

No. 2023-1790

**United States Court of Appeals
for the Federal Circuit**

STEUBEN FOODS, INC.,

Plaintiff-Appellant

v.

SHIBUYA HOPPMANN CORPORATION, SHIBUYA
KOGYO Co., LTD., HP HOOD LLC,

Defendants-Appellees

Appeal from the United States District Court for the District of Delaware in
No. 1:19-cv-02181-CFC, Chief Judge Colm F. Connolly

**APPELLEE'S COMBINED PETITION FOR
PANEL REHEARING AND REHEARING EN BANC**

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Dated: March 17, 2025

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

CERTIFICATE OF INTEREST

Case Number 2023-1790

Short Case Caption Steuben Foods, Inc. v. Shibuya Hoppmann Corporation

Filing Party/Entity Shibuya Hoppmann Corporation, Shibuya Kogyo Co., Ltd., and HP Hood LLC

Instructions:

1. Complete each section of the form and select none or N/A if appropriate.
2. Please enter only one item per box; attach additional pages as needed, and check the box to indicate such pages are attached.
3. In answering Sections 2 and 3, be specific as to which represented entities the answers apply; lack of specificity may result in non-compliance.
4. Please do not duplicate entries within Section 5.
5. Counsel must file an amended Certificate of Interest within seven days after any information on this form changes. Fed. Cir. R. 47.4(c).

I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date: 05/09/2023

Signature: /s/ John Christopher Rozendaal

Name: John Christopher Rozendaal

FORM 9. Certificate of Interest

Form 9 (p. 2)
March 2023

1. Represented Entities. Fed. Cir. R. 47.4(a)(1).	2. Real Party in Interest. Fed. Cir. R. 47.4(a)(2).	3. Parent Corporations and Stockholders. Fed. Cir. R. 47.4(a)(3).
Provide the full names of all entities represented by undersigned counsel in this case.	Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities. <input checked="" type="checkbox"/> None/Not Applicable	Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities. <input type="checkbox"/> None/Not Applicable
Shibuya Hoppmann Corporation		Shibuya Kogyo Co., Ltd
Shibuya Kogyo Co., Ltd		Shibuya Holding Corp.
HP Hood LLC		

Additional pages attached

4. Legal Representatives. List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

None/Not Applicable Additional pages attached

See Appendix A		

5. Related Cases. Other than the originating case(s) for this case, are there related or prior cases that meet the criteria under Fed. Cir. R. 47.5(a)?

Yes (file separate notice; see below) No N/A (amicus/movant)

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6. Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6).

None/Not Applicable Additional pages attached

Appendix A

4. Legal Representatives. List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

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TABLE OF ABBREVIATIONS

BB – Steuben’s Principal Brief, Dkt. XX

RB – Shibuya’s Principal Brief, Dkt. 15

RDOE – Reverse Doctrine of Equivalents

GB – Steuben’s Reply Brief, Dkt. XX

Op. – Panel Opinion, Dkt. 45

INTRODUCTION

This case—about patents on systems for sterilizing and filling bottles—presents an unusual set of legal issues. To determine infringement, the jury had to apply three different variations of equivalents: the garden-variety doctrine of equivalents ('985 patent), the equivalents test for means-plus-function claims ('188 patent), and the reverse doctrine of equivalents (“RDOE”) ('591 patent). When it found infringement, the jury was confused by legally erroneous expert opinions and attorney argument—confused enough that the district court entertained a motion for mistrial, declined to enter the judgement on the verdict, and entered JMOL of non-infringement on all three patents.

The panel affirmed JMOL on the '985 patent because no reasonable jury could find that the accused system's *continuous* addition of sterilant was equivalent to the asserted claim's “intermittent” addition. The jury's errors regarding the other two patents were just as severe, yet the panel reversed the grant of JMOL, on the theory that testimony from plaintiff's expert provided substantial evidence for the verdict. That testimony, however, was premised on a flatly incorrect understanding of the law. Such testimony—by definition—is not substantial evidence.

The expert concluded that Shibuya infringed the '188 patent merely because the accused systems perform the same *function* as the claimed system; he disregarded the “way” prong of the function-way-result test altogether. That is

impermissible. *See Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1309 (Fed. Cir. 1998). And the expert’s conclusion that the accused systems and the ’591 patent have the same principle of operation—meaning the RDOE does not apply—rested on legally incorrect and circular logic. The expert never analyzed the principle of operation of the claimed invention; instead, he analyzed only the principle of operation of the *accused system*, which he *assumed* was the same as the claimed invention because the district court had found literal infringement. But that reasoning nullifies the RDOE: any product—obviously—has the same principle of operation as itself.

To make matters worse, the panel gave short shrift to Shibuya’s alternative argument on the ’591 patent: that the claimed “second sterile region” should be construed as “a sterile area through which food does not flow”—a construction under which Shibuya undisputedly does not infringe. This argument was not an afterthought. It filled seven pages of Shibuya’s appeal brief. RBr.22-23, 46, 60-66. Yet the panel rejected that construction in just one sentence: “The patent is silent as to whether food can flow through the second sterile region.” Op.13. That statement—in addition to being cursory—is irreconcilable with the *panel’s own description* of the specification, which makes clear that food cannot flow through the claimed second sterile region. Op.4-6.

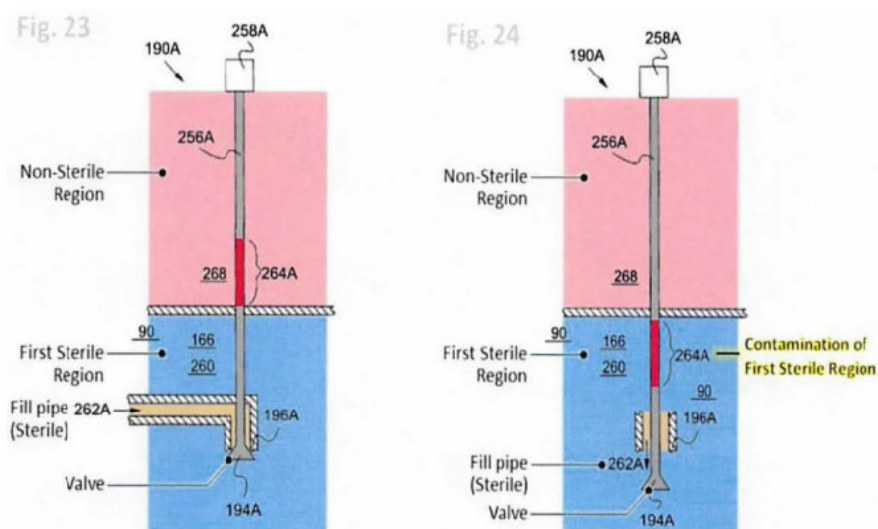
If the panel declines to grant rehearing, the full Court should take this case en banc. The panel’s disregard of the “way” prong of the test for infringement of means-plus-function limitations expands the scope of means-plus-function claims far beyond that permitted by section 112. That is a big problem; the “way” requirement is “of particular importance” in keeping the equivalents analysis “properly limited.” *VLSI Tech. LLC v. Intel Corp.*, 87 F.4th 1332, 1342 (Fed. Cir. 2023). And the panel’s overly expansive approach to claim construction, combined with its nullification of the RDOE, expands the scope of patent claims far beyond that permitted by *Phillips* and *Graver Tank*. The panel’s holdings, if allowed to take root in this Court’s jurisprudence, threaten to upend the balance at the heart of the patent system: patentees have a right to exclude the public from practicing that which they have invented and described, but no more. *See B. Braun Med., Inc. v. Abbott Labs*, 124 F.3d 1419, 1424 (Fed. Cir. 1997).

**POINTS OF FACT OR LAW OVERLOOKED OR
MISAPPREHENDED BY THE COURT**

1. The panel’s analysis of the ’188 patent reads out the “way” prong of the function-way-result test for infringement of means-plus-function limitations. The asserted claims require a “means for filling” bottles. The structure corresponding to this means involves a conveyor plate that holds bottles from the bottom, on an intermittently moving linear conveyor, which stops moving when the bottles are being filled. The panel concluded that the accused grippers that hold bottles from the neck and hand them off among continuously moving rotary wheels operate in the same way as the patented conveyor and conveyor plate “in the context of the claimed function” of aseptically filling bottles because both sets of structures “hold[] and mov[e] bottles from one location to the other.” Op.16-17. But it would be impossible to disinfect and fill bottles without somehow holding and moving them. So the panel in effect found infringement merely because the accused structures perform the claimed function. That was error: section 112 “rules out the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation.” *Chiuminatta*, 145 F.3d at 1309.

