No.

In the Supreme Court of the United States

IZUMI PRODUCTS COMPANY,

Petitioner,

v.

KONINKLIJKE PHILIPS ELECTRONICS N.V.,
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION, AND
PHILIPS DOMESTIC APPLIANCE AND PERSONAL CARE B.V.,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTION PRESENTED

The American patent system has long required that patents include two distinct elements: First, a description of the invention in such terms as will "enable" skilled persons to make and use the invention; and Second, one or more "claims" that delimit the patent's scope for purposes of determining whether the patent has been infringed. In this infringement case, the Federal Circuit employed an interpretive methodology that unpredictably allows the enabling disclosure to narrow the claims' plain meaning. The question presented is:

Whether patent claims that are amenable to interpretation based on their plain meaning may be narrowed by an enabling disclosure that neither explicitly disavows the claims' scope nor explicitly defines the claims' terms.

RULE 29.6 STATEMENT

Petitioner Izumi Products Company states that it has no parent corporation and that no publicly held company owns 10% or more of its stock.

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PETITION FOR A WRIT OF CERTIORARI

Petitioner, Izumi Products Company ("Izumi"), respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in this case.

OPINIONS BELOW

The Federal Circuit's opinion (App., *infra*, 1a–21a) is not reported. The opinion of the United States District Court for the District of Delaware (App., *infra*, 22a–61a) is reported at 315 F. Supp. 2d 589 (2004).

JURISDICTION

The Federal Circuit issued its decision on July 7, 2005. App., *infra*, 1a. Petitioner's timely filed petition for rehearing and rehearing *en banc* was denied on September 16, 2005. App., *infra*, 62a. On December 6, 2005, Chief Justice Roberts extended the time for filing a petition for a writ of certiorari until January 30, 2006. This Court has jurisdiction under 28 U.S.C. § 1254(1).

STATUTORY PROVISION INVOLVED

The statutory provision involved, 35 U.S.C. § 112, is set out in its entirety at App., *infra*, 63a. As relevant here, it provides:

> "The 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."
>
> "The specification shall conclude with one or more claims particularly pointing out and distinctly

claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶¶ 1–2.

STATEMENT

This case presents an important question of patent interpretation that has repeatedly defied resolution by the Federal Circuit. To make the boundaries of patents clear to courts, patent holders, and the public, Congress directed that patents include "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2. The claims determine the scope of the patent holder's temporary monopoly right; products or processes that lie within that scope are infringing. In this case, however, the Federal Circuit relied on inference from the enabling disclosure (*i.e.*, non-claims) portion of the patent to read limitations on the claims' scope that had no basis in the claims' plain language. Specifically, even though the ordinary meaning of the claim term "recess" in Izumi's razor-blade patent does not suggest any angular limitation, the Circuit relied upon the enabling disclosure's description of concave razor-blade recesses to infer that Izumi's claims cover only such recesses.

This method of interpretation, which provoked strong dissent below, has been the subject of long-running disagreement within and among panels of the Federal Circuit—disagreement that the full court tried but failed to resolve in *Phillips* v. *AWH Corp.*, 415 F.3d 1303 (2005) (*en banc*), pet. for cert. filed, Nov. 9, 2005, No. 05-602 (distributed for Conference of Feb. 17, 2006).[1] The approach employed below

[1] The *Phillips* petition presents the question "[w]hether * * * all aspects of a district court's patent claim construction may be reviewed *de novo* on appeal." Pet. for cert. in No. 05-602, at i. Unlike the instant petition, the *Phillips* petition does not address the merits of the Federal Circuit's approach to patent interpretation. The instant petition stands on its own and, we respectfully submit, presents a more compelling case for this Court's interven-

(and encouraged by the *en banc* majority) is not only erroneous as a matter of law, but, left uncorrected, will lead to uncertainty and inefficiency in an area of central and increasing importance to the Nation's economy. This Court's review is accordingly warranted.

1. The modern patent statute requires that the patent specification include "one or more *claims* particularly pointing out and distinctly claiming the subject matter which the appellant regards as his invention." 35 U.S.C. § 112 (emphasis added). This "claims" requirement, which dates from at least 1870, see *Markman* v. *Westview Instruments, Inc.*, 517 U.S. 370, 379 (1996) (discussing Act of July 8, 1870, 16 Stat. 201), was made even more explicit in 1952 when Congress placed it in a separate paragraph. See 35 U.S.C. § 112; 3 D. CHISUM, CHISUM ON PATENTS § 8.02[4], at 8-16 (2005) (CHISUM).

The claims are the focal point of inquiry when a patentholder charges infringement and brings a lawsuit alleging that the defendant made, used, or sold the invention without authorization during the patent's term. See *Markman*, 517 U.S. at 374 (discussing 35 U.S.C. § 271(a)). As this Court explained in *Markman*: "Victory in an infringement suit requires a finding that the patent claim 'covers the alleged infringer's product or process,' which in turn necessitates a determination of 'what the words in the claim mean.'" 517 U.S. at 374 (quoting H. SCHWARTZ, PATENT LAW AND PRACTICE 80 (2d ed. 1995) (SCHWARTZ)). See also *General Elec. Co.* v. *Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938) ("The claims 'measure the invention.'") (quoting *Continental Paper Bag Co.* v. *Eastern Paper Bag Co.*, 210 U.S. 405, 419 (1908)) (footnotes omitted).

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tion. If, however, this Court grants the *Phillips* petition and the instant petition, the Court may wish to consolidate the cases for argument and decision.

The second, "distinct elemen[t]" (*Markman*, 517 U.S. at 373) of the patent specification, sometimes referred to as the "enabling disclosure" (3 CHISUM § 7.03, at 7–10), is a "description of the invention * * * in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains * * * to make and use the same * * *." 35 U.S.C. § 112. This enabling disclosure must also "set forth the best mode contemplated by the inventor of carrying out his invention." *Ibid.*[2]

On numerous occasions, this Court has underscored the importance of the claims from the standpoint of congressional intent and policy. In *Keystone Bridge Co.* v. *Phoenix Iron Co.*, 95 U.S. (5 Otto) 274, 278 (1877), for example, this Court observed that one purpose of the claims requirement is to "reliev[e] the courts from the duty of ascertaining the exact invention of the patentee by inference and conjecture, derived from a laborious examination of previous inventions, and a comparison thereof with that claimed by him." Equally important, this Court subsequently explained, are the needs of the patent holder and the public:

> "The limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public. * * * The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known

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[2] The "specification" encompasses the two distinct elements discussed in the text above. See 35 U.S.C. § 112 ("The specification shall contain a written description * * *. The specification shall conclude with one or more claims * * *."). We note, however, that courts, including this Court, sometimes use "specification" to refer only to the non-claims portion of the patent. See, *e.g.*, *Markman*, 517 U.S. at 378–79; R. HARMON, PATENTS AND THE FEDERAL CIRCUIT § 1.1(b), p. 10 n.41 (7th ed. 2005).

> which features may be safely used or manufactured without a license and which may not.' The claims 'measure the invention.'" *General Elec.*, 304 U.S. at 369 (1938) (quoting, respectively, *Permutit Co.* v. *Graver Corp.*, 284 U.S. 52, 60 (1931), and *Continental Paper Bag*, 210 U.S. at 419) (footnotes omitted).

2. Despite the importance of predictability in interpreting patents, the Federal Circuit has struggled to achieve this goal. Its opinions instead have "reflected two contrasting approaches." 5A CHISUM § 18.03[2], at 12 (2005 Supp.).

The first begins by attempting to ascertain the scope of the claim from the "ordinary meaning" (*Texas Digital Sys., Inc.* v. *Telegenix, Inc.*, 308 F.3d 1193, 1202 (Fed. Cir. 2002)) of the text of the claims. Under this approach, the enabling disclosure is considered only if (1) the ordinary meaning is elusive (*id.* at 1203); (2) the enabling disclosure "has clearly set forth an explicit definition of the term different from its ordinary meaning" (*id.* at 1204); or (3) the enabling disclosure "clear[ly] disavow[s] * * * [the] claim['s] scope." *Ibid.* See also, *e.g.*, *Johnson Worldwide Assocs.* v. *Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999) (similar).

The second approach contemplates a broader (and primary) role for the enabling disclosure in ascertaining the scope of the claims, deeming it "the single best guide to the meaning of a disputed term." *Vitronics Corp.* v. *Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). See also, *e.g.*, *Bell Atlantic Network Servs., Inc.* v. *Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1268 (Fed. Cir. 2001) ("specification may define claim terms 'by implication'") (quoting *Vitronics*, 90 F.3d at 1582).

Federal Circuit panels repeatedly failed to reconcile these conflicting approaches and often found themselves divided. See, *e.g.*, *Housey Pharms., Inc.* v. *Astrazeneca UK Ltd.*, 366 F.3d 1348, 1356 (Fed. Cir. 2004) (Newman, J., dissenting)

("My colleagues' approach to construction is based on confusing recent pronouncements of panels of this court, contravening earlier statements of precedent, thus adding to the confusion."); *SciMed Life Sys., Inc.* v. *Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1347 (Fed. Cir. 2001) (Dyk, J., concurring) ("[O]ur decisions provide inadequate guidance as to when it is appropriate to look to the [enabling disclosure] to narrow the claim by interpretation and when it is not appropriate to do so.").

In 2004, the Circuit set out to resolve this intracircuit split through the customary mechanism of *en banc* review. See *Phillips* v. *AWH Corp.*, 376 F.3d 1382 *(en banc) (per curiam)* (granting rehearing *en banc*),[3] decided, 415 F.3d 1303 (2005) *(en banc)*. The *en banc* majority refused to endorse one aspect of the claim-focused approach—its focus on dictionaries—but otherwise treated panel decisions adopting the two contradictory approaches as each contributing valid interpretive principles. See *id.* at 1312–19. For example, while recognizing that it is improper to "rea[d] a limitation from the written description [*i.e.*, enabling disclosure] into the claims" (*id.* at 1320 (quoting *Sci-Med*, 242 F.3d at 1340)), the majority also observed that the enabling disclosure is "'always highly relevant to the claim construction analysis [and] [u]sually * * * is dispositive.'" *Phillips*, *supra*, at 1315 (quoting *Vitronics*, 90 F.3d at 1582). In short, though the full

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[3] The order granting *en banc* review asked, among other questions, "Should the range of the ordinary meaning of claim language be limited to the scope of the invention disclosed in the specification, for example, when only a single embodiment is disclosed and no other indications of breadth are disclosed?" 376 F.3d at 1383. The Circuit welcomed *amicus curiae* briefs from "bar associations, trade or industry associations, government entities, and other interested parties [and] [i]n particular, the United States Patent and Trademark Office." *Ibid*. More than thirty *amici* accepted the invitation. See 415 F.3d at 1306–08.

court had sought to resolve the conflict in its precedents, it ended up "reaffirm[ing] (*Phillips*, 415 F.3d at 1312) most of "the basic principles of claim construction outlined [in those cases]" (*ibid.*), see *id.* at 1312–19, and thus leaving intact the essential interpretive tools of both lines of pre-*Phillips* precedent.

As a dissenting opinion observed, this resolution was certain to perpetuate the inconsistency and uncertainty that had led the full court to take up the issue:

> "[A]fter proposing no fewer than seven questions, receiving more than thirty *amici curiae* briefs, and whipping the bar into a frenzy of expectation, we say nothing new, but merely restate what has become the practice over the last ten years—that we will decide cases according to whatever mode or method results in the outcome we desire, or at least allows us a seemingly plausible way out of the case." *Id.* at 1330 (Mayer, J., dissenting).

The majority too candidly acknowledged that, under its compromise approach, "there will still remain some cases in which it will be hard to determine whether a person of skill in the art would understand the embodiments [*i.e.*, the enabling disclosure] to define the outer limits of the claim term or merely to be exemplary in nature." *Id.* at 1323.

These predictions have been borne out by Federal Circuit panel decisions, including the decision below, rendered contemporaneously with, or in the wake of, *Phillips*. Just as before *Phillips*, there continues to be division within and among panels on the central question whether, and when, the enabling disclosure may be consulted in discerning the scope of the claims. See, *e.g.*, App., *infra*, 19a (Linn, J., dissenting) ("The two statements from the specification of the '749 patent relied on by the majority do not sufficiently evidence an intention to depart from the ordinary meaning of 'recess' [in the claims]."); *Dorel Juvenile Group, Inc.* v. *Graco Chil-*

dren's Prods., Inc., 429 F.3d 1043, 1050 (Fed. Cir. 2005) (Newman, J., dissenting) ("The majority's approach to claim construction strains this court's attempts to restore consistency of analysis to patent claims by placing the claims in the context of the specification."); *Free Motion Fitness, Inc.* v. *Cybex Int'l, Inc.*, 423 F.3d 1343, 1355 (Fed. Cir. 2005) (Prost, J., dissenting) ("The majority's approach * * * does not attempt to determine what the inventor actually invented, but rather takes the broadest available abstract meaning of a claim term that is not explicitly rejected by the specification.").

3. As a comparison of the majority and dissenting opinions below reveals, the choice of interpretive methodology determines the outcome in this case. The majority's judgment of noninfringement rested on a limitation that is not explicit or even implicit in the text of the claims, but which the majority purported to derive from the enabling disclosure.

Petitioner, Izumi, manufactures electric rotary razors for the U.S. market under the Remington brand. In such razors, inner cutter blades mounted in a circle rotate beneath a stationary outer cutter with slots. During shaving, the outer cutter is brought into contact with the area to be shaved, the hairs enter the slots, and the leading edges of the rotating inner blades shear the hairs off. This confluence of the outer cutter and the inner blade resembles that which occurs in an ordinary pair of scissors when the two blades are brought into contact.

In conventional models, this process generates substantial friction between the inner blades and outer surface, which in turn heats the surface to an uncomfortable temperature, reduces battery life, and wears out the motor. The friction arises principally from the rubbing that occurs when the inner cutter blades contact the under-side of the outer cutter, a condition exacerbated by the build-up of shaving debris on the backs of the inner cutter blades.

In 1995, Izumi obtained a U.S. patent (No. 5,408,749) for an improved electric rotary razor designed to mitigate the friction problem. The specific invention involves carving out a small portion of the back of each inner cutter blade. This recess makes it more difficult for shaving debris to adhere to the back of the blade, one of the factors causing friction. To the extent this recess is carved from the top of the back of the inner cutter blade, it reduces friction in an additional way by decreasing the surface area of contact between the inner cutter and the outer cutter.

Pursuant to the second paragraph of 35 U.S.C. § 112, Izumi set forth several claims to make clear the scope of its proposed patent. As relevant here, Claim 3 recites an inner cutter blade with a "recess formed *below* [the] cutting edge surface." App., *infra*, 81a (emphasis added). Claim 1, by contrast, describes an inner cutter blade with a "recess comprising an indentation formed *immediately beneath* said cutting edge surface * * * whereby said cutting edge surface is made thinner than a thickness of [the] cutter blade." App., *infra*, 80a (emphasis added).

Izumi also addressed the enabling-disclosure requirement of Section 112's first paragraph, describing and diagramming two preferred embodiments of the invention that are both within the scope of Claim 1. In one, Izumi depicted the recess as extending to the top of the inner cutter blade, with a 90-degree angle between the (indented) back of the inner cutter blade and the horizontal shaving surface. In the second, the recess again extended to the top of the inner cutter, but took a concave shape such that the (indented) back of the inner cutter blade formed a smaller-than-90-degree angle with the horizontal shaving surface.[4]

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[4] The Federal Circuit included these diagrams in its opinion below. App., *infra*, 4a.

Respondents, Koninklijke Philips Electronics N.V., Philips Electronics North America Corp., and Philips Domestic Appliance and Personal Care B.V. (collectively, "Philips"), are Izumi's principal competitors in the U.S. market for electric rotary shavers, marketing their products under the Norelco brand. Since at least 1995, the inner cutter blades on Philips' shavers have had recesses on their backs that extend to the top of the blades. Unlike the versions depicted in Izumi's enabling disclosure, Philips' blades' recesses form a greater-than-90-degree angle with the horizontal shaving surface.[5]

4. In March 2002, Izumi filed this action, in the United States District Court for the District of Delaware, against Philips for willful infringement of Izumi's patent. On cross-motions for summary judgment, the district court ruled in favor of Philips. App., *infra*, 22a.

In a decision issued July 7, 2005, a divided Federal Circuit panel affirmed. App., *infra*, 11a–14a.[6] The majority's analysis, before turning to the language of Claims 1 and 3, focused on the enabling disclosure, paraphrasing it as stating that "inner cutter blades having a recess with a cutout angle θ of greater than 90 degrees between the rear side surface of the inner cutter blade surface and the cutting edge surface, as seen in the prior art electric rotary razors, will not prevent shaving debris adhesion." App., *infra*, 12a. Deeming this disclosure "a critical aspect of the invention itself" (*ibid.*), the majority held that the claim term "recess" (which appears in both Claim 1 and Claim 3) must be defined as a "cutout hav-

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[5] We include diagrams of Philips' inner cutter blades at App., *infra*, 82a.

[6] In a holding irrelevant to this Petition, the Federal Circuit affirmed the district court's grant of partial summary judgment to Izumi on the question whether Izumi's patent was anticipated by the prior art and therefore invalid. App., *infra*, 15a.

ing an angle θ of 90 degrees or less between the rear side surface of the inner cutter blade and the cutting edge surface." *Ibid*. Because Philips' blades have an angle θ greater than 90 degrees, the majority affirmed the summary judgment of non-infringement. App., *infra*, 13a–14a.

Judge Linn dissented in relevant part, criticizing the majority's "restriction of the scope of the claimed recess to require this angular limitation [as] improperly read[ing] a limitation from the [enabling disclosure] into the claims." App., *infra*, 16a. Instead, Judge Linn explained, the claim term "recess" should be given "the full scope of its ordinary and customary meaning[:] * * * a cutout" (App., *infra*, 17a), which does not suggest any angular limitation. Given the absence of "any redefinition of the term or any disavowal of claim scope" in the patent, Judge Linn concluded that the ordinary meaning of the claims must prevail. App., *infra*, 21a.

Judge Linn corroborated this understanding of the claims' ordinary meaning by contrasting Claim 1, which describes a "recess . . . formed immediately beneath" the cutting edge surface, with Claim 3, which describes a "recess formed below" that surface. App., *infra*, 20a (alteration in original). In an inner cutter blade with a recess formed "below" but not "immediately beneath" the cutting edge surface, the uppermost portion of the back of the blade would not be indented at all, and therefore would form a greater-than-90-degree angle with the cutting edge surface (as in Philips' models).[7] Indeed, Judge Linn observed, the majority's construction of

[7] Even aside from the contrast between Claims 1 and 3, Judge Linn observed that the ordinary meaning of Claim 3's phrase "recess formed below" is a "cutout located 'at a lower level' than the cutting edge surface" (App., *infra*, 21a (quoting WEBSTER'S THIRD NEW INT'L DICTIONARY 202 (1993)), *i.e.*, not necessarily the *nearest* "lower level" to the cutting edge surface. Accord, WEBSTER'S NEW INT'L DICTIONARY 250 (2d ed. 1958) (defining "below" as "at a lower level than, whether near or far").

the patent as encompassing only recesses formed immediately beneath the cutting edge surface, see App., *infra*, 12a–13a, nullifies the patent's deliberate decision to phrase Claim 1 ("immediately beneath") differently from Claim 3 ("below"). App., *infra*, 20a. Accordingly, Judge Linn would have vacated the district court's summary judgment of non-infringement. App., *infra*, 21a.

Soon after the panel issued its decision in this case, the *en banc* court issued its decision in *Phillips*, 415 F.3d 1303 (July 12, 2005). Izumi timely petitioned for rehearing and rehearing *en banc* on July 20, 2005, but the petition was denied. App., *infra*, 62a.

REASONS FOR GRANTING THE PETITION

In 1982, Congress attempted to achieve certainty in the patent system by centralizing patent appeals in the Federal Circuit. The Circuit, despite its best efforts, has fallen short of this mandate. A deep intracircuit split developed on the proper approach to interpreting patent claims in infringement cases, and the Circuit failed to resolve the split through the usual method of *en banc* review. This Court remains as the lone institution that can rectify the currently prevailing "'zone of uncertainty which * * * discourag[e]s invention only a little less than unequivocal foreclosure of the field.'" *Markman*, 517 U.S. at 390 (quoting *United Carbon Co.* v. *Binney & Smith Co.*, 317 U.S. 228, 236 (1942)).

Uncertainty aside, the Circuit's methodology contravenes Congress' careful separation in 35 U.S.C. § 112 of the claims element from the enabling disclosure element. Congress intended the claims to define the patent's scope in infringement cases, and the enabling disclosure to serve the wholly different purpose of facilitating the public's ability to practice and improve upon the patented invention. In using the enabling disclosure to narrow the claims, the Circuit's approach frustrates the latter purpose by leading inventors to be extremely circumspect in what they say in the enabling disclosure.

Unlike the Circuit's approach, the statutorily mandated interpretive method starts by examining the text of the claims to discern their ordinary meaning, and consults the enabling disclosure only if the claims' ordinary meaning proves elusive or the patent *explicitly* disavows the claims' scope or defines the claims' text. This approach both respects the separate functions of the claims and the enabling disclosure delineated by Congress in Section 112 and has predictability benefits similar to those that have flowed from this Court's statutory interpretation jurisprudence, which uses a statute's text not only as the starting point, *e.g.*, *Bailey* v. *United States*, 516 U.S. 137, 142 (1995), but also, when the text is plain, as the stopping point. *E.g.*, *Lamie* v. *United States Trustee*, 540 U.S. 526, 534 (2004). This case, in which the choice of interpretive approach straightforwardly determines the outcome, presents an ideal vehicle for this Court to grant review and enforce the statutorily mandated approach.

