identified in the patent specification associated with this means-plus-function claim limitation is "a wash basket, an impeller and a liquid level in the wash basket." The description of the preferred embodiments in the '722 Patent provides:

The applicants have discovered that this inverse toroidal rollover cloth movement within a washer can be achieved by balancing the forces applied to the cloth items within the washer. More specifically, the applicants have discovered that for particular low water fill level conditions, oscillating movement of an impeller will cause cloth items loaded within a wash basket to move within the wash basket in the inverse

toroidal manner described herein below.

'722 Patent, col. 4 ll. 18-30 (emphasis added). The specifications further provide:

For example, it is believed that the amount of cloth items loaded into the washer; the amount of water added into the washer, the shape of the impeller, the movement of the impeller and the configuration of the wash basket into which the clothes items are loaded can all affect the establishment of inverse toroidal rollover motion.

'722 Patent, col. 6 ll. 54-60 (emphasis added).

Whirlpool contends that the specifications make it clear that the impeller, the wash basket, and the liquid level in the wash basket are the structure corresponding to the function recited in the "means for balancing" claim term.

Defendants contend that a generic wash basket, impeller and liquid level cannot accomplish the detailed claimed function. There is little disclosed about what the structure is that allows for the inverse toroidal movement.

All three features identified by Whirlpool, the impeller, wash basket and liquid level, are features found in many washing machines in the prior art. Whirlpool has not identified what it has done to these features that distinguishes them in this invention from the prior art. Whirlpool suggests that the amount of cloth items, the amount of water, the shape of the impeller and the configuration of the basket all affect the inverse toroidal motion, but Whirlpool has not identified what amount of cloth items, what amount of water, what shape of impeller or what configuration of the basket will contribute to a balancing of the forces. Whirlpool has identified a theory, but not a structure. This is the heart of Whirlpool's invention, so Whirlpool cannot point to any existing structure that would be known to someone skilled in the art. The Court is accordingly satisfied that Defendants have shown by clear and convincing evidence that the specification lacks disclosure of sufficient structure to accomplish a balancing of the forces.

IV.

The claims at issue in the '666 Patent are Claims 13 and 14. These claims are directed to a method of laundering that does not use mechanical agitation during the spin wash cycle. The parties have identified five terms for construction by the Court. FN2

FN2. The parties' joint status report (Docket # 103) identifies the following disputed terms in the '666 Patent for construction by the Court:

1. "means for providing agitation" in Claim 13;
2. "passing ... through said wash load" in Claim 13;
3. "passing an amount ... in excess of that necessary to saturate the wash load" in Claim 13;

4. "passing ... without mechanically agitating said wash load" in Claim 13; and

5. "said wash load is agitated" in Claim 14.

Claim 13 is a method claim comprising three steps:

A method of laundering a textile wash load in a washing apparatus having a rotatable wash zone including a peripheral wall, means for rotating said peripheral wall and said wash load in said wash zone about a generally vertical axis, and means for providing agitation to said wash load within said wash zone, comprising the steps of:

(1) introducing said wash load into said wash zone;

(2) passing an amount of detergent solution through said wash load in excess of that necessary to saturate the wash load without mechanically agitating said wash load;

(3) thereafter rinsing said detergent solution from said wash load.

'666 Patent, Claim 13 (emphasis added).

Claim 14 is a method claim comprising one step:

A method of laundering textile wash load as recited in claim 13 wherein said wash load is agitated for a time within said wash zone during said rinsing.

'666 Patent, Claim 14 (emphasis added).

A. "Means for providing agitation"

The preamble to Claim 13 recites a "means for providing agitation to said wash load within said wash zone...." '666 Patent, Claim 13. The parties agree that this is a means-plus-function claim and they agree on the definition of the function. The parties disagree, however, on the corresponding structure described in the '666 Patent for performing this function.

Whirlpool contends that the corresponding structure for providing agitation is "any device that moves cloth items to and fro." Defendants contend the corresponding structure for providing agitation is "a vertical axis agitator 30 with a center post, a bottom skirt 32, and a plurality of radially extending vanes 34, and structural equivalents thereof."

The '666 Patent recognizes that prior art wash methods encompass a number of ways of providing agitation. The specification recites:

The known prior art wash methods, whether practiced in a horizontal axis or a vertical axis machine, employ varying amounts of mechanical agitation of the clothes load.

