

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

UNITED INDUSTRIES CORPORATION,  
Petitioner,

v.

SUSAN McKNIGHT, INC.,  
Patent Owner.

---

Case IPR2017-01687  
Patent 9,066,511 B2

---

Before JAMES A. TARTAL, TIMOTHY J. GOODSON, and  
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

TARTAL, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

## I. INTRODUCTION

United Industries Corporation (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting institution of *inter partes* review of claims 1–12 of U.S. Patent No. 9,066,511 B2 (Ex. 1001, “the ’511 patent”) owned by Susan McKnight, Inc. (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6(c) to hear this *inter partes* review instituted pursuant to 35 U.S.C. § 314. In this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, we find on the record before us that Petitioner has not shown by a preponderance of the evidence that claims 1–12 of the ’511 patent are unpatentable. *See* 35 U.S.C. § 316(e).

### A. PROCEDURAL HISTORY

Petitioner filed a Petition requesting institution of *inter partes* review of claims 1–12 of the ’511 patent on four grounds of alleged unpatentability. Pet. 3. Patent Owner filed a Preliminary Response (Paper 6, “Prelim. Resp.”). We initially instituted review of all challenged claims under two of the four grounds because we determined the Petition showed a reasonable likelihood that Petitioner would prevail on the following grounds:

| References                                                      | Basis | Claim(s) challenged |
|-----------------------------------------------------------------|-------|---------------------|
| Anderson, <sup>1</sup> Lang, <sup>2</sup> and Lyng <sup>3</sup> | § 103 | 1–4 and 7–10        |
| Anderson, Lang, Lyng, and Jennerich <sup>4</sup>                | § 103 | 5, 6, 11, and 12    |

Paper 7 (“Inst. Dec.”); *see also* 35 U.S.C. § 314.

---

<sup>1</sup> U.S. Patent No. 5,996,531, issued December 7, 1999 (Ex. 1003, “Anderson”).

<sup>2</sup> U.S. Patent App. No. 2007/0044372 A1, published March 1, 2007 (Ex. 1008, “Lang”).

<sup>3</sup> U.S. Patent App. No. 2005/0138858 A1, published June 30, 2005 (Ex. 1007, “Lyng”).

<sup>4</sup> U.S. Patent No. 2,167,978, issued August 1, 1939 (Ex. 1002, “Jennerich”).

After institution of *inter partes* review, Patent Owner filed a Response to the two grounds instituted. Paper 14 (“PO Resp.”). Subsequent to the Patent Owner Response, the Supreme Court held in *SAS Institute Inc. v. Iancu* that a decision to institute under 35 U.S.C. § 314 may not institute on fewer than all claims challenged in the petition. 138 S. Ct. 1348, 1359–60 (2018). In light of the Guidance on the Impact of SAS on AIA Trial Proceedings<sup>5</sup> issued by the Office, which states that “if the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition,” we modified the Institution Decision to include review of all challenged claims on all grounds asserted in the Petition. Paper 15, 2. Specifically, we further instituted review on the following additional claims and grounds:

| References                                               | Basis | Claims Challenged |
|----------------------------------------------------------|-------|-------------------|
| Denton, <sup>6</sup> Lang, Lyng, and Jennerich           | § 103 | 1–12              |
| Beach, <sup>7</sup> Lang, and McKnight ’812 <sup>8</sup> | § 103 | 1–4 and 7–10      |

*Id.* at 2–3. We also authorized Patent Owner to file supplemental briefing in response to the additional instituted grounds. Paper 16, 2–3.

Patent Owner filed a Supplemental Patent Owner Response to address the grounds not addressed in the Patent Owner Response. Paper 17 (“PO Supp. Resp.”). Petitioner filed a Reply addressing all four grounds instituted (Paper 20 (“Pet. Reply”)). Patent Owner filed a Surreply. Paper 22 (“PO

---

<sup>5</sup> Available at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>.

<sup>6</sup> U.S. Patent No. 223,321, issued January 6, 1880 (Ex. 1004, “Denton”).

<sup>7</sup> U.S. Patent No. 57,036, issued August 7, 1866 (Ex. 1009, “Beach”) (citations to Beach are to the page number and column).

<sup>8</sup> U.S. Patent No. 8,966,812 B2, issued March 3, 2015 (Ex. 1013, “McKnight ’812”).

Surreply”). Oral argument was held before the Board on October 18, 2018. Paper 30 (“Tr.”).

## B. RELATED MATTERS

The parties indicate that the ’511 patent was asserted in a case captioned *Susan McKnight, Inc. v. United Industries Corp.*, No. 2:16-cv-02534-JPM-tmp (W.D. Tenn.). Pet. 1; Paper 4, 2. According to Petitioner, that proceeding was transferred to the Eastern District of Missouri, captioned *Susan McKnight, Inc. v. United Industries Corp.*, No. 4:18-cv-00338-RLW (E.D. Mo.), and stayed pending resolution of this *inter partes* review and the *inter partes* review of related U.S. Patent No. 9,253,973 B2 challenged by Petitioner in IPR2017-01686. Paper 13, 3.

## C. REAL PARTIES IN INTEREST

Petitioner identifies United Industries Corporation and Spectrum Brands, Inc. as real parties in interest. Pet. 1. Patent Owner identifies itself and Purdue Research Foundation as real parties in interest. Paper 4, 2; Paper 13, 2–3.

# II. BACKGROUND

The ’511 patent, titled “Crawling Arthropod Intercepting Device and Method,” issued June 30, 2015, from U.S. Application No. 13/134,150, filed May 31, 2011. Ex. 1001. As background information, below we provide a summary of the ’511 patent, discuss the prosecution history, and provide an illustrative claim. We also identify the proffered witness testimony.

## A. SUMMARY OF THE ’511 PATENT

The ’511 patent generally relates to the use of a device to intercept crawling arthropods and other crawling pests that includes “pitfall trap surfaces that form multiple pitfall traps.” *Id.* at Abstract. In one

embodiment, the '511 patent describes “an intercepting device comprising an exterior, upstanding clim[b]able surface that crawling arthropods . . . can climb and first and second pitfall traps disposed inwardly of the clim[b]able exterior surface for trapping crawling arthropods.” *Id.* at 3:45–50. “[T]he first pitfall trap comprises an inner receptacle that receives a leg of furniture or other object and the second pitfall trap comprises an outer receptacle.” *Id.* at 3:50–53. “[C]rawling arthropods are trapped in the inner receptacle and/or outer receptacle as a result of being unable to climb out, preventing crawling arthropods from moving between the furniture (or other object) and the floor.” *Id.* at 3:53–56.