I. THE UNCERTAINTY INHERENT IN THE FEDERAL CIRCUIT'S INTERPRETIVE APPROACH IMPEDES EFFICIENT INVESTMENT IN INNOVATION AND SPAWNS PATENT-INFRINGEMENT LITIGATION.

As this Court has recognized, "clarity is essential [to the patent system], because it enables efficient investment in innovation." *Festo Corp.* v. *Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730–31 (2002). "A patent holder should know what he owns, and the public should know what he does not." *Ibid.*[8] The Federal Circuit's approach to patent claim interpretation in infringement cases, however, is inher-

[8] Relatedly, clarity reduces litigation over the scope of the patent holder's rights and, to the extent litigation does occur, spares courts from engaging in "inference and conjecture." *Keystone Bridge*, 95 U.S. (5 Otto) at 278.

ently uncertain and therefore frustrates this critical requirement.

A. The Federal Circuit's Interpretive Approach Is Inconsistent and Unpredictable.

The unpredictability of the Federal Circuit's interpretive methodology is apparent from the Circuit's many conflicting opinions. Commentators have described the Circuit's pre-*Phillips* opinions as "reflect[ing] two contrasting approaches." 5A CHISUM § 18.03[2], at 12 (2005 Supp.). Accord, *e.g.*, J. Molenda, *Understanding the Federal Circuit's Internal Debate and its Decision To Rehear* Phillips v. AWH Corp. *En Banc*, 86 J. PAT. & TRADEMARK OFF. SOC'Y 911, 911–12 (2004); R. Wagner & L. Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1133–34 (2004).

The first begins with the text of the claims and seeks to ascertain the ordinary meaning of that text using dictionaries and, where relevant, examining differences in the phrasing of separate claims; this approach turns to the enabling disclosure only where the ordinary meaning is not apparent or the enabling disclosure explicitly defines claim terms or disavows the claims' scope. See, *e.g.*, *Texas Digital*, 308 F.3d at 1202–04; Molenda, *supra*, at 922–27 & nn. 47–76 (collecting cases and labeling this the "claim-focused approach"); Wagner & Petherbridge, *supra*, at 1133–34 (labeling this the "procedural" approach).

The second approach envisages a broader (indeed, primary) role for the enabling disclosure in discerning the scope of the claims, deeming it "the single best guide to the meaning of a disputed term" (*Vitronics*, 90 F.3d at 1582) and allowing it to "define claim terms 'by implication.'" *Bell Atlantic*, 262 F.3d at 1268 (quoting *Vitronics*, *supra*, at 1582). See Molenda, *supra*, at 915 & nn.18-19 (collecting cases and labeling this the "specification-focused approach").

The Circuit's panels struggled to reconcile these approaches, and often found themselves divided. See, *e.g.*, *Housey Pharms.*, 366 F.3d at 1356 (Newman, J., dissenting) ("My colleagues' approach to construction is based on confusing recent pronouncements of panels of this court, contravening earlier statements of precedent, thus adding to the confusion."); *SciMed*, 242 F.3d at 1347 (Dyk, J., concurring) ("[O]ur decisions provide inadequate guidance as to when it is appropriate to look to the [enabling disclosure] to narrow the claim by interpretation and when it is not appropriate to do so.").[9]

In granting *en banc* review in *Phillips*, the Circuit set out to resolve this confusion in its precedents, but ended up "reaffirm[ing]" (415 F.3d at 1312) most of "the basic principles of claim construction outlined [in those cases]" (*ibid.*), see *id.* at 1312-19, and hence effectively proffering a compromise between the two approaches. Compare *id.* at 1320 (empathizing with *Texas Digital*'s concern that the enabling disclosure not be employed to narrow the scope of the claims), with *ibid.* (criticizing *Texas Digital* for "plac[ing] too much reliance on extrinsic sources such as dictionaries, treatises, and encyclopedias"). Compare also, *e.g.*, *id.* at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges * * *."), with *id.* at 1321 (the enabling disclosure may define claim terms "by implication").

In retaining elements of both approaches, *Phillips*' compromise solution carried little promise of bringing certainty to the field. Indeed, the *Phillips* majority itself acknowl-

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[9] Relatedly, the outcomes of infringement appeals depended upon the composition of the Federal Circuit panel assigned to hear the appeal. See generally Wagner & Petherbridge, 152 U. PA. L. REV. at 1163 (using regression analysis to "predict, with statistically significant confidence, the impact of the methodological approach of half (6 of 12) of the active judges of the Federal Circuit").

edged that its decision might not succeed in that crucial objective: "In the end, there will still remain some cases in which it will be hard to determine whether a person of skill in the art would understand the embodiments to define the outer limits of the claim term or merely to be exemplary in nature." 415 F.3d at 1323. An *en banc* dissenting opinion expressed the point in somewhat more forceful terms:

> "[A]fter proposing no fewer than seven questions, receiving more than thirty *amici curiae* briefs, and whipping the bar into a frenzy of expectation, we say nothing new, but merely restate what has become the practice over the last ten years—that we will decide cases according to whatever mode or method results in the outcome we desire, or at least allows us a seemingly plausible way out of the case." *Id.* at 1330 (Mayer, J., dissenting).

Commentators agree that *Phillips* "provides precious little by way of guidance for practitioners and decisionmakers * * * [and hence] does not provide a fix for this broken pillar of substantive patent law." R. HARMON, PATENTS AND THE FEDERAL CIRCUIT § 6.2, p. 51 (7th ed., 2006 Supp.). See also, *e.g.*, S. Maebius, *et al.*, *References Overshadowed: Long-Awaited Case Holds That Patent Specifications Trump Dictionaries*, NAT'L L. J., Aug. 29, 2005, at S1, S14 (*Phillips* "offers little practical guidance to judges"); D. Wolfsohn & A. Goranin, Phillips v. AWH: *The Federal Circuit's Missed Opportunity*, THE LEGAL INTELLIGENCER, Sept. 14, 2005, at 8 ("If courts and litigants must continue to rely on generic recitations of the same 'well-settled' construction principles, while guidance on thornier interpretative questions is avoided, there is little reason to hope that the ad hoc and inconsistent nature of claim construction will be ameliorated anytime soon.").

The post-*Phillips* precedents, including the decision below, bear this out. As in the earlier cases, panels often find

themselves divided on the proper role of the enabling disclosure in ascertaining the scope of the claims. See App., *infra*, 19a (Linn, J., dissenting) ("The two statements from the specification of the '749 patent relied on by the majority do not sufficiently evidence an intention to depart from the ordinary meaning of 'recess' [in the claims]."); *Dorel Juvenile Group*, 429 F.3d at 1050 (Newman, J., dissenting) ("The majority's approach to claim construction strains this court's attempts to restore consistency of analysis to patent claims by placing the claims in the context of the specification."); *Free Motion Fitness*, 423 F.3d at 1355 (Prost, J., dissenting) ("The majority's approach * * * does not attempt to determine what the inventor actually invented, but rather takes the broadest available abstract meaning of a claim term that is not explicitly rejected by the specification.").

B. The Unpredictability Of The Federal Circuit's Methodology Impedes Efficient Investment In Innovation And Spawns Patent-Infringement Litigation.

This Court and Congress have long recognized the importance of certainty to the patent system. In *Markman*, this Court reviewed its precedents and explained:

> "As we noted in *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938), '[t]he limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public.' Otherwise, a 'zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field,' *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942), and '[t]he public [would] be deprived of rights supposed to belong to it, with-

> out being clearly told what it is that limits these rights.' *Merrill v. Yeomans*, 94 U.S. 568, 573 (1877)." *Markman*, 517 U.S. at 390.[10]

Relatedly, to the extent that case law on patent interpretation provides scant guidance, the volume of infringement lawsuits and appeals will increase. See, *e.g.*, S. REP. NO. 97-275, at 5 (1981), reprinted in 1982 U.S.C.C.A.N. 11, 15 (if the field of patent law can achieve more "uniformity * * * [,] the number of appeals resulting from attempts to obtain different rulings on disputed legal points can be expected to decrease").[11]

This Court has also explained the need for certainty from the standpoint of judicial economy, observing—in the particular context at issue here—that the claims requirement "was inserted in the law for the purpose of relieving the courts from the duty of ascertaining the exact invention of the patentee by inference and conjecture * * *." *Keystone Bridge*, 95 U.S. at 278. See also, *e.g.*, *McCarty* v. *Lehigh Valley R. Co.*, 160 U.S. 110, 116 (1895) ("[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim, * * * we should never know where to stop.").

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[10] Indeed, this Court found the goal of predictability sufficiently important to invoke it as "an independent reason to allocate all issues of [patent] construction to the court [rather than to a jury]." *Markman*, 517 U.S. at 390.

[11] We recognize, of course, that certainty does not invariably trump other concerns of the patent system. See *Festo*, 535 U.S. at 732 (reaffirming the doctrine of equivalents notwithstanding that it "renders the scope of patents less certain"). It hardly follows that certainty should not be the guiding principle on most questions of interpretive methodology, especially where, as here, the competing concern cited in *Festo*—that, absent the doctrine of equivalents, "[u]nimportant and insubstantial substitutes for certain elements could defeat the patent" (535 U.S. at 731)—is not implicated.

In 1982, Congress, acknowledging these concerns, attempted to achieve certainty and predictability by centralizing patent appeals in the Federal Circuit. See Federal Courts Improvements Act, Pub. L. No. 97-164 (April 2, 1982), 96 Stat. 25 (codified in relevant part at 28 U.S.C. § 1295(a)(1)). As demonstrated above, however, the Circuit has fallen short of "this noble mandate." *Phillips*, 415 F.3d at 1330 (Mayer, J., dissenting). Instead, despite its best efforts, it has announced an interpretive methodology that has proven unpredictable to the members of that court, the patent bar, and those who invest and engage in innovation. This regime of "inference and conjecture" (*Keystone Bridge*, *supra*, at 278) has impeded efficient investment in innovation and magnified the volume of infringement litigation—unquestionably "important ramifications upon our economy as a whole." S. REP. NO. 97-275, at 6, reprinted in 1982 U.S.C.C.A.N. at 16.[12] See generally U.S. CONST., Art. I, § 8, cl. 8.[13]

In light of the shortcomings of the *en banc Phillips* decision, this Court is uniquely situated to restore certainty to this field and thereby forestall these substantially adverse practi-

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[12] Specifically, while other factors may also be at play, the number of patent lawsuits rose by 90% between 1994 and 2004, compared to a 19% increase in all civil district court cases over the same period. See ADMIN. OFFICE OF THE UNITED STATES COURTS, JUDICIAL FACTS AND FIGURES, TABLE 2.2, http://www.uscourts.gov/judicialfactsfigures/table2.02.pdf.

[13] The importance of the patent system is further suggested by this Court's review in recent years of numerous Federal Circuit patent-law decisions. See, *e.g.*, *eBay Inc.* v. *MercExchange, L.L.C.*, No. 05-130, cert. granted, Nov. 28, 2005; *Lab. Corp. of Am. Holdings* v. *Metabolite Labs., Inc.*, No. 04-607, cert. granted, Oct. 31, 2005; *Merck KGAA* v. *Integra Lifesciences I, Ltd.*, 125 S.Ct. 2372 (2005); *Holmes Group, Inc.* v. *Vornado Air Circ. Sys., Inc.*, 535 U.S. 826 (2002); *Festo*, 535 U.S. 722; *J.E.M. AG Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001); *Pfaff* v. *Wells Elecs., Inc.*, 525 U.S. 55 (1998).

cal consequences. See Wagner & Petherbridge, 152 U. PA. L. REV. at 1178 ("The serious methodological split we identify in the Federal Circuit's jurisprudence raises the possibility, particularly in the absence of meaningful activities by the Federal Circuit to resolve the issue internally, of intervention by the Supreme Court."). As we explain in Point III, *infra*, the approach mandated by 35 U.S.C. § 112 not only respects Congress's clear distinction between the claims and the enabling disclosure (and the markedly different functions of these two elements), but promises significantly greater certainty in application.

II. THE FEDERAL CIRCUIT'S USE OF THE ENABLING DISCLOSURE TO NARROW THE CLAIMS CONTRAVENES THE PATENT STATUTE AND DETERS INVENTORS FROM PROVIDING A USER-FRIENDLY ENABLING DISCLOSURE.

Even aside from the unpredictability of the Federal Circuit's methodology, its "improper read[ing] [of] a limitation from the [enabling disclosure] into the claims" (App., *infra*, 16a (Linn, J., dissenting)) (1) undermines the priority assigned to claims by the patent statute; and (2) deters inventors from providing a user-friendly enabling disclosure, thus inhibiting "the public * * * [from] pursu[ing] innovations, creations, and new ideas beyond the inventor's exclusive rights." *Festo*, 535 U.S. at 731.

A. The Federal Circuit's Notion That The Enabling Disclosure Can Implicitly Narrow The Scope Of The Claims Contravenes The Patent Statute.

In its decision below, the majority tellingly began its analysis with the enabling disclosure before examining the text of the claims. App., *infra*, 12a. It proceeded to rely on inferences from the enabling disclosure to read limitations on the claims' scope that have no basis in the claims' plain lan-

guage. *Ibid.* See also, *e.g.*, *Irdeto Access, Inc.* v. *Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004) ("Even when guidance is not provided in explicit definitional format, the [enabling disclosure] may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.") (quoting *Bell Atlantic*, 262 F.3d at 1268 (in turn quoting *Vitronics*, 90 F.3d at 1582, 1584 n.6)) (internal quotation marks omitted).

This elevation of the enabling disclosure over the claims violates 35 U.S.C. § 112. That statute is clear in stating the separate purposes of these two distinct elements. Whereas the claims "particularly poin[t] out and distinctly clai[m] the subject matter which the applicant regards as his invention" (35 U.S.C. § 112, ¶ 2), the enabling disclosure "enable[s] any person skilled in the art * * * to make and use the same." 35 U.S.C. § 112, ¶ 1. As described in the Statement, *supra*, and in this Court's decision in *Markman*, Congress's treatment of the claims as a "distinct" (517 U.S. at 373) element is an important development that dates from at least 1870, see *Markman*, 517 U.S. at 379 (citing 1 A. DELLER, PATENT CLAIMS § 4, p. 9 (2d ed. 1971)), and was made even more explicit when the claims requirement was placed in its own paragraph in 1952. Thus, the language, structure, and history of Section 112 powerfully demonstrate that the claims are the touchstone in determining the scope of the patent (and, relatedly, the question whether the patent has been infringed, see *Markman*, 517 U.S. at 373).

This Court's decisions confirm this reading of Section 112 and its similarly worded predecessors. In its 1938 decision in *General Electric*, for example, this Court explained that "[t]he *claims* 'measure the invention.'" 304 U.S. at 369 (quoting *Continental Paper Bag*, 210 U.S. at 419) (emphasis added). See also *General Elec.*, *supra*, at 369 ("The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufac-

tured without a license and which may not.'") (quoting *Permutit*, 284 U.S. at 60). More recently, in *Markman*, this Court again confirmed that "an infringement suit * * * necessitates a determination of 'what the words in the *claim* mean.'" 517 U.S. at 374 (quoting SCHWARTZ at 80) (emphasis added).

Indeed, this Court has specifically rejected reliance on other elements to narrow or trump the claims for purposes of determining the patent's scope:

> "We may take it that, as the statute requires, the [enabling disclosure and preferred embodiment] just detailed show a way of using the inventor's method, and that he conceived that particular way described was the best one. But he is not confined to that particular mode of use, since the claims of the patent, not its specifications, measure the invention. While the claims of a patent may incorporate the [enabling disclosure] by reference, and thus limit the patent to the form described in the [enabling disclosure], it is not necessary to * * * describe in the [enabling disclosure] all possible forms in which the claimed principle may be reduced to practice." *Smith* v. *Snow*, 294 U.S. 1, 11 (1935) (citations omitted).

See also *McCarty*, 160 U.S. at 116 ("[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim, * * * we should never know where to stop."); *Markman*, 517 U.S. at 379 ("[A]s early as 1850 'judges were . . . beginning to express more frequently the idea that in seeking to ascertain the invention 'claimed' in a patent the inquiry should be limited to interpreting the * * * 'claim' * * *.") (quoting K. Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. PAT. OFF. SOC. 134, 145 (1938)) (second alteration in original).

B. The Federal Circuit's Use Of The Enabling Disclosure To Narrow The Claims Discourages Inventors From Providing A User-Friendly Enabling Disclosure.

Important functional considerations underlie Section 112's (and this Court's) careful distinction between the claims and enabling disclosure portions of the patent. Ironically, in elevating the enabling disclosure above the claims for purposes of determining the claims' scope, the Federal Circuit undermines the function of the enabling disclosure: to provide the public the means "to pursue innovations, creations, and new ideas beyond the inventor's exclusive rights." *Festo*, 535 U.S. at 731 (citing *Bonito Boats, Inc.* v. *Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989)). See also, *e.g.*, *Kewanee Oil Co.* v. *Bicron Corp.*, 416 U.S. 470, 481 (1974) (enabling disclosure "stimulate[s] ideas and the eventual development of further significant advances in the art"). Because inventors face the possibility that their patents' claims will be narrowed by the enabling disclosure, they attempt to avoid that outcome by drafting an enabling disclosure that is either too short, too long, or too obscure to facilitate the public's practice of the invention. See Note, *The Disclosure Function of the Patent System (or Lack Thereof)*, 118 HARV. L. REV. 2007, 2026 (2005) ("[Applicants] disclose too much information of insignificant value in an attempt to prevent courts from narrowing the scope of their patents.").

Put another way, inventors are deterred from drafting the enabling disclosure in the most natural, user-friendly terms. See *ibid.* (use of enabling disclosure to narrow claims has "the unintended effect of penalizing patentees who wish to file a single, concise description of the overall invention or its best mode"). Increasingly, it is a lawyer, not the inventor, who must take the leading role in drafting the enabling disclosure—and such drafting is focused far more on preventing infringement than stimulating further advances. See P. Garrity & S. Szczepanski, *Federal Circuit Decisions Place a*

Premium on Lawyering, N.Y.L.J., Oct. 17, 2005, at S2, S3, S10 ("The [Federal Circuit's] current approach to deciding patent infringement puts a premium on the skills and knowledge of the lawyer(s) who draft and prosecute the patent application."); Maebius *et al.*, NAT'L L.J., Aug. 29, 2005, at S14 ("[T]he *Phillips* decision places a premium on quality patent draftsmanship.").

These adverse consequences are hardly a matter of speculation: Engineers routinely complain that patents are "hard to read"[14] and "a less than ideal vehicle for communicating technical information." NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., A PATENT SYSTEM FOR THE 21ST CENTURY 63 (S. Merrill, *et al.* eds., 2004) (attributing this in part to the fact that "a patent is written by an attorney or a patent agent to persuade an examiner to grant and a court to uphold a property right of the desired scope"). They underscore why the Federal Circuit's deviation from 35 U.S.C. § 112 warrants this Court's review.

III. THE STATUTE MANDATES A CLAIM-FOCUSED APPROACH, AND THIS CASE PROVIDES AN EXCELLENT VEHICLE FOR THIS COURT SO TO HOLD.

As discussed, Section 112 makes a clear distinction between the claims and enabling disclosure elements. Merging the two during claim interpretation (1) undermines the certainty that the claims should provide regarding what will and will not infringe, and (2) frustrates the function of the enabling disclosure, which is to facilitate improvements upon the invention.

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[14] R. Barr, Statement at the Fed. Trade Comm'n Roundtable on Competition, Economic, and Business Perspectives on Substantive Patent Law Issues: Non-Obviousness and Other Patentability Criteria (Oct. 30, 2002), at 79, transcript available at http://www.ftc.gov/opp/intellect/021030trans.pdf.

Although this Court's statutory interpretation jurisprudence rests on goals beside predictability, it provides a roadmap to achieving that important goal in patent claim interpretation while also preserving the separate functions of the claims and enabling disclosure. That jurisprudence uses the text of the statute as the starting point, *e.g.*, *Bailey*, 516 U.S. at 142, and also, when that text is amenable to interpretation based on its plain meaning, as the stopping point. *E.g.*, *Lamie*, 540 U.S. at 534; *Hartford Underwriters Ins. Co.* v. *Union Planters Bank, N.A.*, 530 U.S. 1, 6 (2000); *United States* v. *Ron Pair Enters., Inc.*, 489 U.S. 235, 241 (1989). Of course, in those cases where a statute's text is "sufficiently ambiguous" (*Eldred* v. *Ashcroft*, 537 U.S. 186, 209 n.16 (2003))—which is to say, incapable of interpretation according to its plain meaning—the interpretive task may "warrant recourse to legislative history." *Ibid*.

Here, the claims are akin to the text of a statute. A court should thus begin the interpretive process by examining the text of the claims to discern their ordinary meaning. This threshold step may include an analysis of differences in language between the claims and a consultation of objective sources such as dictionaries. Only if the claims do not prove susceptible to unambiguous interpretation in this manner should the court turn to the enabling disclosure for clues to resolve the ambiguity. (Additionally, even where the scope of the claims can be discerned from their plain meaning, that scope may be narrowed if the claims or the enabling disclosure *explicitly* disavow that scope or *explicitly* define a claim term in a restrictive way.[15])

Just as the plain meaning approach has provided an "easy, relatively non-divisive way to resolve difficult issues"

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[15] To be sure, the analogy to statutory interpretation is inexact in this last respect, for legislative history, no matter how explicit, is seldom permitted to narrow an unambiguous statute.

