

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

WEATHERCHEM CORPORATION,
Plaintiff.

v.

J.L. CLARK, INC,
Defendant.

No. 1:91-CV-35

Aug. 30, 1996.

Holder of two patents directed toward caps to seal cylindrical spice containers sued alleged infringer. Following bench trial, the District Court, O'Malley, J., held that: (1) one patent was invalid under on-sale bar; (2) allegedly infringing caps did not infringe one patent; and (3) one patent was invalid for obviousness.

So ordered.

4,693,399, 4,936,494. Invalid.

Dennis G. Terez, Squire, Sanders & Dempsey, Cleveland, OH, Robert V. Vickers, Vickers, Daniels & Young, Cleveland, OH, for Weatherchem Corp.

Leslie W. Jacobs, Thomas F. Zych, Sr., Thompson, Hine & Flory, Cleveland, OH, for J.L. Clark, Inc.

OPINION & ORDER

O'MALLEY, District Judge.

With this action, plaintiff Weatherchem Corporation ("Weatherchem") claims that defendant J.L. Clark, Inc. ("Clark") wilfully infringed two patents owned by Weatherchem: Patent No. 4,693,399 (the " '399 patent") and Patent No. 4,936,494 (the " '494 patent"). These two patents are directed toward plastic "two-flap closures," which are commonly used as caps to seal cylindrical spice containers; the caps allow the contents to be sprinkled or spooned out. Clark counterclaims for a declaration that the two patents are invalid, unenforceable, and not infringed by Clark's own two-flap closures.

The parties tried this matter to the bench. The Court now rules in favor of J.L. Clark, holding that both the '399 patent and the '494 patent are invalid. Specifically, the Court concludes that the '399 patent is invalid due to the "on-sale bar," and the '494 patent is invalid because it was obvious given the prior art, which includes the enclosure embodying the claims of Weatherchem's own '399 patent. As to the '494 patent, the Court also concludes, in the alternative, that, if valid, its claims are not infringed by the Clark closures.

Pursuant to Fed.R.Civ.P. 52(a), the Court issues its findings of fact and conclusions of law below.

I.

A. The Allegedly Infringed Claims

Although the patents at issue in this case might at first seem mundane, the ubiquity of cylindrical spice containers in kitchens around the world-and the sprinkle/spoon caps that seal them-underscores the importance and value to the parties of the patents at issue. Because cylindrical spice containers are manufactured, filled, and sealed at high volume, the thermoplastically-formed caps placed on top of the containers must meet certain criteria. Among other things, the caps must: (1) be inexpensively manufacturable at high speed; (2) be of generally uniform thickness, so as not to deform when cooling (necessary so the sprinkle/spoon flaps will stay closed and the cap will fit onto the container); (3) not break when mechanically screwed onto the container; (4) not allow the flaps to pop open when mechanically screwed onto the container; (5) not puncture the paper (or foil) safety-seal liner that is placed between the cap and the container; FN1 and (6) be easy to use by consumers. Slight variations in the design of the caps can significantly effect these characteristics.

FN1. Spice manufacturers today often insert the safety-seal liner *into* the cap, and then screw the cap onto the cylindrical spice container, at which time the liner adheres to the container. The trick is to screw the liner/cap assembly onto the container without perforating the liner, and ensure that the liner properly adheres to the entirety of the container lip.

On October 17, 1986, Weatherchem filed a patent application for a "two-flap closure." This application eventually led to issuance of the '399 patent. With no statements by either Weatherchem or the patent examiner contained in the file, the '399 patent was allowed on April 8, 1987. On July 26, 1988, Weatherchem filed another patent application for a "two-flap container closure." This application eventually led to issuance of the '494 patent, but only after the application was twice rejected by the patent examiner. The patent examiner at first rejected Weatherchem's second application because it did not disclose the invention of anything that was not already shown in either the '399 patent itself, or in another patent relating to a rectangular cap for a metal spice can ("the Foster patent," Patent No. 3,322,308). After Weatherchem twice amended its second application, however, the Patent Office issued a Notice of Allowability on April 11, 1990, which led to issuance of the '494 patent.

The '399 patent contains 15 claims, two of which Weatherchem alleges Clark infringes-claim 12 and claim 13. These claims are as follows (emphasis added by the Court):

Claim 12: A two-mode dispensing cap for a container comprising an injection-molded thermoplastic one-piece body, the body having a generally circular end wall, the end wall having a spoon dispensing side and a shake dispensing side, the shake dispensing side including a plurality of relatively small apertures for dispensing therethrough a pourable product carried in the container, the spoon dispensing side including a relatively large aperture of a size sufficient for allowing passage of a spoon therethrough for spooning out product, **a chordal land area between the spoon and shake sides**, each of said sides having an associated flap hinged on said land, the flap of the shake side being arranged to selectively close or open said relatively small apertures, the flap of the spoon side being arranged to selectively close said relatively large aperture, an internally threaded skirt depending from the perimeter of said end wall, **an annular sealing ledge on the lower side of the end wall interior of said skirt, the land area having a lower surface generally**

coplanar with said sealing ledge and adapted to cooperate with said sealing ledge to support a sealing sheet received in said cap.

Claim 13: A two mode dispensing cap for a container comprising an injection-molded thermoplastic one-piece body, the body having a generally circular end wall, the end wall having a spoon dispensing side and a shake dispensing side, the shake dispensing side including a plurality of relatively small apertures for dispensing therethrough a pourable product carried in the container, the spoon dispensing side including a relatively large aperture of a size sufficient for allowing passage of a spoon therethrough for spooning out product, each of said sides having an associated hinged flap, the flap of the shake side being arranged to selectively close or open relatively small apertures, the flap of the spoon side being arranged to selectively close said relatively large aperture, an internally threaded skirt depending from the perimeter of said end wall, **an annular sealing ledge on the lower side of the end wall interior of said skirt, the sealing ledge having a flat surface extending radially a distance substantially equal to at least twice the nominal wall thickness of the cap.**

The most important features of these claims were the coplanar sealing ledge and chordal land areas, which served to ensure, among other things, proper seating and attachment of the safety-seal liner when the cap was screwed onto the spice container.

The '494 patent contains 14 claims, three of which Weatherchem alleges Clark infringes—claim 9, claim 13, and claim 14. These three claims are as follows (emphasis added by the Court):

Claim 9: A two-mode dispensing cap for a container comprising an injection-molded thermoplastic one-piece body, said body providing a circular end wall and a cylindrical skirt extending from the face of said end wall, said cylindrical skirt having thread means for engaging mating threads adjacent the mouth of an associated container, said end wall having along one side a spooning opening sufficiently large to allow passage of a spoon for spooning out contents from said associated container and a shake dispensing side along another side of said end wall containing a plurality of relatively small apertures for dispensing therethrough the contents of said associated container, a first hinged flap on said body for selectively closing said spooning opening, a second hinged flap on said body for selectively closing said relatively small apertures, and end wall and flaps providing cooperating releasable latch means normally maintaining said flaps closed, said end wall being contoured so that said end wall and flaps cooperate to provide a substantially planar and circular exterior surface when said flaps are closed, **said end wall also providing a relatively flat sealing land inwardly spaced from said skirt having a region adapted to engage the seal with the mouth of said associated container producing forces along the periphery of said end wall in a direction substantially normal to said end wall tending to produce deflection of said wall portion tending to cause malfunction of said latch means, and a plurality of peripherally spaced radially extending reinforcing ribs extending below said wall portion radially between said sealing land and skirt, said reinforcing ribs being disposed on the inner periphery of the skirt at a multitude of relatively closely spaced locations** whereby said reinforcing ribs provide an anchoring action for said end wall portion and sealing land by imparting the inherent stiffness of the cylindrical skirt, and indirectly the container mouth portion threaded onto it, to the end wall portion and sealing land to resist deflection of said wall portion and preventing malfunction of said latch means.

Claim 13: In combination, a container adapted to be filled with granular material and having a mouth with threads extending around the said mouth substantially adjacent thereto, a dispensing cap for said container consisting of an injection-molded plastic one-piece body providing a circular end wall and a cylindrical

skirt having thread means engaging the threads of said container, said end wall providing at least one opening therein through which contents of said container can be removed without removing said cap from said container, said body providing a hinged flap operable to close said opening, said end wall and flap providing latch means for holding said flap closed, said cap providing **a *sealing surface inwardly spaced from said cylindrical skirt engaging said mouth of said container and forming a seal therewith, the periphery of said end wall being subjected to a force substantially normal to said end wall when said cap is tightened onto said container tending to cause deflection of said end wall and tending to cause said latch means to malfunction, and a plurality of reinforcing ribs extending below said end wall radially between said sealing surface and said skirt, said reinforcing ribs being disposed on the inner periphery of the skirt at a multitude of relatively closely spaced locations, said sealing surface being a circumferentially continuous annulus spaced radially inward of the ribs and lying in a flat plane whereby said reinforcing ribs provide an anchoring action for said end wall and sealing surface by imparting the inherent stiffness of the cylindrical skirt, and indirectly the container mouth portion threaded into it, to the end wall and sealing surface to resist deflection of said periphery of said end wall to prevent malfunction of said latch means.***

Claim 14: A dispensing cap for a container having a mouth and threads adjacent said mouth comprising an injection-molded plastic one-piece body providing a circular end wall and a cylindrical skirt extending from one side of said end wall, said cylindrical skirt providing thread means for engaging said threads adjacent said mouth of said container, said end wall providing at least one opening therein through which contents of said container can be removed without removing said cap from said container, said body providing a hinged flap operable to close said opening, said end wall and flap providing latch means for holding said flap closed, a sealing surface along the interior surface of said end wall spaced inwardly from said skirt for engaging said mouth of said container and forming a seal therewith, tightening of said cap onto said container producing forces along the periphery of said end wall in a direction substantially normal to said end wall tending to cause deflection of said peripheral portion of said end wall and also tending to cause said latching means to malfunction, and a ***plurality of reinforcing ribs extending below said end wall radially between said sealing surface and skirt, said reinforcing ribs being disposed on the inner periphery of the skirt at a multitude of relatively closely spaced locations, said sealing surface being a circumferentially continuous annulus spaced radially inward of the ribs and lying in a flat plane*** whereby said reinforcing ribs provide an anchoring action for said end wall and sealing surface by imparting the inherent stiffness of the cylindrical skirt, and indirectly the container mouth portion threaded into it, to the end wall and sealing surface to resist deflection of said periphery of said end wall to prevent malfunction of said latch means.

The most important features of these three claims-and the primary addition to what was earlier claimed in the '399 patent-were a sealing land spaced inward from the skirt of the cap and the radially extending reinforcing ribs connecting that sealing land to the skirt. This configuration served to ensure, among other things, that when the cap was screwed onto the spice container, the cap would not break and the flaps would not pop open.

B. The History of Spice Container Caps and the Patents at Issue.

Some salient features of the spice-cap marketplace before and during Weatherchem's application for the '399 and '494 patents are pertinent to the Court's inquiry. Of primary importance are the then-existing state of the art in spice-cap technology, and Weatherchem's marketing and sales efforts relative to products covered by its '399 and '494 patents.

The main distributors of spices in the United States are McCormick and Durkee. Prior to the late 1980s, these two distributors packaged spices in rectangular metal cans. McCormick's spice cans were made by Clark. The cans were fitted with rectangular plastic snap-on tops, also called fitments, with flaps that allowed for both spooning and sprinkling. This type of packaging, however, carried with it two problems: (1) the contents of the cans could not be viewed easily by the user; and (2) there was no simple, inexpensive way to apply a safety-seal liner to the can, before attaching the plastic snap-on top.

To cure the first problem, the spice industry began to convert to clear plastic or glass cylindrical containers. At first, to seal these new containers, manufacturers undertook a two- or three-step process. First, the manufacturers applied a safety-seal liner to the container. The safety seal was applied in one of two ways: either (1) adhesive was applied to the liner or the lip of the container, and the liner then adhered to the container; or (2) the liner was placed on the lip of the container and the two were placed near a heating element, so that the plastic container lip melted and stuck to the liner. The next step, if so desired, was that the manufacturer attached a snap-on plastic disk, which had sprinkle holes.^{FN2} Some of these plastic disks had both sprinkle holes and also a lift-up flap for pouring spices. The manufacturer might skip this second step, depending on whether it thought consumers wanted to sprinkle that particular spice. Finally, the manufacturers added a threaded, screw-on, metal or plastic cap. This lengthy process was relatively expensive, but worked to allow the consumer to view the contents of the container, sprinkle the spices contained therein, and enjoy the security of a tamper-evident safety-seal liner.

FN2. This plastic snap-on disk, like the rectangular plastic snap-on tops that were attached to the metal spice cans, are also called "fitments."

In cases where the manufacturer decided to skip the second step-that is, omit the snap-on plastic disk with sprinkle holes-a less expensive capping procedure was used. Specifically, the manufacturers inserted a pulpboard disk directly into the screw-on cap, and then also inserted a safety-seal liner directly into the cap. This entire cap/disk/liner assembly was then screwed onto the container. The use of an intermediate pulpboard disk was to ensure a uniform sealing pressure of the liner against the container lip; the screw-on cap alone did not supply this necessary uniform pressure on the liner. Although this container-sealing procedure was less expensive than procedures used when a plastic disk with sprinkle holes was involved, even this procedure was still complicated.

