

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

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| CROWN PACKAGING TECHNOLOGY, INC. and CROWN CORK & SEAL USA, INC., | : | |
| | : | |
| | : | |
| Plaintiffs, | : | |
| | : | |
| v. | : | Civil Action No. 05-608-MPT |
| | : | |
| REXAM BEVERAGE CAN CO., | : | |
| | : | |
| Defendant. | : | |

MEMORANDUM ORDER

I. INTRODUCTION

This is a patent infringement case. On August 18, 2005 Crown Packaging Technology, Inc. and Crown Cork & Seal USA, Inc. (collectively “Crown”) filed suit against Rexam Beverage Can Co. (“Rexam”) and Rexam Beverage Can Americas, Inc. alleging infringement under 35 U.S.C. § 271 of Crown’s U.S. Patent No. 6,848,875 (“the ‘875 patent”).¹ On August 30, 2005, Crown filed its First Amended Complaint adding a count alleging infringement of its U.S. Patent No. 6,935,826 (“the ‘826 patent”).² On October 18, 2005, Crown filed an Unopposed Motion for Leave to File Second Amended Complaint³ which was granted on October 20, 2005⁴ and that complaint was filed on the same date.⁵

¹ D.I. 1 (Complaint for Patent Infringement).
² D.I. 3 (First Amended Complaint for Patent Infringement).
³ D.I. 13.
⁴ D.I. 15.
⁵ D.I. 16. Rexam Beverage Can Americas, Inc. was terminated as a defendant on this same date. See D.I. 13, ¶ 4; D.I. 15. No additional patents were asserted by Crown in the Second Amended Complaint. See D.I. 16.

On November 3, 2005, Rexam filed its Answer to Second Amended Complaint for Patent Infringement and Counterclaims, denying infringement, raising certain affirmative defenses and alleging infringement of its U.S. Patent Nos. 4,774,839 (“the ‘839 patent”), 5,222,385 (“the ‘385 patent”), 5,697,242 (“the ‘242 patent”), 6,129,230 (“the ‘230 patent”), and 6,260,728 (“the ‘728 patent”).⁶ On December 23, 2005, Crown filed its answer to Rexam’s counterclaims denying infringement and raising certain affirmative defenses.⁷

Currently before the court are: (1) Rexam’s motion for partial summary judgment of invalidity of Crown’s U.S. Patent Nos. 6,935,826 and 6,848,875;⁸ and (2) Rexam’s motion for summary judgment that the “Rexam End” does not infringe Crown’s U.S. Patent Nos. 6,935,826 and 6,848,875.⁹ For the reasons discussed below, Rexam’s motion on invalidity is granted in part and denied in part. Rexam’s motion on non-infringement is also granted in part and denied in part.

II. BACKGROUND OF THE INVENTIONS

Crown’s patents-in-suit are directed at beverage cans. The ‘826 patent is directed to a can end having a specific geometric profile. Crown’s patented can ends are described as requiring less metal usage over prior can ends due to various geometrical aspects of the claimed can ends. The ‘875 patent is directed to methods of seaming can ends onto a can after the can is filled. The ‘826 patent and the ‘875

⁶ D.I. 17.

⁷ D.I. 37. On September 11, 2006, the parties consented to the jurisdiction of the United States Magistrate Judge, pursuant to 28 U.S.C. § 636(c) and Federal Rule of Civil Procedure 72, to conduct all proceedings and enter the order of judgment and the case was referred to the magistrate judge the following day. See D.I. 111; D.I. 114.

⁸ D.I. 209.

⁹ D.I. 212.

patent disclose the same invention, as they share the same patent specification. The '826 patent issued from a continuation application from the '875 patent, which issued from a series of continuation applications that began with an original application filed in the United Kingdom on May 24, 1995.¹⁰

Crown alleges that Rexam's can ends, known as Rexam Ends, infringe claim 14 of the '826 patent and claim 34 of the '875 patent.¹¹ In its invalidity motion, Rexam contends that the asserted claims of the patents-in-suit are invalid as anticipated under 35 U.S.C. § 102(b); that the asserted claims of the patents-in-suit are invalid as obvious to a person of ordinary skill in the art in light of the prior art under 35 U.S.C. § 103; that claim 34 of the '875 patent is invalid for failure to comply with the written description requirement of 35 U.S.C. § 112; and that the asserted claims of the patents-in-suit are invalid due to indefiniteness under 35 U.S.C. § 112. In its non-infringement motion, Rexam contends that its accused product, the Rexam End, does not infringe literally or

¹⁰ "A continuation application is a second application that contains the same disclosure as the original applications. . . . Such an application is fully entitled to the benefit of the filing date of the original application." Chisum on Patents § 130.03[2] (2006). The continuation applications of the '875 and '826 patents derive from a common U.S. application which issued as U.S. Patent 6,065,634 ("the '634 patent"). The '875 and '826 patents contain substantially identical specifications (the "common specification"). Citation to particular specification language in either patent is understood to refer to the same language in each patent, although the corresponding language may not appear in the same column or line in each patent.

¹¹ Originally, Crown alleged that Rexam infringes claims 13 and 14 of the '826 patent and claims 32, 33, 34, 50, 51, and 52 of the '875 patent and Rexam moved for a finding of invalidity and non-infringement of all of those claims. On the afternoon of January 18, 2008, as this opinion was being finalized for publication, Crown informed the court that it was withdrawing from contention in this action claim 13 of the '826 patent and claims 32, 33, 50, 51, and 52 of the '875 patent. Crown stated that it planned to proceed only on its infringement claims as to claim 34 of the '875 patent and claim 14 of the '826 patent. Crown also notified the court that it was providing Rexam a covenant not to sue with respect to the withdrawn claims. See D.I. 366. In light of Crown's letter, only claim 34 of the '875 patent and claim 14 of the '826 patent remain at issue and this opinion will only address those claims. The court notes that its rulings herein would have made it unnecessary for the court to have addressed certain of Rexam's invalidity and non-infringement defenses, even absent Crown's withdrawal of certain claims from contention. The court does not need additional responses by Rexam to Crown's January 18, 2008 letter.

under the doctrine of equivalents because certain elements of the asserted claims are absent from the Rexam End.

