

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ZIMMER SURGICAL, INC.,  
Petitioner,

v.

STRYKER CORPORATION,  
Patent Owner.

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Case IPR2016-00261  
Patent 8,282,234 B2

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Before BARBARA A. PARVIS, ZHENYU YANG, and MICHELLE N.  
WORMMEESTER, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review  
*37 C.F.R. § 42.108*

I. INTRODUCTION

A. *Background*

Zimmer Surgical, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting institution of *inter partes* review of claims 1, 5–8, and 12–14 of U.S. Patent No. 8,282,234 B2 (Ex. 1001, “the ’234 patent”). Stryker

Corporation (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

Upon consideration of the Petition, and applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we deny the Petition and decline to institute an *inter partes* review of claims 1, 5–8, and 12–14 of the ’234 patent.

*B. Related Proceedings*

The parties identify as a related proceeding *Stryker Corp. v. Zimmer, Inc.*, No. 1:14-cv-1201 (W.D. Mich.) (“the District Court case”). Pet. 2; Paper 5, 2.

*C. Real Parties-in-Interest*

The Petition identifies Zimmer Surgical, Inc., Zimmer, Inc., and Zimmer Biomet Holdings, Inc. as the real parties-in-interest. Pet. 2. Patent Owner identifies Stryker Corporation as the real party-in-interest. Paper 5, 1.

*D. The References*

Petitioner relies on the following references:

U.S. Patent Application Publication No. 2006/0133069 A1, published June 22, 2006 (Ex. 1004, “Clupper”);

U.S. Patent No. 6,393,617 B1, issued May 28, 2002 (Ex. 1005, “Paris”);

U.S. Patent No. 6,481,019 B2, issued November 19, 2002 (Ex. 1006, “Diaz”); and

U.S. Patent No. 6,908,208 B1, issued June 21, 2005 (Ex. 1007, “Hyde”).

*E. The Asserted Grounds of Unpatentability*

Petitioner presents the following challenges:

1. Claims 1, 5–8, 13, and 14 are unpatentable, under 35 U.S.C. § 102(e), as anticipated by Clupper;
2. Claims 1, 5–8, and 12–14 are unpatentable, under 35 U.S.C. § 103(a), as obvious over Clupper and Paris;
3. Claim 12 is unpatentable, under 35 U.S.C. § 103(a), as obvious over Clupper and Hyde;
4. Claim 12 is unpatentable, under 35 U.S.C. § 103(a), as obvious over Clupper, Paris, and Hyde; and
5. Claims 1, 5–8, and 12–14 are unpatentable, under 35 U.S.C. § 103 (a), as obvious over Diaz and Hyde.

Petitioner supports its challenges with a declaration executed by Mr. Michael L. Jones on November 25, 2015 (Ex. 1002).

*F. The '234 patent*

The '234 patent relates to “[a] personal protection system for providing a sterile barrier around medical/surgical personnel.” Ex. 1001, Abstract. Figure 49 of the '234 patent is reproduced below.