In time, several manufacturers-including U.S. Cap & Closure, Rosam, and Tone Brothers-developed screw-on caps that had sprinkle and/or spoon flaps built right into the cap. By using this type of cap, manufacturers could skip the extra, intermediate step of adding a fitment, or snap-on plastic disk with sprinkle holes. In order to attach a safety-seal liner to the container, however, they still had to use a cap/pulpboard disk/liner assembly, or attach the safety-seal liner separately. Indeed, the new screw-on caps with built in sprinkle/spoon flaps required use of the pulpboard disk even more, because the plugs on the flap that covered the sprinkle holes tended to tear the liner when the whole assembly was screwed onto the container.

It was at this time in the evolution of spice-cap technology that Weatherchem began to develop a new cap, which it eventually called the "Flapper." As it was finally produced, the Flapper was a one-piece, screw-on plastic cap, with two flaps-one for sprinkling and one for spooning. More important, the Flapper was designed to apply uniform sealing pressure on a safety-seal liner, when the liner was inserted into the cap

and screwed onto the container. This sealing feature made use of a pulpboard disk, or a separate step to attach a safety-seal liner, unnecessary. In other words, by using the Flapper, manufacturers could simply insert a safety-seal liner into the cap, and screw the cap onto the container. The extra steps of insertion of a pulpboard disk, attachment of a liner, and/or attachment of a plastic disk with sprinkle holes, were not required. Moreover, when the Flapper was screwed on to a container, the sprinkle/spoon flaps popped open less frequently than did other caps on the market.

The manner and timing of Weatherchem's development of the Flapper is critical. On October 15, 1984, Weatherchem met with Durkee to discuss design and manufacture of a 63 millimeter spice cap with sprinkle and spoon flaps. Durkee explained that it wanted a cap similar to, but different than, an existing Tone Brothers cap, and also wanted to include a safety-seal liner. The Tone Brothers cap was then the only single-piece cap with both sprinkle and spoon flaps built into the cap.

Ten days later, Weatherchem presented to Durkee price quotations for design of a mold to produce such a cap, and on November 8, 1984, Durkee issued a purchase order for design of the mold. Over the next several weeks, Weatherchem and Durkee sent back and forth to each other designs, drawings, and revisions, together fashioning the cap Weatherchem would ultimately produce for Durkee. By February 18, 1985, Weatherchem had produced a drawing entitled "Durkee Concept T2 Cap, Revision B." This drawing did contain some "if-then" contingencies—for example, the drawing noted that changes might be necessary if, after sampling the cap, Durkee wanted the plugs on the sprinkle flap to fit the sprinkle holes more firmly—but was essentially complete. Thus, on February 19, 1985, Durkee issued a purchase order for the mold, with delivery of the mold to be no later than June 14, 1985, and delivery of cap samples to be no later than June 20, 1985. Weatherchem accepted this purchase order on May 13, 1985, and noted it would charge Durkee \$300 for 500 cap samples.

Weatherchem proceeded successfully with manufacture of the mold and shipped 990 cap samples to Durkee on or about July 17, 1985. As both Weatherchem and Durkee expected, these samples needed slight modifications. For example, it was determined that the caps were unacceptably oval and the spoon flap popped open too frequently when the cap was screwed onto a container. Over the next few months, Durkee and Weatherchem worked on correcting these problems. Although these problems had not been entirely ironed out, on August 16, 1985, Weatherchem quoted to Durkee a price of \$156.04 per thousand caps, for an order of 500,000 caps. On September 3, 1985, Durkee responded with a purchase order for 275,000 caps at the \$156.04 per thousand price. After this date, Weatherchem continued to work out some "kinks" in the cap mold, and finalized its cap mold on December 31, 1985. Weatherchem then began mass production of the caps for Durkee on January 3, 1986.

During this development process, Weatherchem was also seeking other consumers for what would ultimately be called the Flapper. In fact, Weatherchem had picked the name, Flapper, for its new cap as early as February 5, 1985. In mid-March of 1985, just after Durkee had placed its purchase order for "Durkee Concept T2 Cap, Revision B," Weatherchem attempted to sell the same cap to Rosam Industries. On September 23, 1985, Weatherchem also solicited Jason Dairy, discussing sale of between 1 and 2 1/2 million caps annually for containers holding grated cheese.

Weatherchem did not immediately take any steps toward obtaining a patent on its Flapper. This may be because at least some Weatherchem personnel believed the Flapper was not patentable: a July 23, 1986 internal Weatherchem memorandum written by a marketing manager so indicates. By letter dated July 28, 1986, however, Weatherchem received surprising news from Durkee. Durkee's letter stated that Durkee

intended to file for patent protection covering the Flapper, and warned Weatherchem not to take action that might infringe these patents. Weatherchem responded by itself filing a design patent application on August 25, 1986, and filing a regular utility patent application on October 17, 1986. These applications led to issuance of the '399 patent to Weatherchem. Weatherchem successfully defended this patent in a patent interference action initiated by Durkee in 1987.

Weatherchem's line of Flapper caps, which it produced in varying sizes, quickly enjoyed considerable market success-by 1988, Weatherchem was selling \$1 million worth of Flapper caps annually, and in 1995 it sold about \$16 million worth. Of course, one of the spice manufacturers Weatherchem approached early on to solicit sales of the Flapper was Durkee's main competitor, McCormick. McCormick had two separate spice manufacturing businesses: a Food Service Division and a Retail Division. By 1987, Weatherchem had successfully solicited sales of its Flapper cap to the Food Service Division. The Retail Division, however, was still packaging spices in rectangular, metal spice cans. Clark sold over 150 million of these spice cans, together with fitting plastic snap-on tops, to the McCormick Retail Division each year. In 1987, however, the Retail Division decided to convert to clear bottles with screw-on plastic caps. Upon learning of this decision, Weatherchem made a formal proposal to the Retail Division on November 10, 1987 regarding purchase of the Flapper. Apparently, the Retail Division found the quoted price too high. Rather than negotiate with Weatherchem, the Retail Division approached Clark and asked whether it could provide a competitive cap.

Knowing that it stood to lose a huge piece of business, Clark worked hard to create a cap competitive with Weatherchem's Flapper. Ultimately, Clark did produce such a product, referred to herein as the Clark-1 cap. Clark began producing the Clark-1 cap for McCormick's Retail Division in April of 1989. Production began only after McCormick had demanded from Clark an agreement indemnifying McCormick for any patent infringement by the Clark-1 cap. By May of 1991, the McCormick Retail Division had purchased over 200 million Clark-1 caps from Clark.

While Clark was developing the Clark-1 cap, Weatherchem was continuing its sales of Flapper caps. In May of 1988, one of Weatherchem's customers, a company called Gel Spice, ran into problems with the Flapper-the flaps popped open at excessive rates when the cap was screwed onto the container. This flap-popping was apparently due to the unusually high torque levels employed by the machines Gel Spice used to screw the caps onto the containers. In June of 1988, Weatherchem solved this problem by adding reinforcing ribs between the sealing surface and the skirt of the Flapper. These ribs made the entire Flapper more stiff, thus decreasing ovality and limiting the frequency of flap-popping during high-torque capping. On July 26, 1988, shortly after it had modified its Flapper to solve Gel Spice's problems, Weatherchem applied for a new patent on this "ribbed Flapper." This new patent application occurred during Clark's development of, and before its mass production of, the Clark-1 cap.

In July of 1992, after this litigation had been initiated, Clark redesigned its Clark-1 cap. The Clark-1 cap contained 26 reinforcing ribs. Clark's redesigned cap (referred to herein as the Clark-2 cap) modified the Clark-1 cap by reducing the number of reinforcing ribs to 16, and adding a tiny annular bead to the sealing surface. The annular bead, only 0.008 inches thick, is functionally insignificant.FN3

FN3. This point was hotly debated at trial, with Clark offering expert testimony in support of its claim that the presence of the annular bead was meaningful to the success of the application of the safety-seal liner. The Court credits, instead, the countervailing testimony of Weatherchem's experts and finds that the annular bead added nothing functionally to the operation of the Clark-2 cap.

II.

Weatherchem claims that both the Clark-1 cap and the Clark-2 cap infringe its '399 patent. In response, Clark argues that: (1) the Clark-1 and Clark-2 caps do not infringe the '399 patent, either literally or under the doctrine of equivalents; (2) the '399 patent is invalid because the invention covered by the patent was placed on sale more than one year before the date of application for the patent; (3) the '399 patent is invalid because the invention covered by the patent was obvious; and (4) the '399 patent is unenforceable because Weatherchem engaged in inequitable conduct with the Patent Office. The Court finds that Clark's first, third, and fourth arguments are without merit: the Flapper was not obvious, Weatherchem did not engage in inequitable conduct with the Patent Office in obtaining the '399 patent, and the Clark-1 and Clark-2 caps do infringe the '399 patent. However, Clark's second argument does have merit: the '399 patent is invalid because Weatherchem put the Flapper on sale more than one year before the date on which it applied for the patent. The Court concentrates first on its determination that the '399 patent is invalid due to the on-sale bar.

A. The Law of the "On-Sale Bar".

[1] [2] [3] An inventor loses his right to a patent if he places his invention "in public use or on sale in this country, more than one year prior to the date of the application for the patent in the United States." 35 U.S.C. s. 102(b). To invalidate a patent under the on-sale bar, the party asserting the bar must demonstrate by clear and convincing evidence "that there was a definite sale or offer to sell more than one year before the application for the subject patent, and that the subject matter of the sale or offer to sell fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art." *UMC Elecs. Co. v. United States*, 816 F.2d 647, 656 (Fed.Cir.1987). "It is not a violation of the on-sale bar to make preparations for the sale of a claimed invention-an actual sale or offer to sell must be proved." *Intel Corp. v. U.S. Intern. Trade Comm'n*, 946 F.2d 821, 830 (Fed.Cir.1991). The ultimate determination that a product was placed on sale under section 102(b) is a question of law, based on underlying facts. *KeyStone Retaining Wall Sys. Inc. v. Westrock, Inc.*, 997 F.2d 1444, 1451 (Fed.Cir.1993).

[4] [5] While a wide variety of factors may influence the on sale determination, no single factor controls the application of s. 102(b), for the ultimate conclusion depends on the totality of the circumstances. *Envirotech Corp. v. Westech Eng'g Inc.*, 904 F.2d 1571, 1574 (Fed.Cir.1990). The underlying policies are what drives the s. 102(b) analysis. *See King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 860 (Fed.Cir.1985). Foremost among these is the policy of preventing inventors from exploiting the commercial value of their inventions while deferring the beginning of the statutory term. *See Envirotech*, 904 F.2d at 1574 (explaining policies underlying the bar). To this end, the inventor is strictly held to the requirement that he file his patent application within one year of any attempt to commercialize the invention. The demands of this policy must be weighed with the sometimes inconsistent goals of encouraging prompt and widespread disclosure of inventions to the public, discouraging the removal of inventions from the public domain when the public has come to rely on their ready availability, and giving inventors a reasonable period to discern the potential value of an invention. *Id*; *Ferag, AG v. Quipp, Inc.*, 45 F.3d 1562, 1566 (Fed.Cir.1995).

[6] [7] [8] Although the general purpose behind the s. 102(b) bar is to require inventors to assert with due diligence their right to a patent through the prompt filing of a patent application, "a patentee may escape the section 102(b) bar on the ground the use or sale was experimental." *LaBounty Mfg., Inc. v. U.S. Intern. Trade Comm'n*, 958 F.2d 1066, 1071 (Fed.Cir.1992). "[A] use or sale is experimental for purposes of section 102(b) if it represents a bona fide effort to perfect the invention or to ascertain whether it will answer its

intended purpose.... If any commercial exploitation does occur, it must be merely incidental to the primary purpose of experimentation to perfect the invention." *Pennwalt Corp. v. Akzona Inc.*, 740 F.2d 1573, 1580-81 (Fed.Cir.1984) (citations omitted); *Barmag Barmer Maschinenfabrik AG v. Murata Machinery, Ltd.*, 731 F.2d 831, 839 (Fed.Cir.1984). A single sale or offer to sell is enough to bar patentability. *In re Caveney*, 761 F.2d 671, 676 (Fed.Cir.1985). Even free distribution of a prototype may raise the on-sale bar if it is done to solicit a sale. *Stearns v. Beckman Instruments, Inc.*, 737 F.2d 1565 (Fed.Cir.1984).