(D. Strauss, *Why Plain Meaning?*, 72 NOTRE DAME L. REV. 1565, 1580 (1997)) in the statutory interpretation context, so too will it bring predictability to the realm of patent claim interpretation. See Wagner & Petherbridge, 152 U. PA. L. REV. at 1162 (using statistical techniques to determine that "a small group [of Federal Circuit judges] is substantially more consistent" and that "this consistent group overlaps perfectly with the Proceduralist [methodology] * * *"). Even more important, in carefully circumscribing when the enabling disclosure may be consulted, it respects the different functions 35 U.S.C. § 112 assigns to the claims and enabling disclosure, and allows inventors to draft their enabling disclosures for the public good rather than self-interest.

While the Federal Circuit decides many patent infringement appeals, this case illustrates in an especially straightforward way how the choice of interpretive approach matters to the outcome.[16] There is no dispute that the enabling disclosure depicts and describes only razor blade recesses that form a 90-degree or smaller angle with the horizontal shaving surface. App., *infra*, 12a (majority), 17a–19a (dissent). Nor is there any dispute that the ordinary meaning of the claim terms "recess," "below," and "immediately beneath" provides no basis for an angular restriction. App., *infra*, 21a (dissent).

Moreover, as the dissent observed and the majority did not refute, the majority's use of the enabling disclosure to narrow the claims has the uncomfortable effect of nullifying the obvious difference between "below" (Claim 3) and "im-

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[16] *Phillips* would also have been a good vehicle to address patent-interpretation methodology if the petitioner had included an appropriate question presented. Compare Pet. for cert. in *AWH Corp.* v. *Phillips*, No. 05-602, at i (presenting only the question "[w]hether the Federal Circuit is correct in holding that all aspects of a district court's patent claim construction may be reviewed *de novo* on appeal"). See also n.1, *supra*.

mediately beneath" (Claim 1). See App., *infra*, at 20a–21a (dissent). This aspect of the case brings into play, again by analogy to statutory interpretation jurisprudence, an especially powerful tool for discerning the claims' plain meaning: the principle that "[w]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." *KP Permanent Make-Up, Inc.* v. *Lasting Impression I, Inc.*, 543 U.S. 111, 118 (2004) (quoting *Russello* v. *United States*, 464 U.S. 16, 23 (1983) (in turn quoting *United States* v. *Wong Kim Bo*, 472 F.2d 720, 722 (5th Cir. 1972))) (internal quotation marks omitted).

Finally, the question of which interpretive methodology to adopt arises here in the context of a patent that is neither unduly long nor technically complex. Accordingly, this case provides an ideal opportunity to enforce the mode of interpretation mandated by 35 U.S.C. § 112 and simultaneously bring certainty to the field.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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JANUARY 2006

United States Court of Appeals,
Federal Circuit.

04-1418, -1423

IZUMI PRODUCTS COMPANY,

Plaintiff-Appellant,

v.

KONINKLIJKE PHILIPS ELECTRONICS N.V., PHILIPS ELECTRONICS NORTH AMERICA CORPORATION, and PHILIPS DOMESTIC APPLIANCES AND PERSONAL CARE B.V.,

Defendants-Cross Appellants.

DECIDED: July 7, 2005

Before NEWMAN, LOURIE, AND LINN, Circuit Judges.

Opinion for the court filed by Circuit Judge LOURIE. Concurring-in-part and dissenting-in-part opinion filed by Circuit Judge LINN.

LOURIE, Circuit Judge.

Izumi Products Company ("Izumi") appeals from the decision of the United States District Court for the District of Delaware granting summary judgment of noninfringement of United States Patent 5,408,749 in favor of Koninklijke Philips Electronics N.V., Philips Electronics North America Corp., and Philips Domestic Appliances and Personal Care B.V. (collectively "Philips"). *Izumi Prods. Co. v. Koninklijke Philips Elecs. N.V.*, 315 F. Supp. 2d 589 (D. Del. 2004). Philips cross-appeals from the decision of the district court denying its motion for summary judgment of invalidity of the '749 patent. Because we agree with the district court that Philips does not infringe the '749 patent and that Philips did

not prove that the patent was invalid on the ground of anticipation by Japanese Patent Publication 55-47879, we *affirm*.

BACKGROUND

The patent in this case generally relates to electric rotary razors. Conventional electric rotary razors are designed with a stationary ring of outer cutter blades and a rotating ring of inner cutter blades. An example of an inner cutter and an outer cutter is shown below in figures 2 and 3, respectively, as they appear in the patent.

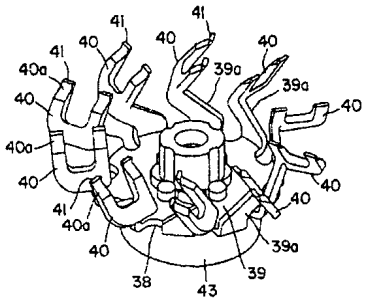

FIG. 2

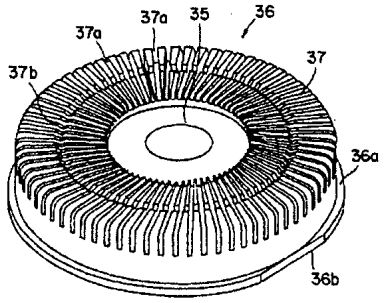

FIG. 3

When such razors are applied to a skin surface to be shaved, the hairs on the skin pass through openings in the outer cutter and are sheared off by the inner cutter blades. To provide a close shave, electric rotary razors may use springs to keep the cutting edge surface of the inner cutter blades in

constant contact with the bottom surface of the outer cutter blades. According to the patent specification, the shortcomings of such conventional electric rotary razors include sheared hairs adhering to the rear side surface of the inner cutter blades. '749 patent, col. 1, ll. 41-47. Another shortcoming of conventional electric rotary razors is that they have a relatively large area of contact between the surfaces of the outer and inner cutters. *Id.*, col. 1, ll. 65-68. These shortcomings result in conventional rotary razors having increased frictional resistance between the two cutters, increased power consumption, and reduced rotational speed of the inner cutter. *Id.*, col. 1, II. 47-55, 65-68. The increased frictional resistance also generates heat on the surface of the outer cutter that touches the skin, thereby causing discomfort. *Id.*, col. 1, II. 56-61.

The patented invention seeks to improve upon conventional electric rotary razors by reducing the surface area of the cutting edge surface of the inner cutter blades and by designing the inner cutter blades so that shaving debris does not easily adhere to its rear side surface. *Id.*, col. 2, II. 19-28. To achieve both of these results, the patent specification discloses an inner cutter blade with the rear portion of the cutting edge surface removed. *Id.*, col. 2, II. 40-48; *Id.* col. 4, II. 56-58. As illustrated below in the embodiments shown in figures 4 and 5, the specification further discloses that an inner cutter blade (40) with a cutout (40(a)), or recess, having a cutout angle θ of 90 degrees (figure 4) or less (figure 5) between the cutting edge surface (41) and the rear side surface of the inner cutter blade, will reduce shaving debris adhesion to the rear side surface of the inner cutter blade. *Id.*, col. 4, I. 58 to col. 5, I. 8.

The specification contrasts the embodiments of the invention shown in figures 4 and 5 with the inner cutter blade (4) of a conventional electric rotary razor, shown below in figure 8, which does not have a cutout. Without the cutout, the rear side surface (4(b)) of the inner cutter blade is parallel to the

front side surface, and the angle between the rear side surface and the cutting edge surface is greater than 90 degrees. *Id.*, *col. 5*, II. 9-13. According to the patent specification, because this angle is greater than 90 degrees, shaving debris (5) will not be prevented from adhering to the rear side surface. *Id.*

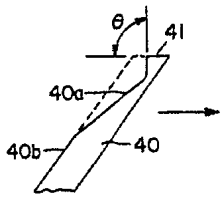

FIG. 4

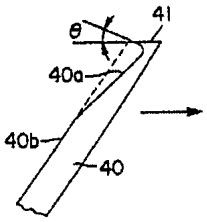

FIG. 5

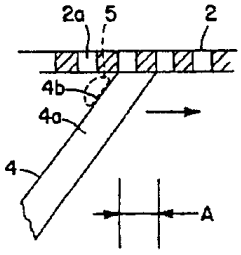

FIG. 8
PRIOR ART

In March 2002, Izumi filed suit against Philips alleging infringement of the '749 patent. Specifically, Izumi accused 116 different electric rotary razor models manufactured by Philips of infringing the '749 patent. *Izumi Prods.*, 315

F.Supp.2d at 596. All of the accused electric rotary razors have semi-cylindrical grooves on the rear side surface of the inner cutter blades. Moreover, the grooves are cut at an angle so that the rear side surface is parallel to the front side surface, resulting in a cutout angle θ of greater than 90 degrees, similar to the prior art inner cutter blade shown in figure 8 above. Philips denied Izumi's allegations of infringement and filed counterclaims seeking a declaratory judgment of noninfringement and invalidity. Izumi asserted all three claims of the '749 patent in the district court proceeding.

Claim 1, one of two independent claims of the '749 patent, reads as follows:

> An electric razor comprising;
>
> at least one outer cutter with openings through which whiskers penetrate;
>
> at least one inner cutter having a plurality of cutter blades, each one of said cutter blades having a cutting edge surface at an upper end thereof that slides on an inside surface of said outer cutter, said cutter blades being inclined in a direction of rotation of said inner cutter; and
>
> a recess comprising an indentation formed immediately beneath said cutting edge surface and facing in a direction opposite from said direction of rotation of said inner cutter in each one of said plurality of cutter blades whereby said cutting edge surface is made thinner than a thickness of said cutter blade.

Claim 2 depends from claim 1, and it includes limitations regarding a cutter disk and the orientation of cutter arms relative to said cutter disk. Claim 3, the other independent claim, reads as follows:An inner cutter used in an electric rotary razor comprising:

> a cutter disk with a through hole at a center thereof;

> a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction relative to said cutter disk;
>
> a cutter blade extending from each one of said cutter arms and inclined in a rotational direction of said inner cutter, each one of said cutter blades being provided with a cutting edge surface at an end surface of said cutter blade and with a recess formed below said cutting edge surface; and wherein
>
> said recess is formed on a rear surface of said cutter blade, said rear surface facing an opposite direction from the rotational direction of said inner cutter.

Izumi moved for summary judgment of infringement and Phillips moved for summary judgment of noninfringement. Following the parties' respective motions, the district court construed the limitations "a recess comprising an indentation formed immediately beneath said cutting edge surface" and "a recess formed below said cutting edge surface" of claims 1 and 3, respectively. *Izumi Prods. Co. v. Koninklijke Philips Elecs. N.V.*, No. 02-156-SLR, 2004 WL 1043375, at *1 (D.Del. April 27, 2004). Both limitations were construed to mean "A cut out formed directly under the cutting edge surface and oriented in a horizontal direction, parallel to the cutting edge surface." *Id.* In reaching this construction, the court relied on the specification, which states: "It is ... possible to form a recess of a great amount of indentation on the upper rear side surface of the cutter blade so that the recess is located immediately beneath the rear edge of the cutting edge surface that is on the opposite side from the direction of rotation of the inner cutter." *Id.* (citing '749 patent, col. 2, II. 43-48). The court further noted that "[t]he specification explains that the purpose for the cut out is to prevent shaving debris from adhering to the surface of the inner cutter." *Id.*

After construing the claim limitations, the court addressed whether the accused products, as a matter of law, met

the "recess beneath/recess below" limitations. In granting summary judgment of no literal infringement,[1] the court found that the inner cutter blades of the accused products have grooves that are positioned at or begin flush with the cutting edge surface, as opposed to having a recess lying immediately below the cutting surface, as the claim requires. *Izumi Prods.*, 315 F.Supp.2d at 598-99. Moreover, the court noted that the grooves are not oriented in a horizontal direction or parallel to the cutting edge surface. *Id.*

The district court also granted Philips' motion to preclude Izumi's expert witness, Dr. Charles E. Benedict, from testifying regarding infringement by the accused products under the doctrine of equivalents. *Id.* at 602. Although Dr. Benedict was qualified as an expert, the court questioned the reliability of his opinion on the effect of turbulence on shaving debris adhesion to the rear side surface of the inner cutter blades of an electric rotary razor. *Id.* The court noted that Dr. Benedict's proffered opinion was not supported by tests conducted on the accused products and that the opinion did not cite any supporting literature. *Id.* Moreover, the court determined that there was no valid scientific connection between Dr. Benedict's turbulence theory and the way the grooved inner cutter blade of the accused products functioned. Thus, the court found that Dr. Benedict's testimony could potentially confuse the jury, and it was therefore precluded from presentation to the jury. *Id.*

Finally, the district court addressed the parties' competing motions for summary judgment of validity and invalidity of

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[1] With respect to Philips' motion for summary judgment of noninfringement under the doctrine of equivalents, the court found that genuine issues of material fact existed as to whether the accused products perform the same function in substantially the same way as the electric razor claimed in the '749 patent. *Izumi Prods.*, 315 F.Supp.2d at 599. Philips, however, does not appeal the court's disposition of that motion.

the '749 patent under 35 U.S.C. § 102(b). The allegedly anticipatory reference was Japanese Patent Publication 55-47879 (the "Hamashima '879 publication"). *Id.* at 603. In concluding that the patent was not anticipated, the court determined that the Hamashima '879 publication did not disclose "a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction," as required by claims 2 and 3 of the '749 patent. *Id.* The court construed the limitation to mean that "two or more projections extend in a vertical direction from the outer edge of the cutter disk." *Izumi Prods.*, 2004 WL 1043375, at *1. The court then observed that the cutter arms in the Hamashima reference extended radially, and not from the outer edge of the cutter disk in a vertical direction. *Izumi Prods.*, 315 F.Supp.2d at 603. Thus, the court granted Izumi's motion for partial summary judgment of no anticipation of claims 2 and 3 of the '749 patent and denied Philips' cross-motion for summary judgment that the Hamashima '879 publication anticipates claim 3 of the '749 patent. *Id.* at 604.

On May 4, 2004, the district court entered final judgments of noninfringement of the '749 patent and a lack of anticipation of claims 2 and 3 of the '749 patent by the Hamashima '879 publication. The district court also dismissed all declaratory judgment counterclaims as moot. Izumi timely appealed and Philips timely cross-appealed to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review a district court's grant of summary judgment de novo, reapplying the same standard used by the district court. *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 149 F.3d 1309, 1315 (Fed.Cir.1998). Summary judgment is appropriate if there is no genuine issue as to any material fact and the moving party is entitled to a judgment as a matter of law. Fed.R.Civ.P. 56(c). "The evidence of the non-movant

is to be believed, and all justifiable inferences are to be drawn in his favor." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986).

I. INFRINGEMENT

On appeal, Izumi challenges the district court's summary judgment of noninfringement of the '749 patent, arguing that the court erred in its claim construction analysis. Izumi contends that the court erred by construing the limitation "recess ... formed immediately beneath," as used in claim 1, to mean a recess that is "directly under" the cutting edge surface. Izumi argues that the court should have construed the limitation to mean a recess that is "lower than the cutting edge surface," but not necessarily "directly under" the cutting edge surface. Although the dictionary defines the term "beneath" as both "directly underneath" and "lower than," according to Izumi, claim 1 would not cover the embodiment shown in figure 4 under the court's construction since no portion of the recess is "directly under" the cutting edge surface.

With respect to the limitation "recess formed below," as used in claim 3, Izumi argues that the district court erred by also construing that term to mean "directly under." As with the claim term "beneath," Izumi asserts that the proper meaning of the term "below" is "lower than." Izumi also contends that the limitation "below" is broader than "immediately beneath," since a "recess formed below" is not necessarily "immediately beneath" the cutting edge surface. Thus, according to Izumi, "recess formed below" should be construed to mean a recess that is lower than the cutting edge surface, but not necessarily "immediately beneath" the cutting edge surface.

Izumi also argues that the district court erred by construing the "recess beneath/recess below" limitations of claims 1 and 3 to be "oriented in a horizontal direction, parallel to the cutting edge surface." According to Izumi, the court improperly read into the claims an additional limitation. Aside from

a horizontally-oriented recess not being disclosed in the patent, Izumi further points out that the recess in the embodiment shown in figure 4 can be viewed as either a horizontally-oriented recess or a vertically-oriented recess, like the accused products.

Finally, Izumi appeals from the district court's preclusion of Dr. Benedict's testimony on infringement under the doctrine of equivalents. Izumi argues that, contrary to the district court's finding, Dr. Benedict considered all of the accused products in forming his opinion. Izumi also asserts that the court committed legal error by requiring Dr. Benedict to test the accused products or cite supporting literature. Izumi argues that Dr. Benedict's testimony applying "well-established" principles of turbulence to electric rotary razors did not require testing or citation of supporting literature. Izumi also disputes the court's finding of a lack of scientific connection between Dr. Benedict's testimony and the functionality of the grooved inner cutter blades. According to Izumi, Dr. Benedict's testimony did explain how the grooved inner cutter blades of the accused products reduce shaving debris adhesion.

Philips responds with various counterarguments to support the district court's claim construction. To support the court's choice of the dictionary definition "directly under," instead of "lower than," Philips cites portions of the specification stating that the cutout angle between the rear side surface of inner cutter blade and the cutting edge surface must be 90 degrees or less in order to reduce shaving debris adhesion. Philips argues that a recess that is simply "lower than" the cutting edge surface will not accomplish the patent's stated objective. Philips also disputes Izumi's assertion that the "directly under" construction would read out the embodiment shown in figure 4. According to Philips, figure 4 represents an embodiment having a recess at the furthest point where it can still be considered "directly under" the cutting edge surface. Philips also argues that Izumi, by surren-

dering claims reciting an inner cutter blade with a reduced cutting edge surface, disclaimed inner cutter blades with a recess that was simply "lower than" the cutting edge surface.

Philips also defends the court's construction requiring the recess to be "oriented in a horizontal direction, parallel to the cutting edge surface." According to Philips, a recess that is "directly under" the cutting edge surface will necessarily be "oriented in a horizontal direction, parallel to the cutting edge surface." Moreover, Philips argues that a recess at or flush with the cutting edge surface will be oriented in a vertical direction.

Regarding the limitation "recess formed below," as used in claim 3, Philips disagrees with Izumi that that term is broader in scope than "recess .... formed immediately beneath," as used in claim 1. Philips notes that the specification never uses the term "below" to describe the position of the recess, but instead always uses the term "immediately beneath." Moreover, Philips argues that contrary to the specification, a recess that is not "immediately beneath" the cutting edge surface will not reduce shaving debris adhesion at the rear of the inner cutter blade.

Philips also responds to Izumi's argument that the district court improperly precluded Dr. Benedict's testimony on infringement under the doctrine of equivalents. Philips reiterates the district court's position that Dr. Benedict's testimony was unreliable because he offered no support for his testimony, in particular, the lack of testing on the accused products and citation of supporting literature. Philips also asserts that, given the lack of support in his testimony, the court appropriately found insufficient connection between Dr. Benedict's turbulence theory and the way the inner cutter blades of the accused products function.

As an initial matter, we conclude that the court erred in construing the limitations "recess ... formed immediately beneath" and "recess formed below" to mean "a cut out formed

directly under the cutting edge surface and oriented in a horizontal direction, parallel to the cutting edge surface." As Izumi recognizes, under the district court's construction, the embodiment shown in figure 4 would not meet either limitation, and that result argues against the court's interpretation. The recess of the embodiment shown in figure 4 does not have any part of its cutout directly under the cutting edge surface, as the district court's claim construction requires. Instead, the recess begins at a point immediately adjacent to the point directly under the cutting edge surface.

We are not, however, prepared to give Izumi the broad interpretation that it currently seeks. The specification states that an objective of the disclosed invention is "to provide an electric razor which assures that the shaving debris and other substances do not easily adhere to the cutter blades of the inner cutter." '749 patent, col. 2, ll. 25-28. The invention accomplishes this objective by cutting out the rear portion of the cutting edge surface. *Id.*, col. 2, II. 40-44. The specification further teaches that inner cutter blades having a recess with a cutout angle θ of greater than 90 degrees between the rear side surface of the inner cutter blade surface and the cutting edge surface, as seen in the prior art electric rotary razors, will not prevent shaving debris adhesion. *Id.*, col. 5, II. 9-13. In disclosing that the cutout angle θ must be 90 degrees or less, the specification is not describing an embodiment of the disclosed invention, but rather defining a critical aspect of the invention itself. We therefore construe the claim term "recess," as used in both claims 1 and 3, to be a cutout having an angle θ of 90 degrees or less between the rear side surface of the inner cutter blade and the cutting edge surface.

Furthermore, we reject Izumi's attempt to construe the limitation "recess formed below," as used in claim 3, more broadly than the limitation "recess ... formed immediately beneath," as used in claim 1. As we construe it, the claim term "recess" has a cutout angle θ between the rear side sur-

face of the inner cutter blade and the cutting edge surface. But there can be no cutout angle θ if the "recess" is not immediately below the cutting edge surface. Indeed, an intervening section of the inner cutter blade would preclude the existence of an angle between the rear side surface portion of the cutout and the cutting edge surface. Thus, the "recess," as that term is used in claim 3, must be immediately below the cutting edge surface. Moreover, Izumi's proposed construction of "recess formed below" would be contrary to a stated objective of the invention, viz., to minimize the contact pressure between the surfaces of the inner and outer cutter blades by reducing the thickness of the cutting edge surface of the inner cutter blade. *Id.*, col. 2, II. 19-24. Under Izumi's construction, the cutting edge surface of the inner cutter blade would not necessarily have a reduced thickness.