'666 Patent, col. 1 ll. 48-51. "Many machines employ an agitator that is mounted on a vertical axis and

driven in an oscillating rotary fashion to agitate the clothes load." '666 Patent, col. 1 ll. 17-19. Horizontal axis machines "provide mechanical agitation of the clothes load by tumbling the load." '666 Patent, col. 1 ll. 38-40. "The amount of fabric damage that occurs during a washing operation is a function of many variables, including the duration and type of agitation provided." '666 Patent, col. 1 ll. 57-61. Because the patent refers to a variety of methods of agitation, and because the dictionary definition of agitation is "to move to and fro," Whirlpool contends that a means for providing agitation is "any device that moves cloth items to and fro." According to Whirlpool, such a device could include an agitator or an impeller.

Defendants contend that the '666 Patent never uses the word "impeller" and that the Court should not read such a structure into the patent. According to Defendants, only one corresponding structure is disclosed in the patent: "A vertical axis agitator 30 of conventional design is provided in the wash basket to provide mechanical agitation to the clothes load. The agitator has a bottom skirt portion 32 and a plurality of radially extending vanes 34." '666 Patent, col. 4 ll. 37-41. Defendants contend that given Whirlpool's limited disclosure and the law regarding the construction of "means for" claims, the agitation means must be construed to be "a vertical agitator with a bottom skirt portion 32 and a plurality of radially extending vanes 34, and the structural equivalents thereof" because that is the corresponding structure that Whirlpool disclosed. *See Cortland Line Co. v. Orvis Co., Inc.*, 203 F.3d 1351, 1357 (Fed.Cir.2000) ("Because the specification describes only one structure corresponding to the connecting function, this court limits the connecting means element to threaded connectors and equivalents thereof.").

While a vertical axis agitator is disclosed in the '666 Patent as the preferred embodiment, '666 Patent, col. 4 ll. 37-39, the specification uses the term "mechanical agitation" in a generic sense to refer to all forms of mechanical agitation known in the prior art. As noted previously, patent claims are not limited to the preferred embodiments. *Teleflex*, 299 F.3d at 1328.

The means for providing agitation was not a key point of novelty to the overall invention; it was not the basis on which to distinguish any prior art. The '666 Patent teaches that any structure for providing agitation to the wash load will suffice for purposes of the invention. One skilled in the art would have an understanding of "known prior art wash methods" and "other different types of agitation." Means for providing agitation is indisputably a concept that is well known to people skilled in the art of washing machines. "The law is clear that patent documents need not include subject matter that is known in the field of the invention and is in the prior art, for patents are written for persons experienced in the field of the invention." *S3 Inc. v. NVIDIA Corp.* 259 F.3d 1364, 1371 (Fed.Cir.2001). "If the claims when read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, s. 112 demands no more." *Id.* at 1367 (quoting *Miles Laboratories, Inc. v. Shandon*, 997 F.2d 870, 875 (Fed.Cir.1993)).

The means for agitation during the rinse cycle was not what made this invention unique. The unique feature of this invention was the lack of agitation during the wash cycle. For purposes of this invention it did not matter how agitation was provided during the rinse cycle. Moreover, if the means for agitation were limited to an agitator and did not cover impellers, then during the prosecution history Whirlpool would not have been required to distinguish its invention from the prior art in *Marshall and Spindel* which did not have agitators.

Because the term "mechanical agitation" rather than vertical axis agitator is used in the claim, the claim must be understood to encompass any form of mechanical agitation. Impellers, like agitators, may be used to move clothes back and forth. Both impellers and agitators can be used to agitate a wash load. The '666 Patent does not limit the manner in which agitation is achieved. The "means for providing agitation" could

include an impeller, even though the term impeller is not found in the claims or in the specification, as long as an impeller was a known prior art method for providing agitation to a wash load.

B. "passing ... through said wash load"

The second step of Claim 13 recites:

(2) passing an amount of detergent solution through said wash load in excess of that necessary to saturate the wash load without mechanically agitating said wash load.

'666 Patent, Claim 13.

The parties dispute the meaning of "passing ... through said wash load." Whirlpool contends that "passing an amount of detergent solution through said wash load" should be construed as "spin washing the wash load by forcing an amount of detergent solution through the wash load by centrifugal force." Defendants contend that the ordinary meaning applies, i.e., that "passing through" requires the solution to pass "through" the clothes, but not over or around them. Passing through refers to a path that goes in one side of the clothes and out another.

With respect to this step, the specifications provide as follows:

Step 72 is to apply the concentrated detergent solution to a spinning wash load. This is referred [sic] to as the spin wash cycle in that the clothes load is not mechanically agitated, it merely is spun with the wash basket and held by centrifugal force against the basket wall during the spinning while the concentrated solution is applied to the spinning wash load.