[9] [10] Factors that tend to show an inventor's experimental relationship with a customer despite a sale or offer for sale have included, for example: (1) non-payment by the customer for the "experimental" device; (2) agreement by the customer to use the device secretly; (3) maintenance of a testing schedule and records; (4) continued control by the inventor of the patented equipment while in the hands of a purchaser; and (5) lack of advertising and promotion of the "experimental" product. *Sinskey v. Pharmacia Ophthalmics, Inc.*, 982 F.2d 494, 498 (Fed.Cir.1992), *cert. denied*, 508 U.S. 912, 113 S.Ct. 2346, 124 L.Ed.2d 256 (1993); *U.S. Environmental Prods., Inc. v. Westall*, 911 F.2d 713, 717-18 (Fed.Cir.1990). "An inventor's protestation of an intent to experiment, expressed for the first time during litigation, is of little evidentiary value, at best." *LaBounty*, 958 F.2d at 1071. Indeed, "an inventor's subjective intent is immaterial when objective evidence points otherwise." *Harrington Mfg. Co. v. Powell Mfg. Co.*, 815 F.2d 1478, 1481 n. 3 (Fed.Cir.1986). When sales are made in an ordinary commercial environment and the goods are placed outside the inventor's control, an inventor's secretly held subjective intent to "experiment," even if true, is unavailing without objective evidence to support the contention. *In re Brigance*, 792 F.2d 1103, 1108 (Fed.Cir.1986). Under such circumstances, the customer at a minimum must be made aware of the experimentation. As stated in *In re Dybel*, 524 F.2d 1393, 1401 (C.C.P.A.1975), an inventor's "failure to communicate to any of the purchasers or prospective purchasers of his device that the sale or offering was for experimental use is fatal to his case."

[11] [12] Regarding the burdens on the parties in proving the on-sale bar, "the challenger has the burden of proving that there was a definite sale or offer to sell more than one year before the application for the subject patent, and that the subject matter of the sale or offer to sell fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art." *UMC Elecs.*, 816 F.2d at 656. If this initial burden is met by a challenger, the patent owner is called upon to come forward with an explanation of the circumstances surrounding what would otherwise appear to be commercialization outside the grace period. *T.P. Labs., Inc. v. Professional Positioners, Inc.*, 724 F.2d 965, 971 (Fed.Cir.1984); *D.L. Auld Co. v. Chroma Graphics Corp.*, 714 F.2d 1144, 1150 (Fed.Cir.1983); *In re Dybel*, 524 F.2d at 1400 (and cases cited therein). "If the inventor had merely a conception or was working towards development of that conception, it can be said there is not yet any 'invention' which could be placed on sale. A sale made because the purchaser was participating in experimental testing creates no on-sale bar." *UMC Elecs.*, 816 F.2d at 657.

[13] In the end, the "key question ... is whether, under the totality of the circumstances, the inventor placed his invention on sale, objectively manifested by a sale or offer for sale of a product that embodies the invention claimed in the patent.... [T]his is an objective test, and ... at its heart lies the inventor's attempt to commercialize the invention." *Ferag*, 45 F.3d at 1568.

B. Application of 35 U.S.C. s. 102(b) to the Facts of this Case.

On August 25, 1986, about eight months after Weatherchem initiated mass production of the Flapper for Durkee, Weatherchem filed a design patent application, Des. 305,206. Weatherchem then filed a regular

utility patent application on October 17, 1986, which led to issuance of the '399 patent. As an initial matter, Weatherchem asserts the critical application date in this case should be August 25, 1986 and not October 17, 1986. The Court rejects this assertion.

[14] [15] [16] "[A]n applicant is entitled to claim the benefit of the filing date of an earlier application for a later-claimed invention only when that earlier application discloses that invention in the manner required by 35 U.S.C. s. 112 first paragraph." *In re Berkman*, 642 F.2d 427, 429 (C.C.P.A.1981). Drawings may be used to satisfy the disclosure requirement. *Id.* Thus, Weatherchem may rely upon the design patent application date only if the drawings contained in Des. 305,206 disclose the claimed elements of the invention. The drawings in Des. 305,206 show seven views of an entire one-piece, screw-on, two-flap spice cap; there are no close-up views or detailed sectional drawings. Conceivably, one or two of these seven drawings do permit one skilled in the art to discern that the cap has "a chordal land area between the spoon and shake sides, each of said sides having an associated flap hinged on said land." But none of the seven drawings allow one skilled in the art to discern the cap has "an annular sealing ledge on the lower side of the end wall interior of said skirt, the land area having a lower surface generally coplanar with said sealing ledge and adapted to cooperate with said sealing ledge to support a sealing sheet received in said cap," or "an annular sealing ledge on the lower side of the end wall interior of said skirt, the sealing ledge having a flat surface extending radially a distance substantially equal to at least twice the nominal wall thickness of the cap."

[17] Because Weatherchem's design patent application "fail[s] to disclose the claimed invention sufficiently to comply with the requirements of s. 112 first paragraph," it is the utility patent application that is relevant to the on-sale bar determination. As noted, this application was filed on October 17, 1986. Thus, Weatherchem's patent is not valid if Weatherchem placed the Flapper into public use or on sale before October 17, 1985.

The evidence is clear that Weatherchem did just that. As noted above, Durkee and Weatherchem worked together to produce a spice cap that fit Durkee's design needs. On February 18, 1985, Weatherchem produced a drawing entitled "Durkee Concept T2 Cap, Revision B" which included most of the design elements Durkee required. Thus, on February 19, 1985, Durkee issued a purchase order for the mold, with delivery of the mold to be no later than June 14, 1985 and delivery of cap samples to be no later than June 20, 1985. Weatherchem accepted this purchase order on May 13, 1985, and noted it would charge Durkee \$300 for 500 cap samples.

Weatherchem shipped 990 cap samples to Durkee on or about July 17, 1985. Durkee evaluated these samples and found most of the specified dimensions had been met, but that problems existed with overall ovality, secureness of the spoon flap lock, and the strength of the flap hinges. Durkee notified Weatherchem of these problems on August 15, 1985, and also noted it wanted the sprinkle hole plugs to be hollow and the words "sift" and "spoon" to be embossed on the flaps. Although these problems remained, on August 16, 1985, Weatherchem quoted to Durkee a price of \$156.04 per thousand caps, for an order of 500,000 caps.

On August 23, 1985, Weatherchem committed to resolving the problems Durkee had identified and promised it would provide another 1,000 samples by August 28. Weatherchem also stated it expected to "have all refinement work completed on the unit mold by the week of September 16 and [to] gain Durkee's final approval at this time." On September 3, 1985, Durkee responded to Weatherchem's August 16, 1985 price quote with a purchase order for 275,000 caps at the \$156.04 per thousand price.

Over the next few weeks, Weatherchem continued to provide cap samples to Durkee, and Durkee continued

to identify minor problems with the samples. On September 19, 1985, for example, Weatherchem stated it would make four changes to the cap mold to meet Durkee's continuing concern that the flaps did not stay down securely; on September 25, 1985, Weatherchem attempted to charge Durkee \$4,900 for these changes. On October 16, 1985, however, Durkee refused to make this \$4,900 payment, noting that the design of the spice cap "was not a joint venture as stated by you earlier. All we asked was for you to deliver a cap that 'works.' Design and performance shortcomings were your responsibility."

Thereafter, Weatherchem continued to make changes to the mold to address the security of the latches on the flaps. On November 27, 1985, for example, Weatherchem agreed to make several more detailed changes to the cap mold, all of which were again addressed to the flap locking mechanism. It is clear that *none* of the changes to the cap mold made after September 19, 1985 (at the latest) were directed to the problem of ovality. None of the changes were ever addressed specifically to the chordal land area or the annular sealing ledge portions of the cap.

In light of this history, it is quite clear that Weatherchem placed into public use or on sale a product that fully anticipated the claimed invention before October 17, 1985. Before this critical date, Weatherchem had supplied Durkee with thousands of sample caps. Although these samples were not "final" in that adjustments were made to the flap portions of the cap after October 17, 1985, the samples certainly included "a chordal land area between the spoon and shake sides, each of said sides having an associated flap hinged on said land," "an annular sealing ledge on the lower side of the end wall interior of said skirt, the land area having a lower surface generally coplanar with said sealing ledge and adapted to cooperate with said sealing ledge to support a sealing sheet received in said cap," and "an annular sealing ledge on the lower side of the end wall interior of said skirt, the sealing ledge having a flat surface extending radially a distance substantially equal to at least twice the nominal wall thickness of the cap." In fact, at least some (if not the earliest) of the samples that Weatherchem *sold* to Durkee undisputedly included every element of the claims set forth in the '399 patent. Weatherchem's samples "fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art." UMC Elec., 816 F.2d at 656.

Weatherchem's dealings with Durkee during the summer and fall of 1985 were not merely "preparations for the sale" of the cap; they were an actual sale. Intel, 946 F.2d at 830. Firm commitments and money changed hands for a device that included all the elements of the patented device. Weatherchem's actions were certainly for the purpose of "exploiting the commercial value of" its invention and not mere experimentation. This commercial exploitation was not "merely incidental to the primary purpose of ... perfect[ing] the invention." Pennwalt, 740 F.2d at 1581.

Weatherchem argues that, until it created the "final" version of the Flapper in December of 1985, the caps it created were only concepts, or were merely experimental. There was certainly a period when the Flapper was "merely a conception." UMC Elecs., 816 F.2d at 657. But at some point in time, between early February of 1985-just before Durkee approved the drawing entitled "Durkee Concept T2 Cap, Revision B"-and late September of 1985-by which time Weatherchem had supplied modified samples of the cap to Durkee-the Flapper ceased to be a conception and became an " 'invention' which could be placed on sale." *Id.* Moreover, the invention *was* actually placed into public use or on sale before October 17, 1985. This occurred, at the *very* latest, in late September of 1985, when Weatherchem sold to Durkee modified cap samples which, even if these samples did not embody the invention described in the '399 patent (which they did), "rendered the claimed invention obvious [through their] addition to the prior art." *Id.* at 656.

Nor can Weatherchem avoid the consequences of its actions by pleading "experimentation." During the

course of the communications between Durkee and Weatherchem leading to the final design for and production of the Flapper, Durkee never agreed to use and test the cap secretly, or limit what it did with the sample caps upon receipt, or participate in the development of the product in any way other than as a customer. Neither Weatherchem nor Durkee, nor any other entity, specifically agreed to or did maintain a testing schedule or testing records. Weatherchem did not seek or obtain any agreement from Durkee that Weatherchem would maintain control over the sample caps while Durkee tested them. Indeed, Weatherchem advertised the Flapper to customers other than Durkee well before Durkee ever placed its first purchase order for the caps. All of these factors point overwhelmingly to the conclusion that Weatherchem was not in an "experimental relationship" with Durkee. *Sinskey*, 982 F.2d at 498; *Westall*, 911 F.2d at 717-18. Weatherchem's statements at trial that, during the time it produced and modified the sample caps for Durkee's evaluation, it had a subjective intent to experiment, are "immaterial" and unavailing. *Harrington*, 815 F.2d at 1481; *Brigance*, 792 F.2d at 1108; *Dybel*, 524 F.2d at 1401.

In sum, Clark has carried its burden of proving by clear and convincing evidence that Weatherchem made a definite sale or offer to sell a spice cap which fully anticipated the '399 patent, more than one year before the application for that patent. Weatherchem has not shown that this sale was for experimental purposes, or that there is any other reason this sale does not violate the on-sale bar of 35 U.S.C. s. 102(b). The totality of the circumstances shows clearly and convincingly that Weatherchem attempted to and did commercialize its invention more than one year before October 17, 1986. As such, Weatherchem's '399 patent is invalid.

C. Clark's Other Arguments Regarding the '399 Patent.

As noted, Clark also directs three other arguments toward Weatherchem's claims it infringes the '399 patent. Because the Court has found that the '399 patent is invalid under the on-sale bar, however, these other arguments are moot.

Nonetheless, for the purpose of completeness and in the interest of aiding appellate review, the Court further finds that Clark's three other arguments are without merit: the Flapper was not obvious, Weatherchem did not engage in inequitable conduct with the Patent Office in obtaining the '399 patent, and the Clark-1 and Clark-2 caps do infringe the '399 patent. Appended to the end of this opinion are additional findings of fact and conclusions of law in support of these determinations.

The Court now turns to Weatherchem's claims regarding the '494 patent.

III.

Like its '399 patent, Weatherchem claims that both the Clark-1 cap and the Clark-2 cap infringe its '494 patent. In response, Clark argues that: (1) the Clark-1 and Clark-2 caps do not infringe the '494 patent, either literally or under the doctrine of equivalents; (2) the '494 patent is invalid because the invention covered by the patent was not novel, Clark having invented it first; (3) the '494 patent is invalid because the invention covered by the patent was obvious; and (4) the '494 patent is unenforceable because Weatherchem committed fraud upon the Patent Office by intentionally failing to disclose material prior art of which it was aware. The Court finds that Clark's second and fourth arguments are without merit: Clark did not first invent the invention described in the '494 patent, and Weatherchem did not commit fraud upon the Patent Office. However, the Court finds Clark's first and third argument do have merit: the '494 patent is invalid because the invention sought to be patented was obvious to one with ordinary skill in the art at the time of the invention; and even if the '494 patent were valid, the Clark-1 and Clark-2 caps do not infringe it. The Court concentrates first on its finding of non-infringement.