III. DISCUSSION

A grant of summary judgment pursuant to Federal Rule of Civil Procedure 56(c) is appropriate “if the pleadings, depositions, answers to interrogatories, and admissions on file, together with affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.”¹² This standard is applicable to patent cases.¹³ A Rule 56(c) movant bears the burden of establishing “that there is an absence of evidence to support the nonmoving party’s case.”¹⁴ The nonmovant must be given the benefit of all justifiable inferences and the court must resolve any disputed issue of fact in favor of the nonmovant.¹⁵

“A patent shall be presumed valid.”¹⁶ “To overcome this presumption of validity, the party challenging a patent must prove facts supporting invalidity by clear and convincing evidence.”¹⁷

A. Rexam’s Motion for Summary Judgment of Invalidity

1. Written Description

Rexam argues that claim 34 of the ‘875 patent is invalid for failure to comply with the written description requirement of 35 U.S.C. § 112, ¶ 1. Rexam argues that this claim is invalid because it does not include the “annular reinforcing bead” limitation

¹² Fed. R. Civ. P. 56(c).

¹³ *Johnson v. IVAC Corp.*, 885 F.2d 1574, 1576-77 (Fed. Cir. 1989).

¹⁴ *Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986).

¹⁵ *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 456 (1992).

¹⁶ 35 U.S.C. § 282.

¹⁷ *Schumer v. Lab. Computer Sys., Inc.*, 305 F.3d 1304, 1315 (Fed. Cir. 2002).

contained in other asserted claims.

The first paragraph of section 112 states:

[t]he specification *shall contain a written description of the invention*, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.¹⁸

The Federal Circuit has stated that:

35 U.S.C. § 112, first paragraph, requires a “written description of the invention” which is separate and distinct from the enablement requirement. The purpose of the “written description” requirement is broader than to merely explain how to “make and use”; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of *the invention*. The invention is, for purposes of the “written description” inquiry, *whatever is now claimed*.¹⁹

To comply the written description requirement, a patent specification “must describe the invention sufficiently to convey to a person of skill in the art that the patentee had possession of the claimed invention at the time of the application, i.e., that the patentee invented what is claimed.”²⁰ In a case such as this, where claims are added after the original filing date, an adequate written description is not provided unless “the disclosure of the [original] application . . . reasonably convey[s] to one of ordinary skill in the art that the inventor possessed the later-claimed subject matter at the time the [original] application was filed.”²¹ The Federal Circuit has also warned that

¹⁸ 35 U.S.C. § 112, ¶ 1 (emphasis added).

¹⁹ *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (emphasis in original).

²⁰ *LizardTech, Inc. v. Regents of the Univ. of California*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

²¹ *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998) *aff'd in part, rev'd in part on other grounds* 236 F.3d 1342 (Fed. Cir. 2001); see also *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1566 (Fed. Cir. 1991) (“Application sufficiency under § 112, first paragraph, must be judged as of the filing date.”) (citing *United States Steel Corp. v. Phillips Petroleum Co.*, 865 F.2d 1247, 1251 (Fed. Cir. 1989)).

“it should be readily apparent from recent decisions of this court involving the question of compliance with the description requirement of § 112 that each case must be decided on its own facts. Thus, the precedential value of cases in this area is extremely limited.”²²

Rexam contends that the common specification demonstrates that the patent applicant was not in “possession” of a can end which meets the limitations of claim 34 of the ‘875 patent in the absence of an “annular reinforcing bead.” In support of its contention, Rexam cites the abstracts, specifications, figures, and the file history of the ‘634 patent, as well as inventor testimony and its expert’s report on invalidity.

The Abstract of the ‘875 patent recites:

A can end comprising a peripheral cover hook, a chuck wall dependent from a first point on the interior of the cover hook, *an outwardly concave annular reinforcing bead* extending radially inwards from a second point on the interior of the chuck wall, and a central panel supported by *an inner portion of the reinforcing bead*, characterized in that, a line connecting the first point and the second point is inclined to an axis perpendicular to the exterior of the central panel at an angle between 30° and 60°.²³

In the “BACKGROUND OF THE INVENTION,” the common specification discusses several prior art can ends, each having reinforcing beads. In particular, it is noted that U.S. Patent No. 4,093,102 “describes can ends comprising a peripheral

²² *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1562 (Fed. Cir. 1991) (quoting *In re Driscoll*, 562 F.2d 1245, 1250 (C.C.P.A. 1977)).

²³ ‘875 patent, Abstract (emphasis added). The abstract of the ‘826 patent similarly describes a can end having an annular reinforcing bead. See ‘826 patent, Abstract (“A can end includes a peripheral cover hook, a chuck wall dependent from the interior of the cover hook, *an outwardly concave annular reinforcing bead* extending radially inwards from the chuck wall, and a central panel supported by an inner portion of *the reinforcing bead*, characterized in that the chuck wall is inclined to an axis perpendicular to the exterior of the central panel at an angle between 30° and 60°, and the concave cross-sectional radius of *the reinforcing bead* is less than 0.75 mm.”) (emphasis added). The abstract of the ‘634 patent is similar, as is its specification, and will not be repeated herein. See D.I. 211 at A186-A195 (‘634 patent).