2. The panel rejected Shibuya’s construction of the ’591 patent’s claimed “second sterile region”—“a sterile area through which food does not flow”—because the panel concluded that the ’591 patent “is silent as to whether food can flow through the second sterile region.” Op.13. The quoted statement is

demonstrably wrong. The panel acknowledged that Figures 23-24 of the patent show “a filling apparatus *without the second sterile region.*” Op.5 (emphasis added). Those figures—as the panel’s depiction of them makes clear—have a sterile region proximate to the first sterile region through which food flows (fill pipe 262A, beige below).



Id. It is thus logically impossible for the claimed “second sterile region” to be a region through which food flows. If food *could* flow in the claimed “second sterile region,” Figures 23-24 *would* have a second sterile region—contrary to the panel’s own description of the invention.

3. The panel’s RDOE analysis failed to grapple with the fact that the alleged “second sterile region” in the structure accused product (namely, the fill pipe through which food is conducted to the bottle) corresponds to structure 262A in figures 23-24—figures that the patent tells us reflect the prior art, *do not have* the

claimed second sterile region, and so do not take advantage of the claimed region's principle of operation. The panel compounded its error by stating that the jury heard conflicting testimony regarding the principle of operation of the claimed invention. In fact, Steuben's expert did *not* analyze the principle of operation in the patent but looked instead at the principle of operation of the *accused device*, which he simply assumed to be the same as that of the claimed invention. That legally erroneous logic is not substantial evidence.

RULE 40(c) STATEMENT OF COUNSEL

Based on my professional judgment, I believe the panel's decision is contrary to *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605 (1950); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc); and *Chiuminatta*, 145 F.3d 1303.

Based on my professional judgment, I believe this appeal requires answers to the following precedent-setting questions of exceptional importance:

1. Whether an accused structure can be found to infringe a means-plus-function limitation merely based on expert testimony that the structure performs the same function as the structure disclosed in the patent, without regard to whether the structures perform that function in substantially the same way.
2. Whether a patent claim may be construed to cover a prior-art design where the specification expressly teaches that the prior-art design lacks an essential element of the claimed invention.
3. Whether, when performing an RDOE analysis, it is permissible to determine the principle of operation of the claimed invention by looking exclusively at the accused product rather than the disclosure in the patent.

/s/ John Christopher Rozendaal
John Christopher Rozendaal
Counsel for Appellees

ARGUMENT

I. The panel read the “way” requirement out of the function-way-result test for means-plus-function limitations—contrary to *Chiuminatta*.

A. The asserted claims of the '188 patent include a means-plus-function limitation: “means for filling [an] aseptically disinfected plurality of bottles at a rate greater than 100 bottles per minute.” Such limitations are “construed ‘to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.’” Op.14. To prove infringement of a means-plus-function limitation, the patentee must show that the accused product “performs the claimed function in substantially the same way to achieve substantially the same result as the corresponding structure described in the specification.” *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1267 (Fed. Cir. 1999).

Here, the corresponding structure for the “means for filling” limitation includes a conveyor and 2x6 conveyor plate (below) and equivalents.

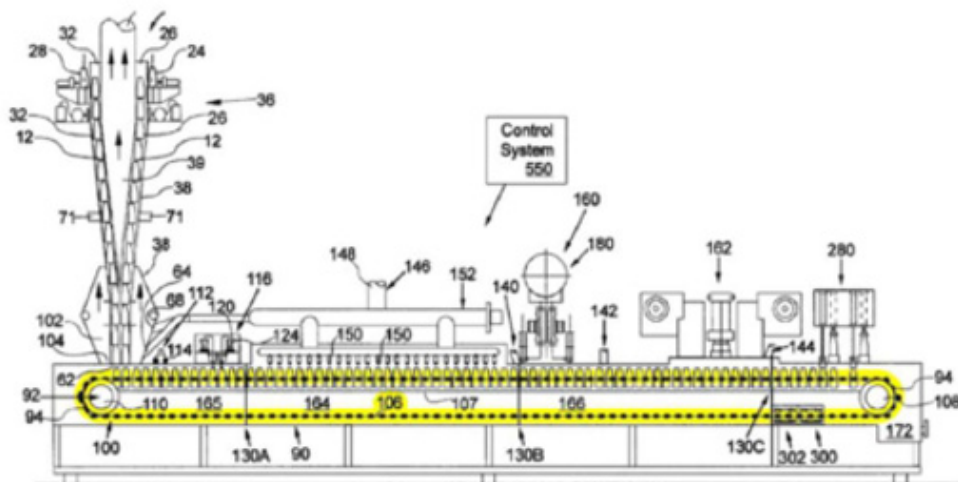
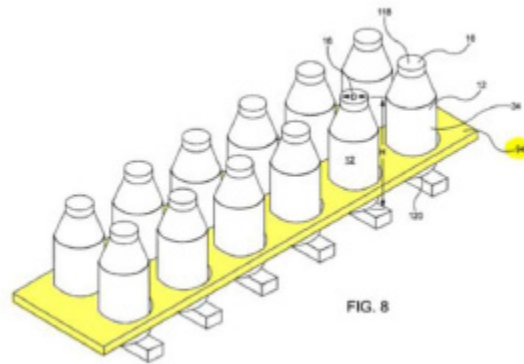
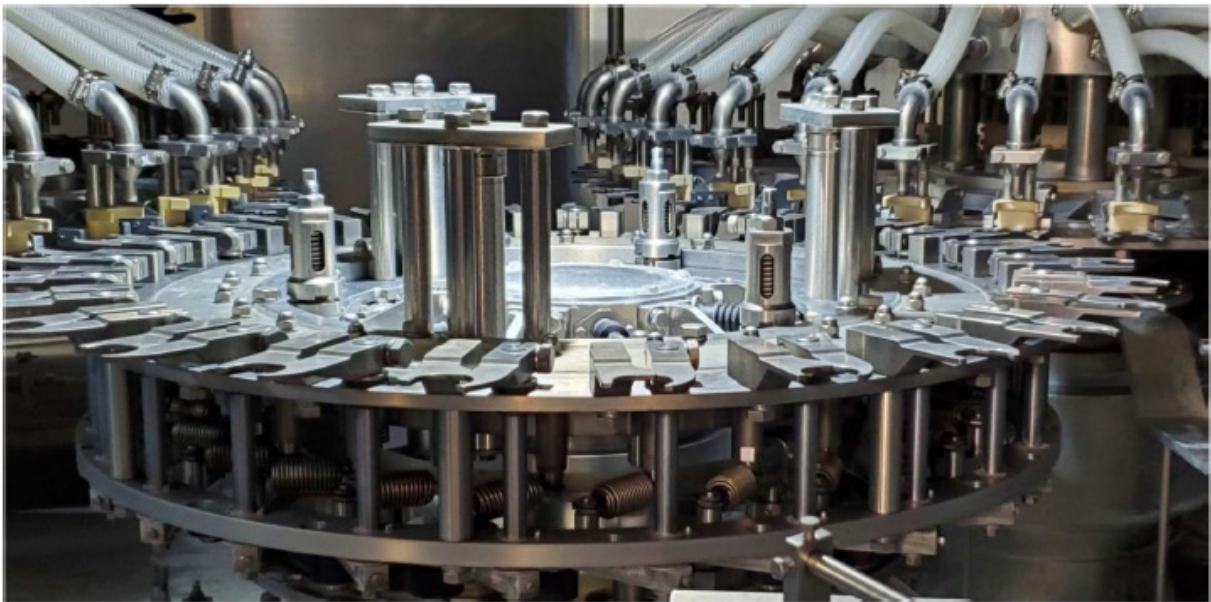


Fig. 3



Appx5302 (annotated), Appx5305 (annotated); Appx5375-5376. Steuben's position is that the accused machines' rotary wheels and neck grippers (below) are equivalent to the conveyor and conveyor plate under the function-way-result test.



Appx5331; Appx5378.



Appx5376.