A. *The Law of Infringement.*

[18] "[W]hoever without authority makes, uses, offers to sell or sells any patented invention, within the United States ... during the term of the patent ... infringes the patent." 35 U.S.C. s. 271(a). The patent owner has the burden of proving infringement, whether literal infringement or infringement under the doctrine of equivalents, by a preponderance of the evidence. *Hughes Aircraft Co. v. U.S.*, 717 F.2d 1351 (Fed.Cir.1983).

[19] An infringement analysis entails two steps. The first step, commonly known as claim construction or claim interpretation, is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

[20] [21] [22] [23] [24] [25] The construction of the patent and the terms contained therein is an issue to be determined by the court as a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, ----, 116 S.Ct. 1384, 1396, 134 L.Ed.2d 577 (1996). To ascertain the meaning of the claims, a court should consider the claim language, the other claims, the patent specification, the prosecution history, and the prior art. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996); *United States v. Adams*, 383 U.S. 39, 49, 86 S.Ct. 708, 713, 15 L.Ed.2d 572 (1966); *SRI, Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1118 (Fed.Cir.1985). "Expert testimony, including evidence of how those skilled in the art would interpret the claims, may also be used." *Fonar Corp. v. Johnson & Johnson*, 821 F.2d 627, 631 (Fed.Cir.1987). In construing a claim, claim terms are to be given their ordinary meaning unless examination of the specification, prosecution history, and other claims indicate that the inventor intended otherwise. *Carroll Touch, Inc. v. Electro Mechanical Systems*, 15 F.3d 1573, 1577 (Fed.Cir.1993). The claims must be read in view of the specification, of which they are a part. *Markman*, 52 F.3d at 979. For purposes of construing the claim, the written description contained in the specification may act as a sort of dictionary, which explains the invention and may define the terms used in the claims. *Id.* Normally, however, words in a claim will be given their ordinary meaning. *Envirotech Corp. v. Al George Inc.*, 730 F.2d 753, 759 (Fed.Cir.1984).

[26] [27] [28] [29] [30] In construing the claims, the court may look to the patent's prosecution history if it is a part of the record in the case. *Markman*, 52 F.3d at 980. "This 'undisputed public record' of proceedings in the Patent and Trademark Office is of primary significance in understanding the claims." *Id.* Although the prosecution history can be used when construing the claims, it cannot enlarge, diminish or vary the limitations in the claims. *Id.* The court may also consider extrinsic evidence to aid the court in coming to a correct conclusion as to the true meaning of the language employed by the patent. *Id.* Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises. This evidence may be helpful to explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history. The district court is free to use helpful extrinsic evidence and reject other evidence as unhelpful. *Id.* Extrinsic evidence, however, may not be used to vary or contradict the terms of the claims. *Id.* at 981. The district court's claim construction, enlightened by such extrinsic evidence as may be helpful, must still be based upon the patent itself and the prosecution history. *Id.* "When, after considering the extrinsic evidence, the court finally arrives at an understanding of the language as used in the patent and prosecution history, the court must then pronounce as a matter of law the meaning of that language." *Id.*

[31] [32] [33] The second prong of the infringement analysis, comparison of the claim to the accused device or process, is a question of fact. *Markman*, 52 F.3d at 976. When an allegedly infringing product includes every limitation of the patent claim, literal infringement is made out, and that is the end of the inquiry. *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 607, 70 S.Ct. 854, 855, 94 L.Ed. 1097 (1950). The presence of additional elements in the accused device is irrelevant if all of the claimed elements are present in it. *Amstar Corp. v. Envirotech Corp.*, 730 F.2d 1476, 1482 (Fed.Cir.1984), *cert. denied*, 469 U.S. 924, 105 S.Ct. 306, 83 L.Ed.2d 240 (1984).

[34] [35] [36] [37] Even if an accused device does not literally infringe a patent claim, the accused device is still found to infringe the patent claim under the doctrine of equivalents if the accused device: (1) performs substantially the same function, (2) in substantially the same way, (3) to achieve substantially the same result. *Graver Tank*, 339 U.S. at 608, 70 S.Ct. at 856; *Goodwill Constr. Co. v. Beers Constr. Co.*, 991 F.2d 751 (Fed.Cir.1993); *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed.Cir.1987), *cert. denied*, 485 U.S. 961, 108 S.Ct. 1226, 99 L.Ed.2d 426 (1988). The doctrine of equivalents is designed to avoid "a fraud on a patent" by discouraging a copyist from making changes in the patent which, though adding nothing, take the copied matter outside the claim. *Graver Tank*, 339 U.S. at 607-08, 70 S.Ct. at 855-56. A patentee may not obtain under the doctrine of equivalents, however, coverage he could not lawfully obtain from the Patent Office by literal claims. *Wilson Sporting Goods v. David Geoffrey & Assocs.*, 904 F.2d 677, 684 (Fed.Cir.1990). The range of equivalents afforded a patent varies with the degree of invention. A pioneer invention, one which represents a major advance over the prior art, is entitled to a broad and liberal application of the doctrine of equivalents. *Thomas & Betts Corp. v. Litton Systems, Inc.*, 720 F.2d 1572 (Fed.Cir.1983). The doctrine of equivalents is a factor to be considered in an infringement analysis only when actual literal infringement is not found. *Hughes Aircraft Co. v. United States*, 717 F.2d 1351 (Fed.Cir.1983).

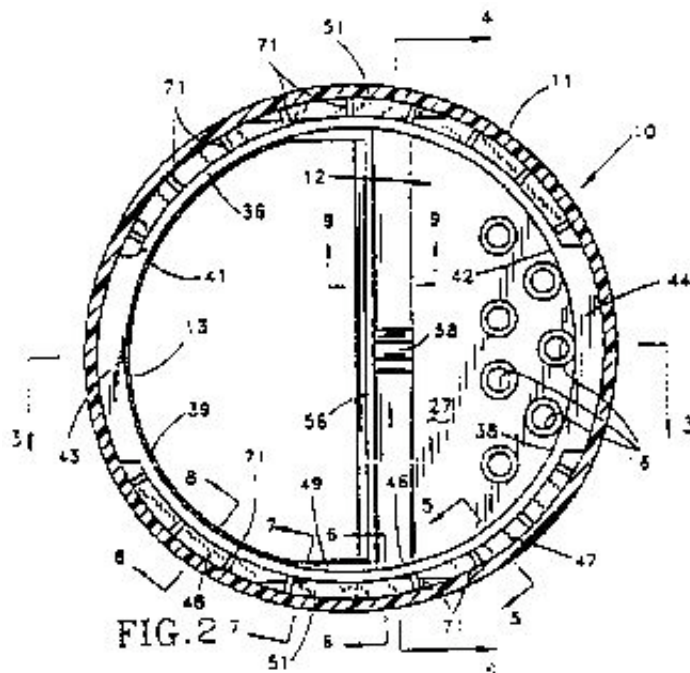
[38] [39] [40] Infringement is determined by comparing the accused device with the claims, not with the preferred or commercial embodiment. *Martin v. Barber*, 755 F.2d 1564, 1567 (Fed.Cir.1985). Claims should be construed, if possible, to sustain their validity. *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed.Cir.1984). However, courts cannot alter what the patentee has chosen to claim as his invention. *SSIH Equipment S.A. v. U.S. International Trade Com.*, 718 F.2d 365, 378 (Fed.Cir.1983). Particular embodiments appearing in the specifications will not be read into the claims; examples are not what is patented. *Shamrock Technologies, Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 792 (Fed.Cir.1990); *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987 (Fed.Cir.1988).

B. Application of 35 U.S.C. s. 271(a) to the Facts of this Case.

1. Construing the Claims.

The '494 Patent calls for a "sealing land" to be "inwardly spaced from [the cap's] skirt" (as opposed to adjoining it) and to be anchored to the skirt wall by "reinforcing ribs" between the land and the skirt. Figure 1 of the '494 Patent displays a perspective view of the patented cap (and is very similar to Figure 1 of the '399 Patent).

Figure 1 of the '494 Patent, shown below, is a view of the interior of the cap. This drawing shows the inside of a cap with two openable flaps that is designed to be threaded onto a container. Identified by numeral 36 is "a circular and planar land which is spaced *a substantial distance in from the inner wall 31 of the skirt* and is concentric therewith." (Emphasis added).



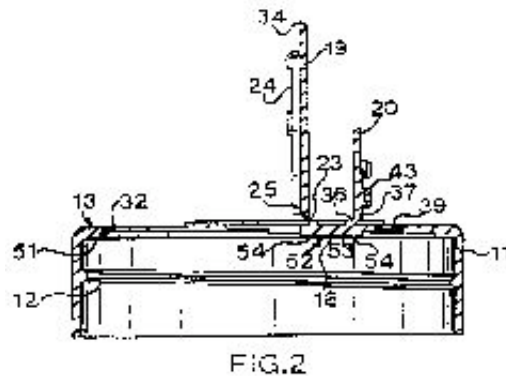
The patent specification defines the "land" in terms of a particular shape and form: "The land 36 is in the form of a *downwardly projecting rib which extends down from the remaining portions of the end wall*" (emphasis added). Figures 5 through 8, discussed and displayed in more detail below, further demonstrate that the land 36 is intended to be the bottom surface of a circular ridge projecting downward from the end wall and parallel to the skirt wall 11 of the cap.

It is important to note the difference between a "land" and a "ledge." The common meaning of the word "land" shows that the circular land to which Weatherchem refers in the '494 patent is physically distinct from the underside of the end wall, and not merely a discrete ring-shaped portion of an entirely planar bottom surface of the end wall.FN4 Nor is a "sealing land" the same as a "sealing ledge." Whereas a downward-extending "land" is a ridge, with matter on *either side of it* that is higher than the lowest portion of the ridge, a downward-extending "ledge" is a shelf, with matter on *one side* that is higher, while the other side of the shelf is affixed to and extends from a face.FN5 As a simple analogy, a block of wood attached to both the ceiling and a wall of a room, at the junction of the ceiling and wall, is a ledge; the same block attached only to the ceiling, spaced out from the wall, is a land. Weatherchem itself understood this distinction when it described the invention covered by the '399 patent. As shown in Figure 2 of the '399 patent, below, which portrays the cap screwed onto a container, the "annular sealing ledge " (51) extended from and was affixed to the skirt, at the junction of the end wall; the "chordal land area" (16) extended from the end wall alone, which was higher than the chordal land area on both sides.

FN4. In the context of mechanical description, a "land" is "a surface area left flush among grooves or hollows made by an industrial process." *Random House College Dictionary* 752 (rev. ed. 1980). See also *Webster's Third New Int'l Dictionary* 1268 (1993) (land is "an area of a surface partly machined (as with

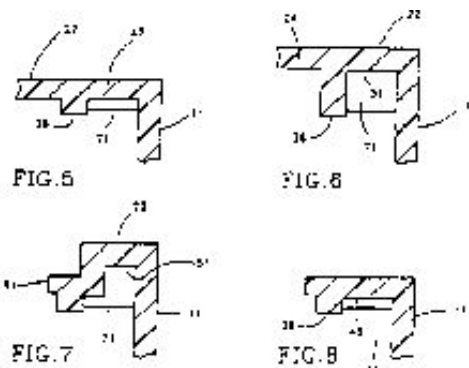
holes, indentations, furrows, or grooves) that is left without such machining: as ... the uncut surface between two adjacent grooves of a phonograph record").

FN5. The common meaning of the word "ledge" is "any relatively narrow, projecting part, as a horizontal, shelflike projection on the facade of a building." *Random House College Dictionary* 764 (rev. ed. 1980). See also *Webster's Third New Int'l Dictionary* 1288 (1993) (ledge is "a narrow shelf forming the top or projecting from the side of a wall or other vertical structure").



Returning to the '494 patent, Figures 2 and 5-8, shown below, also clearly show that the "land 36" is anchored to the inner wall of skirt 11 by ribs 71. These ribs, together with the skirt and the land, create a series of arcuate, box-like structures. According to the specification, that connection imparts greater rigidity to the cap:

It has been found that there is a tendency for the portion of the end wall 12 between the land 36 and the skirt to deflect slightly if the cap is threaded tightly onto the container. Such deflection tends to cause the flap latching system to malfunction. Therefore, the cap is provided with a plurality of peripherally spaced radially extending ribs 71 extending between the land 36 and the adjacent portions of the skirt 11 to resist such deflection....