cover hook, a chuck wall dependant from the interior of the cover hook, *an outwardly concave annular reinforcing bead extending radially inwards from the chuck wall* and a central panel joined to *an inner wall of the reinforcing bead by an annular outwardly convex bead.*²⁴ The common specification compares the can end described in that patent to the can end described in the patents-in-suit by stating that “[w]e have discovered that improvements in metal usage can be made by increasing the slope of the chuck wall and *limiting the width of the anti peaking bead.*”²⁵

Discussing prior art can ends, the common specification notes that “[a]s can ends are developed with narrower anti-peaking beads the chuck bead 19 [shown in figure 2] becomes narrower and more likely to fracture. There is also a risk of scuffing of the can end at the drive position D which can leave unacceptable unsightly black marks after pasteurization.”²⁶ The common specification also states that:

Continuing development of a can end using less metal whilst still permitting stacking of a filled can upon the end of another, *this invention provides a can end* comprising a peripheral cover hook, a chuck wall dependant from the interior of the chuck wall, *an outwardly concave annular reinforcing bead* extending radially inwards from the chuck wall,

²⁴ ‘875 patent, 1:19-24 (emphasis added).

²⁵ ‘875 patent, 1:31-33 (emphasis added). The other prior art patents described in this section of the common specification are each noted to include an annular reinforcing bead. U.S. Patent No. 4,217,843 is said to describe “an alternative design of can end in which *the countersink has inner and outer flat walls, and a bottom radius which is less than three times the metal thickness.*” ‘875 patent, 1:34-37 (emphasis added). U.S. Patent No. 4,571,978 describes a can end comprising “a peripheral flange or cover hook, a chuck wall dependant from the interior of the cover hook, *an outwardly concave reinforcing bead extending radially inwards from the chuck wall from a thickened junction of the chuck wall with the bead,* and a central panel supported by *an inner portion of the reinforcing bead.*” ‘875 patent, 1:45-50 (emphasis added). U.S. Patent No. 5,582,319 describes the use of a particular alloy for a can end, the use of such alloy, “permitted manufacture of a can end with a *narrow, and therefore stronger reinforcing bead*” ‘875 patent, 1:60-61 (emphasis added).

²⁶ ‘875 patent, 3:52-56; *see also* ‘826 patent, 1:63-67 (Prior art “can ends are held during double seaming by an annular flange of chuck, the flange being of a width and height to enter *the anti-peaking bead.* There is a risk of scuffing if this narrow annulus slips. Furthermore a narrow annular flange of the chuck is susceptible to damage.”) (emphasis added).

and a central panel *supported by an inner portion of the reinforcing bead*, characterized in that, the chuck wall is inclined to an axis perpendicular to the exterior of the central panel at an angle between 30° and 60°, and *the concave bead narrower than 1.5 mm (0.060")*.²⁷

Going from the general description of the claimed can end of the invention, describing a can end having an annular reinforcing bead, the common specification details embodiments in which the annular reinforcing bead has certain additional characteristics. "In a preferred embodiment of the can end an outer wall of the reinforcing bead is inclined to a line perpendicular to the central panel at an angle between -15° and +15° and the height of the outer wall is up to 2.5 mm."²⁸ Another embodiment describes a reinforcing bead having "an inner portion parallel to an outer portion joined by said concave radius."²⁹

While one embodiment "shows an overall height h_2 at 6.86mm we have also found that *useful* can ends may be made with an overall height as little as 6.35 mm (0.25)".³⁰ The designation " h_2 " is part of a list of "[t]ypical dimensions of the example of the invention" and refers to the "overall height of the can end." That list of dimensions also includes the designation " h_1 " ("height to the top of antipeaking bead") as being 5.02 mm.³¹ Therefore, the typical depth of the annular reinforcing bead of the invention would be 1.84 mm (6.86 mm - 5.02 mm). Without an annular reinforcing bead, the can

²⁷ '875 patent, 1:32-2:5 (emphasis added).

²⁸ '875 patent, 2:8-10; see also '875 patent, 3:51-54 ("Preferably the anti-peaking bead 25 is parallel sided, however the outer wall may be inclined to a line perpendicular to the central panel at an angle of between -15° and +15° and the height h_4 of the outer wall may be up to 2.5 mm.").

²⁹ '875 patent, 2:1-13.

³⁰ '875 patent, 4:18-20 (emphasis added).

³¹ "Other relevant "typical dimensions" of the invention illustrated in figure 4 include measurements of the "concave radius in antipeaking bead" (r_3); "maximum diameter of antipeaking bead" (d_2); "minimum diameter of antipeaking bead" (d_1); and "outer wall height" (h_4). See '875 patent 4:4-9.

described would be only 5.02 mm, significantly less than the minimum overall height of 6.35 mm described as useful by the common specification.³² Lack of an annular reinforcing bead would also affect the chuck wall angles as the inventors made clear during prosecution of the '634 patent (from which the patents-in-suit are continuations):

In rejecting claim 1 over *Kraska*, the Examiner has failed to appreciate that the selection of wall angles of the can end is critical to the overall strength of the can end, and that relatively small changes in angle can radically affect the performance of the can end. Even *Kraska* recognizes that "*all of the parameters or dimensions of the respective portions which form a countersink 20 are critical and are interrelated to each other to optimize the maximum pressures that the end is capable of withstanding without buckling or rocking*"³³

Additionally, the figures of Crown's patents-in-suit, whether of the prior art or the can end of the claimed inventions, are all illustrated as having an annular reinforcing bead. For instance, figure 5 shows a modified chuck of the invention used in attaching a can end to a can body. Contrasting the prior art illustrated in figure 2, the modified chuck illustrated by figure 5 "is designed to drive initially on the relatively large chuck wall 32 *without entering deeply into the anti-peaking bead 25.*"³⁴

Although the specification describes variations in the annular reinforcing bead, that element is consistently described as part of the invention. Also, Peter James Hinton, one of the inventors of the patents-in-suit (and the '634 patent), acknowledged at deposition that he did not consider the invention to include a can without a

³² Rexam correctly notes that "a can end as described without the annular reinforcing bead would have a height more than 20% $((6.35 \text{ mm} - 5.02)/6.35 \text{ mm} = 20.9\%)$ less than what the inventor described as a 'useful' can end height." D.I. 210 at 36.