Figure 1a of the '511 patent is reproduced below:

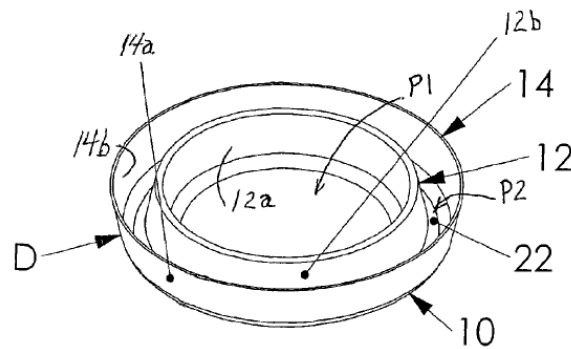


Fig. 1a

Figure 1a illustrates a perspective view of one-piece intercepting device D with first pitfall trap P1 and second pitfall trap P2. *Id.* at 4:15–17, 4:50–57. Patent Owner explains that “[t]he exterior climbable surface 14a has a surface texture rough enough to be readily climbable by crawling arthropods” (citing Ex. 1001, 5:30–34), and “surfaces 12a, 12b, 14b are slippery so that crawling arthropods cannot climb or have difficulty climbing the surfaces thereby trapping the arthropods in either receptacle” (citing *id.* at 5:36–42). Prelim. Resp. 3. “Humans are effectively acting as bait for a trap.” Ex. 1001, 4:6–7. According to Patent Owner, a novel feature of the

device is that it discriminates between bed bugs approaching and departing the bed, sofa, or other object and serves “to monitor the efficacy of extermination efforts.” Prelim. Resp. 2 (quoting Ex. 1001, 4:4, 7:11).

B. PROSECUTION HISTORY OF THE '511 PATENT

As explained by Petitioner, in allowing the claims the Examiner amended application claim 27, which became issued claim 1, to further recite the following italicized claim language:

*wherein the innermost receptacle is formed by an upstanding peripheral surface that is slippery to prevent bed bugs from climbing out of the innermost receptacle, . . . the second outer pitfall trap comprising an upwardly directed receptacle open at a top thereof, and using a human on the bed, the upholstered sofa, or the upholstered chair as a bed bug bait in capturing bed bugs in one or more of the inner or outer pitfall traps as a result of the upstanding peripheral surface and the pitfall trap surfaces being slippery so that bed bugs cannot climb the upstanding peripheral surface and the pitfall trap surfaces.*

Pet. 10; Ex. 1031, 7–8.<sup>9</sup> Petitioner also states that application claim 25, which became issued claim 7, was allowed according to the Examiner because the “innermost receptacle is formed by an upstanding peripheral surface that is slippery to prevent bed bugs from climbing out of the innermost receptacle and the second outer pitfall trap comprising an upwardly directed receptacle open at a top thereof.” Pet. 10–11 (quoting Ex. 1031, 6).

---

<sup>9</sup> Our citations to Exhibit 1031 are to the page number appearing at the bottom of each page of the document filed as an exhibit, not to the original pagination which varies throughout the document.

C. ILLUSTRATIVE CLAIM OF THE '511 PATENT

Claims 1 and 7 of the '511 patent are independent method claims.

Claims 2–6 depend from claim 1 and claims 8–12 depend from claim 7.

Claim 1 is illustrative of the claimed subject matter and is reproduced below:

1. A method of intercepting bed bugs between a leg of a bed, an upholstered sofa, or an upholstered chair and a floor, comprising

placing a bed bug intercepting device on the floor under the leg of the bed, upholstered sofa, or the upholstered chair with a lower end of the leg received on a bottom wall of an inner most receptacle to provide a path for bed bugs departing from the bed, upholstered sofa, or upholstered chair to enter the innermost receptacle,

wherein the innermost receptacle is formed by an upstanding peripheral surface that is slippery to prevent bed bugs from climbing out of the innermost receptacle,

wherein the innermost receptacle provides a liquid-free inner pitfall trap of the intercepting device and with an underside of the bottom wall resting directly on the floor, and

surrounding the inner pitfall trap by a second liquid free outer pitfall trap formed by multiple upstanding pitfall trap surfaces disposed between the inner pitfall trap and an upstanding, exterior bed bug-climbable surface of the intercepting device,

the second outer pitfall trap comprising an upwardly directed receptacle open at a top thereof, and

using a human on the bed, the upholstered sofa, or the upholstered chair as a bed bug bait in capturing bed bugs in one of more of the inner or outer pitfall traps as a result of the upstanding peripheral surface and the pitfall trap surfaces being slippery so that bed bugs cannot climb the upstanding peripheral surface and the pitfall trap surfaces, including capturing any bed bugs departing from the bed, the upholstered sofa, or the upholstered chair in the inner pitfall trap and

capturing any bed bugs approaching the bed, the upholstered sofa, or the upholstered chair, from the floor in the outer pitfall trap,

whereby an individual can determine whether bed bugs are departing from the bed, upholstered sofa or upholstered chair, or approaching the bed, upholstered sofa or upholstered chair, or both, by visual inspection of the intercepting device.

Ex. 1001, 11:13–45 (additional indentations added).

#### D. PROFFERED WITNESS DECLARATIONS

Petitioner supports its Petition with the Declaration of George Rotramel, PhD., dated June 28, 2017. Ex. 1022. Dr. Rotramel states that he received a Doctorate in Entomology in 1971 and has been “an independent consultant in matters relating to pests and pesticides since 1988.” *Id.*

¶¶ 3–4.

Patent Owner supports its Response with the Declaration of Louis N. Sorkin, B.C.E., dated October 25, 2017. Ex. 2001. Mr. Sorkin indicates that he received a Masters of Science in Entomology in 1978 and is a Senior Scientific Assistant in the Department of Entomology at the American Museum of Natural History. *Id.* at 17, 43. Patent Owner also supports its Response with the Declaration of Susan McKnight, dated October 25, 2017. Ex. 2003. Ms. McKnight states that she is the sole owner of Patent Owner. *Id.* ¶ 3.

#### III. ANALYSIS

In our analysis of Petitioner’s unpatentability contentions with respect to claims 1–12 of the ’511 patent, we next address the applicable principles of law; the level of ordinary skill in the art; the construction of the claim term “slippery”; the scope and content of the asserted prior art; and then further analyze each alleged ground of unpatentability.

A. PRINCIPLES OF LAW

To prevail in its challenge to the patentability of claims 1–12 of the ’511 patent, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

In an *inter partes* review, “[a] claim in an unexpired patent . . . shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b)<sup>10</sup>; *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (upholding the use of the broadest reasonable interpretation standard). In determining the broadest reasonable construction, we presume that claim terms carry their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). A patentee may define a claim term in a manner that

---

<sup>10</sup> Although the claim construction standard applied in *inter partes* review was recently changed to the federal court claim construction standard used in a civil action under 35 U.S.C. § 282(b), that change does not apply to this proceeding because the Petition was filed before November 13, 2018, the effective date of the change. *See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51,340, 51,344 (Oct. 11, 2018).

differs from its ordinary meaning; however, any special definitions must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

A patent claim is unpatentable as obvious if “the differences between” the claimed subject matter “and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a). An invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Rather, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.*

An obviousness determination “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *see In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

To show obviousness of a method claim, more is required than merely identifying a prior art reference that discloses an apparatus capable of performing the recited functions. *ParkerVision Inc. v. Qualcomm Inc.*,

903 F.3d 1354, 1363 (Fed. Cir. 2018). Petitioner must “present evidence and argument that a person of ordinary skill would have been motivated to operate” the prior art apparatus in a manner that satisfied the challenged claim’s limitations. *Id.* (citing *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1346–47 (Fed. Cir. 2014) (explaining that a party seeking to invalidate method claims on obviousness grounds must “demonstrate ... ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so’”).