'666 Patent, col. 5 ll. 35-41.

[D]uring the spin wash step 72 ... spin speeds in the range of 420-640 RPM are desirable in order to cause the detergent solution to quickly and directly pass through the clothes load....

'666 Patent, col. 6 ll. 14-24.

[F]orcing the water through the fabric by centrifugal force causes it to take a relatively direct (radial) path through the fabric, as opposed to following a path of least resistance ...

'666 Patent, col. 6 ll. 1-4.

Whirlpool's definition of "passing ... through said wash load" adds the concepts of spin washing, forcing, and centrifugal force. These concepts are found in the specifications and in Claim 8, but they are not found in Claim 13. Claim 13 simply recites "passing an amount of detergent solution through said wash load." The additional concepts Whirlpool introduces in its proposed construction are not justified by the language used in the claim.

Defendants' proposed construction, which requires the detergent solution to pass "through the wash load, not over or around it," (Def. Claim Constr. Br. at 18), is more true to the claim. Clearly, the intention is that most of the solution will take a direct route through the wash load. Nevertheless, Whirlpool objects to

Defendants' introduction of a limitation-"but not over or around them"-because such a limitation is not justified by Claim 13 or the specifications. Claim 13 merely recites passing solution through the wash load. It does not state that all of the solution will pass through the wash load or that no solution will ever go over or around the wash load. The specifications also note that the solution will take a "relatively direct (radial) path" through the fabric. '666 Patent, col. 6 ll. 2-3 (emphasis added).

At oral argument Defendants introduced a proposed construction of "passing [detergent solution] through the wash load, not merely over or around." This construction captures the essence of the claim without prohibiting some solution from going around the wash load. Accordingly, the Court will adopt this construction.

C. "Passing an amount ... in excess of that necessary to saturate the wash load"

In the second step recited of Claim 13 the parties also dispute the meaning of the term "passing an amount ... in excess of that necessary to saturate the wash load." Whirlpool contends that if this term has to be construed at all, it should be construed as "an amount that is just more than that which is needed to saturate the wash load." Defendants contend that it should be construed to require that "the total amount of wash liquid continuously passing through the clothes, exceeds the amount of liquid required to saturate the clothes." According to Whirlpool, Defendants' insertion of the word "continuously" has no basis in the claim term or anywhere in the intrinsic evidence, and its insertion causes a fundamental and improper change to the claim term.

The patent specification describes the quantity of detergent solution as follows:

It has been found that an amount of detergent solution only slightly in excess of that required to saturate the clothes load is sufficient for the concentrated washing operation.

'666 Patent, col. 2 ll. 34-37 (emphasis added).

The concentrated detergent solution is preferably a volume which is slightly in excess of the saturation level for the clothes load. For the purposes of this specification, saturation is defined as the point at which a load of clothes contains all the liquid it can hold. Adding additional liquid at this point merely causes a like amount of liquid to be discharged from the load.

'666 Patent, col. 5 ll. 49-55 (emphasis added).

Defendants contend that their addition of the concept of "continuously" passing through to the construction of the term comes from the prosecution history, and that it was a limitation agreed to by Whirlpool in order to gain allowance of the claim.

The Examiner's Interview Summary record reveals that the attorney "proposes to amend the claims to include "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load." Def. Ex. L., LGE 257 (emphasis added). Thereafter, on April 11, 1988, Whirlpool filed Amendment "B," in which it summarized the agreement reached during the interview with the Examiner as follows:

It was agreed that if each of the claims were clarified, where necessary, to specify the method feature

capturing the essence of "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load", then the claims would be allowable and the case would be in condition for allowance.

Def. Ex. L, Amendment "B" at 4, LGE 266 (emphasis added). Whirlpool then represented that it had amended the claims "to more clearly set forth the specifics of the step just identified along the lines agreed to during the interview." Def. Ex. L., Amendment "B" at 4, LGE 266.

In construing this term Whirlpool has relied solely on the specifications and dictionary definitions. Whirlpool has not responded to Defendants' citation to the discussion of "continuously" in the prosecution history. It is not clear to the Court what the insertion of this limitation adds to the meaning of the claim, but the Court cannot ignore what appears to be a concession in the prosecution history. Having agreed to one meaning during the prosecution of the patent, Whirlpool cannot now avoid this concession. *See Lemelson v. General Mills, Inc.*, 968 F.2d 1202, 1208 (Fed.Cir.1992). Accordingly, the Court will construe the term "passing an amount ... in excess of that necessary to saturate the wash load" consistent with the prosecution history as "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load."