³³ D.I. 211 at A199 ('634 patent file history, Response to Office Action, dated Sept. 16, 1999 (quoting U.S. Patent No. 4,217,843 4:19-24)) (emphasis added). The independent claims of the '634 patent each contain the "annular reinforcing bead" limitation. See D.I. 211 at A195 ('634 patent, claims 1 and 9).

³⁴ '875 patent, 4:39-41 (emphasis added).

“countersink.” In response to a question of whether he contemplated his invention as having a can end that did not include a countersink, Hinton answered “No.”³⁵

Crown points to a portion on Hinton’s testimony in which he stated that a “[c]ountersink is from the top of the end to the bottom of the end . . . [which] would include the chuck wall”³⁶ and that this testimony shows that Hinton considered the can end wall to be critical to the invention, rather than the annular reinforcing bead.

Hinton’s testimony does not raise a genuine issue of material fact. First, Hinton testified that with respect to certain terms of the patents-in-suit that he had not thought about those for five or six years prior to his deposition, that he had “just forgotten about them,” and that he did not know whether a countersink was synonymous with annular reinforcing bead.³⁷ When asked to look at figure 4 of the patents-in-suit, Hinton stated that item 24 in that figure “was probably called the chuck wall” and that he could not recall if item 25 of that figure was the annular reinforcing bead, but that item 25 “could be a countersink radius.”³⁸

Later, Hinton again testified as to his understanding of the annular reinforcing bead of the patents-in-suit.

Q. Mr. Hinton, do you have an understanding of what a reinforcing bead is in the context of a can end?

A. We do not - I have never referred to it as a reinforcing bead. It has just been called a *countersink radius* or *countersink radius diameter*, or . . .

Q. So if I was —

³⁵ D.I. 211 at A163 (Hinton Dep. at 282).

³⁶ D.I. 265, Ex. 12 (Hinton Dep. at 27-28).

³⁷ D.I. 265, Ex. 12 (Hinton Dep. at 26-27).

³⁸ D.I. 265, Ex. 12 (Hinton Dep. at 29-30).

A. It has never been - I have never called it a reinforcing bead.

Q. So if I were to ask you what an annular reinforcing bead was in the context of the claim, what would your answer be?

A. From the knowledge I have gained at this deposition, *I would say it was, it included the countersink radius and the two vertical or near vertical walls on either side of it.*

Q. So, a reinforcing bead would have a base, a radius, and would have two walls on either side of it, is that correct?

A. Yes, yes.³⁹

That testimony demonstrates that the “countersink” Hinton testified as being part of the invention of the patents-in-suit is the at least part of the “annular reinforcing bead,” even under Hinton’s recollection of “things that are a long time ago now.”⁴⁰

The court construed annular reinforcing bead to mean “an outwardly concave generally ‘U’ shaped groove (also called a countersink or anti-peaking bead) that is located inwards from the bottom of the wall (chuck wall) when looking at a cross section of the can end, which encircles and supports the center panel of the can end.”⁴¹

Hinton’s patents use the terms countersink, anti-peaking bead, and annular reinforcing bead interchangeably, as the courts claim construction indicates.

Finally, Rexam’s expert, Edmund Gillest, notes much of the evidence recited above in his report on invalidity and opines that:

[T]hose of ordinary skill in the art in May 1995, when the application from which the ‘826 and ‘875 Patents claim priority was filed, would understand from the specifications of those patents that the new can end those patents describe must include a generally U-shaped ‘annular reinforcing

³⁹ D.I. 211 at A163 (Hinton Dep. at 283) (emphasis added).

⁴⁰ D.I. 265, Ex. 12 (Hinton Dep. at 30) (emphasis added).

⁴¹ D.I. 334 at 19.

bead' surrounding the central panel of the can end.⁴²

Gillest further opines that “any claim of the ‘875 and ‘826 patents that does not require an annular, concave generally U-shaped reinforcing bead between the central panel and the end wall would encompass a can end that is not described by those patents.”⁴³

Crown’s opposition brief primarily distinguishes cases cited by Rexam rather than responding to the evidence of record with which Rexam supports its written description argument. As noted above, the Federal Circuit has warned that “the precedential value of cases in this area is extremely limited,”⁴⁴ due to the case-specific analysis required. Crown does acknowledge, however, that the “law stands for the unremarkable proposition that a ‘claim that omits an element which *applicant describes as an essential or critical feature of the invention originally disclosed does not comply with the written description requirement.*”⁴⁵ Crown avers that nothing in the common specification describes an annular reinforcing bead as an essential or critical feature of the invention and, therefore, the written description requirement is not violated.

Although the common specification does not use the words “essential” or “critical” in connection with “annular reinforcing bead,” everything in the patents-in-suit (from the abstract, to the specification, to the drawings) “describe” a can end that must have an annular reinforcing bead.⁴⁶ This also answers Crown’s contention that the

⁴² D.I. 305 at B83.

⁴³ D.I. 305 at B84.

⁴⁴ *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1562 (Fed. Cir. 1991) (quoting *In re Driscoll*, 562 F.2d 1245, 1250 (C.C.P.A. 1977)).

⁴⁵ D.I. 265 at 35 (citing MPEP § 2163.05 I (citing *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998) and *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998))) (emphasis added).

⁴⁶ Although it is required that a specification must clearly disclose that an invention is limited in order for the claims of the patent to be limited by the specification, no explicit statement of limitation is required. See *Astrazeneca AB v. Mutual Pharmaceutical*, 384 F.3d 1333, 1340 (Fed. Cir. 2004).