B. LEVEL OF ORDINARY SKILL IN THE ART

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.* Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovation Toys, LLC v. MGA Entm’t, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) (“A less sophisticated level of skill

generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.”).

Petitioner contends that a person of ordinary skill in the art at the time of the claimed invention would have had “knowledge of the history and literature concerning insect control devices, particularly as used for bed bug monitoring and trapping” and would have possessed either:

[(i) a bachelor’s or higher level degree in entomology or similar field and three or more years of experience working with bed bugs in a laboratory setting or working with bed bugs and bed bug traps in the field; or (ii) without a bachelor’s level degree in entomology or similar field, seven years of experience in a laboratory setting or in the field working with bed bugs and bed bug traps.

Pet. 14 (citing Ex. 1022 ¶ 15). Patent Owner does not contest Petitioner’s asserted level of ordinary skill in the art. PO Resp. 11.

Based on the evidence provided, including the prior art of record, we agree with Petitioner’s proposed level of ordinary skill and also find that the prior art of record further reflects the level of ordinary skill in the art. *See also Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (noting that the prior art of record may reflect the level of ordinary skill in the art).

### C. CLAIM CONSTRUCTION

The only claim term the Parties propose constructions for is “slippery.” Claims 1 and 7 each recite an “upstanding peripheral surface that is slippery to prevent bed bugs from climbing out.” Ex. 1001, 11:21–22, 12:10–12. Petitioner contends that “slippery” is indefinite, but argues that

because the issue of indefiniteness cannot be raised in this case, it should be construed to mean “smooth.”<sup>11</sup> Pet. 12–13 (citing Ex. 1001, 5:43–46).

With respect to the meaning of “slippery,” the ’511 patent states:

The slippery surfaces can have the appropriate low friction as result of being made of a slippery material, such as polymer, glass, or polished metallic material having a relatively low coefficient of friction and/or by providing a friction-reducing (lubricating) substance thereon to this end. For purposes of illustration, the surfaces 12a, 12b and 14b have a molded or polished surface roughness Ra of about 100 microinches or less to this end.

...

The surface of the capture moat is to be smooth enough that no traction is provided for the bed bugs to engage their hooked tarsal claws on surface irregularities. A hard surface finish of high density polypropylene or polypropylene with a roughness average (Ra) of 100 microinch (2.54 micron) or less, smooth glass or polished metal does not provide traction for the bed bugs.

Ex. 1001, 5:43–50, 7:63–8:2. Additionally, in discussing the Background of the Invention, the ’511 patent makes clear that it was known in the art how to create the slippery interior surface of a pitfall trap, stating:

Smooth, hard surface of pitfall interior surface can be created from glass, ceramics, metals, finish treatments on polished wood, finish treatments on paper, and plastics. The surface roughness (Ra) of an optical grade mirror finish is 0 to 0.5 microinch (0.0127 micron), of a satin finish is 50 to 60

---

<sup>11</sup> Indefiniteness is not among the types of challenges on which an *inter partes* review can be instituted, therefore, we do not resolve the issue of whether “slippery” is indefinite. See 35 U.S.C. § 311(b) (providing that *inter partes* review is available “only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications”). Nevertheless, we consider whether the claims have been shown to be obvious over the asserted references based on our interpretation of what “slippery” encompasses at a minimum.

microinch (1.27 to 1.524 micron), and of an embossed or coarsely textured product is up to 300 microinch (7.62 micron).

*Id.* at 2:37–44 (citation omitted).

Patent Owner contends that “slippery” is not indefinite and that Petitioner’s proposed construction of “smooth” is incomplete, over-inclusive, overly broad, and not in conformance with the patent specification. PO Resp. 12–13. According to Patent Owner, “slippery” means either “low friction so that crawling arthropods cannot climb or have difficulty climbing the surface,” or “smooth enough that no traction is provided for the bed bugs to engage their hooked tarsal claws on surface irregularities.” *Id.*

We explained in the Institution Decision that Petitioner may establish obviousness under its proposed analysis based on prior art that teaches low friction surfaces that crawling arthropods cannot climb or have difficulty climbing because such a surface is encompassed by the claimed “surface that has a surface roughness which is slippery to prevent bed bugs from climbing out.” Patent Owner concedes our interpretation is appropriate for this case, and we adopt it unchanged for purposes of this Decision. *See* Inst. Dec. 9; PO Resp. 13.

#### D. SCOPE AND CONTENT OF THE PRIOR ART

In its efforts to demonstrate the unpatentability of the challenged claims of the ’511 patent, Petitioner relies on Anderson, Lang, Lyng, Hand,<sup>12</sup> Jennerich, Denton, Beach, McKnight ’812, and McGrath, each of which is briefly summarized below.

---

<sup>12</sup> U.S. Patent No. 4,784,086, issued November 15, 1988 (Ex. 1026, “Hand”).

## 1. Summary of Anderson

Anderson, titled “Protective Pet Dish,” is directed to a device for preventing crawling insects from climbing into a pet dish. Ex. 1003, Abstract.

Figures 3 and 4 of Anderson are reproduced below.

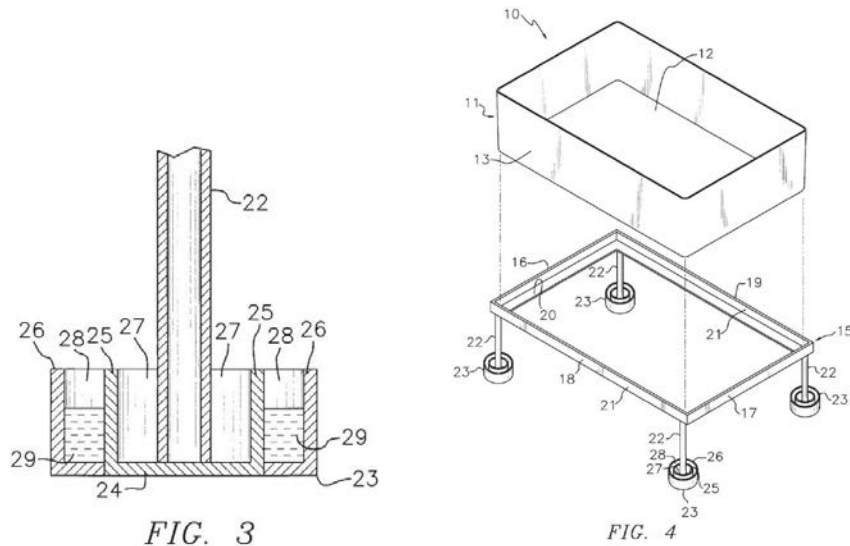


Figure 3 illustrates a cross-sectional view of support leg 22 and moat cup 23 of protective pet dish 10 shown in exploded view in Figure 4. Ex. 1003, 3:49–52, 3:62–63, 4:55. Each moat cup 23 has base 24, inner ring 25, and outer ring 26. *Id.* at 4:55–57. Moat space 28 between inner ring 25 and outer ring 26 holds fluid 29 “for preventing crawling insects from reaching the support legs 22. *Id.* 4:66–5:2. The lower end of each support leg 22 is inserted into the center space 27 of the associated moat cup 23. *Id.* at 5:2–3.