As Shibuya has explained, that infringement theory fails as a matter of law in light of the many substantial differences between the *way* the bottles are filled in the claimed and accused machines. RBr.31-34. Those differences include:

- The conveyor moves the bottles in a straight line, while the rotary wheels move them in a circle. That is a substantial difference as a matter of law. *See* RBr.31 (citing *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1100 (Fed. Cir. 2008); *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1361 (Fed. Cir. 2005); *Mas-Hamilton Grp. v. LaGard, Inc.*, 156 F.3d 1206, 1212-13 (Fed. Cir. 1998). And it is particularly important in this context given the undisputed fact that rotary machines are “much faster” than linear machines. Appx3182 (724:20-725:3).
- The linear conveyor moves intermittently and stops to fill the bottles, whereas the rotary wheels move continuously while filling. “That difference is likewise substantial as a matter of law.” RBr.32 (citing *Mas-Hamilton Grp.*, 156 F.3d at 1213).
- The conveyor plate holds a 2x6 matrix of bottles from the bottom, whereas the neck grippers each hold one bottle at a time by the neck. RBr.33-34.

Moreover, a single conveyor plate holds each group of bottles as they move through the claimed machine, whereas bottles are handed off among multiple neck grippers in the accused machines. RBr.34.

B. The panel did not acknowledge these many differences, nor did it attempt to distinguish the ample precedent *Shibuya* cited showing that the differences are legally meaningful. Instead, the panel simply credited Steuben's expert's testimony that the differences are insubstantial "in the context of the claimed function of filling bottles at a rate greater than 100 bottles per minute" because "the way" both the claimed and accused structures fill bottles "is by holding and moving bottles from one location to the other." Op.16-17.

This bears repeating: the panel found that the claimed and accused structures operate in substantially the same way because they both *hold and move bottles*.

That cannot be right. One could not possibly fill 100 bottles per minute without "holding and moving" the bottles in some way. If Steuben's claims can be construed to cover all means of filling bottles that involve holding and moving them, the claims will cover *anything* that performs the claimed function, regardless of whether it is structurally equivalent. That is not the law: § 112(6) "rules out the possibility that any and every means which performs the function specified in the claim *literally* satisfies that limitation." *Chiuminatta*, 145 F.3d at 1309.

Remarkably, at trial, Steuben's expert candidly admitted that he ignored the "way" prong altogether. "How you hold the bottles is not important," he said,

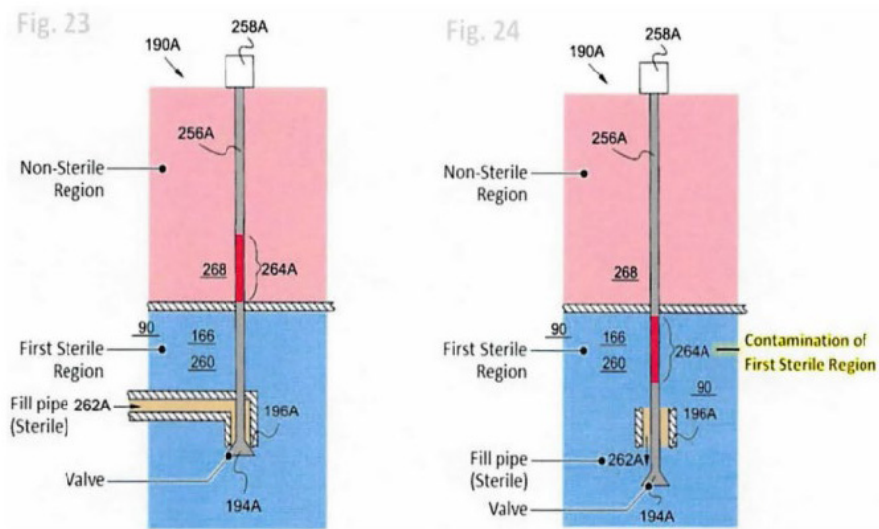
because “the function of the claim is filling bottles at a rate greater than a hundred bottles per minute.” Appx3101(406:5-13). And he said that it does not “matter whether the bottles are moving in a straight line or in a circular fashion” because “in terms of filling at a rate of 100 bottles per minute, you can do it with a linear conveyor” or a “rotary dial.” Appx3102(410:12-20).

This Court’s precedent says otherwise. Determining the “way” in which alleged equivalents operate is a necessary piece of the analysis. *Odetics*, 185 F.3d at 1267. Indeed, the “way” requirement is “of particular importance” in keeping the equivalents analysis “properly limited.” *VLSI*, 87 F.4th at 1342. The panel erred by disregarding this prong of the equivalents test.

II. The panel’s analysis of the scope of the ’591 patent invention is internally inconsistent and runs afoul of *Phillips*.

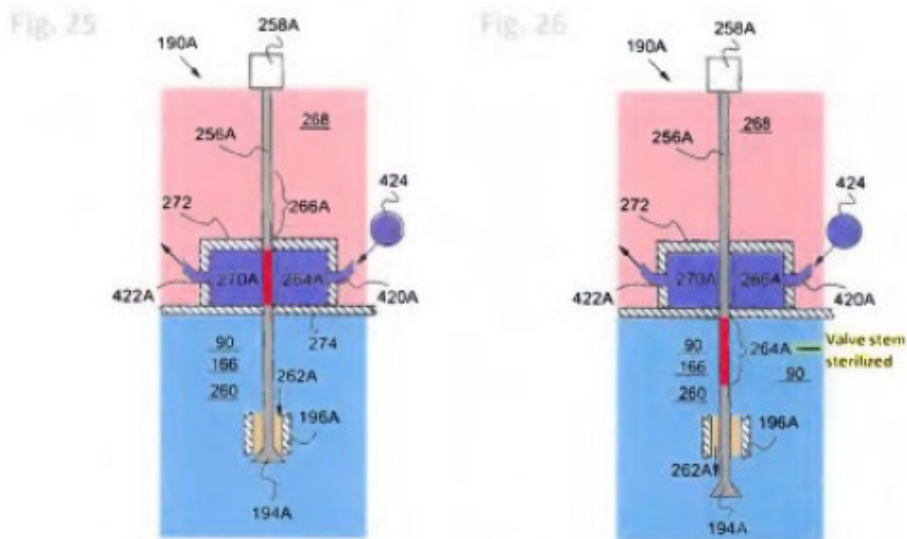
The panel’s rejection of Shibuya’s claim-construction argument is irreconcilable with the panel’s own description of the ’591 patent invention. This Court has long recognized that the correct construction of a claim term is that which “most naturally aligns with the patent’s description of the invention.” *Phillips*, 415 F.3d at 1316. The panel’s decision fails to respect that maxim. Indeed, the panel’s own account of the invention makes clear that Shibuya’s proposed construction for the second sterile region (“an area through which food does not flow,” R.Br.60) is consistent with the specification, while the panel’s construction is not.

As the panel correctly explained, “[t]he claimed second sterile region is used to solve a potential contamination problem created when the valve stem actuates the valve between the closed and open positions.” Op.5. This contamination problem is illustrated in Figures 23 and 24, which “depict a filling apparatus without the second sterile region”:



Id. When valve 194A opens (i.e., moves downward), “portion 264A of the valve stem goes from non-sterile region 268 into the first sterile region 260, potentially contaminating the first sterile region.” *Id.*

The patented solution “to this problem is depicted in Figures 25 and 26”:



Op.5-6. “The specification details ‘[i]n the present invention, the first portion 264A of the valve stem 256A has not introduced contaminants into the first sterile region 260 because the first portion 264A of the valve stem 256A was pre-sterilized in the second sterile region 270A [purple above] before entering the first sterile region 270A before entering the first sterile region 260.’” Op.6. “In other words, the second sterile region prevents contamination of the first sterile region by pre-sterilizing the portion of the valve stem highlighted in red, which would otherwise move from non-sterile region 268 into the first sterile region 260, and potentially introduce contaminants.” *Id.*

This description of the claimed invention—the panel’s own—makes clear beyond doubt that the *claimed* “second sterile region” is something *different* from the sterile region 262A (the food pipe, beige). That is because Figures 23 and 24—which depict sterile region 262A—illustrate the *problem* the claimed invention is

designed to solve and, by the panel’s own admission, *lack* the *claimed* second sterile region, Op.5. So the *claimed* second sterile region must be defined to distinguish it from the prior-art sterile region 262A. The most notable feature of region 262A is that food flows through it. Hence, Shibuya proposed to construe the *claimed* second sterile region as one through which food does not flow. That must be correct: if the claimed second sterile region could be a region through which food flows, then Figures 23 and 24 *would* have the claimed second sterile region—but all agree they do not. *See id.* Furthermore, the claimed second sterile region could not carry out what the panel acknowledges to be its function of “pre-sterilizing” a portion of the valve stem if the region were full of food.