Next, we address the district court's construction requiring the recess to be "orientated in a horizontal direction, parallel to the cutting edge surface." We agree with Izumi that the patent specification does not support this claim construction. As we have construed them here, the claims require only a recess having a cutout angle θ of 90 degrees or less. A semi-cylindrical recess having a cutout angle θ of 90 degrees or less would not be "orientated in a horizontal direction, parallel to the cutting edge surface," but would otherwise appear to fall within the scope of the claim term "recess," as we have defined it. Thus, we conclude that the district court erred in requiring the recess to be "orientated in a horizontal direction, parallel to the cutting edge surface."

Despite our differences with the district court's claim construction, we will affirm its decision on infringement. The court's errors were harmless. Under our construction of the limitations "recess ... formed immediately beneath said cutting edge surface" and "recess formed below said cutting edge surface" to mean "a cut out having an angle θ of 90 degrees or less between the rear side surface of the inner cutter blade and the cutting edge surface, with the cutout also being

immediately lower than the cutting edge surface," the accused products do not literally infringe claims 1 and 3 of the '749 patent. Indeed, neither party disputes that the angle θ between the rear side surface of the inner cutter blade and the cutting edge surface of all of the accused products is greater than 90 degrees. That being the case, there is no infringement.

Furthermore, we hold that the district court did not abuse its discretion by precluding Dr. Benedict's testimony regarding infringement under the doctrine of equivalents. Dr. Benedict's testimony generally explained how inner cutter blades shaped like the accused products could potentially generate sufficient turbulence to prevent shaving debris adhesion. The testimony then immediately jumped to the conclusion that the accused products "perform [ ] substantially the same function in substantially the same way to achieve the same result as the claimed invention." The testimony, however, was missing the essential analysis as to whether inner cutter blades having the same physical dimensions and operating parameters of the accused products generated sufficient turbulence to prevent adhesion of shaving debris. Such an analysis was necessary given that Dr. Benedict had not tested whether shaving debris actually adhered to the rear side surface of the inner cutter blades of the accused products. As the district court noted, without this minimal testing, Dr. Benedict was merely providing his subjective beliefs, which were not supported. We also reject Philips' assertion that Dr. Benedict did consider tests that were performed on the accused products. Aside from the question whether Dr. Benedict relied on appropriate prior tests, from our review of the testimony, even if Dr. Benedict did consider the appropriate tests, it was not reflected in his conclusory testimony. In view of these deficiencies, we conclude that the district court did not abuse its discretion in finding Dr. Benedict's testimony unreliable.

II. ANTICIPATION

Philips cross-appeals from the district court's decision denying its motion for summary judgment of invalidity of the '749 patent on the ground of anticipation by the Hamashima '879 reference under 35 U.S.C. § 102(b). Philips also disputes the court's construction of the limitation "a plurality of cutter arms extending from an outer edge of said cutter disk" to mean "two or more projections extend in a vertical direction from the outer edge of the cutter disk."

Arguing that the court did not apply the plain meaning rule, Philips requests that we construe the limitation to mean an inner cutter comprised of a disk having cutter arms projecting from the disk at some position away from center of the disk and at the disk's outer edge. Under its proposed construction, Philips argues that the Hamashima reference meets this limitation by disclosing cutter arms extending in a radial direction from within the cutter disk. To further support its proposed construction, Philips also argues that the cutter arm arrangement disclosed in the Hamashima reference is "identical" to that in U.S. Patent 2,824,367, where, according to Philips, the Examiner found cutter arms extending from an outer edge of the cutter.

We affirm the district court's decision that the Hamashima '879 publication does not anticipate claims 2 and 3 of the '749 under 35 U.S.C. § 102(b). Moreover, we conclude that the court did not err in its construction of the limitation "a plurality of cutter arms extending from an outer edge of said cutter disk." We agree with Izumi that the claims clearly require some portion of the cutter arms to extend from the outer edge of the cutter disk in a vertical direction. The Hamashima reference, however, only discloses cutter arms extending from within the cutter disk, not from the outer edge of the cutter disk. Indeed, no portion of the cutter arms in Hamashima even touches the outer edge of the cutter disk. Moreover, contrary to Philips' assertion, the cutter arms in

the Hamashima reference are not identical to the cutter arms in the '367 patent. Unlike the cutter arms in the Hamashima reference, a portion of the cutter arms disclosed in the '367 patent extends from the outer edge of the cutter disk. Thus, the Hamashima reference does not anticipate claims 2 and 3 of the '749 patent.

We have considered Izumi's remaining arguments regarding the '749 patent and find them not persuasive.

CONCLUSION

We affirm the district court's grant of summary judgment of noninfringement of the '749 patent and summary judgment of a lack of anticipation of claims 2 and 3 of the '749 patent by the Hamashima '879 publication.

COSTS

Each party shall bear its own costs.

LINN, Circuit Judge, concurring-in-part and dissenting-in-part.

While I concur in the majority's affirmance of the district court's grant of summary judgment of lack of anticipation of claims 2 and 3 of United States Patent No. 5,408,749 ("the '749 patent") and its determination that the district court did not abuse its discretion in excluding expert testimony, I must respectfully dissent from its conclusion regarding noninfringement. The majority concludes that there is no infringement because the accused products have an angle θ, between the rear side surface of the inner cutter blade and the cutting edge surface, greater than 90 degrees and, thus, do not read on the claimed "recess," which, the majority concludes, requires "having an angle θ of 90 degrees or less." *Ante* at ----. In my view, the restriction of the scope of the claimed recess to require this angular limitation improperly reads a limitation from the specification into the claims. I

can discern no proper basis to do so and would give the "recess" limitation the full scope of its ordinary and customary meaning.

The disputed claimed term "recess" appears in independent claims 1 and 3. Claim 1 recites an electric razor comprising, among other things, "a recess ... formed immediately beneath said cutting edge surface ... whereby said cutting edge surface is made thinner than a thickness of said cutter blade." Claim 3 recites an inner cutter comprising, "a recess formed below said cutting edge surface."

Claim terms are to be given their ordinary and customary meaning to one of skill in the relevant art. *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 989 (Fed.Cir.1999). In the context of the specification, the ordinary and customary meaning of "recess" is a cutout. The specification states that "the rear portion of the cutting edge surface (or the portion which faces a direction opposite to the rotational direction of inner cutter) is cut out." '749 patent, col. 2, II. 40-43. The specification further states that "The recess 40a is formed by cutting away a portion of the cutting edge surface 41." *Id.*, col. 4, II. 56-58.

The majority imposes an angular structural limitation on the claim term "recess." Specifically, the majority construes the claim term "recess" to be a cutout having an angle θ of 90 degrees or less between the rear side surface of the inner cutter blade and the cutting edge surface. *Ante* at ----. The majority imposes such an angular limitation based on two statements from the specification. In my view, neither statement compels such a conclusion.

First, the majority contends that the "recess" is limited to cutouts having angles of 90 degrees or less in order to accomplish an objective of the invention; namely, to prevent shaving debris and other substances from adhering to the cutter blades. The specification, however, merely identifies preventing shaving debris from adhering as one of two objec-

tives of the invention. The patent also identifies the objective of "provid[ing] an electric razor which can minimize the contact pressure of the inner cutter against the inside or bottom surface of the outer cutter by securing a reduced amount of surface area of the inner cutter that is in contact with the outer cutter." '749 patent, col. 2, II. 20-24. Our precedent is clear that "the fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 908 (Fed.Cir.2004). Here, cutter blades with cutouts having angles greater than 90 degrees, which would be excluded under the majority's construction, would still achieve the objective of minimizing the contact pressure of the cutter blade. The reduction in contact pressure stems from the reduction in the thickness of the cutting edge surface, regardless of any angular limitation. The identification of an objective that is not met when the claim is given its ordinary meaning is not in itself a disclaimer that is sufficient to narrow that ordinary meaning.

The second passage relied on by the majority, states: "In the conventional inner cutter, the angle θ is greater than 90 degrees as indicated by the dotted lines in [figures] 4 and 5. Accordingly, the shaving debris, etc. tends to adhere to the rear surface 40b of the cutter blade 40. " '749 patent, col. 5, II. 9-13. The majority interprets the quoted text as a requirement that the cutout angle θ must be 90 degrees or less. I respectfully disagree.

While the angularity referenced in this statement of the specification is described as affecting the tendency of shaving debris to adhere to the blade, it has no effect whatsoever on the second objective of the invention, namely, the reduction of friction. Thus, this description of inner cutters with angles equal to or less than 90 degrees, when considered in context, is not a disclaimer of subject matter, but simply an explanation of why inner cutters having not only recesses but

also these particular angles are preferred embodiments in achieving one of the objectives of the invention. "Such a description, of course, does not limit the scope of the claims." *Honeywell Inc. v. Victor Co. of Japan*, 298 F.3d 1317, 1326 (Fed.Cir.2002) (holding that claim need not be construed in a manner that would lead to the solution of both prior art problems discussed in the written description).

The two statements from the specification of the '749 patent relied on by the majority do not sufficiently evidence an intention to depart from the ordinary meaning of "recess." Moreover, the specification here does "not suggest that [recesses having angles of 90 degrees or less] are an essential component of the invention, nor is there any language ... in the specification, that disclaims the use of the invention in the absence of [recesses having angles of 90 degrees or less]." *Liebel*, 358 F.3d at 908. Nor is this case like *SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*, 242 F.3d 1337 (Fed.Cir.2001), where the specification specifically disclaimed non-disclosed embodiments by stating that the "structure defined above is the basic ... structure for all embodiments of the present invention contemplated and disclosed herein." *Id.* at 1343 (quoting the patents at issue). In sum, in this case I can discern no proper basis for deviating from the ordinary and customary meaning of recess, viz., a cutout.

Regarding the construction of the claimed phrase "recess ... formed immediately beneath" recited in claim 1, I agree with the majority that "beneath" should not be construed simply as "directly under" because that would exclude the embodiment shown in figure 4. *Ante* at ----. Thus, consistent with the ordinary meaning of recess and in the context of the specification, I would construe the limitation "recess ... formed immediately beneath" as "a cutout beginning at a point immediately adjacent to the point directly under the cutting edge surface." But I would not read in an additional limitation with respect to the angle θ.

The majority construes the limitation "recess formed below" (claim 3) to have the same scope as "recess ... formed immediately beneath" (claim 1). *Ante* at ----. Under the doctrine of claim differentiation, "there is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims." *Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1023 (Fed.Cir.1987). Although claim differentiation only creates a presumption that each claim in a patent has a different scope and is "not a hard and fast rule of construction," *Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1368 (Fed.Cir.2000) (quoting *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed.Cir.1998)), in this case, I see no basis to overcome the presumption.

The majority marshals two arguments in support of its conclusion that the limitation "recess formed below" and the limitation "recess ... formed immediately beneath" should be construed identically. First, because the majority's construction of the term "recess" requires having a particular cutout angle, the majority reasons that the presence of a cutout angle necessitates construing the limitation "recess formed below" as a recess located immediately beneath. *Ante* at ----. For the reasons set forth above, I do not find that the claimed term "recess" requires any structural angular limitation.

Second, the majority reasons that to read the limitation "recess formed below" more broadly than "recess formed immediately beneath" would be contrary to a stated objective of the invention-to minimize contact pressure between the surfaces of the inner cutter and outer cutter blades. *Ante* at ----. But the invention has two objectives: minimizing contact pressure and preventing shaving debris from adhering. Both claim 1 and claim 3 need not be construed "in a manner that would lead to the solution of both prior art problems." *Honeywell, 298 F.3d at 1326; see Resonate Inc. v. Alteon Websystems*, 338 F.3d 1360, 1367 (Fed.Cir.2003) ("The issue at this point may be stated thus: when the written description

sets out two different problems present in the prior art, is it necessary that the invention claimed, and thus each and every claim in the patent, address both problems? We conclude that on the record in this case, the answer is no.") Claim 3 only requires that the recess be located below, and not immediately beneath, the cutting edge surface. Because I do not find any redefinition of the term or any disavowal of claim scope in the intrinsic evidence, I would ascribe to the limitation "recess formed below" its ordinary and customary meaning of a cutout located "at a lower level" than the cutting edge surface. *Webster's Third New International Dictionary* 202 (1993).

I agree with the majority that the district court erred in its claim construction in requiring the recess to be "oriented in a horizontal direction, parallel to the cutting edge surface." As the majority notes, the patent specification does not support this claim construction. *Ante* at ----. Based on that error and based on the district court's erroneous construction of the limitations "recess formed below" and "recess ... formed immediately beneath," I would vacate the district court's grant of summary judgment and remand.

For the foregoing reasons, I respectfully dissent.

United States District Court, D. Delaware.

IZUMI PRODUCTS COMPANY, Plaintiff,
v.
KONINKLIJKE PHILIPS ELECTRONICS N.V., a Dutch corporation; Philips Electronics North America Corporation; a Delaware corporation; and Philips Domestic Appliances and Personal Care B.V., a Dutch corporation, Defendants.
No. CIV.02-156-SLR.

April 27, 2004.

MEMORANDUM OPINION

SUE L. ROBINSON, Chief Judge.

I. INTRODUCTION

Izumi Products Company ("Izumi") filed an action against Koninklijke Philips Electronics and Philips Electronics North America Corporation N.V. on March 1, 2002 for willful infringement of U.S. Patent No. 5,408,749 (the " '749 patent") related to electric razors. (D.I.1) On May 9, 2002, both defendants denied the allegations of infringement and asserted nine affirmative defenses including invalidity, noninfringement, estoppel, and laches. (D.I.5) Koninklijke Philips Electronics and Philips Electronics North America Corporation N.V. also filed a counterclaim for declaratory judgment of noninfringement, invalidity, and unenforceability due to inequitable conduct. (*Id.*) Izumi denied the allegations of the counterclaim on May 29, 2002. (D.I.7) Izumi filed an amended complaint on December 29, 2002 to add Philips Domestic Appliance and Personal Care B.V. as a defendant in its infringement suit against Koninklijke Philips Electronics and Philips Electronics North America Corporation N.V.. (D.I. 39 at ¶ 4) On January 15, 2003, Philips Domestic Appliance and Personal Care B.V. denied infringement of the '749 patent, asserted the same defenses as

Koninklijke Philips Electronics and Philips Electronics North America Corporation N.V., and also filed a counterclaim for declaratory judgment of noninfringement, invalidity, and unenforceability due to inequitable conduct. (D.I.53) The court will refer to Koninklijke Philips Electronics, Philips Electronics North America Corporation N.V., and Philips Domestic Appliance and Personal Care B.V. collectively as "Philips."

Izumi is a corporation organized under the laws of Japan with its principal place of business in Matsumoto, Nagano-Ken, Japan. (D.I. 1 at ¶ 1) Koninklijke Philips Electronics N.V. is a corporation organized under the laws of the Netherlands with its principal place of business in the Amsterdam and with business operations in the State of Delaware. (*Id.* at ¶ 2) Philips Electronics North America Corporation is a corporation organized under the laws of the State of Delaware with its principal place of business in New York. (*Id.* at ¶ 3) Philips Domestic Appliances and Personal Care B.V. is organized under the laws of the Netherlands with its principal place of business in Amsterdam. (D.I. 39 at ¶ 4) The court has original federal question jurisdiction over this action pursuant to 28 U.S.C. § § 1331 and 1338(a).

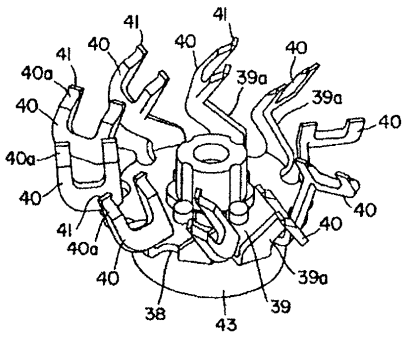
On December 9, 2002, Koninklijke Philips Electronics and Philips Electronics North America Corporation N.V. moved to bifurcate the issues of liability and damages or, in the alternative, to stay discovery of damages. (D.I.34) The court denied this motion on February 27, 2003. (D.I.77) Presently before the court are the parties' numerous summary judgment motions relating to infringement, invalidity, laches, and lost profits.

II. BACKGROUND

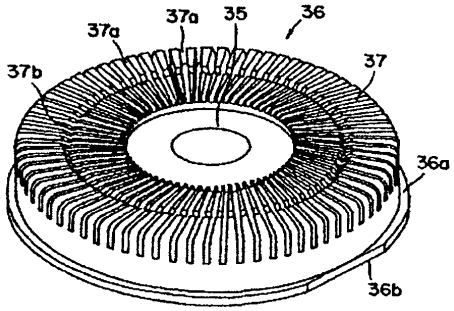
A. The '749 Patent

The patent in suit generally relates to an electric rotary razor. ('749 patent, col. 1 at 11. 5) More particularly, the pat-

ent in suit covers an electric rotary razor that includes an inner cutter located under an outer cutter. (*Id.* at 11. 6, 12-13) As facial hair or "whiskers" penetrate through the outer cutter, they are cut by a shearing force between the inner and outer cutters, much like a strand of hair is severed when caught between the blades of a pair of scissors. (*Id.* at 11. 12-14) An example of an inner cutter is shown in the figure below.



(*Id.*, fig. 2) An example of an outer cutter is shown in the figure below.



(*Id.*, fig. 3)

The electric rotary razor invention recited in the '749 patent was designed to reduce the contact pressure of the inner cutter against the bottom surface of the outer cutter by decreasing the size of the inner cutter blade. (*Id.*, col. 2 at 11. 19-24) It also was designed to prevent shaving debris and

other substances from adhering to the blades of the inner cutter. (*Id.* at 11. 25-28) To accomplish these two design objectives, "the rear portion of the cutting edge surface (or the portion which faces a direction opposite to the rotational direction of the inner cutter) is cut out." (*Id.* at 11. 40-43) The court shall refer to this "cut out" on the inner cutter as "recessed inner cutter."

The application which eventually became the '749 patent was filed on December 7, 1993. The '749 patent granted on April 25, 1995 with three claims, all of which are in dispute in the litigation at bar. Claims 1 and 3 are independent claims, and claim 2 is dependent on claim 1. These claims recite:

1. An electric razor comprising:

> at least one outer cutter with openings through which whiskers penetrate;
>
> at least one inner cutter having a plurality of cutter blades, each one of said cutter blades having a cutting edge surface at an upper end thereof that slides on an inside surface of said outer cutter, said cutter blades being inclined in a direction of rotation of said inner cutter; and
>
> a recess comprising an indentation formed immediately beneath said cutting edge surface and facing in a direction opposite from said direction of rotation of said inner cutter in each one of said plurality of cutter blades whereby said cutting edge surface is made thinner than a thickness of said cutter blade.

2. An electric razor according to claim 1, wherein said inner cutter further comprises a cutter disk with a through hole at a center thereof and a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction relative to said cutter disk and said plurality of said cutter blades extend from said cutter arms.

3. An inner cutter used in an electric rotary razor comprising:

> a cutter disk with a through hole at a center thereof;
>
> a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction relative to said cutter disk; a cutter blade extending from each one of said cutter arms and inclined in a rotational direction of said inner cutter, each one of said cutter blades being provided with a cutting edge surface at an end surface of said cutter blade and with a recess formed below said cutting edge surface, and wherein
>
> said recess is formed on a rear surface of said cutter blade, said rear surface facing an opposite direction from the rotational direction of said inner cutter.

(*Id.*, col. 7 at 11. 14-27; col. 8 at 11. 1-24)

Izumi manufactures electric rotary razors with recessed inner cutters according to the claims of the '749 patent for Remington. Remington, in turn, sells these razors in the United States under the Remington label. (D.I. 182 at 4)

B. The Accused Infringing Products

Izumi alleges that 116 different electric rotary razors with common features infringe the '749 patent.[1] (D.I. 217 at 1)

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[1] The accused infringing electric rotary razor models include the following: 8894XL, 8831XL, 7825XL, 6856XL, 6828XL, 6617X, 8892XL, 8825XL, 7617X, 6853XL, 6826XL, 6615X, 8890XL, 7885XL, 7616X, 6848XL, 6756X, 6614X, 8881XL, 7867XL, 6891XL, 6846XL, 6735X, 6613X, 8880XL, 7866XL, 6885XL, 6844XL, 6709X, 6424LC, 8867XL, 7865XL, 6867XL, 6843XL, 6706X, 6423LC, 8865XL, 7864XL, 6865XL, 6737X, 6705X, 5861XL, 8845XL, 7845XL, 6863XL, 6829XL, 6618X, 5885XL, 5865XL, 5802XL, 4845XL, 4401LC, 31DB, HP1912, 5855XL, 5801XL, 4826XL, 3805X, HQ156, HP1917/3, 5848XL, 5655X,

Specifically, they have three outer cutters with slots through which whiskers penetrate and three inner cutters with several cutting blades. (D.I. 173 at 5) The accused infringing electric rotary razors also employ a cutter disk with a hole in it. Arms extend from the cutter disk in a vertical direction. (*Id.* at 6) Cutting blades extend from the arms and are inclined in the direction of rotation. (*Id.*)

The inner cutters used on the various accused infringing electric rotary razors contain a groove on the backside to reduce the cutting surface. The court shall refer to this groove on the inner cutter as a "grooved inner cutter" to distinguish it from the recessed inner cutter of the claimed invention. (D.I. 217 at 5) The Rota '93 was the first grooved inner cutter blade used by Philips. Over time, Philips introduced other grooved inner cutter blades identified as the Cirrus, Cleo, Apollo, Neptunus Luna, and Jupiter for use in its electric rotary razors. (*Id.*) For example, the 7885XL electric rotary razor uses the Apollo inner cutter blade whereas the 6709X electric rotary razor employs the Neptunus-Luna inner cutter blade. (*Id.*)

Philips Domestic Appliance and Personal Care B.V. manufactures the accused infringing electric rotary razors and ships them to Philips Electronics North America Corporation N.V.. (D.I. 173 at 4) Norelco Products Company, a subsidiary of Philips Electronics North America Corporation N.V., sells the accused infringing electric rotary razors in the United States. (*Id.*)

4821XL, 3605X, HQ156/2, HP1912/3, 5846XL, 5625XX, 4816XL, 3405LC, HQ5, HQ4/2, 5845XL, 5615X, 4805XL, 561X, HQ6, HQ2, 5841XL, 5605X, 4606X, 486XL, HQ167, HQ2/2, 5825XL, 5603X, 4605X, 484XL, HQ4, HP1912/2, 5822XL, 5601X, 4604X, 482XL, HQ4 Plus, HQ5, 5821XL, 5426LX, 4601X, 400DX, HQ8, 5812XL, 4865XL, 4417LC, 282XL, 1915XR, 5811XL, 4853XL, 4414LC, 242C, 1915XR2, 5810XL, 4852XL, 4413LC, 201DB, and HP1917. (D.I. 217 at 8-9)

III. STANDARD OF REVIEW

A court shall grant summary judgment only if "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the 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." Fed.R.Civ.P. 56(c). The moving party bears the burden of proving that no genuine issue of material fact exists. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 n. 10, 106 S.Ct. 1348, 89 L.Ed.2d 538 (1986). "Facts that could alter the outcome are 'material,' and disputes are 'genuine' if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct." *Horowitz v. Fed. Kemper Life Assurance Co.*, 57 F.3d 300, 302 n. 1 (3d Cir.1995) (internal citations omitted).