## 2. Summary of Lang

Lang, titled “Bed Bug Monitor,” describes an “insect monitoring and trapping device,” including a base and a lid, a heating device within the trap to attract insects, and an adhesive surface for trapping insects. Ex. 1008, Abstract. According to Petitioner, Lang teaches that humans are the food

source of bed bugs, discloses a liquid-free trap, “and teaches that as to bed bugs, early detection is of key importance.” Pet. 22, 26–28 (citing Ex. 1008 ¶¶ 3, 10, 27, 28, 37, 39, 45, 47, 52).

### 3. *Summary of Lyng*

Lyng, titled “Trap for Crawling Insects,” describes “an insect trap constructed in the form of a box having an open front end and a removable top.” Ex. 1007, Abstract. “The box, removable top and ramp elements are fabricated from a material which provides a smooth and slippery surface.” *Id.* “A preferred material due to its cost and workability is polyethylene, which readily may be cast-molded or blow-molded to form the elements of the trap.” *Id.* at ¶ 23. According to Petitioner, “Lyng discloses the use of interior trap surfaces that are slippery to prevent bed bugs from climbing out,” and teaches the use of the same materials identified in the ’511 patent Specification. Pet. 22.

### 4. *Summary of Hand*

Hand, titled “Method and Apparatus for Preventing Insects from Entering the Food Area of an Animal Feeding Bowl,” describes a bowl with a “combination of tactic barriers” positioned in the path of travel of the insect from the ground to the food area. Ex. 1026, Abstract. Although Petitioner does not rely on Hand in any combination of prior art, Petitioner contends a person of ordinary skill would have known from Hand the benefits of a liquid-free insect intercepting device. Pet. 21–22 (citing Ex. 1026, 1:20–27); *see also Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015) (“Art can legitimately serve to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness.”).

### 5. Summary of Jennerich

Jennerich, titled “Insect Trap,” generally relates to “traps for house and kitchen vermin, more particularly of insects such as cockroaches, blackbeetles and other beetles, the legs of which are provided with cupules or cleaving balls.” Ex.1002, p. 1, 1:1–5. The trap described by Jennerich “is intended for use in connection with certain powdery preparations, which may be styled paralyzing powders, which render the cupules and cleaving balls of insect legs ineffective.” *Id.* at p. 1, 1:43–47.

Figure 1 of Jennerich is reproduced below.

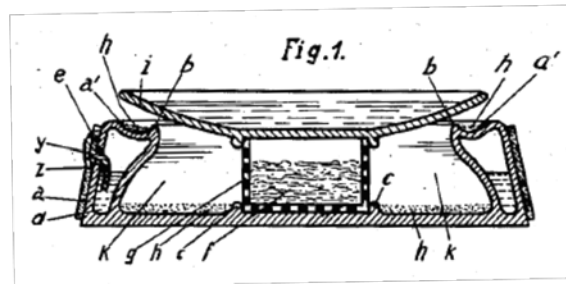


Figure 1 illustrates a cross-sectional view of an embodiment of the trap described by Jennerich. Ex. 1002, p.1, 2:6–8.

The trap shown in Figure 1 “consists of a basin made for instance of earthenware with slanting and, if desired, roughened outer walls *a*, from which a smoothly inclined surface *a'* and a rounded glazed portion *b* leads into a catching space *k*.” *Id.* at p.1, 2:28–33. Paralyzing powder *h* is strewn over the “nearly horizontal trough” formed by inclined surface *a'* and the upper part of the rounded portion *b*. *Id.* at p. 1, 2:33–37. Insects reaching the portion *a'* get their legs into powder *h* and “cannot help gliding down into catching space *k*,” which is also strewn with paralyzing powder *h*. *Id.* at p.1, 2:35–41. “In the middle of the trap, bordered by the projecting rim *c*, there is arranged a perforated receptacle *g*, containing the bait, which

supports a plate *i* filled with water and serving as a spittoon.” *Id.* at p.1, 2:41–45. Spittoon plate *I* may be replaced if not wanted by a suitable cap. *Id.* at p.3, 1:5–7.

Figure 5 of Jennerich is reproduced below.

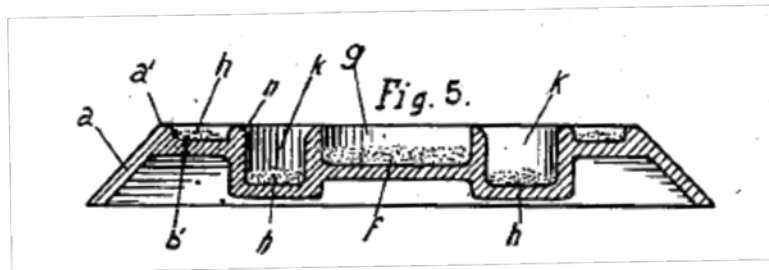


Figure 5 of Jennerich illustrates a cross-sectional view of a second embodiment of a trap with similar features to the trap shown in Figure 1, including:

an inclined wall *a*, a smoothly inclined surface *a'* connecting the top of said inclined wall with a slightly depressed area *b'* which is practically horizontal and capable of receiving and retaining paralyzing powder *h*, a deeply depressed catching space *k* which may also contain paralyzing powder *h* and a central space *g* which receives the bait *f*.

Ex. 1002, p. 2, 1:24–32.

#### 6. Summary of Denton

Denton, titled “Vermin Trap or Insulator,” is directed to a device to protect legs of furniture from insects and vermin. Ex. 1004, ll. 7–9. The device “may be composed of cast or sheet metal, or of earthenware or porcelain, or other suitable material. *Id.* at ll. 52–54.

Figures 1 and 2 of Denton are reproduced below.