The panel’s statement that Shibuya did not “tether the carveout of second sterile regions through which food could flow to language in the specification,” Op.13, is thus demonstrably incorrect. The language and figures from the specification that the panel itself analyzed show that the claimed “second sterile region” cannot be a region through which food flows because, again, otherwise Figures 23 and 24, which depict the prior art, would *also* have a “second sterile region.” So the patent is not “silent as to whether food can flow through the second sterile region.” *Contra* Op.13. Quite the contrary. The specification—“the single best guide” in claim construction, *Phillips*, 415 F.3d at 1315—makes clear that a sterile food pipe cannot be the claimed “second sterile region.” Yet, incredibly, the

structure Steuben accused of satisfying this claim element is the food pipe in Shibuya's system that corresponds to the prior-art food pipe 262A in the patent.

To the extent the panel meant to imply that it could not adopt Shibuya's construction unless the specification's *words* (as opposed to its figures) explicitly defined the "second sterile region" to exclude regions through which food flow or expressly disclaimed regions through which food flow from the invention's scope, the panel erred twice over.

First, a patent's figures are an integral part of the intrinsic evidence; they, alone, "may provide a 'written description' of an invention as required by § 112." *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1565 (Fed. Cir. 1991). Here, those figures unequivocally show that Shibuya's construction is correct: otherwise, the claims would encompass the very prior-art design that the patent makes clear *lacks* the claimed second sterile region. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001) (if "the specification makes clear that the invention does not include a particular feature, that feature is deemed ... outside the reach of the claims ... even though the language of the claims ... might be considered broad enough to encompass the feature"); RBr.61-66.

Second, the panel's suggestion that courts must apply the "ordinary meaning" of a term in a vacuum unless the specification contains lexicography or

disclaimer was likewise wrong. “The plain and ordinary meaning of a term is not merely the words of the term in the abstract”; it is “its meaning to the ordinary artisan after reading the entire patent.” RBr.64 (quoting *AstraZeneca AB v. Mylan Pharms. Inc.*, 19 F.4th 1325, 1330 (Fed. Cir. 2021)); see also *Phillips*, 415 F.3d at 1315 (claims “must be read in view of the specification”). The panel appeared to reason that, because (i) the words “second sterile region” standing alone simply mean “a second region that is sterile” and (ii) the specification does not contain explicit lexicography or disclaimer,¹ further examination of the specification was unnecessary. That analytical framework is irreconcilable with *Phillips*’s emphasis of “the importance of the specification in claim construction,” 415 F.3d at 1315. And it is irreconcilable with this Court’s many cases since *Phillips* that “illustrate how the specification shapes claim meaning even absent formal lexicography or disclaimer.” D. Crouch, *Thorner and the (Not So) Bright Line Rules of Claim Construction*, PatentlyO (Nov. 30, 2024) (discussing *Profectus Tech. LLC v. Huawei Techs. Co.*, 823 F.3d 1375 (Fed. Cir. 2016)).

¹ The patent here arguably *does* disclaim regions through which food flows from the scope of the claimed “second sterile region,” as discussed above. But, even assuming the specification does not rise to the level of disclaimer, the patent’s discussion of what the second sterile region is (and is not) is indisputably relevant to the proper construction of that term.

III. The panel credited legally erroneous expert opinion on RDOE, defying *Graver Tank*.

If the court does not adopt Shibuya’s proposed construction, it should affirm JMOL under RDOE—a longstanding equitable doctrine under which a product falling within a claim’s literal scope nevertheless does not infringe because the product does not take advantage of the principle of operation of the claimed invention and thus does not fall within the claim’s *equitable* scope. *See Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605. The panel disparaged RDOE as an anachronism yet stopped short of holding it is no longer good law. Op.7-10. The panel’s treatment of the doctrine, however, is flatly inconsistent with Supreme Court precedent and effectively renders it a dead letter. Rehearing is warranted to correct this error.

Under RDOE, an article may avoid infringement, even if it is within the literal words of the claim, if it is “so far changed in principle from [the] patented article that it performs the same or a similar function in a substantially different way.” *Graver Tank.*, 339 U.S. at 608–09. The purpose of RDOE is “to prevent unwarranted extension of the claims beyond a fair scope of the patentee’s invention.” *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1581 (Fed. Cir. 1991), *overruled on other grounds by Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282 (Fed. Cir. 2009). “Application of the doctrine requires that facts specific to the accused device be determined and weighed against the

equitable scope of the claims, which in turn is determined in light of the specification, the prosecution history, and the prior art.” *Id.*

Here, the panel did not determine the equitable scope of the asserted claim. Instead, the panel asserted that, even “[i]f Shibuya made a prima facie case” of non-infringement under RDOE, the jury could have credited Steuben’s expert Dr. Sharon’s rebuttal testimony. Op.11. But the panel’s key assumption—that “[t]he jury heard conflicting testimony from experts regarding the principle of operation of claim 26 of the ’591 patent,” Op.12—is demonstrably incorrect.

Dr. Sharon never analyzed the principle of operation of the claimed invention in light of the intrinsic evidence and prior art. Instead, he analyzed *only* the principle of operation of the alleged second sterile region of the accused device (the food pipe of the Shibuya valve) and said effectively that the accused valve had the same principle of operation as itself. The district court explanation of why the expert’s analysis is fundamentally incompatible with RDOE is directly on target and worthy of extended quotation:

Steuben’s position at trial was that it did not have to rely on claim 26 or the patent’s specification to establish claim 26’s or the second sterile region’s principles of operation because I had found that the P7 literally infringed claim 26. It made this point unequivocally in the following exchange between Steuben’s counsel and Dr. Sharon:

Q. So just to be clear, what we were talking about was, you know, how the patent claim works and you’re using [the P7] as an example?

A. That is correct.

Q. Do you think it's fair to use that valve as an example of the patent claim?

A. I do.

Q. Why?

A. Because the—because the accused machine was found to literally infringe, so, you know, if we know that it has that element.

Q. Thank you.

Tr. 357:23–358:9 (Sharon).

But this approach turns the reverse doctrine of equivalents on its head. The doctrine *rescues* from infringement devices that literally satisfy the elements of a claim but perform the same function of the invention in a substantially different way. It makes no sense, then, to look to the accused device that literally infringes to determine how the patented invention performs. But that is what Dr. Sharon did here. He based his description of the *patented invention's* principle of operation on *the P7's* principle of operation. This logic nullifies the reverse doctrine of equivalents.

Appx23-24.

The panel did not acknowledge this critical passage from the district court's opinion. In holding that Dr. Sharon's legally flawed testimony provided substantial evidence for the jury's verdict, the panel nullified the RDOE, which recognizes the possibility that the principle of operation of even a literally infringing product may be different from the principle of operation of the claimed invention. Permitting the principle of operation of the claimed invention to be derived by looking only at the accused product, as the panel did here, erroneously eliminates that possibility.

* * *

The panel treated the parties' disputes on the '188 and '591 patents as a battle of the experts. But in fact there was no legitimate battle of the experts here: one expert applied the law correctly and one did not. The panel's decision to credit Dr. Sharon's legally erroneous testimony threatens to sow confusion in equivalents law. And its internally inconsistent rejection of Shibuya's claim-construction argument compounded this error, with the result that Steuben was permitted to accuse of infringement far more than it invented. Rehearing is warranted.

CONCLUSION

The petition should be granted.

Dated: March 17, 2025

Respectfully submitted,

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ADDENDUM

**United States Court of Appeals
for the Federal Circuit**

STEUBEN FOODS, INC.,
Plaintiff-Appellant

v.

**SHIBUYA HOPPMANN CORPORATION, SHIBUYA
KOGYO CO., LTD., HP HOOD LLC,**
Defendants-Appellees

2023-1790

Appeal from the United States District Court for the
District of Delaware in No. 1:19-cv-02181-CFC, Chief
Judge Colm F. Connolly.

Decided: January 24, 2025

COOK ALCIATI, Gardella Grace PA, Washington, DC, ar-
gued for plaintiff-appellant.

JOHN CHRISTOPHER ROZENDAAL, Sterne Kessler Gold-
stein & Fox PLLC, Washington, DC, argued for defend-
ants-appellees. Also represented by WILLIAM MILLIKEN,
ANNA G. PHILLIPS, BYRON LEROY PICKARD, DEIRDRE M.
WELLS.

2 STEUBEN FOODS, INC. v. SHIBUYA HOPPMANN CORPORATION

Before MOORE, *Chief Judge*, HUGHES and CUNNINGHAM,
Circuit Judges.

MOORE, *Chief Judge*.