If the moving party has demonstrated an absence of material fact, then the nonmoving party "must come forward with 'specific facts showing that there is a genuine issue for trial.' " *Matsushita*, 475 U.S. at 587, 106 S.Ct. 1348 (quoting Fed.R.Civ.P. 56(e)). The court will "view the underlying facts and all reasonable inferences therefrom in the light most favorable to the party opposing the motion." *Pennsylvania Coal Ass'n v. Babbitt*, 63 F.3d 231, 236 (3d Cir.1995). The mere existence of some evidence in support of the nonmoving party, however, will not be sufficient for denial of a motion for summary judgment; there must be enough evidence to enable a jury reasonably to find for the nonmoving party on that issue. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). If the nonmoving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, then the moving party is entitled to judgment as a matter of law. *Celotex Corp. v. Catrett*, 477 U.S. 317, 322, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). In other words, the court must grant summary judgment if the party responding to the

motion fails to make a sufficient showing on an essential element of his case with respect to which he has the burden of proof. *Omnipoint Comm. Enters., L.P. v. Newtown Township*, 219 F.3d 240, 242 (3d Cir.2000) (quoting *Celotex*, 477 U.S. at 323, 106 S.Ct. 2548).

IV. DISCUSSION

A. Izumi's Motion for Summary Judgment of Literal Infringement and Philips's Cross-Motion for Summary Judgment of Noninfringement

A patent is infringed when a person "without authority makes, uses or sells any patented invention, within the United States ... during the term of the patent." 35 U.S.C. § 271(a). A court should employ a two-step analysis in making an infringement determination. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed.Cir.1995). First, the court must construe the asserted claims to ascertain their meaning and scope. *Id.* Construction of the claims is a question of law subject to de novo review. *See Cybor Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed.Cir.1998). The trier of fact must then compare the properly construed claims with the accused infringing product. *Markman*, 52 F.3d at 976. This second step is a question of fact. *See Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed.Cir.1998). Literal infringement occurs where each limitation of at least one claim of the patent is found exactly in the alleged infringer's product. *Panduit Corp. v. Dennison Mfg. Co.*, 836 F.2d 1329, 1330 n. 1 (Fed.Cir.1987). The patent owner has the burden of proving infringement and must meet its burden by a preponderance of the evidence. *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed.Cir.1988) (citations omitted).

Izumi argues that the accused infringing electric rotary razors meet every limitation recited in claims 1, 2, and 3 of the '749 patent under its proposed claim construction. Izumi, therefore, contends that there are no genuine issues of mate-

rial fact regarding literal infringement and that summary judgment should be granted in its favor. In rebuttal, Philips asserts that its electric rotary razors do not contain the "recess beneath/recess below" limitation of the asserted claims. Philips claims that the groove on its electric rotary razors is formed instead at the cutting edge surface and is orientated vertically with respect to the cutting edge surface. As a result, Philips maintains that its electric rotary razors do not infringe the '749 patent.[2]

Based upon the court's claim construction of the phrases "a recess comprising an indentation formed immediately beneath said cutting edge surface/a recess formed below said cutting edge surface," the court agrees with Philips. The court construed the "recess beneath/recess below" claim lan-

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[2] Philips also appears to argue that even if its accused infringing electric rotary razors literally infringe, the reverse doctrine of equivalents applies to shield it from liability. (*See* D.I. 217 at 17-19) The reverse doctrine of equivalents can prevent infringement "where a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claims." *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608-609, 70 S.Ct. 854, 94 L.Ed. 1097 (1950). The reverse doctrine of equivalents is "an equitable doctrine" that was judicially created "to prevent unwarranted extension of the claims [of a patent] beyond a fair scope of the patentee's invention." *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1581 (Fed.Cir.1991); *see also Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1351 (Fed.Cir.2003) (stating that the reverse doctrine of equivalents "is equitably applied based upon underlying questions of fact"). This court has previously held that "a reverse doctrine of equivalents defense is grounded in the rules of equity and is not required to be submitted to a jury for decision." *Ciena Corp. & Ciena Prop., Inc. v. Corvis Corp.*, 2004 WL 253481, *2 (D.Del.2004). Accordingly, the court declines to further consider this argument in the instant motion for summary judgment made in anticipation of a jury trial.

guage to mean "a cut out formed directly under the cutting edge surface and orientated in a horizontal direction, parallel to the cutting edge surface." The 116 accused infringing electric rotary razors contain one of six possible inner cutter blades.[3] (*See* D.I. 186 at 4) The grooves on these inner cutter blades are positioned at or begin flush with the cutting edge surface. They likewise do not lie immediately below or beneath the cutting surface. Additionally, the grooves are not horizontal or parallel to the cutting edge surface. Rather, they are orientated in a vertical direction, perpendicular to the cutting edge surface. The court, consequently, finds that no genuine issues of material fact exist as to the "recess beneath/recess below" limitation. The court grants summary judgment in favor of Philips and against Izumi on literal infringement grounds.

B. Philips's Motion for Summary Judgment of Noninfringement Under the Doctrine of Equivalents

For there to be infringement under the doctrine of equivalents, the accused product or process must embody every limitation of a claim, either literally or by an equivalent. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 41, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). An element is equivalent if the differences between the element and the claim limitation are "insubstantial." *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1316 (Fed.Cir.1999). One test used to determine "insubstantiality" is whether the element performs substantially the same function in substantially the same way to obtain substantially the same result as the claim limitation. *Graver Tank*, 339 U.S. at 608, 70 S.Ct. 854. This test is commonly referred to as the "function-way-result" test. The

[3] Izumi appears to agree that the blades shown in Philips's memorandum of points and authorities in support of its motion for summary judgment of noninfringement accurately reflect the possible cutting blades used on the 116 accused infringing razors. (*See* D.I. 207 at 3)

mere showing that an accused device is equivalent overall to the claimed invention is insufficient to establish infringement under the doctrine of equivalents. The patent owner has the burden of proving infringement under the doctrine of equivalents and must meet its burden by a preponderance of the evidence. *See SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed.Cir.1988) (citations omitted).

Philips argues that the groove employed on its razors does not satisfy the function-way-result test. Philips contends that the groove does not prevent facial debris from adhering to the cutting edge surface, contrary to the function of the recess recited in the '749 patent. (*See* D.I. 182, Horenberg Declaration at ¶ 19; Cameron Declaration ¶ 15) Philips also argues that, even if there were such an unintentional reduction in debris adherence, this reduction would not be accomplished in substantially the same way as described in the '749 patent. To this end, Philips avers that the electric rotary razor claimed in the '749 patent reduces friction by creating a sharp trailing edge on the cutting surface whereas its 116 accused infringing razors reduce friction through a "Lift-and-Cut" mechanism.[4] (*See id.*, Horenberg Declaration at ¶ 18, Cameron Declaration at ¶ 25)

The court finds that genuine issues of material fact exist as to whether the 116 accused infringing electric rotary razors perform substantially the same function in substantially the same way as the electric rotary razor claimed in the '749 patent. While Izumi's expert testified that the purpose of the groove is to reduce friction during shaving, experts for Philips contend that the groove does not have any known effect on debris adherence. Similarly, the parties' experts disagree on how the '749 invention and the 116 accused infringing electric rotary razors reduce friction, if at all. The court,

[4] A "Lift-and-Cut" mechanism pulls whiskers deeper into the shaver on the front side of the inner cutter and away from the skin.

therefore, denies Philips's motion for summary judgment of noninfringement under the doctrine of equivalents.

C. Philips's Motion to Preclude Dr. Benedict's Opinion on Infringement Under the Doctrine of Equivalents

Federal Rule of Evidence 702 governs the admissibility of expert testimony. This rule provides that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." In *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 589, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993), the Supreme Court observed that Rule 702 "clearly contemplates some degree of regulation of the subjects and theories about which an expert may testify." The Supreme Court held that "[p]roposed testimony must be supported by appropriate validation-i.e., 'good grounds,' based on what is known. In short, the requirement that an expert's testimony pertain to 'scientific knowledge' establishes a standard of evidentiary reliability." *Id.* The Supreme Court further held that Rule 702 requires that the evidence or testimony assist the trier of fact to understand the evidence or to determine a fact in issue. Pursuant to these teachings, the Third Circuit has construed Rule 702 as embodying "three distinct substantive restrictions on the admission of expert testimony: qualifications, reliability, and fit." *Elcock v. Kmart Corp.*, 233 F.3d 734, 741 (3d Cir.2000).

To qualify as an expert under Rule 702, a witness must have sufficient qualifications in the form of knowledge, skills, and training. The Third Circuit articulated the stan-

dard for qualifying an expert in *Waldorf v. Shuta*, 142 F.3d 601 (3d Cir.1998). The Third Circuit stated:

> Rule 702 requires the witness to have "specialized knowledge" regarding the area of testimony. The basis of this specialized knowledge "can be practical experience as well as academic training and credentials." We have interpreted the specialized knowledge requirement liberally, and have stated that this policy of liberal admissibility of expert testimony "extends to the substantive as well as the formal qualification of experts." However, "at a minimum, a proffered expert witness ... must possess skill or knowledge greater than the average layman."

Id. at 625 (citations omitted).

An expert's opinion is reliable if it is "based on the 'methods and procedures of science' rather than on 'subjective belief or unsupported speculation'; the expert must have 'good grounds' for his or her belief." *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717, 742 (3d Cir.1994)(quoting *Daubert*, 509 U.S. at 589, 113 S.Ct. 2786). The Third Circuit has enumerated a list of factors that a district court should consider in evaluating whether the proposed scientific methodology is "reliable" based upon Daubert and *United States v. Downing*, 753 F.2d 1224, 1238-41 (3d Cir.1985). These factors include: "(1) whether a method consists of a testable hypothesis; (2) whether the method has been subjected to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put." *Paoli*, 35 F.3d at 742 n. 8. In *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 119

S.Ct. 1167, 143 L.Ed.2d 238 (1999), the Supreme Court observed that this list is not exclusive and that each factor need not be applied in every case. To this end, the Supreme Court stated: "The trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable. That is to say, a trial court should consider the specific factors identified in Daubert where they are reasonable measures of the reliability of expert testimony." *Id.* at 152, 119 S.Ct. 1167.

Finally, Rule 702 requires that the expert testimony must fit the issues in the case. In other words, the expert's testimony must be relevant for the purposes of the case and must assist the trier of fact. The Supreme Court explained that "Rule 702's 'helpfulness' standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Daubert*, 509 U.S. at 591-92, 113 S.Ct. 2786. This standard, nevertheless, is not intended to be a high one or to be applied in a manner that requires the plaintiffs "to prove their case twice-they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable." *Oddi v. Ford Motor Co.*, 234 F.3d 136, 145 (citing *Paoli*, 35 F.3d at 744).

The district court acts as a "gatekeeper," preventing opinion testimony that does not meet the requirements of qualification, reliability, and fit from reaching the jury. *Daubert*, 509 U.S. at 597, 113 S.Ct. 2786. "[T]he trial judge must determine at the outset, pursuant to Rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Id.* at 592-92, 113 S.Ct. 2786. The party offering the expert

must satisfy this burden "by a preponderance of proof." *Id.* at 593 n. 10, 113 S.Ct. 2786.

Philips argues that Dr. Charles E. Benedict's testimony regarding infringement under the doctrine of equivalents is inadmissible pursuant to Fed.R.Evid. 702 and *Daubert*. Dr. Benedict opines that Philips's accused grooved inner cutter performs substantially the same function as Izumi's recessed inner cutter by creating turbulence in the facial grease residue, thereby reducing or preventing the buildup of fat, skin, hair and other debris on the rear surface of the inner cutter blade. Philips challenges all three substantive restrictions identified by the Third Circuit regarding expert testimony. That is, Philips contends that: (1) Dr. Benedict is not qualified as an expert in the field of razor design; (2) his testimony is both unreliable and unsupported; and (3) his testimony would not assist the trier of fact.

The court disagrees in part as to Dr. Benedict's qualification as an expert and agrees in part as to the reliability and fit requirements. Dr. Benedict earned a Ph.D. in mechanical engineering from the University of Florida and is a registered professional engineer in Florida and Georgia. (*See* D.I. 208 at ¶ 1) He worked for over thirty-five years as an electromechanical design engineer during which time he designed, developed, tested, and manufactured more than fifty products and machine systems. (*See id.* at ¶ 2) Based upon Dr. Benedict's academic training and his work experience, the court finds that Dr. Benedict certainly possesses skill or knowledge greater than the average layman, the minimum requirement to qualify as an expert under Rule 702. The fact that Dr. Benedict has served as an expert witness in more than 200 cases, none of which involved patent litigation or razor technology, is of little consequence to his ability to qualify as an expert in the case at bar. Moreover, the court is unpersuaded by Philips's attempt to discredit Dr. Benedict's qualifications by pointing out that three courts of the 200 courts before which Dr. Benedict appeared as an expert excluded his opin-

ion. Therefore, the court concludes that Dr. Benedict has the proper qualifications to proffer an expert opinion, especially considering that the Third Circuit has liberally interpreted the requirement that a witness have specialized knowledge.

Turning to consider the reliability requirement, Dr. Benedict reviewed the grooved inner cutter found on only two accused infringing electric rotary razors, namely, the Norelco Model 7885XL-Quadra Action and the Norelco Model 710R6, in formulating his turbulence theory. (*See id.* at ¶ 10) He did not consider the grooved inner cutters on any of the other 114 accused infringing electric rotary razors. While the court acknowledges that turbulence is a well established engineering principle in the area of fluid dynamics, the court finds that Dr. Benedict essentially applied this theory to explain the function of the accused infringing electric rotary razors based solely on his subjective belief.[5] He did not perform any testing on any of the accused infringing electric rotary razors or, for that matter, on an electric rotary razor manufactured by Izumi to validate his theory. He likewise did not cite any literature reference to substantiate the application of the turbulence principle in the context of electric rotary razors. Although the Third Circuit has recognized that novel conclusions should not be excluded where the methodology and its application are reliable, *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 153 (3d Cir.1999), the court concludes that Dr. Benedict's theory is void of good grounds absent some form of support. As a result, the court concludes that Dr. Benedict's turbulence theory does not meet the test for admissibility.

Lastly, with respect to the fit requirement, the court does not find a valid scientific connection between Dr. Benedict's

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[5] Dr. Benedict applied the principle of turbulence in developing a system to reclaim beaches, known as a permeable groin. (*See id.* at ¶ 5) A permeable groin, however, is very clearly not the same thing as an electric rotary razor.

turbulence theory and the function of the grooved/recessed inner cutter. The jury, as such, potentially may be confused by Dr. Benedict's expert opinion. The court, consequently, concludes that Dr. Benedict's testimony will not aid the trier of fact. The court grants Philips's motion to preclude Dr. Benedict from testifying about turbulence in relation to infringement under the doctrine of equivalents.

D. Izumi's Motion For Partial Summary Judgment of No Anticipation of Claims 2 and 3 of the '749 Patent Under 35 U.S.C. § 102(B) and Philips's Cross-Motion for Summary Judgment of Anticipation of Claim 3 Under 35 U.S.C. § 102(b)

Under 35 U.S.C. § 102(b), "[a] person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country ... more than one year prior to the date of the application for patent in the United States." The Federal Circuit has stated that "[t]here must be no difference between the claimed invention and the referenced disclosure, as viewed by a person of ordinary skill in the field of the invention." *Scripps*, 927 F.2d at 1576. In determining whether a patented invention is explicitly anticipated, the claims are read in the context of the patent specification in which they arise and in which the invention is described. *Glaverbel Societe Anonyme v. Northlake Mktg. & Supply, Inc.*, 45 F.3d 1550, 1554 (Fed.Cir.1995). The prosecution history and the prior art may be consulted if needed to impart clarity or to avoid ambiguity in ascertaining whether the invention is novel or was previously known in the art. *Id.* The prior art need not be *ipsissimis verbis* (i.e., use identical words as those recited in the claims) to be anticipating. *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716 (Fed.Cir.1984).

A prior art reference also may anticipate without explicitly disclosing a feature of the claimed invention if that missing characteristic is inherently present in the single

anticipating reference. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed.Cir.1991). The Federal Circuit has explained that an inherent limitation is one that is necessarily present and not one that may be established by probabilities or possibilities. *Id.* That is, "[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Id.* The Federal Circuit also has observed that "[i]nherency operates to anticipate entire inventions as well as single limitations within an invention." *Schering Corp. v. Geneva Pharms. Inc.*, 339 F.3d 1373, 1380 (Fed.Cir.2003). Moreover, recognition of an inherent limitation by a person of ordinary skill in the art before the critical date is not required to establish inherent anticipation. *Id.* at 1377.

An anticipation inquiry involves two steps. First, the court must construe the claims of the patent in suit as a matter of law. *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 714 (Fed.Cir.1998). Second, the finder of fact must compare the construed claims against the prior art. *Id.* A finding of anticipation will invalidate the patent. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 147 F.3d 1374, 1378 (Fed.Cir.1998).

Izumi argues that Japanese Patent Publication 55-47879 (the "Hamashima '879 publication")[6] does not disclose "a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction" as recited in claims 2 and 3 of the '749 patent. Izumi contends that the cutter arms disclosed in the Hamashima '879 publication extend "radially," and not from the outer edge of the cutter disk in a vertical direction. The court agrees. The court construed the phrase

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[6] Since the Hamashima '879 publication published in May 1980 and the '749 patent was not filed until 1993, the parties do not dispute that the Hamashima '879 publication qualifies as prior art under 35 U.S.C. § 102(b). The Hamashima '879 publication was not cited during the prosecution of the '749 patent in the United States.

"a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction relative to said cutter disk" to mean that "two or more projections extend in a vertical direction from the outer edge of the cutter disk." This construction does not provide for cutter arms that extend in a radial direction as shown in the Hamashima '879 publication. The court, therefore, concludes that the Hamashima '879 publication does not anticipate claims 2 and 3 of the '749 patent. The court grants Izumi's motion for partial summary judgment of no anticipation of claims 2 and 3 of the '749 patent and denies Philips's cross-motion for summary judgment that the Hamashima '879 publication anticipates claim 3 of the '749 patent.[7]

E. Izumi's Motion for Partial Summary Judgment of No On-Sale Bar

Under 35 U.S.C. 102(b), "[a] person shall be entitled to a patent unless the invention was ... on sale in this country, more than one year prior to the date of the application for patent in the United States." This statutory provision is commonly referred to as the "on sale bar," *Brasseler, U.S.A.I, L.P. v. Stryker Sales Corp.*, 182 F.3d 888, 889 (Fed.Cir.1999), and is intended to limit the time for an inventor to commercialize an invention before filing a patent application. *Group One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041, 1053 (Fed.Cir.2001). The date one year prior to the date on which the patent application was filed, consequently, is known as the "critical date." *Monon Corp. v. Stoughton Trailers, Inc.*, 239 F.3d 1253, 1257 (Fed.Cir.2001). Since

[7] Izumi also moves to preclude Philips from relying on an untimely written opinion of counsel concerning the invalidity of the '749 patent based upon the Hamashima '879 publication. (*See* D.I. 236) In light of the court's conclusion that the Hamashima '879 publication does not anticipate claims 2 and 3 of the '749 patent, the court denies Izumi's motion to preclude Philips from relying on an untimely opinion of counsel as moot.

Izumi applied for the '749 patent on December 7, 1993, the critical date in this case is December 7, 1992.

The on sale bar is not limited to sales by the inventor, but also may result from activities of a third party that anticipate the invention. *In re Epstein*, 32 F.3d 1559, 1564 (Fed.Cir.1994). Additionally, a single sale or even a single offer to sell for profit may trigger the on sale bar. *In re Caveney*, 761 F.2d 671, 676 (Fed.Cir.1985). In any event, whether a product is on sale within the meaning of 102(b) "is a question of law with subsidiary issues of fact." *In re Epstein*, 32 F.3d at 1564.