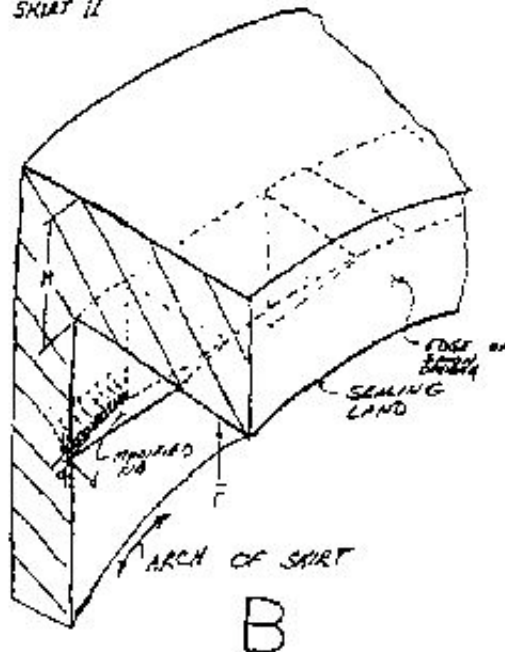
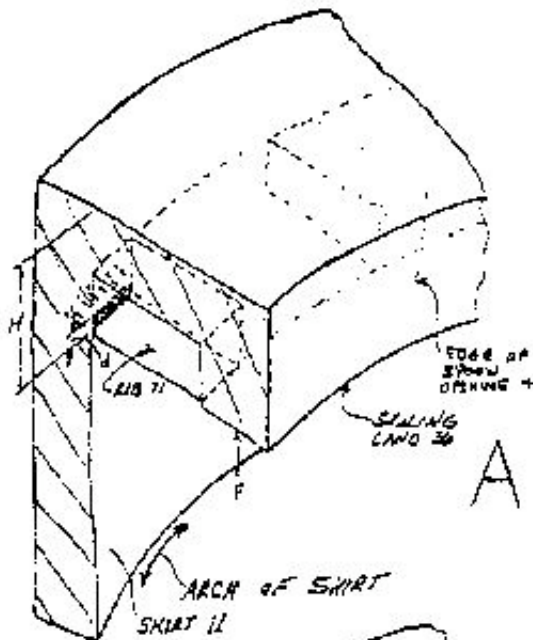


Thus, all of the challenged claims of the '494 Patent require:

1. a "sealing land" or "sealing surface" that extends down from the underside of the end wall, and is not merely an area of the underside of the end wall itself or a ledge attached to the skirt; and
2. "reinforcing ribs extending below said end wall radially between said sealing land [or surface] and [said] skirt, ... whereby said reinforcing ribs provide an anchoring action for said end wall portion and sealing land by imparting the inherent stiffness of the cylindrical skirt, ... to the end wall portion and the sealing land [or surface] to resist deflection...." The ribs must be *between* the sealing land and skirt, not entirely *below* the sealing land.

[41] [42] In light of the ordinary meaning of the terms and the definitions employed in the patent specification and drawings discussed above, the term "sealing land" or "sealing surface" must be construed to mean the bottom surface of a circular ridge *projecting downward* from the underside of the end wall of the cap-it is a land, not a ledge. Moreover, the "radial ribs" referred to in the patent must be construed to mean ribs positioned between the skirt wall and the sealing land-even in such a way that the lower surface of the rib is still higher than the lower surface of the sealing land, as shown in figures 5 through 8 and described in the patent specification at column 6, lines 59-60. The ribs cannot be entirely below the lowest surface of the sealing land.

Weatherchem submitted two sketches, attached to the February 5, 1990 amendment (DTX 1030 at 65), allegedly demonstrating its invention (see next page). Sketch A clearly shows a sealing land extending below the end wall, with anchoring ribs positioned between the skirt wall and the sealing land; it is apparent that the sealing surface referred to is different from, and not coplanar with, the bottom surface of the end wall itself. Sketch A accurately depicts what is claimed in the '494 patent.



Sketch B, however, does not conform with the specification or drawings contained in the patent as finally allowed, or in the proposed-but-denied patent applications, nor does it conform with the common meaning of the words used to describe the invention. Sketch B shows the "sealing land" as an area of—that is, a portion of and *the same thing* as—the lower surface of the corner formed by the skirt and the end wall. This "land" area, therefore, is either merely the underside of the end wall itself, or a separate *ledge* placed at the junction of the skirt and end wall—it is not really a "land." Indeed, Weatherchem's attorney, Mr. Howard Shimola, testified that Sketch B shows the *ledge* described in the '399 patent, but "with ribs." Sketch B also shows triangular gussets, or ribs, lying completely below this sealing ledge. While Sketch B may show what was claimed in the '399 patent, but "with ribs," Sketch B does not show what the patentee invented or

claimed in the '494 patent. Sketch B does not appear in the '494 patent and is not described in the patent.FN6 Although particular limitations or embodiments appearing in the specification should not be read into the claims, the Court holds that, in light of the entire prosecution history, the claims and the specification are identical on this point—a sealing ledge is different from a sealing land.

FN6. Moreover, even if the claims made in the '494 patent did cover the design in Sketch B—which this Court holds they do not—the design shown in Sketch B is also obvious. The use of triangular gussets connecting the skirt of a spice cap to the end wall (or connecting the skirt to a ledge formed at the junction of the skirt and end wall) to rigidify the entire structure is disclosed in the Patent 4,545,508 ("the Cribb patent").

[43] The term "reinforcing ribs between said sealing land [or surface] and skirt [providing] an anchoring action for said end wall and sealing land [or surface]" must be construed to mean ribs extending between (i.e., contacting and providing a physical connection with) and anchoring the sealing land to the skirt wall of the cap. The ribs cannot merely connect the end wall with the skirt, or connect a ledge at the junction of the end wall and skirt, to the skirt.

The prosecution history of the '494 Patent conforms to the definitions employed in the patent specification and compels the use of the ordinary meaning of the claim terms. The '494 Patent prosecution history is extensive, with numerous statements by the applicant and by the examiner, which have a restrictive or estoppel effect regarding the meaning of the claims. *Southwall Technologies, Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579 (Fed.Cir.1995). In order to overcome two rejections of the claims by the Patent Office because of prior art references (the Hickman and Foster patents), Weatherchem amended the claims to require that the

reinforcing ribs provide an anchoring action for said end wall and sealing surface by imparting the inherent stiffness of the cylindrical skirt ... to the end wall and sealing surface. (Feb. 5, 1990 amendment at 52-58).

The applicant emphasized the recited definitions by pointing out that his newly claimed configuration of ribs anchoring together the sealing land and the skirt wall "more particularly define[d] the invention" and was based on the figures of the patent. He distinguished the prior art by arguing that the claimed anchored structure brought about greater rigidity, which in turn eliminated the problem of end wall deflection causing flap malfunction. Weatherchem stated these features were not found in the prior art cited by the Patent Office.

Finally, in further support of its effort to gain allowance of the claims over the prior art, Weatherchem tendered the Declaration of Mr. Rotheiser, a technical expert. Rotheiser avowed Weatherchem's invention was different from prior art in that it "reinforces the structure with a series of radial ribs 71. *In conjunction with end wall 12 and skirt 11, this results in a series of box-like structures with a high level of rigidity.*" (Emphasis added). These box-like structures are shown in Sketch A, referred to above, and not in Sketch B. Expert testimony established conclusively that the box-like structures shown in Sketch A do make the cap quite stiff, while the configuration shown in Sketch B does not.

After Weatherchem conducted three more telephone conferences with the patent examiner and submitted yet another version of the earlier Rule 116 amendment to overcome the rejections, the Patent Office finally relented and allowed the claims. The Patent Office added a caveat in its reason for allowance, however:

[t]he dispensing cap has a multitude of reinforcing ribs spaced around the periphery of the cap *in an area bound by a skirt and a sealing land*. The sealing land engages the top of the bottle, *spaced inward of the reinforcing ribs*. This i[n] combination with other claim language makes the instant invention patentably unique. (Emphasis added)

The prosecution history, as an aid in defining the terms of the claims, is fully consistent with the ordinary meaning of the claims, as confirmed by the specification and drawings of the '494 patent. These tools for claim construction establish that the ribs must form a physical connection-an anchor-between the skirt wall and sealing land, thereby reinforcing the stiffness of the cap.

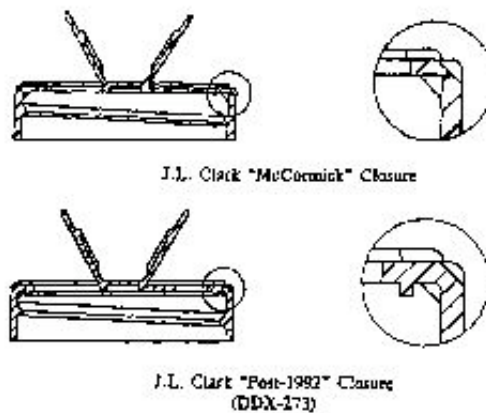
In sum, the claims of the '494 Patent, when construed in accordance with the definitions employed in the patent, the statements in the prosecution history, and the ordinary meaning of the claim terms, require that:

(1) the "sealing land" or "sealing surface" can only be the bottom surface of an annular "downwardly projecting rib" or ridge of plastic material extending from the underside of the end wall of the cap, and not affixed to the skirt like a ledge or shelf; and

(2) the "reinforcing ribs extending ... radially between said sealing land [or sealing surface] and [said] skirt" can only be plastic ribs or strips perpendicular to and connecting, *i.e.*, in physical contact with, the sealing land and skirt wall, thereby forming a series of arcuate box-like structures.

2. The Structure Of The Clark Caps.

In the present case, four Clark caps are at issue. They may be sorted into two groups, the pre-1992 "Clark-1 caps" (top drawing below) and the post-1992 "Clark-2 caps" (bottom drawing below).



J.L. Clark "McCormick" Closure

J.L. Clark "Post-1992" Closure
(DDX-173)

The underside of the end wall of the Clark-1 cap is flat and, except for a recessed channel between the spoon and sift sides of the cap, lies in a single plane. Thus, the Clark-1 caps do not have a lower end wall the underside of which contains a projecting sealing land or other surface. The Clark-1 caps are sealed by direct contact of the underside of the end wall with the container.

The Clark-2 caps have an extremely thin and low annular sealing rib (land), which is so thin as to be: (1) nearly invisible to the naked eye, and (2) functionally irrelevant. Essentially, then, the underside of the end walls of the Clark-2 cap are also flat and, except for a recessed channel between the spoon and sift sides of the cap, lie in a single plane. Thus, the Clark-2 caps also do not have an underside that contains a functionally meaningful projecting sealing land or other surface. Like the Clark-1 caps, the Clark-2 caps are sealed by direct contact of the underside of the end wall with the container.

Both the Clark-1 and Clark-2 caps have a number of triangular gusset-like ribs placed at the junction of the end wall and skirt wall. Given that there is no sealing land extending from the underside of the end wall of the Clark-1 cap, these gussets obviously do not connect to any sealing land. Even accepting the existence of the annular rib on the Clark-2 cap (despite its non-functionality), the gussets on the Clark-2 cap do not connect the annular rib to the skirt.

3. Comparing the Clark Caps to the Claims of the '494 Patent.

[44] There are substantial differences between the claimed product and the Clark caps, particularly when viewed in light of the technology and prior art. Further, the Clark caps do not perform the same function, in the same way, and with the same result as the elements of the claimed cap.

More specifically, both the Clark-1 and Clark-2 caps have no separate functional sealing land. The portion of the Clark caps that seals against the container onto which the caps are screwed is the lower surface of the end wall itself. In both the Clark-1 and Clark-2 caps, the container simply engages the underside of the flat end wall of the caps. In both cases, no land is utilized, and certainly no land that provides for the combined strengthening, spacing, and sealing functions. The '494 patent claims a sealing land *extending from and distinct from* the end wall itself as the portion of the cap that seals against the container. The Clark caps do not have this design.

Further, the Clark caps have a number of triangular gusset-like ribs placed at the junction of the end wall and skirt wall. These gussets reinforce the junction between the flat underside of the end wall and the curved inner side of the skirt. The gussets do not lie between a sealing land and the skirt wall, and do not create a series of arcuate box-like structures. Indeed, the evidence was that Clark's gusset design does not strengthen the cap to anywhere near the same degree as the box-like structures, formed by the particular geometry of the skirt, sealing land, and radial ribs, claimed in the '494 patent.

A comparison of the '494 patent claims with the Clark caps shows that required claim limitations are absent. Thus, there is no literal infringement.

[45] Further, the Clark caps do not infringe any of the claims of the '494 patent under the doctrine of equivalents. The doctrine of equivalents is only applicable if the differences between an accused product and the asserted claim as a whole are insubstantial. *Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc.*, 62 F.3d 1512, 1517-18 (Fed.Cir.1995). Given the physical structure of the Clark caps and the manner in which they function, the differences between these caps and the '494 patent claims are indeed objectively substantial. Thus, there is no infringement under the doctrine of equivalents.

The Clark caps have a different structure than the claimed caps, and do not perform substantially the same function, in substantially the same way, to obtain substantially the same result. There is no structure in the

Clark caps that could even arguably be considered equivalent to the sealing land or surface connected physically via the "reinforcing ribs" to the skirt wall. According to the patent specification, drawings, and prosecution history, that specific structure is required to strengthen the cap so as to minimize deflection of the end wall (which causes flap latch failure), while at the same time sealing the container. The Clark caps have different strengthening and sealing elements: (1) the gussets strengthen, while (2) the separate end wall seals. The gussets and end wall are not connected in such a way as to strengthen the cap, like the '494 patent discloses. The designs of the Clark-1 and Clark-2 caps do not function to anchor the walls and thereby rigidify and seal the structure, as Weatherchem has described and claimed in its patent.