“specification indicates that the embodiment[s] shown in the drawing[s] are merely exemplary.”⁴⁷ As explained above, specification contrasts the annular reinforcing bead of Crown’s inventions from those of the prior art and the exemplary embodiments describe can ends having annular reinforcing beads of differing geometries. Nowhere is there an indication that the inventors possessed a can end having the other elements of claim 34 of the ‘875 patent *without* also having an annular reinforcing bead, and Crown has not pointed to any contrary evidence.

Crown also argues there is no requirement that a claim recite each element needed to utilize the claimed subject matter and that it is appropriate to claim subcombinations of an invention. For that argument Crown relies on *Stiftung v. Renishaw PLC*.⁴⁸ The court notes that the *Stiftung* court was reviewing a finding of indefiniteness under 35 U.S.C. § 112, ¶ 2, not a written description analysis under the first paragraph of that section. Nevertheless, that case is distinguishable. There, the Federal Circuit found that the omission of a particular element of the claim at issue did not render that claim invalid as indefinite. The court stated that “it is entirely consistent with claim definiteness of the second paragraph of section 112, to present ‘subcombination’ claims, drawn to only one aspect or combination of elements of an invention *that has utility separate and apart from other aspects of the invention*.”⁴⁹ As explained above, the common specification’s discussion of minimum height of “useful” can ends according to the invention would not include a can end with the elements of

⁴⁷ D.I. 264 at 35 (citing ‘826 patent, 2:49-51 (“Various embodiments will now be described by way of example and with reference to the accompanying drawings”).

⁴⁸ 945 F.2d 1173 (Fed. Cir. 1991).

⁴⁹ *Stiftung*, 945 F.2d at 1181 (emphasis added).

the claims at issue that lacks an annular reinforcing bead.

Another of Crown's arguments is that the claim 34 of the '875 patent does not exclude can ends having an annular reinforcing bead because claim '32 of the '875 patent, from which claim 34 is multi-dependant, includes the open-ended "comprising" transitional phrase. While Rexam acknowledges that the claims at issue are broad enough to cover a can *having* an annular reinforcing bead, Rexam is correct that the doctrine of claim differentiation suggests that those claims would also have to cover a can end *lacking* an annular reinforcing bead, or those claims would be "essentially redundant" of other claims in the respective patents.⁵⁰

Crown also suggests that "the PTO has already determined, as [a] matter of fact, that the specification satisfied the written description requirement. The PTO's Manual of Patent Examining Procedure ('MPEP') requires the Examiner to conduct a 'thorough reading and evaluation of the content of [an] application' to insure compliance 'with the written description requirement.'"⁵¹ Were that the end of the inquiry, however, there would be nothing left for the court to do. The court understands the presumption that a patent is valid and the presumption of administrative correctness. In this instance, the court determines that the PTO erred in its determination that claim 34 of the '875 patent is in compliance with the written description requirement.

The evidence before the court, therefore, makes clear that claim 34 of the '875

⁵⁰ Compare, e.g., '826 patent claims 13 and 1; *Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1344 (Fed. Cir. 2005).

⁵¹ D.I. 264 at 34 (citing MPEP § 2163 II A). The court notes that the requirement that the patent examiner conduct a "thorough reading and evaluation of the content or [an] application" to insure compliance "with the written description requirement" is the totality of Crown's "Disputed Facts On Written Description" contained in the "Statement of Facts" section of its opposition brief. See D.I. 264 at 9.

patent must contain, in addition to the other elements of the claims, an annular reinforcing bead. The specification does not support that broader claim which eliminates that limitation. Because there is no genuine issue of material on this question, the court grants Rexam's motion for summary judgment that claim 34 of the '875 patent is invalid for failure to comply with the written description requirement of 35 U.S.C. § 112, ¶ 1.

In light of the court's determination, below, that Rexam is entitled to summary judgment of the remaining claim at issue, claim 14 of the '826 patent, the court need not address the parties arguments concerning Rexam's alternative invalidity theories. Those theories are, therefore, denied as moot.

B. Rexam's Motion for Summary Judgment of Non-Infringement

To determine whether a claim has been infringed, the court must conduct a two step analysis: claim construction and application of the construed claim to the accused product or process.⁵² The patent owner has the burden of proving infringement by a preponderance of the evidence.⁵³ "It is well settled that each element of a claim is material and essential, and that in order for a court to find infringement, the plaintiff must show the presence of every element or its substantial equivalent in the accused device."⁵⁴

⁵² *Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1533,1353 (Fed. Cir. 1998).

⁵³ *Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 758 (Fed. Cir.1984) (citing *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1361 (Fed. Cir.1983)).

⁵⁴ *Zygo Corp. v. Wyko Corp.*, 79 F.3d 1563, 1568 (Fed. Cir. 1996) (citing *Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985)); see also *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1357-58 (Fed. Cir. 2006) ("To establish infringement, every element and limitation of the claim must be present in the accused device, literally or by an equivalent." (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997)); *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1539 (Fed. Cir. 1991) ("There can be no infringement as a matter of law if a claim limitation is totally

Crown alleges that the Rexam End infringes claim 14 of the '826 patent, that claim recites:

The end according to claim 13, further comprising *an annular reinforcing bead* connected to said wall at said second point, said *annular reinforcing bead* connecting said wall to said central panel. (emphasis added)

As noted above, the court construed annular reinforcing bead to mean “an outwardly concave generally ‘U’ shaped groove (also called a countersink or anti-peaking bead) that is located inwards from the bottom of the wall (chuck wall) when looking at a cross section of the can end, which encircles and supports the center panel of the can end.”⁵⁵ Rexam argues the Rexam End does not literally infringe claim 14 of the '826 patent because, under the court’s claim construction, its product does not include the annular reinforcing bead limitation (as well as other limitations of those claims).