In order for a patent to be held invalid under the on sale bar of § 102(b), the Supreme Court has held that two conditions must be satisfied prior to the critical date. "First, the product must be the subject of a commercial [sale or] offer for sale.... Second, the invention must be ready for patenting." *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67, 119 S.Ct. 304, 142 L.Ed.2d 261 (1998). An accused infringer, therefore, 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." *Group One*, 254 F.3d at 1047 (citations omitted).

Though the Supreme Court in *Pfaff* did not elaborate on what was meant by "a commercial offer for sale,[8]" the Federal Circuit has held that this prong consists of two sub-parts.

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[8] In contrast, the Supreme Court explained at length the "ready for patenting" prong. The Supreme Court stated that "[the second] condition may be satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." *Pfaff*, 525 U.S. at 59, 119 S.Ct. 304.

That is, the court must find that: (1) there was a "commercial offer;" and (2) said offer was for the patented invention. *Scaltech, Inc. v. Retec /Tetra, L.L.C.*, 269 F.3d 1321, 1328 (Fed.Cir.2001). Recently, the Federal Circuit has defined what constitutes an offer for sale for purposes of this statutory bar. "Only an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under 102(b)." *Group One*, 254 F.3d at 1048. The Federal Circuit further has held that

> [t]he question of whether an invention is the subject of a commercial offer for sale is a matter of Federal Circuit law, to be analyzed under the law of contracts as generally understood. To hold otherwise would potentially mean that a patent could be invalid in one state, when the patentee's actions amounted to an offer under the laws of that state, and valid in a second state, when the same actions did not amount to an offer under the laws of that second state. Such a result is clearly incompatible with a uniform national patent system.

Id. at 1047. An important source of general contract law for determining whether a communication or series of communications rises to the level of a commercial offer for sale is the Uniform Commercial Code. *Id.* at 1047 (citing *Enercon GmbH v. Int'l Trade Comm'n*, 151 F.3d 1376, 1382 (Fed.Cir.1998)). The Supreme Court also has cited the Restatement of Contracts with approval in the commercial contract law context.[9] *Id.* at 1048 (citing *Mobil Oil Exploration*

[9] Under the Restatement, "an offer is the manifestation of willingness to enter into a bargain, so made as to justify another person in understanding that his assent to that bargain is invited and will conclude it." *Linear Tech. Corp. v. Micrel, Inc.*, 275 F.3d 1040, 1050 (Fed.Cir.2001) (quoting Restatement (Second) of Contracts §

v. United States, 530 U.S. 604, 607, 120 S.Ct. 2423, 147 L.Ed.2d 528 (2000)).

In any given circumstance, who is the offeror, and what constitutes a definite offer, requires looking closely at the language of the proposal itself. Language suggesting a legal offer, such as 'I offer' or 'I promise' can be contrasted with language suggesting more preliminary negotiations, such as 'I quote' or 'are you interested.' Differing phrases are evidence of differing intent, but no one phrase is necessarily controlling.

Id. (citing Restatement (Second) of Contracts § § 24, 26 (1981)). An offer for sale need not be accepted to implicate the on sale bar. *Scaltech*, 269 F.3d at 1328 (citing *UMC Elecs. Co. v. United States*, 816 F.2d 647, 653 (Fed.Cir.1987)).

Turning to consider the second sub-part, "the invention that is the subject matter of the offer for sale must satisfy each claim limitation of the patent, though it may do so inherently." *Scaltech*, 269 F.3d at 1329. It is not necessary to show that all embodiments of the invention were on sale before the critical date; it is sufficient to show only that one embodiment was offered for sale more than one year before the filing date of the patent application. *Id.* at 1330. Additionally, it is not necessary for the inventor to recognize either the workings of his invention or its full potential when he makes an offer for sale within the meaning of § 102(b). *Id.* at 1331.

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24 (1981)). "A manifestation of willingness to enter into a bargain is not an offer if the person to whom it is addressed knows or has reason to know that the person making it does not intend to conclude a bargain until he has made a further manifestation of assent." *Linear Tech.*, 275 F.3d at 1050 (quoting Restatement (Second) of Contracts § 26 (1981)).

The parties dispute whether the invention recited in the '749 patent was offered for sale pursuant to the first prong of the *Pfaff* test. Specifically, Philips argues that Sears offered to sell and sold the "Rotomatic" and the "Craftsman" electric rotary razors in the United States in the late 1960s, 1970s, 1980s, and early 1990s through its consumer catalogs and retail stores. Philips also contends that Distler offered to sell and sold the "Town n' Country" electric rotary razor in the United States in the 1950s and 1960s through its distributor, the Daro Company.[10] In response, Izumi charges that Philip's evidence regarding the three electric rotary razors is inadmissible and that, as a result, it cannot satisfy the clear and convincing burden of proof to establish invalidity under § 102(b). Izumi likewise claims that, even if such evidence were admissible, Philips failed to describe the specific configuration of the inner cutters used in the three types of razors.

Viewing the underlying facts and all reasonable inferences therefrom in a light most favorable to Philips, the court finds that there are no genuine issues of material fact as to whether the Rotomatic, Craftsman, and Town n' Country razors satisfy the first prong of the *Pfaff* test.[11] The Rotomatic and Craftsman razors were listed for sale in the Sears catalog in the late 1960s, 1970s, and 1980s. Nevertheless, advertisements, catalogs, and other promotional materials are generally considered invitations to solicit offers or enter into a

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[10] Throughout discovery, Philips advanced the argument that it sold its Norelco Rota '93 electric rotary razors in the United States prior to the critical date. However, in its answering brief to the instant motion, Philips stated that it "will not assert that its own razors were offered for sale in the United States before the critical date." (D.I. 219 at 2)

[11] The parties do not dispute the second prong of the *Pfaff* test, to wit, whether the Rotomatic, Craftsman, and Town n' Country razors were "ready for patenting."

bargain, not offers themselves. Richard A. Lord, Williston on Contracts § 4:7 at 286-87 (4th ed.1990); Restatement (Second) of Contracts § 26, comment b. Indeed, the Federal Circuit has observed that "[m]ere advertising and promoting of a product may be nothing more than an invitation for offers, while responding to such an invitation may itself be an offer." *Group One*, 254 F.3d at 1048. While the court acknowledges that customers could readily have placed orders for these razors, the record is void of evidence concerning sales figures or the like to show that offers and/or sales, in fact, were made before the critical date. Similarly, it is unclear based upon the present record whether the Town n' Country razor ever was offered for sale or sold in the United States prior to the critical date. To support its allegations concerning this razor, Philips merely introduced two documents on the history of shaving, a few unidentified photographs, and an internet-based publication, stating: "The Piccalo was a very small shaver with a rather large battery-holder, which was used as a place to store the shaver as well." (*See* D.I. 220, ex. 24, 25, 26) Moreover, the record completely fails to show whether the three razors meet all the limitations recited in the claims of the '749 patent. In light of the foregoing, the court grants Izumi's motion for partial summary judgment of no on sale bar.

F. Philips's Motion for Summary Judgment of Invalidity Under 35 U.S.C. 102(G) in View of Philips's Prior Invention

Under 35 U.S.C. § 102(g)(2), an applicant is not entitled to a patent if "before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it." The Federal Circuit has explained that "if a patentee's invention has been made by another, prior inventor who has not abandoned, suppressed, or concealed the invention, § 102(g) will invalidate that patent." *Apotex USA, Inc. v. Merck & Co.*, 254 F.3d 1031, 1035 (Fed.Cir.2001). The Federal Circuit also has ob-

served that this section "retains the rules governing the determination of priority of invention." *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed.Cir.1986) (quoting *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1444 (Fed.Cir.1984)). To this end, a party alleging prior invention can establish that he was the first to invent by showing either: (1) he was first to reduce the invention to practice; or (2) he was first to conceive the invention and then exercised reasonable diligence in attempting to reduce the invention to practice from a date just prior to the applicant's conception to the date of his reduction to practice. 35 U.S.C. § 102(g)("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 the first to conceive and last to reduce to practice, from a time prior to conception by the other."). As recognized by the Federal Circuit,

> [a] principal purpose of § 102(g) is to ensure that a patent is awarded to a first inventor. However, it also encourages prompt public disclosure of an invention by penalizing the unexcused delay or failure of a first inventor to share the "benefit of the knowledge of [the] invention" with the public after the invention has been completed.

Checkpoint Sys. v. United States Int'l Trade Comm'n, 54 F.3d 756, 761 (Fed.Cir.1995)(citing *Paulik v. Rizkalla*, 760 F.2d 1270, 1280 (Fed.Cir.1985)).

Conception is the "formation in the inventor's mind of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice." *Hybritech*, 802 F.2d at 1376 (citations omitted). A conception must encompass all limitations of the claimed invention, and "is complete only when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research

or experimentation." *Singh v. Brake*, 317 F.3d 1334, 1340 (Fed.Cir.2002) (citations omitted). Put differently, every limitation must be shown to have been known to the inventor at the time the invention is alleged to have been conceived. *Davis v. Reddy*, 620 F.2d 885, 889 (Cust. & Pat.App.1980)(citing *Schur v. Muller*, 54 C.C.P.A. 1095, 372 F.2d 546, 551 (1967); *Anderson v. Anderson*, 403 F.Supp. 834, 846 (D.D.C.1975)). Because conception is a mental act, "it must be proven by evidence showing what the inventor has disclosed to others and what that disclosure means to one of ordinary skill in the art." *In re Jolley*, 308 F.3d 1317, 1321 (Fed.Cir.2002) (quoting *Spero v. Ringold*, 54 C.C.P.A. 1407, 377 F.2d 652, 660 (Cust. & Pat.App.1967)). The Federal Circuit has opined that a court should apply the "rule of reason" in determining conception. That is, the court should examine, analyze, and evaluate reasonably all pertinent evidence when weighing credibility of an inventor's story. *Holmwood v. Sugavanam*, 948 F.2d 1236, 1239 (Fed.Cir.1991). Evidence in the form of documents does not need to be corroborated. *Id.* Rather, "[o]nly the inventor's testimony requires corroboration before it can be considered." *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed.Cir.1993).

Reduction to practice may either occur actually or constructively. Actual reduction to practice requires a showing by the inventor that "the invention is suitable for its intended purpose." *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1578 (Fed.Cir.1996). This may require actual testing for a complicated invention or may require only the complete construction of a prototype for a simple invention with obvious purpose and workability. *Id.* For a party alleging prior invention to establish that he actually reduced his invention to practice by testimony, he must corroborate his proffered testimony with independent evidence, which is evaluated under a rule of reason considering all the evidence. *Loral Fairchild Corp. v. Matsushita Elec. Indus. Corp. Ltd.*, 266 F.3d 1358, 1363 (Fed.Cir.2001). Notably, there is no requirement that

the "prior invention" be commercialized in order for it to be actually reduced to practice. *Steinberg v. Seitz*, 517 F.2d 1359, 1363 (Cust. & Pat.App.1975). The key is whether the invention can be commercialized or has reached the point where "practical men [would] take the risk of commercializing the invention." *Goodrich v. Harmsen*, 58 C.C.P.A. 1144, 442 F.2d 377, 383 (Cust. & Pat.App.1971). Constructive reduction to practice, in contrast, occurs when a party alleging prior invention files a patent application on the claimed invention. *Hybritech*, 802 F.2d at 1376.

The party alleging prior invention must be able to show diligence "from a date just prior to the other party's conception to ... [the date of] reduction to practice [by the party first to conceive]." *Monsanto Co. v. Mycogen Plant Science, Inc.*, 261 F.3d 1356, 1369 (Fed.Cir.2002); *Mahurkar*, 79 F.3d at 1577. However, it is not necessary for a party alleging prior invention to drop all other work and concentrate solely on the particular invention involved. *Rines v. Morgan*, 45 C.C.P.A. 743, 250 F.2d 365, 369 (Cust. & Pat.App.1957). There also need not be evidence of activity on every single day if a satisfactory explanation is evidenced. *Monsanto*, 261 F.3d at 1369 (citations omitted). Additionally, determining whether the required "reasonable diligence" has been satisfied involves specific inquiry. *Id.* (citations omitted).

In order to avoid a finding that a prior invention was abandoned, suppressed, or concealed, the party alleging prior invention must take affirmative steps to make the invention publicly known. *Friction Div. Prods., Inc. v. E.I. Du Pont de Nemours & Co.*, 658 F.Supp. 998, 1013 (D.Del.1987)(citing *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 586 F.Supp. 1176, 1215 (D.Kan.1984)). The Federal Circuit has explained that,

> when determining whether an inventor has abandoned, suppressed, or concealed an invention, a period of delay between completion of the invention and subsequent public disclosure may or may not be

> of legal consequence. The delay may be inconsequential if, for example, it is reasonable in length or excused by activities of the inventor. Furthermore, there is no particular length of delay that is per se unreasonable. Rather, a determination of abandonment, suppression, or concealment has "consistently been based on equitable principles and public policy as applied to the facts of each case." A court must determine whether, under the facts before it, any delay was reasonable or excused as a matter of law.

Checkpoint, 54 F.3d at 761 (citations omitted).

Finally, the party alleging prior invention must establish prior invention by clear and convincing evidence. *Apotex*, 254 F.3d at 1037-38. If the party alleging prior invention does so, then the burden of production shifts to the patentee to produce evidence sufficient to create a genuine issue of material fact as to whether the party alleging prior invention abandoned, suppressed, or concealed the invention. *Id.* If the patentee carries this burden of production, then the party alleging prior invention may rebut the evidence of abandonment, suppression, or concealment with clear and convincing evidence. *Id.*

Philips argues that it conceived and actually reduced the grooved inner cutter to practice in the United States by November 1992. To this end, Philips asserts that its engineers conceived of the grooved inner cutter in the United States when they submitted their invention disclosure form written in Dutch to Philips's Corporate Intellectual Property and Standards Department in September 1990. In November and December 1992, Philips claims that it incorporated the grooved inner cutter into its Rota 93 line of electric rotary razors and shipped these razors to Norelco in the United States. Philips contends that these razors were then shown to its U.S. customers and exhibited at the Housewares Show in Chicago in January 1993. Philips charges that these activi-

ties all occurred well before Izumi conceived of the claimed recessed inner cutter in January 1993, filed a Japanese patent application directed to such cutter in February 1993, and brought said cutter into the United States in February 1993. Philips maintains that it, therefore, qualifies as a prior inventor under § 102(g) and that the '749 patent is invalid on prior invention grounds.

For Philips to succeed in challenging the validity the '749 patent in the instant motion for summary judgment based on § 102(g), Philips must demonstrate by undisputed evidence that: (1) it shipped electric rotary razors with grooved inner cutters into the United States prior to February 1993; and (2) Izumi did not conceive of the invention first and exercise diligence in reducing it to practice. The court finds that Philips is unable to meet this burden as to its reduction to practice. While Philips claims that it mandated that all Rota 93 razors manufactured and shipped after November 6, 1992 contain the grooved inner cutter and that it produced 30,000 grooved inner cutters by week 38 of 1992 (see D.I. 237, Horenberg Deposition at 72-74; Schiferli Deposition at 80-81; D.I. 215, ex. 36 at P4228), there is evidence of record to undermine these contentions. The invoices cited by Philips as proof that it brought Rota 93 razors into the United States in November and December 1992 do not contain any information about the type of inner cutters used on the shipped electric rotary razors.[12] (*See e.g.*, D.I. 193, ex. 11, 13, 14, 18, 19) Philips also made design changes to the grooved blades as of December 7, 1992 and worked extensively on the equipment used to mass produce those blades in January and February 1993. As a result, it did not officially release the Rota '93 electric rotary razor with grooved inner cutter for production until later in 1993. (*See* D.I. 214, ex. 6 at 131-133, 144-145, 172; D.I. 215, ex. 32, ex. 36; D.I. 239, ex.

[12] Non-grooved blades were interchangeable with grooved blades on the Rota '93 razor model. (*See* D.I. 214, ex. 8 at 60-61)

32) Given this contradictory evidence, the court concludes that summary judgment is inappropriate as to Philips's reduction to practice in the United States.

With regard to Izumi's conception date, the court finds that no genuine issues of material fact exist. Izumi conceived in August 1991 of a recessed inner cutter with blades orientated in a vertical direction with respect to the direction of rotation. As noted above, conception must encompass all limitations of the claimed invention. Izumi's 1991 inner cutter, therefore, cannot qualify as a conception of the recessed inner cutter recited in the '749 patent because the claimed inner cutter blades are inclined in the direction of rotation, not positioned vertically. Moreover, applying the rule of reason, the court concludes that Izumi's own admission verifies that it did not have the idea of inclining the inner cutter blades in August 1991. Izumi argues in its answering brief to the instant motion that "common sense" dictates inclining the inner cutter blades since such orientation imparts a sharper edge for cutting. Nevertheless, Izumi particularly acknowledged in that same brief that it inclined the blades to improve their sharpness in October 1991, after finding in September 1991 that the blades were not adequately supported. (*See* D.I. 205 at 4) Accordingly, the court denies Philips's motion for summary judgment on prior invention grounds in part as to Philips's reduction to practice and grants said motion in part as to Izumi's conception date.

G. Philips's Motion for Partial Summary Judgment on Laches

Laches is an equitable defense to a claim for patent infringement. *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1028 (Fed.Cir.1992). Laches is defined as "the neglect or delay in bringing suit to remedy an alleged wrong, which taken together with lapse of time and other circumstances, causes prejudice to the adverse party and operates as an equitable bar." *Id.* at 1028-1029. "In refusing to

enforce a patentee's claim of infringement, the Supreme Court invoked the maxim: '[c]ourts of equity, it has often been said, will not assist one who has slept upon his rights, and shows no excuse for his laches in asserting them.' " *Id.* at 1029 (quoting *Lane & Bodley Co. v. Locke*, 150 U.S. 193, 201, 14 S.Ct. 78, 37 L.Ed. 1049 (1893)). To establish the defense of laches, the defendant has the burden of proving two elements: (1) that the plaintiff delayed in filing suit for an unreasonable and inexcusable length of time after the plaintiff knew or reasonably should have known of its claim against the defendant; and (2) that the defendant suffered material prejudice or injury as a result of the plaintiff's delay. *Id.* at 1028.

With regard to the first prong of unreasonable delay, "[t]he length of time which may be deemed unreasonable has no fixed boundaries but rather depends on the circumstances." *Id.* at 1032 (citations omitted). In determining whether the plaintiff's delay in filing suit was unreasonable, the court must look to the period of time beginning when the plaintiff knew or reasonably should have known of the defendant's alleged infringing activity and ending when the plaintiff filed suit. The period does not begin, however, until the patent issues. *Id.* (citations omitted). In addition, the court must consider and weigh any excuses offered by the plaintiff for its delay including, but not limited to: (1) other litigation; (2) negotiations with the accused; (3) possible poverty or illness under limited circumstances; (4) wartime conditions; (5) the extent of the alleged infringement; and (6) a dispute over the ownership of the asserted patent. *Id.* at 1033 (citations omitted).

A presumption of unreasonable delay arises if the patentee delayed filing suit for six years after actual or constructive knowledge of the defendant's acts of alleged infringement. *Id.* at 1037. However, this presumption may be rebutted if the plaintiff is able to show sufficient evidence to generate a genuine issue of fact as to the existence of ei-

ther one of the factual elements associated with the laches defense. *Id.* at 1038. If the presumption of laches is rebutted, the defense of laches is not eliminated. Rather, the defendant can still establish laches by establishing the elements for this defense based upon the totality of the evidence presented. *Id.* at 1038.

Turning to consider the second prong of material prejudice, the defendant can establish either economic prejudice or evidentiary prejudice. *Id.* Evidentiary prejudice may arise where the delay has curtailed the defendant's ability to present a full and fair defense on the merits due to the loss of evidence, the death of a witness, or the unreliability of memories. *Id.* Economic prejudice arises where a defendant suffers the loss of monetary investments or incurs damages which would have been prevented if the plaintiff had filed suit earlier. *Id.* In this regard, courts must look for a change in the economic position of the alleged infringer during the period of delay; courts cannot simply infer economic prejudice from the possibility of damages pursuant to a finding of liability for infringement. *Id.*

"The application of the defense of laches is committed to the sound discretion of the district court." *Aukerman*, 960 F.2d at 1032 (citations omitted). Because it is equitable in nature, "mechanical rules" do not govern its application. *Id.* at 1032. Instead, the court must consider all of the facts and circumstances of the case and weigh the equities of the parties. "The issue of laches concerns delay by one party and harm to another. Neither of these factors implicates the type of special considerations which typically trigger imposition of the clear and convincing standard." Consequently, the defendant must establish the elements for the laches defense by the preponderance of the evidence, consistent with the burden of proof in equitable laches and estoppel cases. *Intuitive Surgical, Inc. v. Computer Motion, Inc.*, 2002 WL 31833867, n. 4 (D.Del.2002). When laches is applied, the patentee may

not recover any damages for the period of time prior to filing suit. *Id.* at 1028.