Weatherchem is, in any event, estopped by the prosecution history from attempting to broaden its claims to cover the accused structure. During the prosecution, as pointed out above, it amended its claims to overcome the prior art references used by the patent examiner to repeatedly reject the claims. It added the limitation:

whereby said sealing ribs provide an anchoring action for said end wall portion and sealing land *by imparting the inherent stiffness of the cylindrical skirt*, and indirectly the container mouth portion threaded into it, *to the end wall portion and sealing land* to resist deflection in said end wall portion to prevent malfunction of said latch means. [Emphasis added]

The new claims were limited to what was shown in the figures of the patent: "The amended language in the claims describing the pattern of the ribs is based on the showing in the drawings." The only showings in the drawings are a sealing land in the form of a downwardly projecting ridge or rib, and radial "reinforcing ribs" physically connecting the "sealing land" with the "skirt wall." That limitation was further emphasized by submission to the patent examiner of Sketch A, showing a rib physically connecting the sealing land 36 to the skirt 11. Sketch A, according to the applicant, showed "the concept of the invention." Weatherchem further told the examiner that the combination of the radial rib tightly connecting the land and the skirt was the allegedly patentable "improvement over the type of cap shown in [the prior art] Hickman" patent. Although Weatherchem also offered Sketch B, Sketch B simply does not show the concept of the invention. Rather, it shows the very different concept Clark uses: no sealing ledge or land *separate from* the underside of the end wall itself, and gusset-like ribs connecting the end wall to the skirt, instead of ribs connected to the skirt and sealing land to form box-like structures. In view of this prosecution history and the amendments made therein, this Court cannot construe the claims to cover by equivalents an entirely different structure.

In sum, the Court finds that the accused infringing devices do not, in fact, infringe the claims of the '494 patent as properly construed. Weatherchem has not carried its burden of proof of showing infringement.

C. The Law of "Obviousness".

Even if the Clark-1 and Clark-2 caps did infringe the '494 patent, Clark cannot be liable for infringement because the '494 patent is invalid for obviousness.

[46] [47] A patent is invalid "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which such subject matter pertains." 35 U.S.C. s. 103. Obviousness is a question of law, but rests on the resolution of several factual inquiries. In re Woodruff, 919 F.2d 1575 (Fed.Cir.1990). These factual inquiries are: "(1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; [and] (3) the level of ordinary skill in the

[pertinent] art." *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve*, 796 F.2d 443, 447 (Fed.Cir.1986), *cert. denied*, 484 U.S. 823, 108 S.Ct. 85, 98 L.Ed.2d 47 (1987) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S.Ct. 684, 693, 15 L.Ed.2d 545 (1966)). Also relevant to the obviousness inquiry are "secondary considerations [such] as commercial success, long felt but unsolved needs, [and] failure of others" to invent. *Graham*, 383 U.S. at 17, 86 S.Ct. at 693.

1. Scope and Content of Prior Art

[48] [49] To determine whether a reference is within the scope and content of the prior art, the Court first determines if the reference is within the field of the inventor's endeavor. If it is not, a court must next consider whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. *In re Deminski*, 796 F.2d 436, 442 (Fed.Cir.1986); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535 (Fed.Cir.1983). Further, the art must have existed as of the date of invention, presumed to be the filing date of the application unless an earlier date is proved. Obviousness is determined as of the time the invention was made.

2. Differences Between the Prior Art and the Claims at Issue.

[50] [51] When ascertaining the differences between the prior art and the claimed invention, the Court must consider the patented claims and the prior art in their entireties to determine whether it would have been obvious to modify the prior art to produce the claimed invention. *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714 (Fed.Cir.1991); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed.Cir.1983), *cert. denied*, 469 U.S. 851, 105 S.Ct. 172, 83 L.Ed.2d 107 (1984). A court should not "distill the invention down to a 'gist' or 'core,' a superficial mode of analysis that disregards elements of the whole." *Bausch & Lomb*, 796 F.2d at 449. On the other hand, it is not necessarily improper to "focus[] on one element of the claimed invention." *Ryko*, 950 F.2d at 717. It is true the Court should not "unduly" focus on one facet of the invention, *Gore*, 721 F.2d at 1548, but the Court must focus on certain aspects of the invention "to ascertain the principal differences between the patented claim and the prior art." *Ryko*, 950 F.2d at 717 (citing *Graham*, 383 U.S. at 17, 86 S.Ct. at 693). When analyzing a patent claim for obviousness, "the claim should be considered as a whole, but the differences between the claim and the prior art need to be identified to place the obviousness analysis into proper perspective." *Id.*

[52] [53] [54] [55] Determination of whether a new combination of known elements would have been obvious to one of ordinary skill depends on various factors, including whether the elements exist in "analogous art," that is, art that is reasonably pertinent to the problem with which the inventor is concerned. *Deminski*, 796 F.2d at 442. When the references are all in the same or analogous fields, knowledge thereof by the hypothetical person of ordinary skill is presumed, *In re Sernaker*, 702 F.2d 989, 994 (Fed.Cir.1983), and the test is whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention. *In re Young*, 927 F.2d 588, 591 (Fed.Cir.1991). When it is necessary to select elements of various teachings in order to form the claimed invention, a court must ascertain whether there is any suggestion or motivation in the prior art to make the selection made by the applicant. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed.Cir.1985). "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." *In re Bond*, 910 F.2d 831, 834 (Fed.Cir.1990) (quoting *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 140 (Fed.Cir.1986)); *In re Cho*, 813 F.2d 378, 382 (Fed.Cir.1987); *In re Gorman*, 933 F.2d 982, 986 (Fed.Cir.1991). That knowledge cannot come from the applicant's invention itself. *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678-79 (Fed.Cir.1988). Hindsight reconstruction of the prior art by picking and choosing features from existing art and/or patents is

impermissible, "absent some teaching or suggestion supporting the combination." In re Fritch, 972 F.2d 1260, 1266 (Fed.Cir.1992); Interconnect Planning, 774 F.2d at 1143.

[56] [57] [58] [59] The fact that an invention is a combination of old elements or a simple improvement is not, alone, a foundation upon which a finding of obviousness can be supported. The criteria of s. 103 is not whether the differences from the prior art are "simple enhancements," but whether it was obvious to make the total structural combination. Simplicity is not inimical to patentability. Goodyear Tire & Rubber Co. v. Ray-O-Vac Co., 321 U.S. 275, 279, 64 S.Ct. 593, 594, 88 L.Ed. 721 (1944). Complexity is not a requirement for non-obviousness. Demaco Corp. v. F. Von Langsdorff Licensing Ltd., 851 F.2d 1387 (Fed.Cir.1988), *cert. denied*, 488 U.S. 956, 109 S.Ct. 395, 102 L.Ed.2d 383 (1988). It is immaterial that all the elements of an invention are old. Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1383 (Fed.Cir.1986), *cert. denied*, 480 U.S. 947, 107 S.Ct. 1606, 94 L.Ed.2d 792 (1987). "There is no basis in the law, however, for treating combinations of old elements differently in determining patentability." Fromson v. Advance Offset Plate, Inc., 755 F.2d 1549, 1556 (Fed.Cir.1985). What must be found obvious is the claimed combination.

3. The Level of Ordinary Skill in the Pertinent Art.

[60] [61] There are six factors relevant to a determination of the level of ordinary skill: educational level of the inventor, type of problems encountered in the art, prior art solutions, rapidity of innovation, sophistication of technology, and educational level of active workers in the field. Environmental Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 697 (Fed.Cir.1983), *cert. denied*, 464 U.S. 1043, 104 S.Ct. 709, 79 L.Ed.2d 173 (1984). As to educational level of the inventor, "[a]lthough the educational level of the inventor may be a factor in determining the level of ordinary skill in the art, it is by no means conclusive." Orthopedic Equip. Co. v. All Orthopedic Appliances, 707 F.2d 1376, 1382 (Fed.Cir.1983); Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448 (Fed.Cir.1985). "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." Ryko Mfg. Co. v. Nu-Star, Inc., 950 F.2d 714, 718 (Fed.Cir.1991). Instead of ascertaining what was subjectively obvious to the inventor at the time of invention, the court must ascertain what would have been objectively obvious to one of ordinary skill in the art at such time. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1574 (Fed.Cir.1986), *cert. denied*, 479 U.S. 1034, 107 S.Ct. 882, 93 L.Ed.2d 836 (1987).

4. Secondary Considerations.

Finally, a court should examine other objective indicia of obviousness. Such evidence includes commercial success, long felt but unresolved needs, and failed attempts. Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 895-96 (Fed.Cir.1984), *cert. denied*, 469 U.S. 857, 105 S.Ct. 187, 83 L.Ed.2d 120 (1984). A court *must* consider these "secondary considerations" when present. Stratoflex, 713 F.2d at 1538; Cable Electric Products, Inc. v. Genmark, Inc., 770 F.2d 1015, 1026-28 (Fed.Cir.1985).

5. Burden of Proof.

[62] Regarding the burden of proof, the Weatherchem patents are presumed valid. 35 U.S.C. s. 282. Clark has the burden of proving invalidity with facts supported by clear and convincing evidence. This burden remains on Clark and never shifts. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444 (Fed.Cir.1984), *cert. dismissed*, 468 U.S. 1228, 105 S.Ct. 32, 82 L.Ed.2d 923 (1984). Clark must prove by clear and convincing evidence that the subject matter of the particular claims *as a whole* would have been obvious at the time of the invention to a person having ordinary skill in the art. Polaroid Corp. v. Eastman

Kodak Co., 789 F.2d 1556, 1558 (Fed.Cir.1986), *cert. denied*, 479 U.S. 850, 107 S.Ct. 178, 93 L.Ed.2d 114 (1986).

D. Application of 35 U.S.C. s. 103 to the Facts of this Case.

[63] The art prior to the '494 patent clearly includes the '399 patent itself. It also certainly includes other spice caps designed and/or produced commercially before the application for the '494 patent was submitted, including the "Rosam II" cap as presented in Defendant's Trial Exhibit 1052A.FN7

FN7. The "Rosam I" cap, Defendant's Trial Exhibit 1053, is described in Design Patent 278,602. Rosam II is essentially Rosam I with the addition of ribs spaced radially between the skirt and a sealing ledge.

The principal difference between the '494 patent and the '399 patent is the addition of the radial ribs. As noted, these ribs lie between, and connect, the skirt and an inner sealing land extending from the underside of the end wall, thus creating a series of arcuate box-like structures. The function of these ribs is to stiffen the entire cap and limit flaps from popping open when the cap is screwed onto a container.

This structure is what is presented in the Rosam II cap. The Rosam II cap is similar to the Flapper, except that it has two sprinkle openings (one with large sprinkle holes and one with small sift holes) instead of a sprinkle opening and a spoon opening. An examination of the underside of the Rosam II cap reveals: (1) a circular land concentric with the skirt; (2) which extends down from the underside of the end wall; (3) and which seals against the lip of the container; (4) and which is connected to the skirt by a series of ribs; (5) which extend down from the underside of the end wall slightly less than the distance the sealing land extends; (6) and which form a series of arcuate, box-like structures; (7) serving to stiffen the entire cap, thereby limiting the problems of ovality and flap latch release when the cap is screwed onto a container. In other words, the Rosam II cap fully discloses the use of stiffening ribs in the same manner, with the same peculiar geometry, and to achieve the same function as described in the '494 patent. It is also notable that the design of the Rosam II cap was a modification of the Rosam I cap, the sole modification being the *addition of ribs between the sealing land and the skirt to stiffen the entire cap*. Because the Rosam II and the caps disclosed by the '399 patent are both in the same or analogous fields, knowledge thereof by the hypothetical person of ordinary skill is presumed. In re Sernaker, 702 F.2d 989, 994 (Fed.Cir.1983). This is true even if Weatherchem did not *actually* know of the existence of the Rosam II cap, as it is the knowledge of the hypothetical person of ordinary skill that is relevant, and this hypothetical person is presumed to know of art as relevant as the Rosam II cap.FN8

FN8. It is thus not inconsistent to find, as the Court does, that Weatherchem did not commit fraud on the patent office by failing to disclose the Rosam II cap, even though knowledge of the Rosam II cap by the hypothetical person of ordinary skill in the art is presumed. Weatherchem did not disclose the existence of the Rosam II cap to the Patent Office during its application for the '494 patent, but Clark did not prove by clear and convincing evidence that Weatherchem's failure to do so was prompted by an intent to deceive the patent examiner.

When Weatherchem found that its existing Flapper cap did not sufficiently limit the amount of flap-popping when used by Gel Spice, it "went back to the drawing board." Weatherchem needed to modify its design to stiffen the entire cap, so that when it was automatically screwed onto a container with very high torque, the

skirt and end wall would not deflect and the flaps would not pop open. Weatherchem achieved this end by adopting precisely the rib design used in the Rosam II cap and adding this design to the existing design disclosed by the (invalid) '399 patent. Weatherchem had a clear incentive to combine the teachings of the two pieces of prior art, knowledge of which it either had or is presumed to have had.