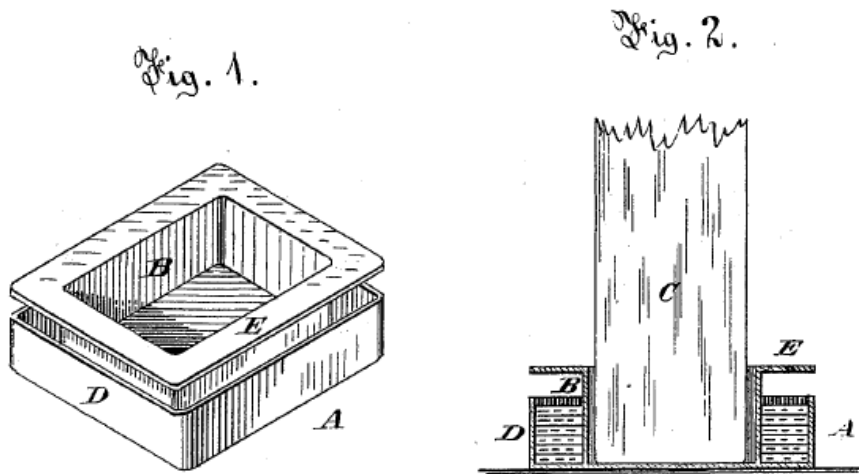


Figure 1 illustrates a perspective view and Figure 2 illustrates a vertical section of a trap or insulator. *Id.* at ll. 20–23. As shown in Figure 2, central compartment B of cup A is adapted to receive leg C of a safe or other object to be protected from vermin. *Id.* ll. 28–33. Objects without legs may be protected as well by resting them on the top of the compartment. *Id.* at ll. 55–58. Element D is “an annular or encircling trough or moat to hold some liquid or semi-liquid which, either by reason of its viscid or other qualities, is repugnant to insects and prevents their passage from the floor to the furniture thus protected.” *Id.* at ll. 33–38. Brim or flange E prevents materials and dust from contacting the liquid in the trough or moat. *Id.* at ll. 42–46.

#### 7. Summary of Beach

Beach, titled “Improved Caster,” describes an improvement for bedsteads and other articles of furniture. Ex. 1009, p. 2, col. 1.



E. ASSERTED OBVIOUSNESS OVER ANDERSON, LANG, AND LYN

Petitioner contends that claims 1–4 and 7–10 would have been obvious over Anderson, Lang, and Lyng. Pet. 15–32; Pet. Reply 1–19. Patent Owner disputes Petitioner’s contentions. PO Resp. 14–39; PO Surreply 2–11.

Petitioner provides a combined analysis of independent claims 1 and 7, identifying how it contends each recited limitation is taught in the combination of Anderson, Lang, and Lyng. Pet. 15–29. Claims 1 and 7 are both directed to “[a] method of intercepting bed bugs,” and require very specific limitations, including “placing a bedbug intercepting device on the floor;” “surrounding the inner” pitfall trap (or receptacle) by a second outer pitfall trap (or receptacle); and “using a human on the bed” as bed bug bait. Claims 1 and 7 also detail features of the intercepting device to be used, including two pitfall traps with slippery interior surfaces and an exterior surface which is a bed bug climbable surface.

Petitioner’s obviousness contentions are premised on applying the teachings of Anderson’s “Protective Pet Dish” to the very specific methods recited by the ’511 patent to intercept bed bugs. In particular, Petitioner’s arguments are substantially directed towards showing that an obvious combination of the asserted prior art teaches the features of the intercepting device used in the claimed method. Our analysis below focuses primarily on claim 1, but our findings are equally applicable to the common limitations of claim 7.

*1. Differences Between the Subject Matter of Claims 1 and 7 and the Teachings of Anderson, Lang, and Lyng*

Petitioner relies primarily on Anderson as teaching the recited limitations of claims 1 and 7, supplemented by the teachings of Lang and Lyng. We discuss Petitioner's contentions as to each limitation of claim 1 below. Although claim 1 is directed to a method, Petitioner's analysis treats it substantially as an apparatus claim by attempting to show that each feature of the interception device used in the claimed method would have been obvious over the asserted art. We need not resolve whether Petitioner has shown by a preponderance of the evidence that the asserted prior art teaches every limitation of claims 1 and 7 because, for the reasons provided further below, we find Petitioner's rationale for the asserted combination insufficient. Nevertheless, to provide context for our analysis, we summarize how Petitioner maps the cited prior art to the claim limitations.

- a. "A method of intercepting bed bugs between a leg of a bed, an upholstered sofa, or an upholstered chair and a floor, comprising"*

Petitioner contends, and Patent Owner does not dispute, that the preamble of claim 1 is a non-limiting statement of intended use. Pet. 15. Petitioner further asserts that "Anderson discloses a method for intercepting insects using trap ([moat cup] 23) placed between a leg (22) of a stand of a raised pet food dish and a floor," and that it was well known in the art to use insect traps under furniture legs. *Id.* at 15–16.

- b. “placing a bed bug intercepting device on the floor under the leg of the bed, upholstered sofa, or the upholstered chair with a lower end of the leg received on a bottom wall of an inner most receptacle to provide a path for bed bugs departing from the bed, upholstered sofa, or upholstered chair to enter the innermost receptacle”

Figures 3 of Anderson is reproduced below again.

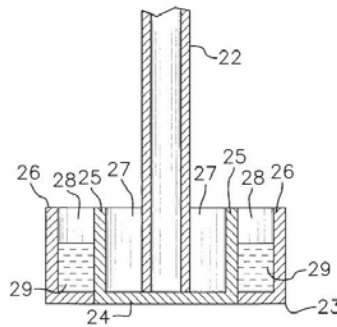


FIG. 3

Figure 3 illustrates a cross-sectional view of support leg 22 and moat cup 23 of a protective pet dish. Ex. 1003, 3:49–52, 3:62–63, 4:55. As to claim 1, Petitioner identifies center space 27 as an inner most receptacle with a bottom wall (base 24) that receives leg 22. Pet. 17.

Claim 7 includes a similar limitation as above, but specifies “placing a bed bug intercepting device on the floor under *the climbable upstanding surface of a leg of the bed . . . with the climbable upstanding surface of the leg* having a lower end received on a bottom wall of an inner.” Ex. 1001, 11:66–12:48 (emphasis added). According to Petitioner, Anderson discloses placing moat cup 23 on the floor “under a climbable upstanding surface of a leg (22)” purportedly “to provide a path for insects departing the stand to enter the innermost receptacle.” *Id.* Petitioner does not further explain why the surface of leg 22 supporting the pet dish would have been understood to be a “climbable upstanding surface,” as recited by claim 7, in light of the

objective of Anderson of preventing insects from reaching the pet dish supported by leg 22.

- c. *“wherein the innermost receptacle is formed by an upstanding peripheral surface that is slippery to prevent bed bugs from climbing out of the innermost receptacle”*

With regard to whether the interior surface of center space 27 is slippery, Petitioner concedes that Anderson does not identify the material from which it is made, but further notes that Anderson states an objective to provide a pet dish that may be “easily and efficiently manufactured” at a “low cost.” Pet. 18–19 (citing Ex. 1003, 2:53–55, 2:59–62). Petitioner turns to Lyng as teaching “the use of interior trap surfaces that are slippery to prevent bed bugs from climbing out.” *Id.* at 19 (citing Ex. 1007, Abstract, ¶¶ 12, 23).

- d. *“wherein the innermost receptacle provides a liquid-free inner pitfall trap of the intercepting device and with an underside of the bottom wall resting directly on the floor, and”*

Petitioner maintains that center space 27 of Anderson is an inner pitfall trap that is liquid free and bottom wall 24 rests on the floor. Pet. 18.