Philips argues that it is entitled to a presumption of laches because Izumi knew or should have known of the alleged infringement before March 1, 1996, six years before it filed its complaint, given that Izumi: (1) considered Norelco its only competitor in the United States for electric rotary razors; (2) was aware that Norelco introduced a new line of electric rotary razors in early 1993; and (3) visited the Norelco booth at the Housewares Show in January 1993 where the new line of electric rotary razors with the accused infringing grooved inner cutter was displayed. (*See* D.I. 183, ex. 1 at 15; D.I. 184, Izumi Dep. at 40-41) Philips asserts that a simple glance at the inner cutter blades in the pop-open head of any Norelco razor sold since 1993 would have revealed the presence of the groove. Philips also asserts that, even if the presumption is inapplicable, Izumi had actual knowledge of its grooved inner cutter no later than March 1997 when it examined the inner cutters from three of its electric rotary razors. (*See* D.I. 183, ex. 5, ex. 6 at 8; D.I. 184, Hirata Dep. at 575) Philips likewise contends that it suffered both economic and evidentiary prejudice as a result of Izumi's delay in filing suit. In this regard, Philips charges that if it had been given notice of Izumi's infringement allegations, then it could have switched to one of several noninfringing substitute inner cutters, thereby avoiding damages claims approximating $139 million for reasonable royalties and $86 million in lost profits. Additionally, Philips avers that Izumi, in line with its five or six year retention policy, destroyed or lost documents involving competitive intelligence, consumer demand, and product testing that were created between 1992 and 1997. Philips complains that such documents were necessary for it to present complete invalidity, noninfringement, and laches defenses. (*Id.*, Hirata Dep. at 283-285, 544-54, 570-571, 600, 629) Accordingly, Philips maintains that the equities weigh in favor of applying the doctrine of laches to limit

Izumi's recovery for damages if it is found liable for infringement.

The court disagrees. Viewing the evidence in a light most favorable to Izumi, the court finds that partial summary judgment on Philips's affirmative defense of laches is inappropriate because there are many genuine issues of material fact. As to the presumption of laches, factual disputes exist as to whether Izumi had actual or constructive knowledge of Philips's use of a grooved inner cutter as of March 1, 1996. Izumi personnel testified that they did not see the grooved inner cutter before 1997. Specifically, Izumi's president, Shunji Izumi, stated that he did not look inside Norelco razors at the Housewares Show in 1993 and never saw the grooved inner cutter until January 1998 when he learned of Philips's opposition to the European counterpart of the '749 patent. (*See* D.I. 214, ex. 10 at 250, 306-309) Mr. Izumi also stated that no one at Izumi looked at the accused infringing electric rotary razors in 1993, 1994, 1995, or 1996. (*See* D.I. 214 at 318-319) Additionally, despite the fact that Philips was Izumi's only competitor in the electric rotary razor market, Philips did not advertise the grooved inner cutter at any time. (*See* D.I. 182 at 6; D.I. 189 at 3-4) Indeed, Philips's own sales personnel reported that they were not aware of the grooved inner cutter until the instant litigation. (*See* D.I. 214, ex. 12 at 65-66, 75) This evidence suggests that nothing prompted Izumi to investigate Philips's activities for possible infringement, counter to Philips's allegations. Having recognized this, the court, nevertheless, is mindful that "laches will not be imputed to one who has been justifiably ignorant of facts which create his right or cause of action. But ignorance will not of itself excuse delay. The party must be diligent and make such inquiry and investigation as the circumstances reasonably suggest." *Wanlass v. Gen. Elec. Co.*, 148 F.3d 1334, 1338 (Fed.Cir.1998)(quoting *Potash Co. Of Am. v. Int'l Minerals & Chem. Corp.*, 213 F.2d 153, 155 (10th

Cir.1954)). Thus, the court concludes that there is disputed evidence regarding the presumption of laches.

Assuming, arguendo, that the presumption of laches does not apply in the case at bar, the court finds genuine issues of material fact concerning whether the delay from the date Izumi knew about Philips's grooved cutter[13] until it filed suit in March 2002 was unreasonable. From January 1998 to January 2002, Izumi engaged in an opposition proceeding in Europe involving the European counterpart to the '749 patent. Izumi claims that it waited to sue until the conclusion of the opposition in order to determine the bases and merits of Philips's objections, since such objections potentially were relevant to an infringement action in the United States. Izumi likewise was involved in other litigation with Philips concerning trade dress in various countries throughout the world beginning in 1990. (*See* D.I. 210 at 3-5) As noted above, the Federal Circuit has held that other litigation is an excuse that courts must consider when deciding whether a plaintiff's delay in filing suit was reasonable.

The court likewise finds disputed facts regarding both economic and evidentiary prejudice. While Philips contends that it would have switched from using the grooved inner cutters to a noninfringing alternative if it had been given notice of Izumi's infringement allegations, the court is not persuaded by this averment. After Izumi filed suit against Philips for infringement of the '749 patent, Philips did not switch to a substitute noninfringing inner cutter. Instead, Philips continued to sell the allegedly infringing grooved inner cutter, suggesting that it was more concerned about earning a

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[13] Accepting Philips's suggestion of March 1997 as the earliest possible date when Izumi knew of the grooved inner cutter, the period of delay, at most, is five years. Alternatively, accepting Izumi's argument that it did not know of the grooved inner cutter until January 1998, the period of delay, at minimum, is approximately four years and three months.

profit than about Izumi's claim of infringement. Philips likewise did not seek the advice of counsel concerning the '749 patent until Izumi filed suit, and then limited the requested opinion exclusively to the issue of noninfringement, ignoring the validity of the '749 patent. (*See* D.I. 214, ex. 5 at 45-46, ex. 3 at 28-29) Egregious conduct by an alleged infringer can prevent a finding of laches by demonstrating the equities of the case favor the plaintiff. *Aukerman*, 960 F.2d at 1032. Moreover, contrary to Philips's allegations surrounding document destruction during the period of delay, Izumi points to evidence suggesting that it does not conduct consumer demand or marketing surveys. Izumi, as a result, could not have destroyed any such documents. (*See* D.I. 214, ex. 7 at 498-550, 504) Because there are disputed issues of material fact as to whether a presumption of laches exist and, if not, whether Philips can prove the two elements of laches by a preponderance of the evidence, the court denies Philips's motion for partial summary judgment on the affirmative defense of laches.

H. Philips's Motion for Partial Summary Judgment on Izumi's Claim for Lost Profits Damages

The measure of damages is an amount which will compensate the patent owner for the pecuniary loss sustained because of the infringement. 35 U.S.C. § 284. The floor for a damage award is no less than a reasonable royalty, *Seattle Box Co. v. Indus. Crating & Packing Inc.*, 756 F.2d 1574, 1581 (Fed.Cir.1985), and the award may be split between lost profits as actual damages to the extent they are proven and a reasonable royalty for the remainder. *See TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 898 (Fed.Cir.1986).

To recover lost profits damages as actual damages, the patentee must show a reasonable probability that, "but for" the infringement, it would have made the sales that were made by the infringer. *Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538, 1545 (Fed.Cir.1995) (citations omitted). The

Federal Circuit has adopted a four-factor test, first articulated in *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152 (6th Cir.1978), as a standard, non-exclusive method for a patentee to establish entitlement to lost profits damages. Under the Panduit test, the patentee must prove: (1) demand for the patented product; (2) absence of acceptable non-infringing substitutes; (3) manufacturing and marketing capability to exploit the demand; and (4) the amount of the profit it would have made. *Id.*

A patentee need not negate every possibility that a purchaser might have bought a product other than its own. *Rite-Hite*, 56 F.3d at 1545. On the contrary, so long as the patentee establishes each of the Panduit factors, the court may reasonably infer that the claimed lost profits were caused by the infringing sales. *Id.* Thus, by satisfying the Panduit test, the patentee establishes its prima facie case with respect to "but for" causation. The burden, in turn, shifts to the alleged infringer to show that the inference is unreasonable for some or all of the lost sales. *Id.*

Besides the Panduit test, the Federal Circuit has recognized that a patentee also may prove lost profits under a market share theory. *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1577 (Fed.Cir.1989). Under this approach, a patentee recovers lost profits on the percentage of infringing sales equal to its market share. *Id.* at 1578. The Federal Circuit has explained that "[i]n the two-supplier market, it is reasonable to assume, provided the patent owner has the manufacturing and marketing capabilities, that it would have made the infringer's sales.... In these instances, the *Panduit* test is usually straightforward and dispositive." *Id.* The Federal Circuit has recognized, however, that a two-supplier market is not always in play and that the factors in the Panduit factors are not always applicable. Therefore, the Federal Circuit has held that awarding lost profits based on market share is proper if the patentee shows an established market share in lieu of the absence of acceptable noninfringing alter-

natives and, at the same time, meets the three other *Panduit* factors. *Id.*

The entire market value rule arises to "allow[ ] for recovery of damages based on the value of an entire apparatus containing several features, even though only one feature is patented." *Fonar Corp. v. Gen. Elec.*, 107 F.3d 1543, 1552 (Fed.Cir.1997). The Federal Circuit has applied this rule to allow for a recovery on the value of the entire apparatus only in situations where the patented feature is the basis for customer demand. *Id.* (citing *Rite-Hite*, 56 F.3d 1538, 1549). In the absence of this restriction, an infringer could be required to pay multiple recoveries on a single product to numerous patentees, each of whom file infringement claims directed to different components of the product without regard to the extent to which its patented component contributed to the overall profitability of the product. If the infringer's materials emphasize the value of the patented feature, then such emphasis serves as evidence that the feature is responsible for the customer demand. *Fonar*, 107 F.3d at 1552-53.

In an attempt to avail the entire market share rule, Philips argues that Izumi must present evidence allocating profits to those attributable to the patented feature and those attributable to other product features. Philips charges that Izumi cannot meet this allocation. To this end, Philips points out that Marvin Levy, Izumi's lost profits damages expert, calculated Izumi's lost profits based upon the value of the electric rotary razor as a whole, not as between the patented recessed inner cutter and the other product features. (*See* D.I. 190, ex. 3 at 11-16, Appendix 6) Philips, therefore, contends that it is entitled to summary judgment on Izumi's lost profits claim and that Izumi is limited to pursue only a reasonable royalty.

The court disagrees with Izumi in part. Izumi alleges that Philips infringes all claims of the '749 patent. Claims 1 and 2 recite an electric razor, to wit, a complete apparatus. As such, assuming that Philips is found to infringe either claim,

Izumi is entitled to lost profits based upon the value of the entire electric rotary razor as long as it is able to prove "but for" causation using the *Panduit* factors. However, if Philips is found to infringe only claim 3, which arguably recites a component part of an electric rotary razor, namely, an inner cutter, the court finds no genuine issues of material fact exist concerning whether the recessed inner cutter is the basis for customer demand for the allegedly infringing electric rotary razors. There is no evidence that Izumi marketed, advertised, or promoted the inner cutter component to consumers in the United States. (*See* D.I. 190, ex. 1, Kakimoto Dep. at 154, Vatrt Dep. at 85) In contrast, the evidence shows that Izumi successfully marketed a variety of other features, including its Dual Track system, high performance motor, pop-up trimmer, charging indicator, dual voltage, and ergonomics. (*See* D.I. 190, Kakimoto Dep. at 155-156) Therefore, the court concludes that summary judgment is not premature as to claim 3. Accordingly, the court denies Philips's motion for partial summary judgment on Izumi's claim for lost profits damages in part as to claims 1 and 2 and grants said motion in part as to claim 3.

V. CONCLUSION

For the reasons stated herein, the court grants Izumi's motion for partial summary judgment of no anticipation of claims 2 and 3 of the '749 patent and denies Philips's cross-motion for summary judgment that the Hamashima '879 publication anticipates claim 3 of the '749 patent. The court denies Izumi's motion for summary judgment of literal infringement and Philips's motion for partial summary judgment on laches. The court grants Philips's cross-motion for summary judgment of noninfringement in part as to literal infringement and denies this motion in part as to infringement under the doctrine of equivalents. The court grants Philips's motion to preclude Dr. Benedict's turbulence opinion as it relates to infringement under the doctrine of equivalents and Izumi's motion for partial summary judgment of no

on sale bar. The court denies Philips's motion for partial summary judgment on plaintiff's claim for lost profits damages in part as to claims 1 and 2 and grants said motion in part as to claim 3. The court denies Philips's motion for summary judgment of invalidity under prior invention in part as to Philips's reduction to practice and grants this motion in part as to Izumi's conception. Finally, the court denies Izumi's motion to preclude Philips from relying on an untimely opinion of counsel as moot. An order shall issue.

D.Del.,2004.
Izume Products Co. v. Koninklijke Philips Electronics N.V.
315 F.Supp.2d 589

END OF DOCUMENT

Federal Circuit Order Denying Rehearing/Rehearing *En Banc*

O R D E R

A combined petition for panel rehearing and for rehearing en bane having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the CROSS-APPELLANTS, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en bane and response having. been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en bane be, and the same hereby is, DENIED.

The mandate of the court will issue on September 23, 2005.

FOR THE
COURT,

Jan Horbaly
Clerk

Dated: September 16, 2005

FILED
U.S. COURT OF APPEALS FOR
THE FEDERAL CIRCUIT
SEP 16 2005
JAN HORBALY
CLERK

cc: Harold A. Barza
John M. DiMatteo

IZUMI PRODUCTS V KONINKLIKJKE PHILIP, 04-1418, -1423
(DCT - 02-CV-156)

* Note: Pursuant to Fed. Cir. R. 47.6, this order is not citable as precedent. It is a public record. *

35 U.S.C. § 112

§ 112. Specification

The 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.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

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

U.S. Patent No. 5,408,749

US005408749A

United States Patent
Momose

Patent Number: 5,408,749
Date of Patent: Apr. 25, 1995

ELECTRIC RAZOR

Inventor: Karuhiro Mosrose, Nagano Japan

Assignee: Irami Products Company, Nagano. Japan

Appl. No.: 163,379

Filed: Dec. 7, 1993

Foreign Application Priority Data

Feb. 12, 1993 [JP] Japan..... 5-024380

Int. CL* B26B 19/16
US. CL 30/43.6; 30/347
Field of Search .....30/43.4, 43.5. 43.6.
30/346.55, 346.57

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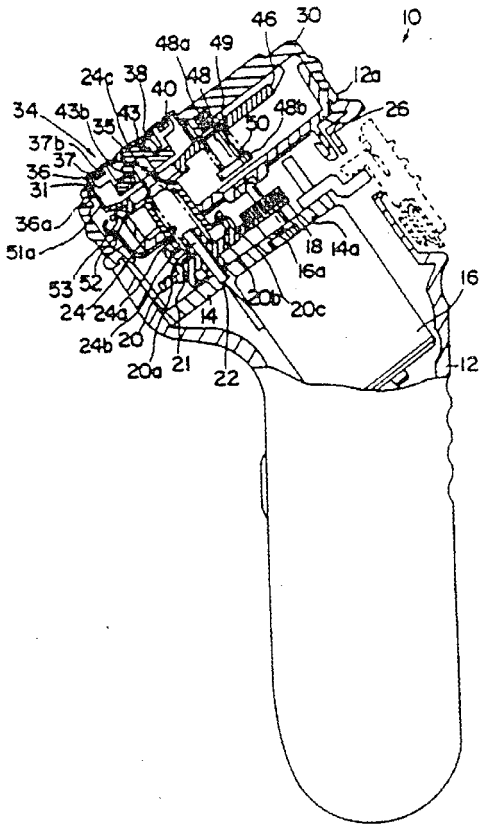
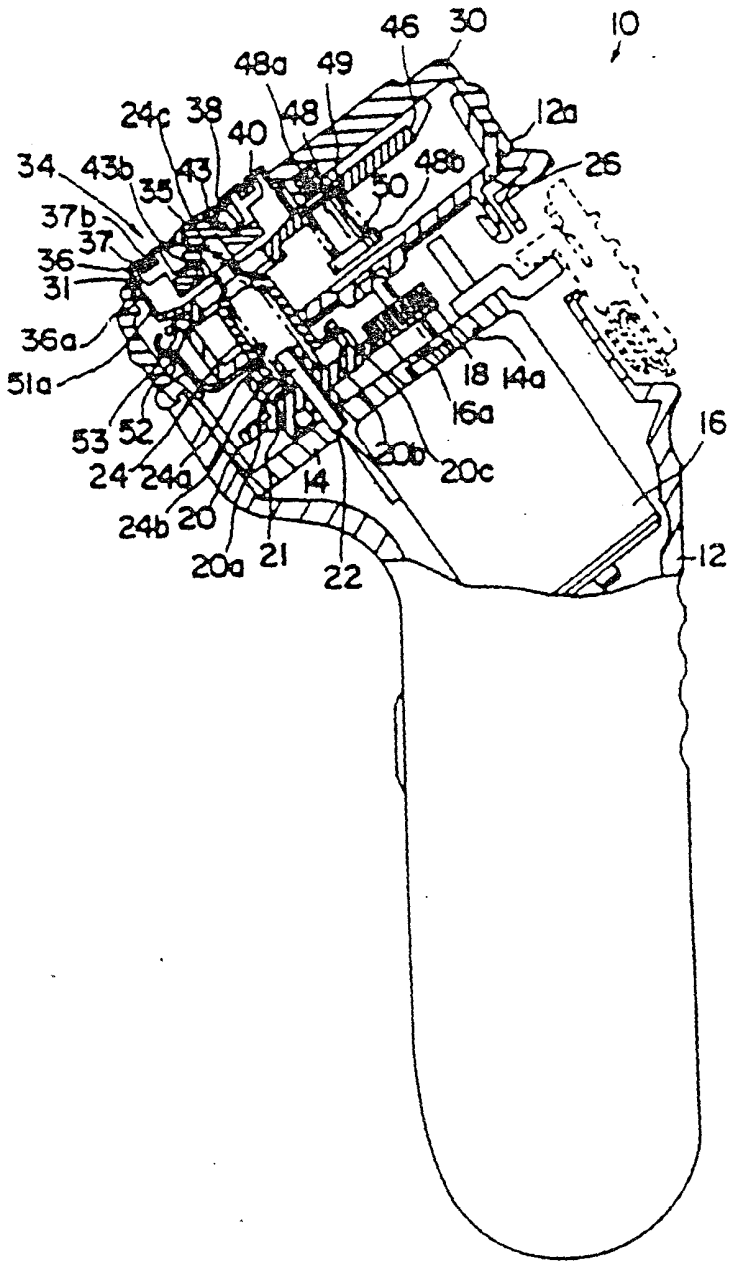
Primary Examiner—Hwei-Siu Payer
Attorney, Agent, or Firm —Koda and Androba

ABSTRACT

An electric rotary razor including at least one outer cutter which has slits for whisker entry and at least one inner cutter having a plurality of cutter blades. Each one of the cutting blades is inclined in the rotational direction of the inner cutter and has a cutting edge surface at its upper end that slide on the bottom surface of the outer cutter. The cutting edge surface is thinner than the cutter blade or the cutter blade can have a recess beneath the cutting edge surface. Thus, sheered whiskers are prevented from sticking to the cutter blade of the inner cutter.

3 Claims, 3 Drawing Sheets

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51a
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FIG.1

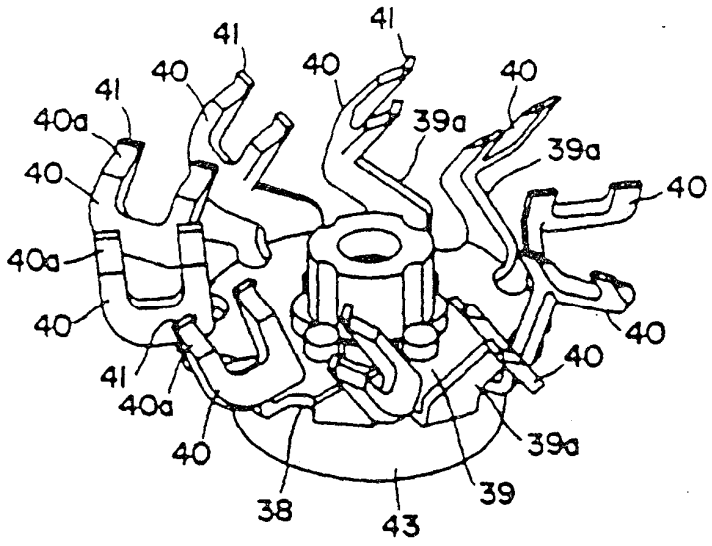
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FIG. 2

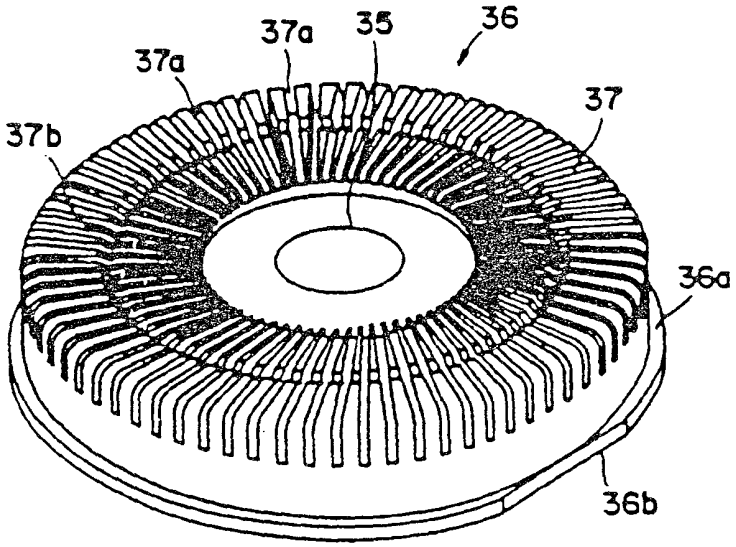
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FIG. 3

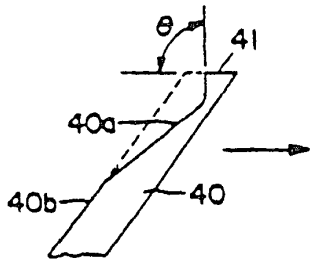


FIG. 4

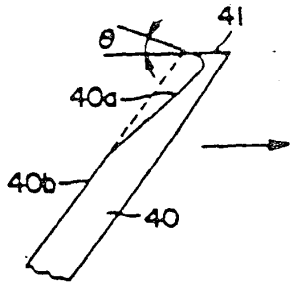


FIG. 5

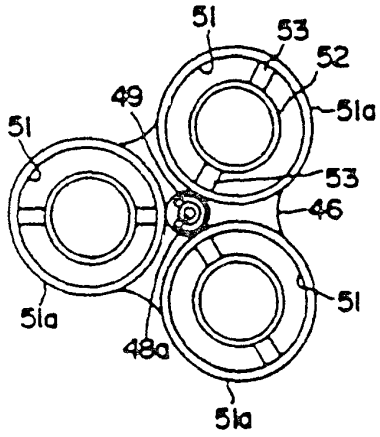


FIG. 6

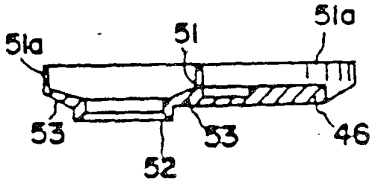


FIG. 7

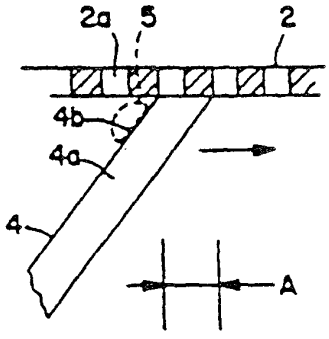


FIG. 8
PRIOR ART

ELECTRIC RAZOR

BACKGROUND OF INVENTION

1. Field of the Invention

The present invention relates to an electric razor and more particularly to an electric razor that includes an inner rotary cutter which can reduce the load and frictional resistance relative to the power source and outer cutter.

