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

APTARGROUP, INC,
Plaintiff.
v.
OWENS-ILLINOIS, INC., and Armin Tool and Manufacturing Co,
Defendants.

March 14, 2003.

MEMORANDUM OPINION AND ORDER

MORAN**, Senior J.**

Plaintiff sues defendants for infringement of three claims, claims 1, 31 and 47, of U.S. Patent No. 5,439,143 ('143 patent) relating to a dispensing valve for packaging. The '143 patent is one continuation in a series of patents covering various aspects of a dispensing valve that seals the opening of a container filled with a fluid product. Before the court is the issue of claim construction, more particularly whether the outer portions of the valve head must become continuously thinner from the outer edge of the valve head at least to the central area of the valve head. We answer that query affirmatively.

The three claims read as follows:

1. A dispensing package for fluid products, comprising:

a container shaped to retain a selected fluid product therein, and having a discharge opening; and

a dispensing valve for controlling the flow of the fluid product from said container, having a marginal portion sealing about the discharge opening of said container, and a head portion including a central area with an orifice which opens to permit fluid flow therethrough in response to a predetermined discharge pressure within said container, and closes to shut off fluid flow therethrough upon removal of the predetermined discharge pressure; said head portion having an exterior surface which interfaces with ambient environment and has at least at outer portions thereof an inwardly curving arcuate side elevational shape defined by a first radius, and an interior surface which interfaces with the fluid product in said container and has at least at outer portions thereof an inwardly curving arcuate side elevational shape defined by a second radius, which is greater than said first radius, such that said exterior and interior surfaces converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice.

31. A dispensing valve for fluid product packaging of the type having a container with a discharge opening therein, comprising:

a marginal portion for sealing about the discharge opening of the container and a head portion including a central area with an orifice which opens to permit fluid flow therethrough in response to a predetermined discharge pressure within the container, and closes to shut off fluid flow therethrough upon removal of the predetermined discharge pressure; said head portion having an exterior surface which interfaces with ambient environment and has at least at outer portions thereof an inwardly curving arcuate side elevational shape defined by a first radius, and an interior surface which interfaces with the fluid product in the container and has at least at outer portions thereof an inwardly curving arcuate side elevational shape defined by a second radius, which is greater than said first radius, such that said exterior and interior surfaces converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice.

47. A dispensing package for fluid products, comprising:

a container shaped to retain a selected fluid product therein, and having a discharge opening; and

a dispensing valve for controlling the flow of the fluid product from said container, having a marginal portion sealing about the discharge opening of said container, and a head portion including a central area with an orifice which opens to permit fluid flow therethrough in response to a predetermined discharge pressure within said container, and closes to shut off fluid flow therethrough upon removal of the predetermined discharge pressure; said head portion having an exterior surface which interfaces with ambient environment and has a generally concave shape when viewed from outside said container, and an interior surface which interfaces with the fluid product in said container and has a circular center area and a generally inclined outer portion which tapers inwardly toward said circular center area, such that said exterior and interior surfaces converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice.

The parties largely agree about the applicable law, and so do we. Claim construction is a question of law. We first look to the claim language itself, generally giving the claim language the full range of its ordinary meaning as understood by persons skilled in the art, unless the text of the patent makes clear that a word was used with a special meaning. The patent text reveals no special usage and, accordingly, we can turn to commonly used dictionaries as an aid in construction. We also turn to the specifications and the prosecution history, although the claims are not necessarily limited to the embodiments described in the specifications. The public is entitled to rely upon the public record of a patent in determining the scope of the patent's claims.

Plaintiff contends that claims 1 and 31 cover a valve head that is of uniform thickness in the outer portions of the valve head, so long as the exterior and interior surfaces converge toward the center to provide a valve head of tapered construction that is thinner at the center portion touching the orifice than at the outer portions. It points out, quite correctly, that the portions of the claims referring to radii do not require the radii to be non-concentric, which would necessarily lead to a continuous thinning (or thickening) of the outer portions. Radii of differing lengths which are concentric would result in walls of continuing equal thickness, the thickness depending upon the relative lengths of the radii. The disagreement between the parties relates to the subsequent language further defining the relationship of the radii:

such that said exterior and interior surfaces converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice.