D. "passing ... without mechanically agitating said wash load"

In the second step of Claim 13 the parties also dispute the meaning of the term "passing ... without mechanically agitating said wash load."

Whirlpool contends that "without mechanically agitating said wash load" should be construed to mean "without using the means for providing agitation to agitate the wash load." Defendants contend that "without mechanically agitating" should be construed to mean that the clothes do not move relative to each other.

In the specifications Whirlpool distinguished its invention from the prior art by noting that its spin-wash operation does not involve mechanical agitation of the clothes load:

The applicants have, however, discovered a concentrated washing operation that can be successfully practiced in a vertical axis automatic washer at water to cloth ratios well below five to one, through the use of a concentrated spin-wash operation which does not involve mechanical agitation of the clothes load.

'666 Patent, col. 2 ll. 13-18 (emphasis added).

Step 72 is to apply the concentrated detergent solution to a spinning wash load. This is referred to as the spin wash cycle in that the clothes load is not mechanically agitated.

'666 Patent, col. 5 ll. 35-38 (emphasis added).

In construing a term used in the patent it is appropriate to consider how the term is defined in the specifications. *Finnegan Corp. v. International Trade Comm'n*, 180 F.3d 1354, 1364 (Fed.Cir.1999). In the summary of the '666 invention the inventors explained the invention as follows:

Very little water is required during the concentrated washing step, and no mechanical agitation is applied to the clothes during this operation. That is, the clothes do not move relative to each other during the

concentrated wash step, even though they are being spun about the vertical axis of the machine.

'666 Patent, col. 2 ll. 28-34 (emphasis added). In discussing the prior art, the '666 Patent specifications similarly equate mechanical agitation to the movement of clothes relative to each other:

The known prior art wash methods, whether practiced in a horizontal axis or a vertical axis machine, employ varying amounts of mechanical agitation of the clothes load. That is, during the concentrated washing operation the individual items of clothing are moved relative to each other and relative to the wash basket or drum.

'666 Patent, col. 2 ll. 48-54 (emphasis added). The specifications further provide that during the spin wash cycle "the clothes load is not mechanically agitated, it merely is spun with the wash basket and held by centrifugal force against the basket wall during the spinning while the concentrated solution is applied to the spinning wash load." '666 Patent, col. 5 ll. 37-41 (emphasis added).

In its response brief Whirlpool asserted that "reversing direction during the spin wash does not constitute 'mechanical agitation' within the meaning of claim 13." Pl. Resp. Br. at 17. The Court rejects this broad statement as it is contrary to the representations during the prosecution history. During the application process for the '666 Patent Whirlpool distinguished its invention from prior art that achieved mechanical agitation by slowing, stopping, or reversing the direction of rotation of the wash tub to cause a tumbling and mechanical agitation of the clothes in the wash tub. During the application process for the '666 Patent the Examiner rejected claims 1-13 as being unpatentable over prior art, particularly Spendel and Marshall. Whirlpool responded to that rejection in Amendment "A," filed with the Patent Office on August 17, 1987. Spendel involved a horizontal axis washer, where the wash load was tumbled through the spray of detergent solution. Whirlpool distinguished Spendel as follows:

The clothes are tumbled within the horizontal drum through the use of an eccentric drive for the drum to provide a varying rotational speed thus providing conventional mechanical agitation to effect cleaning.

Def. Ex. L, Amendment "A" at 10, LGE 235 (emphasis added). Marshall involved an angled axis which permits a tumbling of the clothes during a spinning process. Whirlpool distinguished Marshall as follows:

Marshall specifically desires to maintain an annular layer of water within the wash tub in which the clothes are carried to assist in the mechanical agitation achieved by Marshall through the use of slowing or stopping and sometimes reversing the direction of rotation of the wash tub to cause a tumbling and mechanical agitation of the clothes in the wash tub.

D Ex. L., Amendment "A" at 11, LGE 236 (emphasis added). Whirlpool then represented to the Patent Office that the '666 invention was not anticipated by Spendel or Marshall because both Spendel and Marshall "provide and require mechanical agitation of the wash load during the step of applying the solution to the clothes load" and therefore failed to teach or suggest "to pass the detergent solution through the wash load without mechanical agitation." Def. Ex. L., Amendment "A" at 15, LGE 240.