2. Prior Art

In rotary electric razors, the inner cutters are rotated under the outer cutters, and the whiskers are cut by the shearing force provided by the outer and inner cutters. There is an electric razor having a single shaving unit that consists of a single inner cutter and a single outer cutter unstalled in a head frame of a razor. That is also another type of electric razor that has three shaving units arranged in an equilateral triangle shape on a head frame.

FIG. 8 illustrates the relationship between the outer cutter and the inner cutter. The explanation of the cutters will be made below referring to how the whiskers are cut by the cutters.

More specifically, the outer cutter 2 has openings or slits 2*a* on the top surface. Whiskers penetrate the slits 2*a* into the razor and are cut by the sliding action of cutter blades 4*a* (only one shown in this Figure) of the inner cutter 4 which is in contact with the outer cutter 2 and rotates in the direction of the arrow. In other words, the whiskers are cut by the outer cutter 2 and the routing inner cutter 4. The cutter blades 4*a* of the inner cutter 4 are inclined in the rotational direction of the inner cutter.

There are different types of inner cutters. One of them is an inner cutter obtained by cutting and bending a plurality of projections from the circumferential edge portion of a cutter disk that is made out of metal or other materials.

When shaving is done, grease secreted out of the skin is mixed with shaving debris of the sheared whiskers. As a result, the shaving debris easily adheres to the surfaces of the cutter blade, particularly to the rear side surface 4*b* of the cutter blade 4*a* that faces the opposite direction from the direction of the rotation of the inner cutter. More specifically, if the shaving debris 5 and other substances adhere to the cutter blades, the frictional resistance between the inner cutter and the outer cutter increases. This means that the load applied on the driving source (or motor) increases, resulting in high power consumption. Moreover, the rotational speed of the inner cutter goes down and the cutting or shaving performance drops. Thus, cleaning of the inner cutter 4 is inevitable.

Furthermore when the frictional resistance between the inner and outer cutters is increased, heat is generated, which imparts an unpleasant sensation to the skin. In addition, the generation of heat accelerates wear in the inner and outer cutters and may damage them eventually.

In a conventional electric razor, a spring is used so that the cutter blades, or its tip ends, of the inner cutter are urged so as to keep contact with the inner or bottom surface of the outer cutter. In this structure, if the area of contact between the outer and inner cutters is large, a large load is proportionally applied on the inner cutter, and this causes the increase of power consumption.

In the inner cutter which has cutter blades integral with a metal cutter disk, the cutter blades are obtained, as described above, by cutting and bending the circumferential edge portion of a round metal disk. Thus, the thickness of the cutter disk will be the thickness of the cutter blade, which is referred to by A in FIG. 8. As a result, it is necessary that a cutter disk be as thin as possible so as to obtain thin cutter blades in order to keep the friction between the inner and outer cutters as small as possible. When however, the cutter disk as a whole is thin, the overall strength of the cutter

blades is impaired. In other words, in conventional inner cutters, the reduction in the thickness of the cutter blade and the assurance of the overall strength of the cutter blades is in conflict and has been unsolved.

SUMMARY OF THE INVENTION

Accordingly, one object of the present invention is to provide as electric razor which can minimize the contact pressure of the inner cutter against the inside or bottom surface of the outer cutter by securing a reduced amount of surface area of the inner cutter that is in contact with the outer cutter.

It is another object of the present invention to provide an electric razor which assures that the shaving debris and other substances do not easily adhere to the cutter blades of the inner cutter.

These objects are accomplished for an electric razor which includes at least one outer cutter having openings or slits opened in the top surface through which the whiskers penetrate and at least one rotatable inner cutter which, in cooperation with the outer cutter, cuts the whiskers and has a plurality of cutter blades inclined in the direction of rotation; and a unique structure for the razor is that the cutter blades is provided with a cutting edge surface at the end surface that slides on the inner or bottom surface of the outer cutter and the cutting edge surface is formed to be small thickness.

In order to accomplish the objects, the rear portion of the cutting edge surface (or the portion which faces a direction opposite to the rotational direction of the inner cutter) is cut out. It is also possible to form a recess of a great amount of indentation on the upper rear surface of the crease blade so that the recess is located immediately beneath the rear edge of the cutting edge surface that is on the opposite side from the direction of rotation of the inner cutter.

With the structure described above, the load which the inner cutter bears is small because the thickness of the cutting edge surface in the direction of rotation is small and therefore the contact area between the outer cutter and the cutting edge surface of the inner cutter is small.

In addition, with the greatly indented recess formed immediately beneath the cutting edge surface of the cutter blade, the shaving debris and other substances are not likely to adhere to the surface of the inner cutter including the cutter blades and the cutting edge surfaces.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional diagram of the head portion of the electric razor according to the present invention;

FIG. 2 is a perspective view of an inner cutter used in the razor of the present invention, the inner cutter being mounted on a transmission cylinder;

FIG. 3 is a perspective view of an outer cutter used in the razor of the present invention;

FIG. 4 is a side view of one of the cutter blades of the inner cutter used in the razor of the present invention on an enlarged scale;

FIG. 5 is a side view of one of the cutter blades of another inner cutter used in the razor of the present invention on an enlarged scale;

FIG. 6 is a top view of the blade-retaining plate used in the razor;

FIG. 7 is a vertical cross section thereof; and

FIG. 8 is an illustration showing the positional relationship between the inner and outer cutters of a prior art razor.

DETAILED DESCRIPTION OF THE INVENTION

One embodiment of the present invention will be described below in detail with reference to the accompanying drawings.

In FIG. 1, reference numeral 12 is that housing of an electric razor 10. The housing 12 has an opening 12*a* at the upper end, and a fixing frame 14 is inserted into the housing 12 through this opening 12*a* and fixed inside the housing 12 A motor 16 is mounted to the undersurface of the fixing frame 14. The axle 16*a* of the motor 16 protrudes through a hole 14*a* of the fixing frame 14, and a drive gear 18 is coupled to the motor axle 16*a*.

Three transmission gears 20 (only one is shown) are rotatably supported on the fixing frame 14 and engage with the drive gear 18. These transmission gears 20 are arranged in an equilateral triangle configuration, and drive shafts 24 (only one is shown) are engaged with the transmission gears 20. Since all three transmission gears 20 have the same structure, only one transmission gear 20 and its related elements will be described below.

The transmission gear 20 includes a shaft tube 20*a* which is rotatably fitted on a shaft 22 provided on the fixing plate 14. A coil spring 21 is provided on the shaft tube 20*a*. The lower portion of the spring 21 is positioned on the shaft tube 20*a*, and the upper portion of the spring 21 is set inside the inner tube 24*a* of the drive shaft 24. Thus, the drive shaft 24 is urged upward (in the drawing) by the spring 21. The drive shaft 24 has a flange 24*b* around the lower end, and this flange 24*b* is positioned inside a guide tube 20*b* of transmission gear 20. The drive shaft 24 is prevented from slipping relative to the transmission gear 20 by a claw 20*c* formed on the inner surface of the guide tube 20*b*. The flange 24*b* of the drive shaft 24 is engaged with the guide tube 20*b* so that that transmission gear 20 and the drive shaft 24 are rotated together. As an example of this engagement of the drive

shaft 24 and the transmission gear 20, a portion of the flange 24*b* of the drive shaft 24 is cut away, and the guide tube 20*b* has the same shape as the cut-away flange 24*b* for a secure engagement

A drive shaft holder 26 is installed in the opening 12*a* of the housing 12 at a distance from the fitting frame 14. The drive shaft holder 26 is shaped in a somewhat shallow cylindrical receptacle. The upper portion of the drive shaft 24 protrudes from the bottom of this drive shaft holder 26.

A head frame 30 is fitted on the housing 12 in a detachable fashion so that the head frame 30 can cover the drive shaft holder 26. The head frame 30 is formed with three through holes 31 so that three shaving units described below are installed to these holes 31 from the inside of the housing 12.

Each shaving unit 34 comprises an outer cutter 36 and an inner cutter 38. The outer cutter 36, as seen in FIG. 3, has a round shaving surface 37 on its top surface. Openings or slits 37*a* are provided in substantially a radial direction for the entire shaving surface 37. An outer cutter cap 35 is fitted in the center of the outer cutter 36. A circular guide groove 37*b* is formed at an intermediate portion of the shaving surface 37. Thus, so that the shaving surface 37 is divided into two (outside and inside) sections in the form of concentric circles. Furthermore, the outer cutter 36 has a flange 36*a* at the bottom. The upper surface of the flange 36*a* comes into contact with the under surface of the head frame 30 so that the outer cutter 36 cannot slip off. In addition, a cut-out 36*b* is formed at one part of the outer cutter 36. Thus, the outer cutter 36 is prevented from rotating by a combination of the cut-out 36*b* and a stopper (not shown) formed on the inside surface of the head frame 30.

On the other hand, as seen from FIG. 2, the inner cutter 38 has a plurality of cutter arms 39*a* extending upwardly from the outer circumferential edge portion of a cutter disk

39. In other words, the arms extend in a vertical direction relative to the surface of the cutter disk 39. A cutter blade 40 is formed at the end of each one of the cutter arms 39*a*. The cutter blade 40 is inclined in the direction of rotation of the inner cutter that is shown by arrows in FIGS. 4 and 5. The cutter blades 40 slide under the outer cutter 36. The end of each one of the cutter blades 40 is split into two branches so that the two split ends are formed with cutting edge surfaces 41. The cutting edge surfaces 41 are parallel to the surface of the cutter disk 39 and fit in the two circular sections of the shaving surface 37 of the outer cutter 36.

At the center of the cutter disk 39 an engagement hole is formed, and into this engagement hole, a transmission cylinder 43, which transmits the rotation from the power source (the motor 16) to the inner cutter 38 is inserted. Thus, the inter cutter 38 and the transmission cylinder 43 form a single unit. As seen from FIG. 1, the transmission cylinder 43 has an engagement hole 43*b* in the bottom, and a transmission tongue 24*c* formed at the tip end of the drive shaft 24 is inserted into this engagement hole 43*b*. The surrounding areas of the engagement hole 43*b* are rounded to provide as easy insertion of the transmission tongue 24c of the drive shaft 24 into the engagement hole 43*b*.

A more detailed description of the inner cutter 38 will be made below with reference to FIGS. 2 and 4.

At the upper part of the rear surface 40*b* of the cutter blade 40, a recess 40*a* is formed. More specifically, the recess 40*a* is on the surface which faces the direction that is opposite from the direction of rotation of the inner cutter shown by the arrow in FIG. 4. The recess 40*a* is formed by cutting away a portion of the cutting edge surface 41. In particular, as seen from FIG. 4, about a rear half portion of the cutting edge surface 41 that faces the direction opposite from the direction of rotation of the inner cutter is cut out as shown by the dotted line. In other words the dotted line represents

the shape of the rear side of a conventional cutter blade. More specifically, as shown in FIG. 4, the upper portion of the recess 40*a* has an angle Θ relative to the cutting edge surface 41, and this cut angle Θ is 90 degrees in this embodiment. In addition, this recess 40*a* is beveled rearwardly from its middle point. With this recess 40*a* it is difficult for the shaving debris and other substances to adhere to the recess 40*a*. In other words, shaving debris hardly adheres to the cutter blade 40.

If, as seen from FIG. 5, the angle Θ is set to be smaller than 90 degrees, the end of the rear surface 40*b* is pointed and the recess 40*a* in a rounded concave shape, thus making it much more difficult for shaving debris and other substances to adhere to the recess 40*a*.

In the conventional inner cutter, the angle Θ is greater than 90 degrees as indicated by the dotted lines in FIGS. 4 and 5. Accordingly, the shaving debris, etc. tends to adhere to the rear surface 40*b* of the cutter blade 40.

Back to FIG. 1, the reference numeral 46 is a shaving unit retaining plate 46 which is installed on the back surface of the head frame 30. The shaving unit retaining plate 46 is fixed to the head frame 30 via a supporting shaft 48. The supporting shaft 48 has a threaded portion 48*a* at one end that is screwed into the center hole of the head frame 30. The supporting shaft 48 has a flange 48b at the other end, and a spring 50 is installed on the supporting shaft 48 so that it is between the flange 48*b* and the shaving unit retaining plate 46. The upper end of the supporting shaft 48 is restrained by a retaining ring 49. Thus, the shaving unit retaining plate 46 is urged upward by the spring 50.

As seen in FIGS. 6 and 7, the shaving unit retaining plate 46 has through holes 51 which positionally correspond to the holes 31 of the head frame 38. As seen in FIG. 1, supporting tubes 51*a* project upward from the inside rims of these holes

51, and the upper ends of these supporting tubes 51*a* are in contact with the flanges 36*a* of the outer cutters 36.

When shaving is performed, the shaving surfaces 37 of the outer cutters 36 are pressed toward the inside of the razor 10 so that the outer cutters 36 are pushed inwardly against the driving force of the springs 50. Thus, shaving is performed with the razor fitting snugly on the facial contour. In addition, the drive shafts 24 that hold the transmission cylinder 43 are also supported by springs 21. Accordingly, the drive shafts 24 can move to and fro in the axial directions together with the shaving units 34.

Meanwhile, the shaving unit retaining plate 46 is further provided with a ring section 52 in each supporting part 53. The ring section 52 is supported by the drive shaft 24 so as not to come into contact with the cutter cylinder 43 during the shaving.

The shaving unit retaining plate 45 described above is attached to the back surface of the head frame 30 via the supporting shaft 48. When the head frame 30 is detached from the razor 10 the shaving units 34 stay with the shaving unit retaining plate 46 because of the ring sections 52 of the supporting tubes 51*a* of the shaving unit retaining plate 46.

The springs 21 urge the inner cutters 38 so that the cutting edge surfaces 41 of the inner matters 38 are pressed against the inside or bottom surfaces of the outer cutters 36, thus causing whiskers to be cut by the outer cutters 36 and inner cutters 38. Accordingly, with the surface area of the cutting edge surface 41 smaller than that of conventional razors, a cutting effect equal to that obtained in the conventional razors is obtainable with the inner cutter of this invention even if the pressing force of the springs 21 is small. In other words, due to the smaller surface area of the cutting edge surfaces of the cutter blades, the pressing pressure which the inner cutters 38 apply to the outer cutters 36 can be reduced.

In use, the electric razor 10 is switched on, and shaving is performed by pressing the outer cutters 36 against the face. Whiskers penetrate the outer cutters 36 through the slits 37*a* of the shaving surface 37 and are sheared by the outer cutters 36 and the cutter blades 40 of the inner cutters 38 which are rotated by the motor 16 via the drive gear 18, the transmission guts 20 and the drive shafts 24. Since the upper ends of the supporting tubes 51*a* are is contact with the flanges 36*a* of the outer cutters 36, the sheared whiskers are guided by the supporting tubes 51*a* and drop without being scattered or coming out of the outer cutters 36 and collected in the receptacle shape drive shaft holder 26.

When whiskers are collected in the drive shaft holder 26, the head frame 30 is detached from the housing 12, and the whiskers art cleaned out of the drive shaft holder 26 by brush or other devices. Since not much shaving debris sticks to the shaving units 34 particularly to the inner cutter as described above, there is no great need to clean the shaving units 34. If however, the shaving units 34 need to be cleaned, they can be re-moved from the head frame 30 by unscrewing the supporting shaft 48 and then cleaned.

In the above embodiment, the outer cutter 36 is divided into concentric circles by the circular guide groove 37*b*, and the cutter blade 40 of the inner cutter 38 are split into two branches. However, the inner cutters of the present invention which have recesses on the rear surfaces can be used in razors with outer cutters that have no guide grooves 37*b*. Also, the recesses can be formed on the rear surfaces of the cutting blade with single or non-branched cutting edge surfaces.

In addition, the front edge (and not the rear edge as in the above embodiment) of the cutting edge surface of the cutter blade can be cut out so as to reduce the over-all weight of the inner cutter and to reduce the surface area which contacts the outer cutter. Also, the recesses can be formed on the front

(and not on the rear) surface of the cutting blades. The same effect as in the rear recesses are obtained.

In the above, various descriptions are given based on an appropriate embodiment of the present invention. However, the present invention is not limited to the embodiment. It goes without saying that various modifications are possible within the spirit of the present invention.

According to the present invention, the electric razor includes inset cutters that have recesses on the surfaces of the cutter blades that face the direction opposite from the rotational direction of the inner cutter. Accordingly, shaving debris and other substances do not easily adhere to the Cutting blades. Thus, cleaning of the inner cutters, if necessary, can be done easily. Furthermore, since not much of the shaving debris, etc. adhere to the cutter blades, there is no increase in the weight of the inner cutters with the repeated shavings. As a result, the load on the motor can be small, and the power consumption can be small.

In addition, since the area of contact between the outer cutters and inner cutters is reduced due to the cut-out on the cutting edge surface, the cutting edge surfaces of small thickness are obtained and the overall weight of the inner cutters can be small. Also, with the reduced area of contact between the outer cutters and the inner cutters, the contact pressure of the inner cutters against the outer cutters can be small. Accordingly, a shaving effect equal to that of conventional electric razors can be obtained even if the driving force of the springs which presses the inner cutter against the outer cutter is small. Thus, the contact pressure on the outer cutters can be small and so as the load on the motor.

Accordingly, shaving debris and other substances do not easily adhere to the inner cutters, the area of contact between the inner cutters and outer cutters is small, and the overall weight of the inner cutters can be small. These result is that

the power consumption of the razor is small, and in a rechargeable electric razor, the razor can work longer.

I claim:

1. An electric razor comprising:

at least one outer cutter with openings through which whiskers penetrate;

at least one inner cutter having a plurality of cutter blades, each one of said cutter blades having a cutting edge surface at an upper end thereof that slides on an inside surface of said outer cutter, said cutter blades being inclined in a direction of rotation of said inner cutter and

a recess comprising an indentation formed immediately beneath said cutting edge surface and facing in a direction opposite from said direction of rotation of said inner cutter in each one of said plurality of cutter blades whereby said cutting edge surface is made thinner than a thickness of said cutter blade.

2. An electric razor according to claim 1, wherein said inner cutter further comprises a cutter disk with a through hole at a center thereof and a plurality of cutter arms extending from an outer edge of said cutter disk to a vertical direction relative to said cutter disk and said plurality of said curter blades extend from said cutter arms.

3. An inner cutter used in an electric rotary razor comprising:

a cutter disk with a through hole at a center thereof:

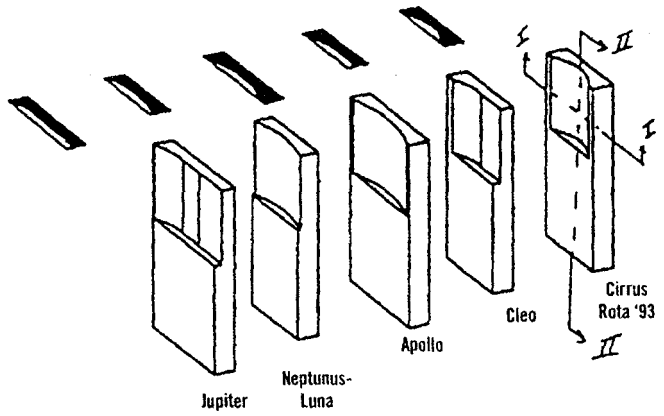
a plurality of cutter arms extending from an outer edge of said cutter disk in a vertical direction relative to said cutter disk;

a cutter blade extending from each one of said cutter arms and inclined in a rotational direction of said inner cut-

ter, each one of said cutter blades being provided with a cutting edge surface at an end surface of said cutter blade and with a recess formed below said cutting edge surface; and wherein

said recess is formed on a rear surface of said cutter blade, said rear surface facing an opposite direction from the rotational direction of said inner cutter.

Diagram of Inner Cutters on Respondent Philips' Electric Rotary Shavers Sold Since 1995:



[Source: Record (pp. A000490-91, A02387-88) in *Izumi Prods. Co.* v. *Koninklijke Philips Electronics N.V., et al.*, Fed. Cir. Nos. 04-1418, -1423.]