Those surfaces are the surfaces of at least the outer portion of the valve head. The central portion need not have converging curved surfaces and, indeed, in the figures set forth in the specifications the interior surface of the central area is generally shown as flat, thus resulting in a progressive but not uniform thinning adjoining the orifice at the center.

According to the plaintiff, "tapered" can mean inclined or angled and, in any event, does not require continuous thinning. "[S]uch that" refers to the characteristics of the valve itself, namely that it is thinner in the center. "[C]onverge" is a directional term; both surfaces can converge toward the center at the same angle. Plaintiff contends that the measurements of one embodiment described in the specifications (col. 10, lines 1-20), modified to correct an obvious typographical error, shows outer portions of uniform thickness. That is in accord with an earlier construction of the inventors (not part of the prosecution history) that demonstrated that outer portions of uniform thickness worked well, so long as there was a thinning adjoining the orifice.

We think plaintiff distorts the plain language. The quoted language above qualifies the claims as it relates to the radii. The valve head has outer portions, a central area and an orifice, as plainly appears in the patent drawings and as conceded by plaintiff in its fig. 2 on page 2 of its initial brief. The radii for the surfaces of the outer portions cause curved surfaces that converge toward the central area (which is different from the orifice) to provide a tapered construction prior to the central area, which results in a reduced thickness adjoining the orifice whether or not there is thinning in the central area. "Tapered" can, perhaps, sometimes be construed as inclined or angled, but here it cannot be so construed when it is used in conjunction with "converge." "Converge," according to Webster's Third New International Dictionary, means "to tend toward one point: approach nearer together ... move toward a single point: come together...." In that context "tapered" has to mean what defendant contends: "becoming continuously narrower or more slender in one direction," two surfaces approaching each other, such as a wedge.

Indeed, every figure in the patent drawings that depicts the outer portions shows continuous thinning of the outer portions. We do not think the plain claim language can be recast because of a described embodiment which, even according to plaintiff, contains an erroneous measurement which would require the public to correct the error and then to draft the figure to understand what it discloses, and which, according to defendants(and we think correctly), would still result in a thinning outer portion. And, obviously, extrinsic evidence of what an inventor learned from his experimentation and what he thought he could claim, none of which is disclosed in the patent, is not entitled to consideration. Again, the public is entitled to rely upon the public record of a patent in determining the scope of the patent's claims.

Plaintiff correctly points out that claim 47 is an independent claim requiring its own construction. Defendants did not originally construe claim 47 and did not believe it necessary to do so because of a footnote to plaintiff's response to defendants' status report of December 23, 2002:

[1]Although this is neither the time nor the place to brief the substance of the claim construction, Plaintiff notes that while claim 1 of U.S. Patent No. 5,435,143 (which is attached to the Complaint) does recite that at least the outer portions be *curved,* it does not require that any particular portion of the valve head *taper*. In contrast, claim 47 of the '143 Patent is specifically directed at the construction shown in the drawings, and *that* claim does require an outer taper. See '143 Patent, col. 21, 11.22-24 ("and a generally inclined outer portion which tapers inwardly"). But this same language, and the limitation it conveys, is absent from claim 1.

Plaintiff has now backed away from the concession, but to no avail. Claim 47 does describe a different geometry. The surfaces of the outer portions are not defined by radii, at least not with respect to the interior surface. That surface can be, for example, a straight line which is, as stated in the claim, inclined (the patentee had no difficulty in using the word "inclined" when it meant inclined). That tells us little about the relationship between the exterior surfaces and the interior surfaces of the outer portions. But claim 47 goes on to include the same dependent clause found in claims 1 and 31: "such that said exterior and interior surface converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice." We construe it in like manner as in claims 1 and 31. That conclusion is reenforced by the further description of "a generally inclined outer portion which tapers inwardly toward said circular center area...." Again, we construe taper to mean an outer portion which becomes continuously narrower.

Defendants also rest upon plaintiff's disclaimer of four years' patent protection in the context of the prosecution history. It may be right, but we do not reach that contention in light of the plain meaning of the patent claims. Defendants also contend that the construction urged by plaintiff would cause prior art to anticipate, or, at a minimum render obvious, the '143 patent. We do not reach that contention for the same reason and for the added reason that plaintiff has had no opportunity to respond.

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