Defendants contend that Whirlpool's construction of "without mechanically agitating" to mean "without using the means for providing agitation" is an attempt to adopt a definition that covers mechanical agitation of clothes during the wash process so long as that agitation is caused by some structure other than the claimed "means for providing agitation." Defendants contend that this construction ignores the definition of

agitation in the patent and Whirlpool's representations made during the patenting process. Defendants contend that because Whirlpool gave notice of its intention to exclude from the scope of its claims washers that periodically interrupt or change rotation of a wash basket during a wash cycle during the prosecution history to gain allowance, it cannot now change its position and argue a contrary interpretation of its claims before this Court. *See Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 452 (Fed.Cir.1985) ("the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance."). Defendants "are entitled to rely on the record made in the Patent Office in determining the meaning and scope of the patent." *Lemelson v. General Mills, Inc.*, 968 F.2d 1202, 1208 (Fed.Cir.1992).

Whirlpool distinguished its invention from prior art by defining "without mechanical agitation" to mean that the clothes did not move relative to each other. Defendants contend that Whirlpool should not now be allowed to argue that agitation of the clothes during the wash process is allowed so long as that agitation is caused by some structure other than the claimed "means for providing agitation."

Defendants are understandably concerned that Whirlpool's definition limits the mechanical agitation to the "claimed" means of agitation. Whirlpool has acknowledged that there are a number of means of agitating clothes or moving clothes relative to each other, including the use of agitators, tumbling, and reversing the direction of rotation of the wash tub. Any of these can be a "means for providing agitation to agitate the wash load." The specification and the prosecution history demonstrate that if a mechanical process causes the clothes to move relative to each other, then that process constitutes mechanical agitation. It is possible for there to be more than one means of agitation, or moving clothes relative to each other. Claim 13 does not tie the absence of mechanical agitation to any particular agitating structure. The Court is satisfied that Defendants' concerns will be resolved if Whirlpool's definition is changed from "the means" for providing agitation to "a means" for providing agitation. That construction is consistent with the claim, the specifications and the prosecution history. Accordingly, the Court will construe "without mechanically agitating" as "without using a means for providing agitation to agitate the wash load."

E. "Said Wash Load is Agitated"

Dependent Claim 14 provides that "said wash load is agitated." Whirlpool contends that this phrase should be construed as "moving the wash load to and fro." Defendants contend that it should be construed to involve an agitator because this is what Whirlpool represented during the prosecution of the patent.

As noted in Part IV A above, the '666 Patent uses the term "agitate" in its broadest and most generic form. Accordingly, the Court will adopt Whirlpool's construction of "said load is agitated" to mean "moving the wash load to and fro."

F. Free Solution

Finally, Defendants seek to prevent Whirlpool from arguing for a claim coverage which would encompass a conventional wash process where clothes are moved around in the water. The '666 Patent expressly promotes the use of "very little water" during the claimed process. '666 Patent, col. 2 11. 27-30. In listing the novel aspects of the invention over the prior art, Whirlpool stressed "low water volume." '666 Patent, col. 31.50-col. 41.4. During prosecution Whirlpool distinguished known wash processes because they "require a substantial volume of water." (Ex. L., LGE 210, IDS at 3). Whirlpool also stated:

In Applicant's method, when the clothes load is initially sprayed with concentrated liquid detergent, the

amount of liquid detergent solution in the wash basket at any given time is only enough to saturate the clothes load and there is no excessive or free solution in which the vanes could operate to mechanically agitate the wash load.

Def. Ex. L. LGE 241, Amendment "A" at 16 (emphasis added).

The term "free solution" is not found in either of the asserted claims, Claims 13 and 14. Defendants are not requesting this court to construe a particular claim in the patent. Instead, they are asking for an anticipatory ruling of non-infringement for an entire class of products. This is not the appropriate time to consider whether this patent encompasses a particular product or wash process. "A claim is construed in the light of the claim language, the other claims, the prior art, the prosecution history, and the specification, *not* in light of the accused device." *SRI Intern. v. Matsushita Elec. Corp. of America*, 775 F.2d 1107, 1118 (Fed.Cir.1985) (en banc) "[C]laims are not construed 'to cover' or 'not to cover' the accused device." *Id.* The Court accordingly declines to address Defendants' free solution argument at this time. Of course, Defendants are free to raise the issue again at a more appropriate time.

An order consistent with this opinion will be entered.

W.D.Mich.,2005.

Whirlpool Corp. v. LG Electronics, Inc.

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