Steuben Foods, Inc. (Steuben) appeals the United States District Court for the District of Delaware’s entry of judgment as a matter of law (JMOL) of noninfringement for claim 26 of U.S. Patent No. 6,209,591, claims 19 and 22 of U.S. Patent No. 6,536,188, and claims 3 and 7 of U.S. Patent No. 6,702,985. *Steuben Foods, Inc. v. Shibuya Hoppmann Corp.*, 661 F. Supp. 3d 322, 336 (D. Del. 2023) (*Decision*). Steuben also appeals the district court’s conditional grant of a new trial on infringement, invalidity, and damages. *Id.* For the following reasons, we reverse the JMOL for the ’591 and ’188 patents, affirm the JMOL for the ’985 patent, reverse the conditional grant of a new trial on noninfringement, and vacate the conditional grant of a new trial on invalidity and damages.

BACKGROUND

In 2010, Steuben filed a complaint in the United States District Court for the Western District of New York alleging Shibuya Hoppmann Corp. infringed, *inter alia*, claims of the ’591, ’188, and ’985 patents (the Asserted Patents). In 2012, Shibuya Kogyo Co., Ltd. was added as a defendant. In 2012, Steuben filed a similar complaint, alleging HP Hood LLC infringed, *inter alia*, claims of the Asserted Patents. The cases were consolidated. In 2019, the Western District of New York granted a motion filed by Shibuya Hoppmann Corp., Shibuya Kogyo Co. Ltd., and HP Hood LLC (collectively, Shibuya) to transfer the case to the District of Delaware.

In 2020, the district court issued its claim construction order. In 2021, the district court denied cross-motions for summary judgment of noninfringement, infringement, and invalidity of the Asserted Patents. The district court held a five-day jury trial. *Decision* at 325. At the close of

evidence, Shibuya moved for JMOL under Federal Rule of Civil Procedure 50(a) of noninfringement as to all asserted claims of the Asserted Patents. The district court denied the motions, and the jury returned a verdict that the Asserted Patents are valid and infringed and awarded \$38,322,283.78 in damages.

After the verdict, Shibuya renewed its JMOL of noninfringement under Rule 50(b) as to all asserted claims of the Asserted Patents; moved for JMOL in the first instance as to invalidity of the asserted claims of the Asserted Patents and as to damages; and, in the alternative, moved for a new trial if the district court did not find noninfringement for any of the claims. J.A. 5211–55. The district court granted Shibuya’s motion regarding noninfringement of all the Asserted Patents, found the invalidity arguments waived, and conditionally granted a new trial under Rule of Civil Procedure 50(c)(1). *Decision* at 336. The district court entered a Rule 54(b) judgment, and Steuben appealed. J.A. 31–33. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I. Judgments as a Matter of Law

We review a district court’s grant of JMOL under regional circuit law. *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1301 (Fed. Cir. 2011). The Third Circuit reviews a grant of JMOL de novo, applying the same standard as the district court. *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir. 1993). “Such a motion should be granted only if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find liability.” *Id.* Infringement is a question of fact which we review for substantial evidence when tried to a jury. *Wii-Lan, Inc. v. Apple, Inc.*, 811 F.3d 455, 462 (Fed. Cir. 2016).

A. '591 Patent

The Asserted Patents generally relate to systems for the aseptic packaging of food products. *E.g.*, '591 patent at 1:9–10. The '591 patent specifically is directed to “an apparatus and method for providing container product filling in an aseptic processing apparatus.” *Id.* at 1:10–13. Asserted claim 26 recites:

26. Apparatus for aseptically filling a series of bottles comprising:

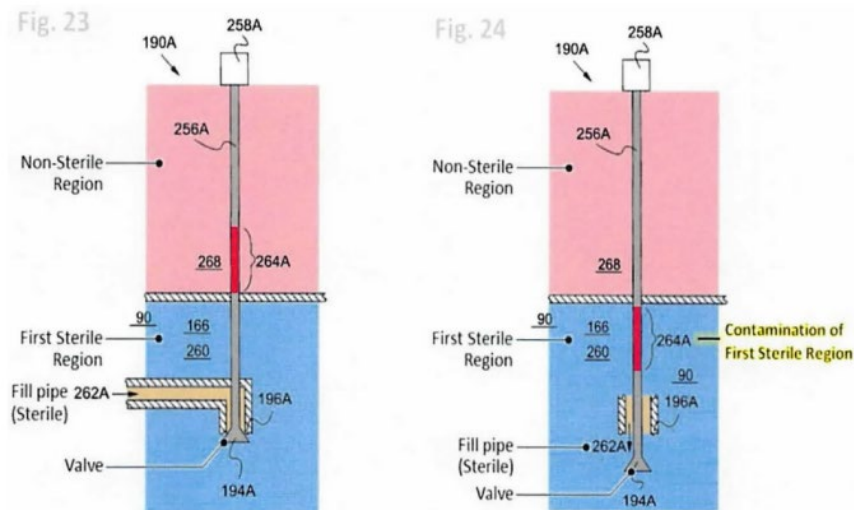
a valve for controlling a flow of low-acid food product into a bottle at a rate of more than 350 bottles per minute in a single production line;

a first sterile region surrounding a region where the product exits the valve;

a second sterile region positioned proximate said first sterile region;

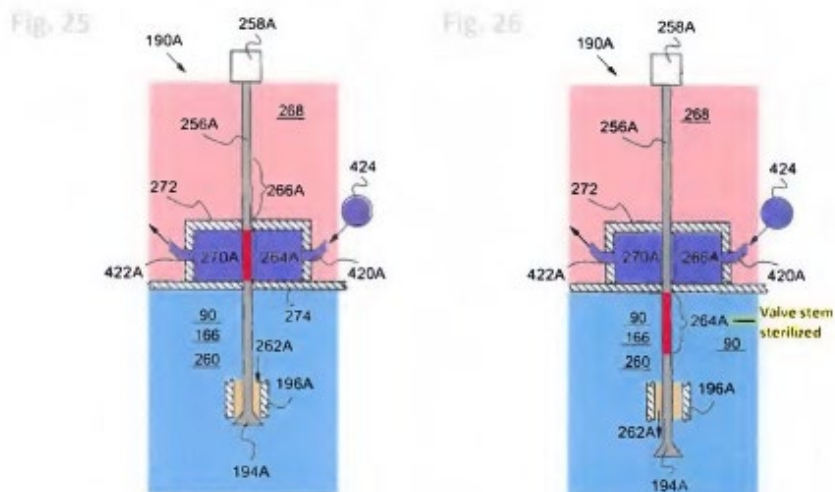
a valve activation mechanism for controlling the opening or closing of the valve by extending a portion of the valve from the second sterile region into the first sterile region, such that the valve does not contact the bottle, and by retracting the portion of the valve from the first sterile region back into the second sterile region.

The claimed second sterile region is used to solve a potential contamination problem created when the valve stem actuates the valve between the closed and open position (allowing the sterile food product to flow through the valve). Figures 23 and 24 of the '591 patent depict a filling apparatus without the second sterile region:



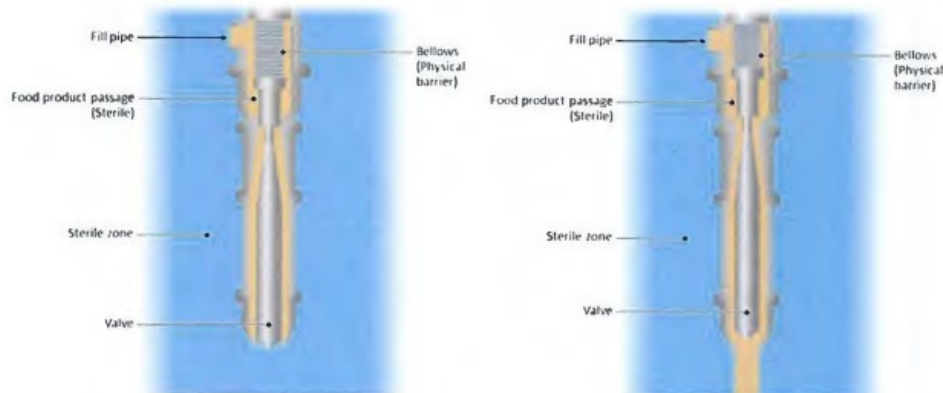
Decision at 331 (annotated). As shown, when actuator 258A displaces valve stem 256A in a downward direction, valve 194A is removed from nozzle 196A, allowing product 262A to flow into a bottle. '591 patent at 14:1–16. When this happens, portion 264A of the valve stem goes from non-sterile region 268 into the first sterile region 260, potentially contaminating the first sterile region. *Id.* at 14:16–23.