Rexam points to an illustration of the Rexam End to support its argument.⁵⁶ According to Rexam, that illustration shows the Rexam End having “a flat central panel that extends beyond the inner extent of the wall to join the wall and. The wall is folded outwardly to extend first up from the central panel and then down to join the central panel.”⁵⁷ Rexam states it “refers to the configuration that is behind a portion of the wall as a fold. The folded wall eliminates the otherwise universally present groove in the top of beverage can ends that collects dirt and debris making drinking from the can unappealing.”⁵⁸ Rexam notes that Dan Abramowicz, who according to Rexam is a

missing from the accused device.” (citing *Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 798 (Fed. Cir. 1990)).

⁵⁵ D.I. 334 at 19.

⁵⁶ See D.I. 214 at A8 (Illustration of Rexam End).

⁵⁷ D.I. 215 at 4.

⁵⁸ D.I. 215 at 4.

Crown PhD. Executive Vice-President of Technology and Regulatory Affairs, described the Rexam End as a “[f]olded end with the countersink bent ~90° behind the countersink wall. *This essentially forms a flat panel with no countersink.*”⁵⁹

Crown does not seriously contest that Rexam’s end literally infringes claim 14 of the ‘826 patent under the court’s construction of “annular reinforcing bead.”⁶⁰ Crown states that “there is record evidence of literal infringement under *Crown’s proposed construction* and genuine issues of material fact preclude summary judgment *if the Court adopts that construction.*” Crown also states that “there is record evidence that, even based upon Rexam’s overly-narrow claim interpretations, Rexam *literally* infringes the ‘*non-bead*’ claims.”⁶¹ Crown’s expert, Martin J. Higham, did not make any literal infringement argument concerning the Rexam End under the court’s construction of the annular reinforcing bead limitation.⁶² In fact, Crown acknowledges that the Rexam End does not literally infringe that claim under the court’s construction: “Rexam’s can end and seaming method *would not satisfy the bead claims literally under Rexam’s overly-restrictive bead definition*, they would nevertheless infringe these claims under the doctrine of equivalence.”⁶³

In light of this acknowledgment, there is no genuine issue of material fact that the

⁵⁹ D.I. 214 at A1 (June 28, 2004 email from Abramowicz to Nigel Gilson, “cc” to Frank Mechura and Len Jenkins).

⁶⁰ D.I. 263 at 1 (emphasis added).

⁶¹ D.I. 263 at 1 (second emphasis added); see also D.I. 263 at 3 (“Crown has presented evidence of literal infringement of the *non-bead* claims even if Rexam’s overly-restrictive bead definition were to be adopted.”)

⁶² See D.I. 266, Ex. 18, Tab A at 17-18, ¶¶ 64-67 (discussing literal infringement of claim 14 under Crown’s rejected construction of the annular reinforcing bead limitation); *id.* at Ex. 18, Tab A at 32, ¶ 113 (stating Higham expected to testify that the Rexam End literally infringes claims *other than* claim 14 of the ‘826 patent under Rexam’s then-proposed constructions).

⁶³ D.I. 263 at 4 (emphasis added).

Rexam End does not literally infringe claim 14 of the '826 patent.

Crown argues, however, that even under the court's construction of annular reinforcing bead, the Rexam End infringes under the doctrine of equivalents ("DOE").

In *Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co.*, the United States Supreme Court stated that "a patentee may invoke [the] doctrine [of equivalents] to proceed against the producer of [an allegedly infringing] device if it performs substantially the same function in substantially the same way to obtain the same result."⁶⁴ The Federal Circuit has since "recognized the function, way, result test applied in *Graver Tank*."⁶⁵ Moreover, "substantial identity must be proven with regard to all three elements of the doctrine specified in *Graver Tank*: *function* performed, *means* by which function is performed, and *result* achieved."⁶⁶

"[T]he evidentiary requirements necessary to prove infringement under the doctrine of equivalents [include] . . . the need to prove equivalency on a limitation-by-limitation basis . . . [and] requir[es] equivalency to be proven with particularized testimony and linking argument."⁶⁷ The purpose of "[t]hese evidentiary requirements [is to] assure that the fact-finder does not, under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement."⁶⁸ Therefore, "[i]n

⁶⁴ 339 U.S. 605, 608 (1950) (internal quotations omitted).

⁶⁵ *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1566 (Fed. Cir. 1996).

⁶⁶ *Lear Siegler, Inc. v. Sealy Mattress Co. of Michigan*, 873 F.2d 1422, 1425 (Fed. Cir. 1989) (emphasis in original).

⁶⁷ *Texas Instruments*, 90 F.3d at 1566 (citations and internal quotations omitted).

⁶⁸ *Id.* at 1567 (internal quotations omitted); see also *Hewlett-Packard Co. v. Musteck Sys., Inc.*, 340 F.3d 1314, 1322-23 (Fed. Cir. 2003) (stating that "the evidentiary requirements for proof of infringement under the doctrine of equivalents . . . require . . . provid[ing] evidence 'on a limitation-by-limitation basis' . . . [and] [t]hat evidence must have included 'particularized testimony and linking

order to prevent the doctrine from expanding a patent's protection beyond the scope of its claims, the Federal Circuit has warned that the application of the doctrine of equivalents should be 'the exception . . . [and] not the rule' in patent infringement actions."⁶⁹ The Federal Circuit has summarized the burden of establishing infringement under the doctrine of equivalents, stating that:

[A] patentee must . . . provide particularized testimony and linking argument as to the "insubstantiality of the differences" between the claimed invention and the accused device or process, or with respect to the function, way, result test when such evidence is presented to support a finding of infringement under the doctrine of equivalents. Such evidence must be presented on a limitation-by-limitation basis. Generalized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice.⁷⁰

A plaintiff asserting infringement under the doctrine of equivalents "must present *evidence and argument* concerning the doctrine and *each* of its *elements*. . . . The evidence and argument on the doctrine of equivalents cannot merely be subsumed in plaintiff's case of literal infringement. . . . Accordingly, the fact there was evidence and argument on literal infringement, that may also bear on equivalence," is insufficient to demonstrate infringement under the doctrine of equivalents.⁷¹ Where the patent recites certain functions, "an accused device which does not perform [a] central function could rarely, if ever, be considered to be insubstantially changed from the claimed invention."⁷²

Crown argues that under the doctrine of equivalents the Rexam End meets the

argument" (citations omitted)).