Weatherchem argues that, even if this Court finds objective indicia of obviousness, which it does, secondary considerations show that the claims made in the '494 patent were not obvious. Specifically, Weatherchem notes the Flapper enjoyed tremendous commercial success quickly after its introduction. The problem with this argument is that the Flapper's success is largely attributable to the design disclosed in the '399 patent. This design was an addition to the prior art and was patentable; unfortunately for Weatherchem, it waited to apply for patent protection until more than one year after it first placed a product embodying this design in public use or on sale. The design modification represented by the '494 patent may have improved the Flapper even more over prior art, but the commercial success of the Flapper after this modification was still attributable mostly to the design elements disclosed in the '399 patent. The majority of the "long felt but unresolved needs" of consumers of spice caps were met with the " '399 Flapper." This version of the Flapper was a one-piece cap, had both sprinkle and spoon openings, was inexpensively manufacturable at high speed, was of generally uniform thickness and thus did not deform when cooling, did not break when mechanically screwed onto the container, normally did not allow the flaps to pop open when mechanically screwed onto the container, allowed use of a safety-seal liner without using a pulpboard disk, did not puncture the safety-seal liner, and was easy to use by consumers. The " '494 Flapper" resolved only the additional need, felt by some users of extremely high-torque capping equipment, to further prevent popping of flaps. The continued commercial success of the " '494 Flapper" does not have a substantial nexus to the addition of the ribs to the " '399 Flapper" design.

Although patents are presumed valid, Clark has proved by clear and convincing evidence that the combination of elements actually or presumably known to Weatherchem, and embodied in the '494 patent claims, would have been obvious to one of ordinary skill in the relevant field. Thus, the '494 patent is invalid for obviousness.

E. Clark's Other Arguments Regarding the '494 Patent.

As noted, Clark also directs two other arguments toward Weatherchem's claims it infringes the '494 patent. Because the Court has found that the '494 patent is invalid for obviousness, and that, even if valid, Clark did not infringe the '494 patent, these other arguments are moot.

Nonetheless, for the purpose of completeness and in the interest of aiding appellate review, the Court further finds that Clark's two other arguments are without merit: Clark did not first invent the invention described in the '494 patent, and Weatherchem did not fail to disclose material prior art of which it was aware. Appended to the end of this opinion are additional findings of fact and conclusions of law in support of these determinations.

IV.

For whatever reason—perhaps a mistaken belief that the Flapper was not patentable—Weatherchem failed to apply for patent protection of its Flapper invention within one year of putting the Flapper in public use or on sale. Because of this, Weatherchem Patent No. 4,693,399 is invalid. Further, the modifications Weatherchem made to its early version of the Flapper were already disclosed by the prior art; thus, Patent No. 4,936,494 is invalid for obviousness. Moreover, even if this latter patent was not invalid for obviousness, the accused

devices do not infringe the '494 patent.

Clark has carried its heavy burden of proving both patents are invalid. Thus, Clark's prayer for a declaration of invalidity as to Weatherchem's '399 and '494 patents is GRANTED. Clark's prayer for a declaration of non-infringement as to Weatherchem's '494 patent is also GRANTED.

V.

The Court adds below the following findings of fact and conclusions of law. If the '399 patent was not invalid due to the on-sale bar, the Court would hold: (1) the Clark-1 and Clark-2 caps do infringe the '399 patent; (2) the '399 patent was not obvious; and (3) Weatherchem did not engage in inequitable conduct in obtaining the '399 patent. Further, if the '494 patent was not obvious, and if the Clark caps did infringe the '494 patent, the Court would further hold: (4) Clark did not first invent the subject matter of the '494 patent; and (5) Weatherchem did not fail to disclose material prior art in obtaining the '494 patent.FN9

FN9. The Court makes no findings regarding Clark's argument that, even if it did infringe the '494 patent, its infringement was not willful. No evidence was adduced on willfulness because the Court bifurcated the trial and the parties did not address this issue, which has become moot in light of this order.

A. The Clark Caps Do Infringe the '399 Patent.

Assuming-contrary to the Court's holding-that the '399 patent is not invalid under the on-sale bar, the Court holds the Clark caps would infringe the '399 patent.

[64] Claims 12 and 13 of the '399 patent both include the element of "an annular sealing ledge on the lower side of the end wall interior o[f] [the] skirt." Claim 12 also has as an element "a chordal land area between the spoon and shake sides." Claim 12 states that the "[chordal] land area ha[s] a lower surface generally coplanar with [the annular] sealing ledge and adapted to cooperate with said sealing ledge to support a sealing sheet received in said cap." Claim 13 states that the "annular sealing ledge [has] a flat surface extending radially a distance substantially equal to at least twice the nominal wall thickness of the cap." The design of the sealing ledge and the chordal land area described in Claims 12 and 13 works "to provide support for [the edge and] intermediate areas of a paper [or foil] seal, which can be particularly important when the seal is stamped into the closure by automatic high speed equipment." *See* '399 patent at col. 2, ll. 6-12 & col. 6, ll. 15-24.

The plain language of these claims, together with the specifications and the drawings, makes clear the meaning and scope of the claims. All of the challenged claims of the '399 Patent require:

1. an annular sealing ledge formed at the junction of the end wall and skirt, which serves to seal against the container onto which the cap is screwed and support an intermediate safety-seal liner; and
2. that the annular sealing ledge be coplanar with the chordal land area and/or twice the thickness of the cap wall (which is itself generally uniform in thickness).

The Clark-1 and Clark-2 caps do not have an annular sealing ledge. Rather, both Clark caps merely have a flat end wall, which seals directly against the container onto which it is screwed. To recite again a simple analogy, the Clark caps have a structure similar to that of a ceiling of a room meeting a wall. The cap

described in Weatherchem's '399 patent claims 12 and 13 has a ledge, equivalent to placing a block of wood at the juncture of the ceiling and wall.

Given that the Clark caps do not have *any* sort of functionally meaningful ledge formed at the junction of the skirt and end wall, they certainly do not have a sealing ledge coplanar with a chordal land area, or a sealing ledge twice the thickness of the cap wall. The Clark caps do not contain every limitation of the challenged patent claims. In other words, the Clark caps do not literally infringe the '399 patent.

[65] Both the Clark-1 and Clark-2 caps do, however, perform substantially the same function, in substantially the same way, to achieve substantially the same result. Like the cap disclosed by the '399 patent, the Clark caps *do* have the following elements:

1. a two-mode dispensing cap for a container, comprising an injection-molded, thermoplastic one-piece body; and
2. the body having a generally circular end wall, the end wall having a spoon dispensing side and a shake dispensing side; and
3. the shake dispensing side including a plurality of relatively small apertures for dispensing therethrough a pourable product carried in the container, the spoon dispensing side including a relatively large aperture of a size sufficient for allowing passage of a spoon therethrough for spooning out product; and
4. a chordal area (though not a chordal land, exactly) between the spoon and shake sides, each of said sides having an associated flap hinged on said chordal area, the flap of the shake side being arranged to selectively close or open the relatively small apertures, the flap of the spoon side being arranged to selectively close the relatively large aperture.

The only critical element contained in the challenged '399 claims that the Clark caps do *not* have is:

1. an annular sealing ledge formed at the junction of the end wall and skirt, which is coplanar with the chordal land area and/or twice the thickness of the cap wall.

In addition, the Clark caps *do* have an element that the '399 patent does not disclose: radial gussets spaced around the junction of the skirt wall and end cap.FN10

FN10. In addition, the Clark-2 caps have an extremely small annular ridge, or bead, which, as noted above, the Court finds by clear and convincing evidence is non-functional. Indeed, the evidence is equally clear that Clark placed this nearly invisible ridge on the Clark-2 cap only so that it would have a sealing surface that is *not* formed at the junction of the end wall and skirt, and *not* approximately twice the thickness of the cap wall, as is the sealing ledge described in the '399 patent. However, Clark's attempt to use this meaningless addition to distinguish the Clark-2 cap from the Flapper described in the '399 patent fails. The doctrine of equivalents is designed to avoid patent fraud by discouraging a copyist from making changes in the patent which, *though adding nothing*, take the copied matter outside the claim. *Graver Tank*, 339 U.S. at 607-08, 70 S.Ct. at 855-56. The minuscule land adds nothing to the Clark-2 cap. Clark cannot avoid the equity of the doctrine of equivalents by so simple a means as addition of a non-functional element to its product.

Upon examination of the function of the claimed elements of the cap covered by the '399 patent, the manner in which those functions operate, and the results obtained, and then comparing those characteristics with the Clark caps, the conclusion that the Clark caps infringe the '399 patent under the doctrine of equivalents is unavoidable. Instead of using an annular sealing ledge placed at the junction of the skirt and end wall to strengthen the cap, the Clark caps use triangular gussets. To again use an analogy, Weatherchem strengthened the corner where the ceiling and wall meet by placing a long block of wood into the corner, while Clark placed into the corner a series of small triangular bracket-type pieces of wood. The addition of material to the corner, however, whether as ledge or brackets, performs substantially the same function, in substantially the same way, to achieve substantially the same result.

Weatherchem made sure that the lowest portions of the underside of the end wall lay entirely in one plane, in order to support the safety-seal liner. Weatherchem did this by making sure the chordal land area had ridges extending down exactly as far as the annular ledge. Clark, on the other hand, achieved this same result-making the lowest parts of the underside of the end wall lay entirely in one plane-by simply making the end wall flat and ensuring the triangular gussets did not so extend into the interior of the end wall that they would touch the container lip or safety-seal liner.

The functions of those critical elements of the '399 patent that the Clark caps do not have are performed by substantially similar elements. Instead of the annular sealing ledge strengthening the corner of the cap's skirt and end wall, the Clark caps use gussets. Instead of supplying support for a safety-seal liner by ensuring coplanarity of certain portions of the underside of the end wall (the annular ledge and chordal land area ribs), Clark designed coplanarity of virtually the entire end wall, not just certain portions. The critical functional results are exactly the same: a two-mode cap that is inexpensively manufacturable at high speed, is of generally uniform thickness, resists deformation when cooling, resists breaking when mechanically screwed onto a container, minimizes flap-popping, supports a safety-seal liner, and is easy to use by consumers.

That the Flapper disclosed by the '399 patent was a pioneer invention-one which represents a major advance over the prior art, and is thus entitled to a broad and liberal application of the doctrine of equivalents, *Thomas & Betts*, 720 F.2d 1572-is clearly shown by its immediate success. There existed no spice cap before the " '399 Flapper" that performed *all* the functions of the Flapper (recited immediately above), much less performed them all well. The " '399 Flapper" remained the only spice cap on the marketplace that could perform all these functions until Clark produced its Clark-1 cap. The Clark-1 cap, and later the Clark-2 cap, achieved functional equivalence with the " '399 Flapper" in substantially the same way and with the same result. Indeed, the evidence was overwhelming that Clark "invented" the Clark-1 cap for its largest customer, McCormick, by copying the Flapper as closely as possible, but modifying the cap just enough to attempt to avoid patent infringement.

Before the Flapper was introduced, Clark had no product remotely similar in functionality. This includes Clark's old, push-on Accent Cap, which had no design elements even directed toward maintaining stiffness of the end wall or support of a safety-seal liner. It was only after the Flapper was introduced that Clark attempted to create the Clark-1 cap, and the Clark-1 cap was designed to achieve the same functional results as the Flapper in as close to the same way as possible without obviously copying the Flapper *in toto*. This Court finds the evidence is clear and convincing that Clark infringed the '399 patent under the doctrine of equivalents.

In sum, the Clark-1 and Clark-2 caps do not literally infringe the '399 patents, because the Clark caps do not

contain the claimed element of an annular sealing ledge formed at the junction of the end wall and skirt, which is coplanar with the chordal land area and/or twice the thickness of the cap wall. However, the Clark-1 and Clark-2 caps do infringe the '399 patent under the doctrine of equivalents, because the Clark caps perform virtually every function the " '399 Flapper" caps perform, and in substantially the same way, to achieve a virtually identical result. As such, were it not for the on-sale bar, the Court would hold that both the Clark-1 and Clark-2 caps infringe the '399 patent.

B. The '399 Patent *Was Not Obvious*.

[66] Clark argues that the claims of the '399 patent are invalid because they are obvious. This argument is moot in light of the Court's conclusion that the '399 patent is invalid under the on-sale bar. Nonetheless, the Court considers this argument and concludes the '399 patent was not obvious.

To show obviousness, the primary reference asserted by Clark is the "Durkee patent," Kozlowski 4,714,181. The Kozlowski '181 is the patent Durkee filed in connection with the Flapper in 1985. It does, indeed, claim the invention of the '399 patent; it addresses itself to the very design and mold Weatherchem provided to Durkee. It is not prior art to the '399, however, because it was subject to *inter parte* interference proceedings in the United States Patent Office between Weatherchem and Durkee, where the priority of the "invention" was awarded to Weatherchem by the United States Patent Office. The '399 patent remained in force; however, there is an adverse decision to the claims of Kozlowski. In the interference, the Board of Patent Appeals and Interferences rendered a judgment, as follows: "judgment as to the subject matter of the counts in issue [i.e., invention of the '399 patent] is hereby awarded to John R. Hickman and Craig C. Weidman." The Kozlowski patent is not prior art, accordingly, because it discloses an invention to which Weatherchem was correctly awarded priority under 35 U.S.C. s. 135.