The '591 patent's solution to this problem is depicted in Figures 25 and 26:



Decision at 331 (annotated). The specification details “[i]n the present invention, the first portion 264A of the valve stem 256A has not introduced contaminants into the first sterile region 260 because the first portion 264A of the valve stem 256A was pre-sterilized in the second sterile region 270A before entering the first sterile region 260.” ’591 patent at 14:49–53. In other words, the second sterile region prevents contamination of the first sterile region by pre-sterilizing the portion of the valve stem highlighted in red, which would otherwise move from non-sterile region 268 into the first sterile region 260, and potentially introduce contaminants.

Steuben alleged Shibuya’s P7 aseptic bottling line infringed claim 26 of the ’591 patent and moved for summary judgment of infringement. J.A. 5155. Specifically, Steuben argued the accused product contained a sterile zone surrounding the fill pipe, identified by Steuben as a first sterile region, and a sterile food product passage, identified as the “second sterile region,” as depicted below. *Decision* at 332.



Id. (annotated).

At summary judgment, Shibuya argued the accused product did not infringe because it did not meet the “second sterile region” limitation and, separately, there existed genuine material facts in dispute regarding noninfringement under the reverse doctrine of equivalents (RDOE). J.A. 5156. The district court found that the accused product’s product pipe was “a second sterile region proximate [to] said first sterile region,” and thus literally infringed claim 26. J.A. 5159. However, the district court denied summary judgment of infringement because there was a genuine issue of material fact about whether RDOE precluded a finding of infringement. J.A. 5163.

We have previously described RDOE as an “anachronistic exception, long mentioned but rarely applied.” *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1368 (Fed. Cir. 2002). RDOE is, as it sounds, the reverse of the doctrine of equivalents. An alleged infringer may avoid a judgment of infringement by showing the accused “product has been so far changed in principle [from the asserted claims] that it performs the same or similar function in a substantially different way.” *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107,

1124 (Fed. Cir. 1985). A patentee alleging infringement bears the initial burden of proving infringement. *Id.* at 1123. If the patentee establishes literal infringement, then an accused infringer claiming noninfringement under RDOE bears the burden of establishing a prima facie case of noninfringement under RDOE. *Id.* at 1123–24. If the accused infringer meets this burden, then the burden shifts back to the patentee to rebut the prima facie case. *Id.* at 1124.

The jury found claim 26 of the '591 patent not invalid and infringed. J.A. 5204–08. The district court granted JMOL of noninfringement, holding that no reasonable juror could have found infringement. *Decision* at 335. The district court found that Shibuya satisfied its prima facie case of RDOE through Dr. Glancey's testimony and Dr. Sharon's rebuttal testimony was wrong as a matter of law and entitled to no weight. *Id.* at 334.

Steuben makes two primary arguments on appeal: (1) the district court erred in relying on RDOE to overturn the jury's verdict of infringement of claim 26 of the '591 patent, and (2) RDOE is not a viable defense to infringement. Shibuya argues the district court correctly granted JMOL under RDOE. In the alternative, Shibuya argues that the district court erred in its claim construction of "second sterile region" and under the proper construction, JMOL of noninfringement is warranted.

RDOE can be traced back to at least the 1800s. In *Boyden Power-Brake Co. v. Westinghouse*, the Supreme Court stated:

We have repeatedly held that a charge of infringement is sometimes made out, though the letter of the claims be avoided. The converse is equally true. The patentee may bring the defendant within the letter of his claims, but if the latter has so far changed the principle of the device that the claims of the patent, literally construed, have ceased to

represent his actual invention, he is as little subject to be adjudged an infringer as one who has violated the letter of a statute has to be convicted, when he has done nothing in conflict with its spirit and intent.

170 U.S. 537, 568 (1898) (internal citations omitted). Half a century later, in *Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co.*, the Supreme Court commented:

[The doctrine of equivalents] is not always applied in favor of a patentee but is sometimes used against him. Thus, 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 claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee's action for infringement.

339 U.S. 605, 608–09 (1950).

Steuben argues this common law doctrine, RDOE, was eliminated by the 1952 Patent Act. Specifically, Steuben argues RDOE conflicts with 35 U.S.C. § 271(a) and was subsumed in 35 U.S.C. § 112 when Congress enacted the 1952 Patent Act. Whether the doctrine survived enactment of the 1952 Patent Act is a question of first impression. Steuben argues the plain language of 35 U.S.C. § 271(a), “[e]xcept as otherwise provided in this title,” requires that exceptions to infringement must be expressly identified in Title 35. Opening Br. 39. Because RDOE is not codified in Title 35, Steuben argues it is no longer a defense to infringement. While RDOE may have been appropriate prior to 1952, Congress wrote out any RDOE exception to infringement when defining infringement in the 1952 Patent Act.

Steuben argues this elimination was intentional because RDOE was subsumed by 35 U.S.C. § 112.

Specifically, Steuben argues that if a device literally falls within the scope of a claim, but the accused infringer believes the claim is too broad and its device should not infringe, the appropriate recourse is a § 112 challenge, not a claim of noninfringement under RDOE. We have noted, without deciding, “when Congress enacted 35 U.S.C. § 112, after the decision in *Graver Tank*, it imposed requirements for the written description, enablement, definiteness, and means-plus-function claims that are co-extensive with the broadest possible reach of the reverse doctrine of equivalents.” *Tate*, 279 F.3d at 1368; *see also Valmont Indus., Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1042 (Fed. Cir. 1993) (noting § 112 ¶ 6 “operates more like the reverse doctrine of equivalents than the doctrine of equivalents because it restricts the coverage of literal claim language”).

Shibuya argues RDOE survived the 1952 Patent Act. Shibuya argues the Supreme Court held the 1952 Patent Act “left intact the entire body of case law on direct infringement” in *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 342 (1961), which Shibuya interprets to include defenses to direct infringement such as RDOE. Shibuya also argues the Supreme Court rejected Steuben’s § 112 argument in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.* when it observed “[t]he 1952 Patent Act is not materially different from the 1870 Act with regard to claiming,” and declined to overrule *Graver Tank*. 520 U.S. 17, 26 (1997).

We find Steuben’s arguments compelling, but need not decide whether RDOE survived the 1952 Patent Act. We have never “affirmed a decision finding noninfringement based on the reverse doctrine of equivalents.” *Tate*, 279 F.3d at 1368; *see also, e.g., U.S. Steel Corp. v. Phillips Petroleum Co.*, 865 F.2d 1247, 1253 (Fed. Cir. 1989); *Intel Corp. v. U.S. Int’l Trade Comm’n*, 946 F.2d 821, 842 (Fed. Cir. 1991); *Odetics, Inc. v. Storage Tech. Corp.*, 116 F.3d 1497 (Fed. Cir. 1997); *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1351 (Fed. Cir. 2003); *Roche Palo*

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Alto LLC v. Apotex, Inc., 531 F.3d 1372, 1378 (Fed. Cir. 2008); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1339 (Fed. Cir. 2009). And this case does not cause a change of course. If Shibuya made a prima facie case that the principle of operation of the accused product was so far removed from that of claim 26 of the '591 patent, the jury's verdict should not have been overturned under RDOE because Dr. Sharon provided rebuttal testimony that the jury was entitled to credit. JMOL of noninfringement was therefore improper.

The district court faulted Dr. Sharon's explanation of the '591 patent's principle of operation as contrary to the specification, and therefore, did not consider any of Dr. Sharon's testimony. *Decision* at 334. With respect to the '591 patent, Dr. Sharon testified the principle of operation is "basically filling more than 350 bottles per minute aseptically and doing that with, by having these two sterile regions that the valve is sort of constrained to so that as it opens and closes, it only stays within those two regions and it does not go into any non-sterile region and therefore risk the possibility of bringing in contaminants, pathogens, into the food." J.A. 3089 at 355:7–13. The district court concluded this was wrong as a matter of law because it is inconsistent with the specification where "the whole purpose of the second sterile region in the patented invention is to sterilize the portion of the valve stem that is *exposed to a non-sterile* region." *Decision* at 334 (emphasis added by the district court).