- e. *“surrounding the inner pitfall trap by a second liquid free outer pitfall trap formed by multiple upstanding pitfall trap surfaces disposed between the inner pitfall trap and an upstanding, exterior bed bug-climbable surface of the intercepting device”*

Petitioner argues that Anderson teaches surrounding central space 27 (the alleged inner pitfall trap / receptacle) by moat space 28 (the alleged second outer pitfall trap / receptacle). Pet. 18. Petitioner concedes that Anderson teaches the use of liquid in moat space 28, but argues that Lang teaches a liquid-free trap and that Hand provides reasons to remove liquid from an intercepting device. *Id.* at 21–23. Petitioner also contends that the

exterior of outer ring wall 26 is an “insect-climbable surface,” because Anderson states that the moat cup is filled with fluid “to prevent crawling insects on the ground from climbing up the support legs.” Pet. 21; Ex. 1003, 5:17–20.

- f. *“the second outer pitfall trap comprising an upwardly directed receptacle open at a top thereof, and”*

Petitioner maintains that moat space 28 of Anderson is an outer pitfall trap open at the top. Pet. 23–25.

- g. *“using a human on the bed, the upholstered sofa, or the upholstered chair as a bed bug bait in capturing bed bugs in one of more of the inner or outer pitfall traps as a result of the upstanding peripheral surface and the pitfall trap surfaces being slippery so that bed bugs cannot climb the upstanding peripheral surface and the pitfall trap surfaces,”*

According to Petitioner, food in Anderson’s pet dish “is effectively acting as bait for a trap, which is analogous to humans on an elevated bed or other piece of furniture acting as the ‘bait’ for bed bugs.” Pet. 26–27 (further discussing Lang’s teaching that bed bugs feed solely on the blood of animals). Petitioner further relies on Lyng as teaching “the use of interior trap surfaces that are slippery to prevent bed bugs from climbing out.” *Id.* at 27.

- h. *“including capturing any bed bugs departing from the bed, the upholstered sofa, or the upholstered chair in the inner pitfall trap and capturing any bed bugs approaching the bed, the upholstered sofa, or the upholstered chair, from the floor in the outer pitfall trap whereby an individual can determine whether bed bugs are departing from the bed, upholstered sofa or upholstered chair, or approaching the bed, upholstered sofa or upholstered chair, or both, by visual inspection of the intercepting device”*

According to Petitioner, “[b]ecause Anderson, either alone or in view of Lyng, discloses traps with inner (27) and outer (28) pitfall traps that are slippery so insects cannot climb out, visual inspection of the Anderson device (as taught in Lang) would show whether bed bugs are departing the furniture (and are captured in the inner trap), or approaching the furniture (and are captured in the outer trap).” Pet. 28. Petitioner further asserts that Lang teaches retaining bed bugs in a trap and visual inspection for detection of bed bugs. *Id.* (citing Ex. 1008 ¶¶ 47, 52).

*2. Differences Between the Subject Matter of Claims 2–4 and 8–10 and the Teachings of Anderson, Lang, and Lyng*

Petitioner addresses each element of claims 2–4 and 8–10 in the Petition and contends that it is taught by Anderson, Lang, and Lyng. Pet. 29–32.

Claims 2 and 8 further recite “visually inspecting the intercepting device.” According to Petitioner, Lang “teaches the importance of early inspections and detection of bed bugs in a trap.” Pet. 29 (citing Ex. 1008 ¶¶ 10, 47, 52).

Claims 3 and 9 recite “providing fibrous material on the bed bug-climbable surface.” Petitioner relies on Lyng as teaching the use of “cellulosic substrate 30,” a fibrous material, on the exterior surface of an

insect trap, making it easier for insects to climb. *Id.* at 30 (citing Ex. 1007 ¶¶ 22, 24–26). Petitioner also relies on Lang as teaching that bed bugs are attracted to materials with a rough surface texture and surface porosity.” *Id.* (quoting Ex. 1008 ¶ 37).

Claims 4 and 10 recite trap surfaces “have a surface roughness Ra of about 100 microinches or less.” Petitioner argues that Lyng teaches the use of slick trap materials capable of meeting the recited surface limitation, which would have resulted from routine optimization. Pet. 31–32.

### *3. Reasons for The Combination of Anderson, Lang, and Lyng*

As explained above, to show the obviousness of the claimed method, Petitioner cannot merely show an apparatus capable of performing the method would have been obvious but must present evidence and argument that a person of ordinary skill would have been motivated to operate the prior art apparatus in a manner that satisfied the limitations of the challenged claims. *ParkerVision Inc.*, 903 F.3d at 1363. For the reasons provided below, Petitioner has not shown a sufficient rationale for combining the teachings of the prior art to arrive at the intercepting device used in the claimed methods. Moreover, Petitioner has not shown why it would have been obvious for a person of ordinary skill to operate an intercepting device in a manner that satisfied the limitations of the challenged method claims.

From the outset, Petitioner provides no persuasive evidence that a person of ordinary skill would have been motivated to operate the pet dish of Anderson as a bed bug intercepting device. The express objective of Anderson is “to provide a new protective pet dish for preventing crawling insects from climbing into the pet dish,” and notably “ants, especially fire ants, and spiders.” Ex. 1003, 3:4–6, 3:24–27. Petitioner reasons that

“[g]iven the structural similarity between the Anderson pet dish and a piece of furniture (e.g., a bed), and the prior art references teaching the use of insect traps placed under the legs of furniture (*see, e.g.*, [Denton], ll. 7-9; EX1024, ll. 8-11; EX1025, ll. 8-10), it would have been obvious to a [person of ordinary skill] to use the Anderson insect intercepting device (23) with a leg of a piece of furniture instead of a leg of a pet dish in order to intercept bed bugs.” Pet. 16 (citing Ex. 1022 ¶32).

Petitioner ignores a fundamental difference between Anderson and claims 1 and 7 of the ’511 patent. Anderson is directed to preventing insects from reaching the pet dish, whereas the challenged claims are directed to capturing bed bugs. In this regard, claims 1 and 7 each recite a method that uses a device with both a surface that is “bed bug-climbable” on the exterior, opposite surfaces that are slippery that bed bugs cannot climb on the inner and outer pitfall traps. Anderson, however, is silent as to the material it is made of and silent as to the degree its surfaces are climbable or slippery. Petitioner argues that the exterior of outer ring wall 26 of Anderson is “insect-climbable.” Pet. 21. Yet, Petitioner further asserts a person of ordinary skill “would have been motivated to make the upstanding peripheral surface (inner surface of 25) of Anderson ‘slippery’ to prevent bed bugs from being able to escape from trap area 27, which has been long known in the art.” Pet. 19–20 (citing Lyng’s teaching of the use of interior trap surfaces that are slippery). Petitioner reasons that using “slippery” surfaces, as taught by Lyng, would “lower the cost and make the manufacturing process easier.” *Id.* at 20; *see also* Pet. Reply 14–19. Petitioner does not explain why a person of ordinary skill would leave (or make) some surfaces of Anderson’s pet dish insect-climbable while

modifying other surfaces of Anderson to be “slippery.” Anderson makes clear that the apparatus it teaches “pertains to a new protective pet dish for preventing crawling insects from climbing into the pet dish.” Ex. 1003, 1:6–8. We are not persuaded that Petitioner has established that the exterior of outer ring wall 26 of Anderson is bed-bug climbable, much less any reason why a person of ordinary skill in the art would use it as a bed-bug climbable exterior surface.