Clark also points to other pieces of prior art in support of its obviousness argument. Specifically, Clark points to the Rosam I cap, the Tone cap, the U.S. Cap and Closure cap, and the cap shown in Foster '812, and claims one skilled in the art would have been "motivated" by the teachings of these references "to prepare the closure described in at least claim 12 of the '399 patent...." Clark did not produce testimony or other evidence, however, showing just how the structures of the alleged prior art could be combined to teach the claims in the '399 patent. Indeed, the testimony at trial clearly showed that it was the Flapper that Clark looked to in attempting to design its own screw-on closures; Clark, apparently, was unable to glean the advances of the '399 from reference only to the prior art. *See, e.g., Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757 (Fed.Cir.1988), *cert. denied*, 493 U.S. 814, 110 S.Ct. 62, 107 L.Ed.2d 30 (1989) (evidence of copying is indicative of non-obviousness). As noted above, the mere fact that the changes to the prior art embodied in the Flapper may seem "simple" in hindsight does not render that invention obvious under s. 103. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d at 1392.

The Flapper's commercial success is also strong evidence that the improvement claimed in the '399 was not obvious. *See Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 F.2d 1573 (Fed.Cir.1984), *cert. denied*, 471 U.S. 1065, 105 S.Ct. 2138, 85 L.Ed.2d 496 (1985). The Flapper enjoyed immediate and substantial success, resulting in large-scale sales and profits within a short time after its introduction. The Court finds, despite Clark's claims to the contrary, that this commercial success was attributable to the elements of the Flapper design disclosed in the '399 patent, particularly in claims 12 and 13 of that product.

Consequently, the Court finds Clark has not shown by clear and convincing evidence that any claim of the '399 was obvious in light of the prior art.

C. Weatherchem Did Not Engage in Inequitable Conduct in Obtaining the '399 Patent.

[67] Clark contends that the '399 patent is unenforceable because Weatherchem failed to fully disclose the prior art to the United States Patent Office. This argument is moot in light of the Court's conclusion that the '399 patent is invalid under the on-sale bar. Nonetheless, the Court considers this argument and concludes Weatherchem did not engage in inequitable conduct.

Clark claims Weatherchem acted inappropriately in connection with its prosecution of the '399 patent by failing to "fully" disclose the prior art. Clark does not contend that Weatherchem failed to identify what Clark deems to be pertinent prior art references. Clark, instead, claims Weatherchem should have done more to show the Patent Office just *how* pertinent that prior art was. Clark claims Weatherchem should have accomplished this by providing actual samples of the prior art caps or at least by providing sketches of those caps. Apparently, Clark believes these more visual references would have led the patent examiner to reject the claims of the '399.

Clark cited no authority establishing a legal requirement to identify prior art in any particular fashion. Clark, similarly, offered no testimony tending to show the existence of a Patent Office practice requiring visual depictions of prior art references. Weatherchem, on the other hand, offered ample evidence showing that the claims of the '399 were subjected to detailed scrutiny by the Patent Office, scrutiny which Weatherchem both invited and assisted.

The claims of the '399 patent have been the subject of three issued patents, *i.e.*, the '206 design patent, the '399 patent and the Durkee patent. Those claims have also been the subject of an interference action and a second application by Kozlowski. Obviously, several patent examiners trained in the screw-on closure art have considered the claims of the '399 patent.

In reviewing these events, the Court finds there is no material prior art known to any person defined in 37 C.F.R. s. 1.56 which was withheld from the United States Patent Office. Simply put, there was no evidence adduced by Clark supporting its allegation that Weatherchem ever had any intent to deceive the United States Patent Office during the prosecution of the '399 patent or in the related interference; nor is there any evidence that Weatherchem ever actually failed to produce any relevant prior art of which it was aware. As such, Clark's argument that Weatherchem engaged in inequitable conduct finds no support in the record.

D. Clark Did Not First Invent the Subject Matter of the '494 Patent.

[68] Clark suggests it did not infringe the '494 patent because Clark, itself, was the inventor of the claims in the '494 patent, and its invention took place before the invention thereof by Weatherchem. Clark thus argues non-infringement through prior invention, citing 35 U.S.C. s. 102(g). Clark's argument is moot in light of the Court's conclusions that the '494 patent is obvious and Clark did not infringe the '494 patent in any event. Nonetheless, the Court considers Clark's s. 102(g) argument and concludes Clark did not first invent the subject matter of the '494 patent.

The claims of the '494 patent define a combination which includes a plurality of reinforcing ribs between the "sealing land" and the skirt of the plastic closure, creating a series of arcuate box-like structures. Thus, to establish prior invention by Clark, Clark must show by clear and convincing evidence that an employee at Clark had a closure, as defined in the claims of the '494 patent, with a plurality of reinforcing ribs positioned at a multitude of relatively closely spaced locations between the "sealing land" or "sealing

surface" and the skirt of the plastic closure, creating a series of arcuate box-like structures.

Weatherchem's record date of invention by the '494 patent is the filing date July 26, 1988. Mr. Weidman of Weatherchem had made the invention by June 1988.

Upon making the invention, Mr. Weidman immediately changed the mold for the 53 mm closure being sold to Gel Spice. By June 7, 1988, the 53 mm "Flapper" at Weatherchem contained reinforcing ribs, as defined in the claims of the '494 patent. By late May or early June of 1988, Mr. Weidman invented the "Flapper" closure now the subject of the '494 patent. Weatherchem immediately took steps to disclose this closure and filed a patent application on July 26, 1988. In the meantime, the Gel Spice product was being sold with the improved "Flapper" as claimed in the '494 patent.

The most relevant documents regarding the structure of the Clark closure are drawings dated June 17, 1988, and approved by McCormick on July 28, 1988. No reinforcing ribs are shown in these drawings of the closure to be sold to McCormick by Clark. The original closure proposed for McCormick had no ribs. By July 28, 1988, Weatherchem was selling the "ribbed Flapper" to Gel Spice.

A second set of drawings by Clark, dated September 8, 1988 and approved by McCormick on September 13, 1988, are accompanied by a transmittal letter stating that these drawings are a recent set of "revised" drawings reflecting the "latest" structure for the Clark closures. This second set of revised drawings does not show reinforcing ribs. By this time, Clark had access to the commercial product of Weatherchem and McCormick knew of the use of ribs on the 53 mm "Flapper." Clark also had access to the first version of the Flapper and to the Cribb patent, which discloses addition of triangular gussets in order to strengthen the entire cap.

On January 17, 1989 Clark filed a patent application on the twin door closure it had developed for McCormick. This application matured into VerWeyst patent 4,898,292. This application was filed by Clark on the "Clark-1" closure and does not disclose reinforcing ribs, much less ribs connecting a sealing land and skirt to create a series of arcuate, box-like structures.

Between June, 1988 and January, 1989, Clark had at least three opportunities to show or disclose to the public that it had invented the closure defined in claims 9, 13 and 14 of the '494 patent. Clark failed to disclose any closure having reinforcing ribs of any kind until some time after January 1989. There is no evidence to show that Clark or employees of Clark had invented reinforcing ribs of any sort prior to June 1988. Indeed, the most that Clark could claim to have invented even today was a cap that was extremely similar to the '399 patent, but with triangular gussets added. Clark never invented a cap similar to the '494 patent, with a sealing land and radial ribs connecting the land to the skirt in a series of arcuate box-like structures.

Moreover, even if a Clark employee had invented reinforcing ribs for two-door plastic closures having sealing capabilities, such invention would not be prior art to the '494 patent under 35 U.S.C. s. 102(g), which states that "A person shall be entitled to a patent unless:

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by

the other.

Clark has not established by clear and convincing evidence a prior invention under Section 102(g) and that the invention was not abandoned, suppressed or concealed. *Hybritech Incorporated v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed.Cir.1986), *cert. denied*, 480 U.S. 947, 107 S.Ct. 1606, 94 L.Ed.2d 792 (1987); *Medtronic, Inc. v. Daig Corp.*, 611 F.Supp. 1498, 1508 (D.Minn.1985), *aff'd*, 789 F.2d 903 (Fed.Cir.1986), *cert. denied*, 479 U.S. 931, 107 S.Ct. 402, 93 L.Ed.2d 355 (1986). *See E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co.* 849 F.2d 1430, 1437 (Fed.Cir.1988), *cert. denied*, 488 U.S. 986, 109 S.Ct. 542, 102 L.Ed.2d 572 (1988) ("the requirement of proving no abandonment, suppression or concealment does modify somewhat the 'secret' nature of Section 102(g) prior art"); *International Glass Co. v. United States*, 187 Ct.Cl. 376, 408 F.2d 395, 403-04 (1969) (per curium).

Clark has not proved conception, corroboration, diligence until reduction to practice and that "the invention" worked for its intended purpose. Secret prior art must be disclosed ultimately to the public or it is deemed suppressed, or concealed. Clark's failure to establish conception of the claimed invention of the '494 patent prior to June, 1988 renders moot any other fact inquiry under s. 102(g), including any purported diligence by Clark or an alleged inventor. *Tomecek v. Stimpson*, 513 F.2d 614, 619 (C.C.P.A.1975).

[69] [70] Even assuming, however, that Clark had proved by clear and convincing evidence that the claimed invention of the '494 patent was *conceived* before the invention of the '494 patent by Mr. Weidman, Clark must also prove by clear and convincing evidence that any alleged prior inventor was diligent in *reducing the claimed invention to practice*. 35 U.S.C. s. 102(g); *Oka v. Youssefyeh*, 849 F.2d 581, 584 (Fed.Cir.1988). Diligence in reducing a claimed invention to practice also requires independent corroborating evidence in addition to the inventor's own testimony and supporting documents. *Hahn v. Wong*, 892 F.2d 1028 (Fed.Cir.1989) (citing *Lacotte v. Thomas*, 758 F.2d 611, 613 (Fed.Cir.1985)). Clark must also show that the alleged reduction to practice "actually worked for its intended purpose." *Holmwood v. Sugavanam*, 948 F.2d 1236, 1238 (Fed.Cir.1991) (citing *Newkirk v. Lulejian*, 825 F.2d 1581, 1582 (Fed.Cir.1987)). This requires that an embodiment of the invention containing all elements of the claim be tested sufficiently to demonstrate that it will actually work for its intended purpose. *Newkirk*, 825 F.2d at 1582.

Thus, Clark's alleged prior invention must show a multitude of relatively closely spaced reinforcing ribs lying between a sealing land and the cap skirt, to resist deflection of the end wall as a result of the sealing surface of the cap engaging and being tightened onto the mouth of the container, together with all other elements of the claims in the '494 patent. Clark never showed any such prior invention. Clark's claim that it first invented the subject matter of the '494 patent is not well-taken.

E. Weatherchem Did Not Fail to Disclose Material Prior Art.

Clark contends that the '494 patent is unenforceable because Weatherchem did not disclose the Rosam II closure to the Patent Office. This argument is moot in light of the Court's conclusions that the '494 patent is obvious and that Clark did not infringe the '494 patent in any event. Nonetheless, the Court considers this non-disclosure argument and concludes Weatherchem did not fail to disclose material prior art.

[71] [72] Clark must prove two elements to support its defense of inequitable conduct. Both elements must be proven by clear and convincing evidence. First, there must be misconduct that is "material." Second, the misconduct must have been performed with the intent to deceive or mislead the Patent Office. *Gross*

negligence alone does not satisfy this intent to deceive requirement. *Kingsdown Medical Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 872 (Fed.Cir.1988), *cert. denied*, 490 U.S. 1067, 109 S.Ct. 2068, 104 L.Ed.2d 633 (1989).

[73] This Court has already found that the '494 is invalid because the invention embodied in it is obvious in light of the prior art, specifically the Rosam II cap. This finding compels the conclusion that the Rosam II constitutes "material" prior art for purposes of a fraud analysis. It is also undisputed that the Rosam II was not disclosed to the Patent Office as a prior art reference in connection with the '494 application. These facts do not, however, require the conclusion that Weatherchem is guilty of inequitable conduct in connection with the '494 patent. *See Braun Inc. v. Dynamics Corp. of America*, 975 F.2d 815, 822 (Fed.Cir.1992) (intent to defraud is not to be inferred from failure to disclose material art, that element must be separately established).

After careful review of the evidence, and most particularly the testimony of Weatherchem's counsel Mr. Howard Shimola, the Court concludes that Clark has failed to clearly and convincingly establish that the failure to disclose the Rosam II cap to the Patent Office was done intentionally or designed to mislead the Patent Office as to the patentability of the invention disclosed in the '494.

IT IS SO ORDERED.

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