⁶⁹ *nCube Corp. v. Seachange International, Inc.*, 313 F. Supp. 2d 361, 377 (D. Del. 2004) (quoting *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991)).

⁷⁰ *Id.*

⁷¹ *Lear Siegler*, 873 F.2d at 1425 (citations omitted).

⁷² *Vehicular Techs. Crop. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1382 (Fed. Cir. 2000).

annular reinforcing bead limitation because “[t]he differences between [claim 14 of the ‘826 patent] and the Rexam end and seaming method are insubstantial.”⁷³ In the body of its opposition brief, Crown’s support for this argument merely points to the following statement in its expert’s report:

Assuming Rexam’s claim construction with regard to the annular reinforcing bead is adopted by the Court . . . [and applying] the function-way-result test to this claim element, this aspect of the Rexam end is not substantially different from its corresponding elements in the 826 . . . patent[], and, thus, the Rexam end . . . infringe[s] claim 14 of the 826 patent . . . under the doctrine or equivalents.⁷⁴

In its “counter-statement of facts” section, Crown asserts that, with regard to the annular reinforcing bead limitation “[t]he Rexam ends and seaming methods perform substantially the same function, in substantially the same way, to achieve substantially the same result as the claimed invention.”⁷⁵ In support of that assertion, Crown cites paragraphs 114 through 131 of Higham’s report.⁷⁶ Crown does not quote Higham’s report, other than the paragraph quoted above, or further explain its DOE argument or attempt to rebut the evidence submitted by Rexam.

According to the specification of the ‘826 patent there are at least three functions of the annular reinforcing bead of Crown’s invention: (1) to strengthen the can end; (2) to provide support for a central panel; and (3) to provide an opening into which a seaming chuck enters from above.

⁷³ D.I. 263 at 6; see *Riles v. Shell Exploration & Prod. co.*, 298 F.3d 1302, 1309 (Fed. Cir. 2002) (“A claim element is equivalently present in an accused device only if ‘insubstantial differences’ distinguish the missing claim element from the corresponding aspects of the accused device.” (quoting *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1423 (Fed. Cir. 1997))).

⁷⁴ D.I. 263 at 26 (quoting D.I. 266, Ex. 18, Tab A at 34, ¶¶ 117-18).

⁷⁵ D.I. 263 at 6.

⁷⁶ *Id.*

With respect to the added strength function, the specification of the '826 patent notes that “[w]e have discovered that improvements in metal usage can be made by increasing the slope of the chuck wall and *limiting the width of the anti peaking bead*,”⁷⁷ and that a narrow annular reinforcing bead provides strength to the can end.⁷⁸ The specification notes that “[c]ontinuing development of a can end using less metal, while still permitting stacking of a filled can this invention provides a can end comprising . . . an outwardly concave annular reinforcing bead extending radially inwards from the chuck wall, . . . [with] *the concave bead being narrower than 1.5 mm (0.060”)*” along with other elements.⁷⁹

Concerning the function of providing support for a central panel, the specification states that the “*central panel is supported by an inner portion of the reinforcing bead*.”⁸⁰ Describing a particular embodiment, the specification likewise states “a can end, according to the invention, comprising . . . an outwardly concave reinforcing or anti-peaking bead 25 extending radially inwards from the chuck wall, and *a central panel 26 supported [on] an inner portion panel 27*.”⁸¹

With regard to the function of providing an opening into which a seaming chuck

⁷⁷ '826 patent, 1:33-35 (emphasis added).

⁷⁸ See '826 patent, 1:61.

⁷⁹ '826 patent, 2:1-11 (emphasis added).

⁸⁰ '826 patent, 2:7-8 (emphasis added).

⁸¹ '826 patent, 3:54-60 (emphasis added); see also '826 patent, figure 4. Prior art can ends are also described as having an annular reinforcing bead supporting the central panel. See, e.g., '826 patent, 3:23-27 (describing figure 2 as illustrating a can end having “an outwardly concave anti-peaking bead 15 extending inwards from the chuck wall *to support a central panel*” (emphasis added)). As noted above, the annular reinforcing bead of prior art can ends is distinguished from the can end described by Crown's patents due to the widths of the respective beads. Also, by extending the annular reinforcing bead inward from the chuck wall, “[t]he can ends may be economically made of thinner metal if pressure retention requirements permit because these can ends have a relatively small centre panel in a stiffer annulus.” '826 patent, 8:39-41.

enters from above, the specification states that “[i]n contrast to the [prior art] chuck of FIG. 2 the modified chuck 30 is designed to drive initially on the relatively large chuck wall 32 *without entering deeply into the anti-peaking bead 25.*”⁸² While prior art can ends are described as having wider annular reinforcing beads and seaming chucks entering more deeply therein, the ‘826 patent explicitly states that the chuck of the invention also enters the annular reinforcing bead during the seaming process, only not as “deeply.” This would only be possible with an annular reinforcing bead having the characteristics of the court’s construction of that term, i.e., “an outwardly concave generally ‘U’ shaped groove . . . located inwards from the bottom of the wall (chuck wall) . . . which encircles and supports the center panel of the can end.”