While we agree with Petitioner that, by the structure disclosed, Anderson teaches center space 27 and moat space 28 corresponding to first and second pitfall traps, we are not persuaded that a person of ordinary skill would have had reason to make the interior surface of the upstanding peripheral surface defining center space 27 “slippery” to trap bedbugs or to save costs or make manufacturing easier.<sup>13</sup> Presumably insects would have been trapped and detectable in existing moat space 28. Providing an insect-climbable surface that brings insects closer to the pet dish seemingly

---

<sup>13</sup> In its Reply, Petitioner argues for the first time that a rationale for making the inner surface of center space 27 slippery would have been “to permit detection of insects by trapping them.” Pet. Reply 14. Because this argument was not presented sufficiently in the Petition it was waived. Moreover, Anderson provides for the detection of insects without modification by trapping them in moat space 28. Petitioner’s rationale that center space 27 traps insects is also inconsistent with Petitioner’s contention that a central receptacle, like center space 27 fails to trap bed bugs because bed bugs may exit the trap by climbing back up the leg of furniture inserted into the central receptacle. Pet. Reply 19. We further are not persuaded that Mr. Sorkin admitted making the interior surface of center space 27 slippery. See Pet. Reply 5, 23–24.

undermines Anderson's goal, and Petitioner has not explained adequately why one would modify Anderson to do so.

Petitioner's contentions become further strained in light of the recitation in claims 3 and 9 of "providing fibrous material on the bed bug-climbable surface." According to Petitioner, "it would have been obvious to a [person of ordinary skill] to use fibrous material on the exterior surface of Anderson to make it easier for insects to climb into the trap." Pet. 30 (citing Ex. 1022 ¶41). Petitioner does not explain why such a change would have been obvious to a person of ordinary skill given the focus Anderson places on keeping insects out of the pet feeding apparatus, not on detecting or trapping insects, much less making it easier for insects to climb the exterior.

We have considered Dr. Rotramel's testimony in support of the Petition in this regard, but it is conclusory and unsupported by evidence. *See, e.g.,* Ex. 1022 ¶ 33. We find more persuasive the following testimony provided by Mr. Sorkin:

Petitioner fails to provide any rationale as to why a [person of ordinary skill] would modify the inner peripheral surface of Anderson's inner ring wall 25 at all. The advantages achieved by a second pitfall trap strategically placed with respect to the first pitfall trap to discriminate between bed bugs departing the bed or approaching the bed from the surrounding area . . . aid in remediation of the bed bug infestation and are completely absent from both Anderson and Lyng. . . . Petitioner refers to Anderson's center space 27 as a "trap area." (Petition, p. 19). However, Anderson never describes the center space 27 as being a trap area. Anderson only describes center space 27 for receiving a support leg. (Ex. 1003, col. 4, ll. 10-13; col. 5, ll. 2-5). Rather, the purpose of Anderson's Protective Pet Dish is for "preventing crawling insects from climbing into the pet dish." (Ex. 1003, col. 1, ll. 50-53). This purpose is accomplished by trapping crawling insects in the moat space 28, which Anderson's FIG. 3 shows is a space outside the inner peripheral

surface of inner ring wall 25. (Ex. 1003, col. 4, 1. 67-col. 5, 1. 2 and col. 5, 11. 16- 20). Lyng, also a single pitfall trap, provides no basis for modifying Anderson as Petitioner asserts to discriminate between bed bugs approaching or departing.

Ex. 2001 ¶ 11.

Claims 1 and 7 also expressly recite “surrounding” the “inner pitfall trap” (or “receptacle”) by a second “outer pitfall trap” (or “receptacle”). Although Petitioner identifies features of Anderson that structurally correspond to inner and outer pitfall traps, Petitioner does not address why it would have been obvious for a person of ordinary skill to have practiced the method claimed of “surrounding the inner pitfall trap by a second liquid free outer pitfall trap.” Similarly, Petitioner argues that using a human as bait in a bed, as claimed, is analogous to using food in the pet dish of Anderson. Pet. 26–27. We are not persuaded that obviousness of a method can be shown merely by an analogous relationship between what is taught in the prior art and what is recited in the methods claimed. Thus, we find Petitioner’s contention that a person of ordinary skill “would have been motivated to use the two receptacle insect intercepting device from Anderson with a bed with legs (instead of a pet dish with legs) and a human host (instead of pet food) as “bait,” to be based conclusory and reflective of the application of impermissible hindsight. Pet. 27 (citing Ex. 1022 ¶37).

In sum, Petitioner has not shown why it would have been obvious for a person of ordinary skill to operate an intercepting device with the recited features of the ’511 patent in a manner that would have satisfied the limitations of the challenged method claims. Absent any persuasive rationale for why the asserted prior art would have been combined in the manner asserted to produce an intercepting device that would have been

used in accordance with the claimed methods, we find Petitioner's obviousness analysis reflects an impermissible hindsight reconstruction of the limitations of the challenged claims. Accordingly, Petitioner has not shown by a preponderance of the evidence that claims 1–4 and 7–10 would have been obvious over Anderson, Lang, and Lyng.<sup>14</sup>

F. ASSERTED OBVIOUSNESS OVER ANDERSON, LANG,  
LYNG, AND JENNERICH

Petitioner contends that claims 5, 6, 11, and 12 would have been obvious over Anderson, Lang, Lyng, and Jennerich. Pet. 33–34; Pet. Reply 24. Patent Owner disputes Petitioner's contentions. PO Resp. 39.

Claims 5, 6, 11, and 12 all depend from claim 1 or claim 7 and recite certain features related to lubricating the surfaces of the trap to be slippery. Petitioner contends, for example, that “Jennerich discloses the use of lubricating powder (h) on the outer (trough between a' and b) and inner (k) receptacles to prevent bed bugs from climbing out.” Pet. 33 (citing Ex. 1002, 1:6–12, 2:29–31, 2:33–37). Petitioner reasons it would have been obvious to apply the lubricating powder of Jennerich to the surfaces of the inner and outer receptacles of Anderson to make the surfaces slippery. Pet. 34.

Petitioner does not remedy all of the deficiencies identified above with respect to the alleged obviousness of claims 1 and 7 over Anderson, Lang, and Lyng. Accordingly, for the same reasons, we find Petitioner has

---

<sup>14</sup> Because our decision turns on the deficiencies of Petitioner's stated reasons to combine the asserted prior art, we need not reach Patent Owner's arguments regarding secondary considerations of nonobviousness. See PO Resp. 6–10.

not shown by a preponderance of the evidence that claims 5, 6, 11, and 12 would have been obvious over Anderson, Dempster, Lang, and Lyng.