Regardless, Dr. Sharon provided other testimony that the jury was entitled to consider. Dr. Sharon testified the principle of operation of the second sterile region in the accused product is "that it provides a sterile region for the valve tip to go up into when it's being opened so that it doesn't, you know, go into a non-sterile region and then bring contaminants into food." J.A. 3090 at 360:20–361:3; J.A. 8472–73. Dr. Glancey, Shibuya's expert, testified the principle of operation of claim 26 of the '591 patent is "[t]he

second sterile region uses a sterilizing media or sterilant that provides that second sterile region,” and “the valve stem is sterilized in that second sterile region, removing any contaminant.” J.A. 3227–28 at 907:8–908:1. He further testified that Shibuya’s valve’s principle of operation is substantially different because it uses a “flexible barrier we called a bellows. That’s basically a barrier preventing contaminants, blocking contaminants by the physical barrier. So the contaminants can never move into the food passage in the Shibuya valve.” J.A. 3228 at 908:6–10. The jury heard conflicting testimony from experts regarding the principle of operation of claim 26 of the ’591 patent. Dr. Sharon’s testimony constitutes substantial evidence for the jury’s rejection of RDOE. “We presume the jury resolved all underlying factual disputes in favor of the verdict.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1040 (Fed. Cir. 2016) (en banc).

JMOL “should be granted only if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find liability.” *Lightning Lube*, 4 F.3d at 1166. Here, viewing the evidence in the light most favorable to Steuben, the non-movant, a reasonable jury could have found the principles of operation of the accused product and claim 26 of the ’591 patent were not “so far changed,” as to support a theory of noninfringement under RDOE. *SRI*, 775 F.2d at 1124. Because there was substantial evidence to rebut any prima facie case of RDOE, we need not address whether a prima facie case was met.

Shibuya argues in the alternative that the district court erred when it did not adopt Shibuya’s proposed construction of “second sterile region,” and that under the correct construction there is no infringement. Response Br. 60. Shibuya’s proposed construction of “second sterile region” is “a region that is sterile and proximate to the first sterile region through which food does not flow.” Response

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Br. 61. The district court declined to adopt Shibuya's proposed construction of "second sterile region." J.A. 5074. The district court noted Shibuya did not point to any lexicography or disclaimer in the patent that would require the negative limitation. J.A. 6122. Here too, Shibuya does not tether the carveout of second sterile regions through which food could flow to language in the specification. The patent is silent as to whether food can flow through the second sterile region. We see no error in the district court's construction.

For the foregoing reasons, we reverse the JMOL of non-infringement with respect to the asserted claim of the '591 patent and reinstate the jury's verdict of infringement.

B. '188 Patent

The '188 patent is directed to an aseptic bottle sterilization filling line. *See* '188 patent at 2:1–6. Steuben alleged Shibuya infringed claims 19 and 22:

19. A device for aseptically bottling aseptically sterilized foodstuffs having at least about a 12 log reduction in *Clostridium botulinum* comprising:

means for providing a plurality of bottles;

means for aseptically disinfecting the plurality of bottles;

means for aseptically filling the aseptically disinfected plurality of bottles with the aseptically sterilized foodstuffs; and

means for filling the aseptically disinfected plurality of bottles at a rate greater than 100 bottles per minute.

22. The device for aseptically bottling aseptically sterilized foodstuffs having at least about a 12 log reduction in *Clostridium botulinum* of claim 21, wherein the interior of the plurality of filled bottles

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does not have a residual level of hydrogen peroxide of about 0.5 ppm or more.

Id. at claims 19 and 22 (emphases added).

Under pre-America Invents Act 35 U.S.C. § 112 ¶ 6, a claim limitation can be written in terms of a function achieved, rather than a definite structure that achieves the function. *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1266 (Fed. Cir. 1999). The limitation must be construed “to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” *Id.* at 1266–67 (quoting 35 U.S.C. § 112 ¶ 6). To show infringement of a means plus function limitation, the patent owner must show the relevant structure in the accused product “perform[s] the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification.” *Id.* at 1267. To show an accused structure is equivalent, the structure must “perform the identical function, in substantially the same way, with substantially the same result.” *Kemco Sales, Inc. v. Control Papers, Inc.*, 208 F.3d 1352, 1364 (Fed. Cir. 2000). Identifying the claimed function and the corresponding structures disclosed in the written description are issues of claim construction. *Id.* at 1360. Whether an accused product has an equivalent structure is a question of fact. *Odetics*, 185 F.3d at 1268–69.

The district court construed the term “means for filling the aseptically disinfected plurality of bottles at a rate greater than 100 bottles per minute” as a means plus function limitation. *Decision* at 328. The district court identified the function as “[aseptically] filling the aseptically disinfected plurality of bottles at a rate greater than 100 bottles per minute,” and the structure as “filling valves (Items 194A, 194B) and filling nozzles (Items 190A, 190B); a control system (Item 550); a conveyer plate (Item 94); conveyer (Item 106); and equivalents.” J.A. 5073–74. The jury returned a verdict of infringement of claims 19 and 22 of

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the '188 patent. J.A. 5205. The district court granted JMOL of noninfringement because no reasonable juror could find “the way the accused machines’ rotary wheels and neck grippers operate is substantially the same as the way a conveyor and conveyor plate operate.” *Decision* at 329.

Steuben argues Dr. Sharon provided substantial evidence for the jury to find the accused structures perform the claimed function in an equivalent way. Steuben argues that the district court failed to consider infringement in the context of the claimed function and erred by importing unclaimed functions into its analysis. We agree with Steuben and reverse the district court’s grant of JMOL of noninfringement.

Steuben presented substantial evidence by which the jury could find infringement. For the identified structure of conveyor 106, Dr. Sharon testified the way conveyor 106 performs its role in the overall function of the claim limitation is by moving the bottles via rotating around a pulley system, causing the bottles to move along the machine. J.A. 3102 at 408:18–25. Dr. Sharon testified the accused product’s rotary wheels¹ operate in substantially the same way by “rotat[ing] to bring the bottles from . . . one station to the next.” *Id.* at 410:1–11. In Dr. Sharon’s opinion, these two structures are equivalents. *Id.* at 409:1–6. Steuben also played the jury a video of the rotary wheels moving within the accused machine during the testimony of Dr. Sharon. *Id.* at 409:7–22.

¹ Dr. Sharon refers to “dials” and “transfer wheels” in his testimony, Dr. Glancey refers to “rotating turrets,” whereas the district court and the parties use the term “rotary wheels.” *Compare* J.A. 3102 at 409:5–6, *with* J.A. 3214 at 854:25, *and Decision* at 329. To avoid confusion, we use the term “rotary wheels.”

For conveyor plate 94, Dr. Sharon testified the way the conveyor plate performs its portion of the claimed function is by holding the bottles as they are brought “to the filler so they can then be filled.” J.A. 3101 at 404:16–406:25. He testified the accused product’s neck grippers are equivalent to the ’188 patent’s conveyor plate because they hold the bottles as they move. *Id.* at 405:7–406:25. Dr. Sharon showed the jury the neck grippers and the way they hold a bottle. *Id.* at 405:18, 406:17–21. Dr. Sharon also pointed out the neck grippers in a video of the accused product played for the jury. J.A. 3102 at 409:12–20. Dr. Sharon did note the two structures differ in that the accused product’s neck grippers hold the bottles from the neck, rather than the bottom as the conveyor plate does, on the way to be filled, but testified this difference is insubstantial in the context of the claimed function of filling bottles at a rate greater than 100 bottles per minute. J.A. 3101 at 406:1–25. This is substantial evidence by which the jury could find infringement.

Shibuya argues Steuben reads out the structural identity requirement of the equivalence test and only recites functional equivalence. Specifically, Shibuya contends Steuben did not adduce sufficient evidence that the way the accused structures operate is substantially equivalent. We find there is substantial evidence with which the jury could have concluded otherwise.

Shibuya fails to tether its “substantially the same way” comparison to the claimed function. While Dr. Glancey testified to several differences in rotary wheels versus the conveyor, J.A. 3214 at 855:1–22, and in the neck grippers versus the conveyor plate, J.A. 3214 at 853:3–854:14, these differences must be evaluated in the context of the claimed function. “The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function.” *Odetics*, 185 F.3d at 1268. Dr. Sharon testified that the way the

conveyor and conveyor plate help perform the claimed function is by holding and moving bottles from one location to the other. J.A. 3102 at 408:18–25; J.A. 3101 at 404:16–406:25. He testified the accused product uses equivalent structures of rotary wheels and neck grippers in substantially the same way, “in the context of filling bottles at a rate greater than 100 per minute.” J.A. 3101 at 406:2–25; J.A. 3102 at 410:1–11. Dr. Sharon’s testimony went directly to the “way” the structures operate in the context of the claimed function, and provided the jury substantial evidence with which to find infringement. We reverse the grant of JMOL of noninfringement with respect to the asserted claims of the ’188 patent and reinstate the jury’s verdict of infringement.