In addition to evidence from the specification, Rexam submits that a Crown document entitled “SuperEnd Meeting Cott Beverages March 2001” demonstrates that the inventors recognized this as an important function of the annular reinforcing bead.⁸³

In that document, the authors state:

As previously discussed, SuperEnd™ features a countersink radius with a shell press induced transition from a vertical wall to a 45° wall making the chuck to end location different than that of a conventional end. *Control of the end in the seamer however remains a key factor. This is achieved by the nose of the chuck partially entering the countersink radius area of the end with the 45° angle of the chuck centralizing the can and end at the make-up position, thus maintaining equally as good control as that of a can with a conventional end.*⁸⁴

⁸² ‘826 patent, 4:60-63 (emphasis added).

⁸³ See D.I. 214 at A64-A64. This document was authored by Peter Hinton (an inventor of patents-in-suit) and Peter Moran (which Rexam represents is an inventor of one of the cited references).

⁸⁴ D.I. 214 at A62 (emphasis added). Rexam states that the SuperEnd is Crown’s first commercial embodiment of the ‘826 and ‘875 patents. D.I. 215 at 21 n.3. Rexam notes that the same quotation was used in other documents dated prior to the Dec. 18, 2001 filing date of the ‘875 patent until at least two years after that filing date. See D.I. 215 at 21 n.4. Crown does not challenge Rexam’s statements and does not address this document in its opposition brief. Indeed, Rexam’s expert used the

Rexam noted each of these functions in its opening brief.⁸⁵

In its opposition brief, Crown merely cites Higham's report. That report, however, only addresses the added strength function of an annular reinforcing bead:

The function of the annular reinforcing bead of the claims is to increase the pressure resistance of a seamed-on can thereby reducing the incidence of end reversal under abnormal conditions, e.g., dropping, overfilling, or heating. Therefore, the annular reinforcing bead allows for a reduction in metal usage in the can end when compared to an end without a reinforcing bead while maintaining industry standard pressure performance.⁸⁶

Higham opines that the function of the fold of the Rexam End is the same as the function of the annular reinforcing bead of claim 14 of the '826 patent.

The fold of the Rexam end is an amount of metal in the end in excess of what is necessary to close the can end and seal the contents. The fold, therefore, can be justified only if it is there to strengthen the end. Therefore, I conclude that the function of the fold is to increase the pressure resistance of a seamed-on can end thereby reducing the incidence of end reversal under abnormal conditions.⁸⁷

In support of that opinion, he cites the deposition testimony of Mike Gogola of Rexam who acknowledges that the fold of the Rexam End is an anti-buckling feature that strengthens the can end.⁸⁸ In its reply brief, Rexam does not dispute that Higham's argument concerning the strength function of the Rexam End fold, but points out that Higham does not address the other functions of the annular reinforcing bead, and that Crown makes no argument that those are not key functions of that structure.

In *Vehicular Technologies Corp. v. Titan Wheel International, Inc.*, the Federal

SuperEnd to compare performance with the Rexam End in his DOE analysis of the Rexam End fold. See D.I. 266, Ex. 18, Tab A at 38, ¶ 129.

⁸⁵ See D.I. 215 at 20-22.

⁸⁶ D.I. 266, Ex. 18, Tab A at 34-35, ¶ 120.

⁸⁷ D.I. 266, Ex. 18, Tab A at 35, ¶ 121.

⁸⁸ D.I. 266, Ex. 18, Tab A, Attachment 18 of the Higham report at 40:12-41:19 (Gogola Dep.).

Circuit stated that “an accused device which does not perform [a] central function could rarely, if ever, be considered to be insubstantially changed from the claimed invention.”⁸⁹ The court notes that this case, indeed this very quotation, was set forth in the Argument section of Rexam’s opening brief in its discussion of the doctrine of equivalents.⁹⁰ Crown neither counters Rexam’s evidence concerning the functions of supporting the central panel and providing an opening from above which a seaming chuck enters nor makes *any* argument that these are not key functions of the annular reinforcing bead. Moreover, Higham’s report does not address these functions. Because there is no evidence creating a genuine issue of material fact on these points, Rexam is entitled to summary judgment that the fold of the Rexam End does not meet the annular reinforcing bead limitation of claim 14 of the ‘826 patent under the doctrine of equivalents.

IV. CONCLUSION

At Wilmington, this 22nd day of January, 2008:

For the reasons stated above:

I. IT IS ORDERED and ADJUDGED that Rexam’s motion for partial summary judgment of invalidity of Crown’s U.S. Patent Nos. 6,935,826 and 6,848,875 (D.I. 209) is **GRANTED in part and DENIED in part.**

1. Rexam’s motion for summary judgment that claim 34 of the ‘875 patent is invalid under 35 U.S.C. 112, ¶ 1 is **GRANTED.**
2. Rexam’s motion for summary judgment of invalidity of other claims of the

⁸⁹ 212 F.3d 1377, 1382 (Fed. Cir. 2000).

⁹⁰ D.I. 215 at 10.

patents-in-suit is **DENIED as moot** in light of the court's grant of Rexam's motion for summary judgment of non-infringement of claim 14 of the '826 patent and Crown's withdrawal of the other previously-asserted claims.

II. IT IS ORDERED and ADJUDGED that Rexam's motion for summary judgment of non-infringement (D.I. 212) is **GRANTED in part and DENIED in part**.

1. Rexam's motion for summary judgment that the "Rexam End" does not infringe claim 14 of the '826 patent is **GRANTED**.
2. Rexam's motion for summary judgment of non-infringement of other claims of the patents-in-suit is **DENIED as moot** in light of the court's grant of Rexam's motion for summary judgment of invalidity of claim 34 of the '875 patent and Crown's withdrawal of the other previously-asserted claims.


UNITED STATES MAGISTRATE JUDGE