G. ASSERTED OBVIOUSNESS OVER DENTON, LANG,  
LYNG, AND JENNERICH

Petitioner contends that claims 1–12 would have been obvious over Denton, Lang, Lyng, and Jennerich. Pet. 34–54; Pet. Reply 25–27. Patent Owner disputes Petitioner’s contentions. PO Supp. 2–8; PO Surreply 11–13.

Petitioner provides an analysis of each element of independent claims 1 and 7 and identifies where it contends it is disclosed in Denton, Lang, Lyng, and Jennerich. Pet. 34–49. Petitioner contends the center compartment B and trough D of Denton correspond to bait-free first and second pitfall traps.<sup>15</sup> Pet. 37, 40. Patent Owner argues, and we agree, that Denton provides no written disclosure to suggest that central compartment B operates as a pitfall trap. *See* PO Supp. Resp. 5–6. To the contrary, Figure 2 of Denton, which Petitioner did not present in the Petition, illustrates compartment B fully occupied by leg C. Denton also indicates that objects without legs may be protected as well by resting them on the top of the compartment. Ex. 1004, 1:55–58. In both proposed uses, leg C or other objects prevent insects from entering compartment B.

Petitioner suggests that during prosecution the Examiner considered the inner receptacle of Denton to be a pitfall trap. Pet. 37 (citing Ex. 1029, 8). We are not persuaded by Petitioner’s reliance on the Examiner’s application of Denton to a prior version of a claim, given that

---

<sup>15</sup> In its Reply, Petitioner refers to central compartment “D,” which we understand to be intended as a reference to “center compartment B,” because “D” is identified in Denton as “an annular or encircling trough or moat.” Pet. Reply 25–26; Ex. 1004, ll. 28–34.

the Examiner explained that application by noting the “structure of 1st pitfall trap not being particularly claimed.” Ex. 1029, 8.<sup>16</sup> Moreover, the challenged claims at issue are directed to methods and Petitioner neither adequately explains how or why a person of ordinary skill in the art would modify Denton’s trap to operate as a first and second pitfall trap nor identifies any persuasive motivation for a person of ordinary skill to do so in accordance with the specific limitations of either claim 1 or 7 of the ’511 patent.

Similarly, Petitioner does not explain how the materials Denton discloses it may be made of would simultaneously satisfy both the claimed exterior climbable surface and the claimed “slippery” surface. *See* Pet. 37, 40 (asserting “Denton also discloses the use of smooth materials that meet the ’511 patent disclosure regarding materials to use to make ‘slippery’ surfaces,” and yet also contends “Denton discloses exterior D corresponding to “an insect-climbable surface”). Petitioner’s reasoning for modifying Denton to have both slippery and insect-climbable surfaces appears to be based on nothing more than an attempt to reconstruct the trap disclosed in the ’511 patent, and provides no persuasive reason for doing so, suggesting it is motivated by impermissible hindsight.

Finally, to the extent Petitioner purports to rely on Jennerich for certain claim limitations, Petitioner does not explain adequately how Jennerich modifies Denton and what the resulting structure would include from each disclosure. *See* Pet. 38–49. Accordingly, Petitioner has not shown by a preponderance of the evidence that any of the challenged claims

---

<sup>16</sup> Citations to Ex. 1029 are to the original pagination.

of the '511 patent would have been obvious over Denton, Lang, Lyng, and Jennerich.

H. ASSERTED OBVIOUSNESS OVER BEACH, LANG, AND MCKNIGHT '812

Petitioner contends that claims 1–4 and 7–10 would have been obvious over Beach, Lang, and McKnight '812. Pet. 54–68; Pet. Reply 27–29. Patent Owner disputes Petitioner's contentions. PO Supp. 8–11; PO Surreply 13–15.

Petitioner provides an analysis of each element of independent claims 1 and 7 and identifies where it contends it is disclosed in Beach, Lang, and McKnight '812. Pet. 54–66. Petitioner identifies socket *a* of Beach as the inner pitfall trap and annular cup *b* as the outer pitfall trap. *Id.* at 57–59. Petitioner also contends that Beach uses “smooth materials that meet the '511 patent disclosure regarding materials that can make ‘slippery’ surfaces,” because Beach states that it may be made of “any known fusible sheet or wrought metal adapted for the purpose.” Pet. 57 (quoting Ex. 1009, p.2, col. 1). Petitioner also argues that Beach discloses an exterior bed-bug climbable surface, presumably made of the same material Petitioner contends is also “slippery.” Pet. 61. Petitioner also argues that McKnight discloses the use of slippery surfaces to prevent bed bugs from climbing out, and that it would have been obvious to apply slippery surfaces to Beach. Pet. 58–60.

Petitioner proposes numerous modifications to the caster of Beach in its attempt to match the elements of the '511 patent. Petitioner proposes eliminating the caster of Beach such that it rests directly on the floor because the caster is not critical to the design and does not produce any unexpected results. Pet. 56. Petitioner proposes eliminating the use of liquid in Beach's

annular cup in light of Hand and Lang. Pet. 60–61. Petitioner proposes eliminating the entire cap of Beach because Hand suggests removal of liquid insecticide and Lang teaches visual inspection of the trap to detect bed bugs. Pet. 62–63.

Beach provides no written disclosure to suggest that central socket *a* operates as a pitfall trap. Petitioner provides no persuasive explanation of the differences between Beach and the '511 patent. Nor does Petitioner explain how the materials Beach discloses it may be made of would satisfy both the claimed exterior climbable surface and the claimed “slippery” surface.

Petitioner’s reasoning for modifying Beach appears to be based on nothing more than an attempt to reconstruct the trap disclosed in the '511 patent, and provides no reason for doing so other than hindsight. Moreover, the challenged claims at issue are directed to methods and Petitioner neither adequately explains how or why a person of ordinary skill in the art would modify Beach’s device to operate as a first and second pitfall trap nor identifies any persuasive motivation for a person of ordinary skill to do so in accordance with the specific limitations of the challenged method claims of the '511 patent. Accordingly, Petitioner has not shown by a preponderance of the evidence that any of the challenged claims of the '511 patent would have been obvious over Beach, Lang, and McKnight '812.

#### IV. CONCLUSION

Based on the evidence and arguments, Petitioner has not demonstrated by a preponderance of the evidence that the subject matter of claims 1–12 of the '511 patent would have been obvious over any of the asserted combinations of prior art.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–12 of U.S. Patent No. 9,066,511 B2 *have not* been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2017-01687  
Patent 9,066,511 B2

For PETITIONER:

Michael R. Houston  
Naikang Tsao  
Jeffrey R. Lomprey  
FOLEY & LARDNER LLP  
mhouston@foley.com  
ntsao@foley.com  
jlomprey@foley.com

For PATENT OWNER:

John Linderman  
Justin Durelli  
MCCORMICK, PAULDING & HUBER LLP  
lind@ip-lawyers.com  
durelli@ip-lawyers.com