C. ’985 Patent

The ’985 patent relates to “[a]n apparatus and method for providing container interior sterilization in an aseptic processing apparatus.” ’985 patent at Abstract. Steuben asserted claims 3 and 7, which both depend from claim 1:

1. Apparatus for sterilizing a container comprising:
 - a first supply source of sterile air;
 - a supply source of sterilant;
 - an atomizing system producing an atomized sterilant from the mixing of the sterile air from the first supply source of sterile air with the sterilant;
 - a second supply source providing a non-intermittent supply of hot sterile air to a conduit wherein said conduit is operationally coupled between said atomizing system and a container, and wherein said *atomized sterilant is intermittently added* to said conduit;

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a mechanism for applying the atomized sterilant and the second supply source of hot sterile air on to the container; and

a third supply source of a hot sterile drying air for activating and drying the sterilant in the interior of the container, wherein the container is upright.

3. The apparatus of claim 1, wherein the container is a bottle.

7. The apparatus of claim 1, wherein after drying the container interior surface retains a concentration of hydrogen peroxide less than 0.5 PPM.

The asserted claims require the atomized sterilant to be added to the conduit “intermittently.” ’985 patent at claim 1. Steuben and Shibuya stipulated to a construction of “intermittently added” as “[a]dded in a non-continuous matter.” *Decision* at 325; J.A. 5075. It is undisputed the accused machines add sterilant continuously. *Decision* at 325. The jury found claims 3 and 7 of the ’985 patent infringed under DOE. *Decision*, at 326. The district court granted Shibuya’s motion for JMOL of noninfringement. *Id.* at 328. The district court determined the “‘intermittently added’ limitation cannot be met under the doctrine of equivalents by a continuous addition of sterilant,” because “intermittently” and “continuously” are antonyms of each other, not equivalents, and doing something in a non-continuous manner cannot be achieved by doing it continuously. *Id.* at 327.

Steuben argues the district court erred in granting JMOL of noninfringement of the asserted claims of the ’985 patent. Specifically, Steuben argues substantial evidence supports the jury’s verdict of infringement because under DOE, the accused product’s continuous sterilization is equivalent to claim 1’s “intermittently added” limitation. find there is not substantial evidence to support the jury’s verdict.

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When at least one claim element is missing from an accused product, infringement can still be found under DOE if the accused product contains “an equivalent device or instrumentality.” *Warner-Jenkinson*, 520 U.S. at 40. Something is equivalent if the differences between it and the claim limitation are “insubstantial,” or it matches the “function, way, and result of the claimed element.” *Id.* DOE may not apply where “the accused device contain[s] the antithesis of the claimed structure,” such that the claim limitation would be vitiated. *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1356 (Fed. Cir. 2012).

Steuben’s expert, Dr. Sharon, testified Shibuya’s product’s continuous sterilization was equivalent to claim 1’s “intermittently added” limitation under the “function, way, result” test. J.A. 3107–08 at 430:20–434:17. Dr. Sharon testified the ’985 patent uses a spoon dipper to add the sterilant intermittently and the “function is to ensure the right amount of sterilant gets to the bottle.” J.A. 3108 at 431:3, 12–13. He testified the “way” is the spoon dipper, and the “result” is a properly sterilized bottle. *Id.* at 431:17–432:4. Dr. Sharon testified the accused product’s equivalent is “continuously using flow sensors and metering pumps to achieve the same function because in the end, the point is to get the right amount of sterilant into the bottle.” J.A. 3107 at 429:9–13. He testified the function of the Shibuya’s product’s continuous sterilization is to “ensure that the correct amount of sterilant gets to the bottles,” the “way” is “with metering pumps and flow meters,” and the result is “that the bottles are properly sterilized.” J.A. 3108 at 433:1–434:13.

In this case, where the parties stipulated to a claim construction of “intermittently added” as “[a]dded in a non-continuous matter,” with which we see no error, a finding of infringement under DOE would vitiate the claim limitation. Something that is done non-continuously cannot be the equivalent of something done continuously. Steuben points to different cases where this court has held

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“continuous” and “intermittent” can be equivalents. *See Epos Techs., Ltd. v. Pegasus Techs. Ltd.*, 766 F.3d 1338, 1347 (Fed. Cir. 2014). But in *Epos*, as the district court noted, the parties had not stipulated to a claim construction of “intermittent” that necessarily precludes a continuous device. *Decision* at 328. A reasonable juror could not find, under this construction, that Shibuya’s continuously added sterilant is equivalent to the claims’ “intermittently added.” We therefore affirm the district court’s grant of JMOL of noninfringement with respect to the asserted claims of the ’985 patent.

II. New Trials

We review a district court’s grant of a motion for a new trial under regional circuit law. *Uniloc*, 632 F.3d at 1309. The Third Circuit reviews a grant of a new trial for abuse of discretion. *Lightning Lube*, 4 F.3d at 1167.

A. Infringement

Shibuya moved for a new trial on infringement in the alternative to JMOL. J.A. 5252. The district court conditionally granted a new trial with respect to infringement under Rule 50(c)(1). *Decision* at 336. Rule 50(c)(1) states “[i]f the court grants a renewed motion for judgment as a matter of law, it must also conditionally rule on any motion for a new trial by determining whether a new trial should be granted if the judgment is later vacated or reversed. The court must state the grounds for conditionally granting or denying the motion for a new trial.” The district court’s sole ground for conditionally granting a new trial on infringement was “as explained above, the jury’s verdicts with respect to infringement of the asserted claims of the [Asserted Patents] are contrary to the evidence.” *Decision* at 336. Because the district court did not provide any basis for granting a new trial that is not subsumed by our analysis regarding the JMOLs, we reverse the conditional grant of a new trial on infringement.

B. Validity

After the jury verdict, Shibuya moved for JMOL of invalidity of the Asserted Patents under Federal Rule of Civil Procedure 50(b) or, in the alternative, a new trial. *Decision* at 335. The district court found Shibuya never moved under Rule 50(a) at trial. *Id.* at 335–36. “A motion under Rule 50(b) is not allowed unless the movant sought relief on similar grounds under Rule 50(a) before the case was submitted to the jury.” *Exxon Shipping Co. v. Baker*, 554 U.S. 471, 486 n.5 (2008). The district court determined Shibuya could not bring a Rule 50(b) motion and denied the motion. *Decision* at 336. The district court did, however, “conditionally grant Shibuya’s motion for a new trial under Federal Rule of Civil Procedure 50(c)(1).” *Id.*

On appeal, Steuben argues the district court erred in not extending the waiver analysis to Shibuya’s request for a new trial on invalidity. Shibuya argues a new trial on validity is required because it is not possible to parse the infringement and invalidity issues post-trial. And, even if Shibuya waived its JMOL on invalidity, it was still entitled to a new trial because the verdict went against the great weight of the evidence. Response Br. 69–70.

The district court did not provide any reasoning for conditionally granting a new trial specific to validity for us to review. *Decision* at 336. We therefore cannot assess whether the district court abused its discretion in the conditional grant. We vacate the conditional grant of a new trial on invalidity and remand for further proceedings.

C. Damages

After the jury verdict, Shibuya moved for JMOL on damages or, in the alternative, a new trial. J.A. 5248–54. The district court did not address the JMOL on damages because it granted JMOLs of noninfringement for all asserted claims of the Asserted Patents, obviating any need

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for a damages verdict. *Decision* at 336. The district court conditionally granted a new trial under Rule 50(c)(1). *Id.*

On appeal, Steuben argues no new trial on damages is necessary because Shibuya necessarily infringed any one of the asserted claims each time it ran the accused machines. Opening Br. 66–67. In Steuben’s view, if we reinstate the jury verdict of infringement on any one or more of the claims of the Asserted Patents, we should also reinstate the full damages award. Shibuya argues a new trial on damages is required if we reinstate any of the jury’s verdict. Response Br. 71.

Because the district court provided no rationale for its grant of a new trial on damages, we vacate and remand.

CONCLUSION

We have considered Steuben’s remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm-in-part, reverse-in-part, and vacate-in-part. We remand for further proceedings.

**AFFIRMED-IN-PART, REVERSED-IN-PART,
VACATED-IN-PART, AND REMANDED**

COSTS

No costs.

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

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Case Number: 2023-1790

Short Case Caption: Steuben Foods, Inc. v. Shibuya Hoppmann Corporation

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