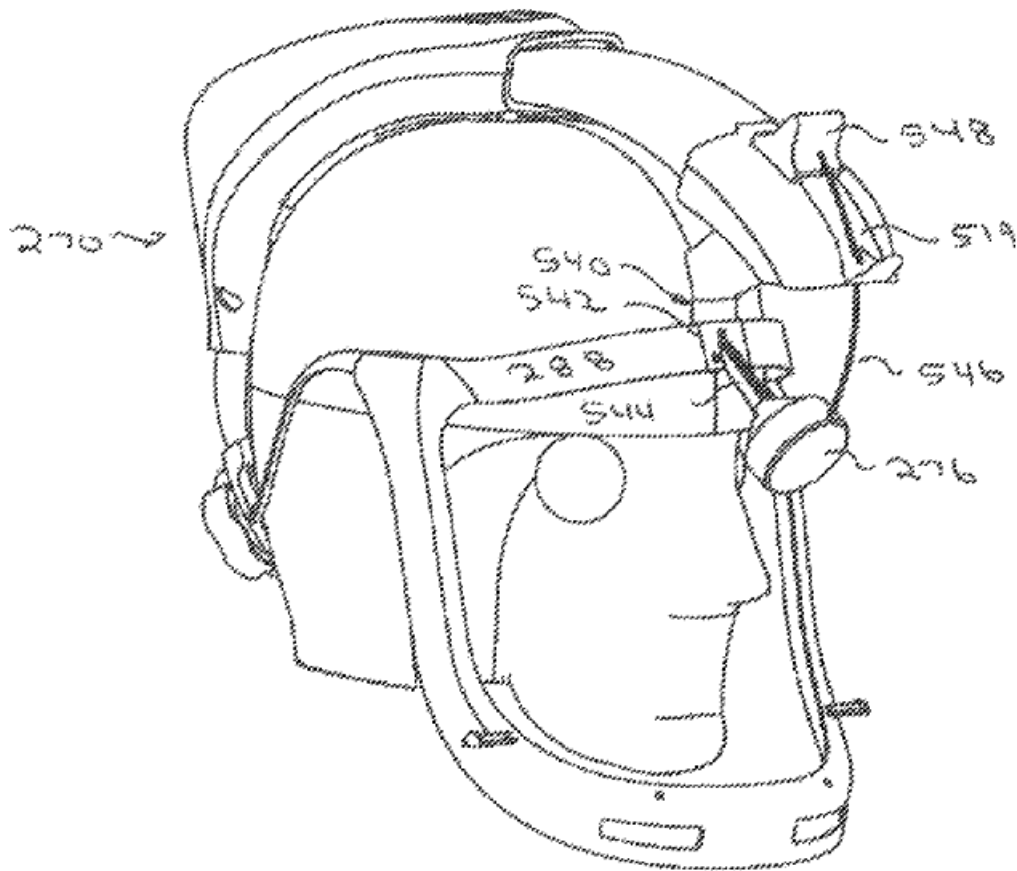


FIG. 49

Figure 49 illustrates a light adjustably mounted to a head unit.

As shown in Figure 49, light unit 276 is mounted to bracket 540, which is attached to forehead band 288. *Id.* at 22:52–53. Two arms 544 extend diagonally downward from base 542. *Id.* at 22:56–57. Light 276 is pivotally mounted to and between the free ends of bracket arms 544. *Id.* at 22:57–58. Small tab 548 is slidably mounted to rib 519 on top of the front nozzle assembly. *Id.* at 22:60–61. Air forced through the ventilation unit is

discharged through front and rear nozzle assemblies, respectively. *Id.* at 14:52–54; *see also id.* at Fig. 29 (illustrating front nozzle assembly 280).

*G. Illustrative Claim*

Claims 1 and 8 are the independent claims challenged in this proceeding. Claims 5–7 depend directly from claim 1 and claims 12–14 depend directly from claim 8. Independent claim 1 is illustrative of the claimed subject matter and is reproduced below with emphasis on the element that is the focus of our analysis.

1. A personal protection system comprising:
  - a helmet to be worn over the head of a wearer, said helmet including a head band that is disposed above the face of the wearer;
  - a hood disposed over said helmet, said hood having a transparent face shield that is forward of said head band;
  - a fastening assembly integral with at least one of said helmet or said hood for releasably holding said hood, including said face shield, over said helmet;
  - a ventilation assembly integral with said helmet, the ventilation assembly having a fan and a front nozzle that is connected to said fan to receive air output by said fan, said front nozzle having an opening through which the air is discharged that is located forward of the head band so as to be in front of the face of the wearer; and
  - a light assembly including a light source and a light emitting head, said light assembly being mounted to said helmet and positioned to emit light through said face shield and being located below the front nozzle opening so that air discharged through the front nozzle opening flows over said light assembly.*<sup>[1]</sup>

Ex. 1001, 27:31–52 (emphases added).

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<sup>1</sup> We refer to this limitation as “the light assembly limitation.”

## II. CLAIM CONSTRUCTION

### A. *Legal Standard*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC.*, 793 F.3d 1268, 1277–1279 (Fed. Cir. 2015) (“Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA,”<sup>2</sup> and “the standard was properly adopted by PTO regulation.”), *cert. granted sub nom. Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Only terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

### B. *Summary of the Parties’ Contentions*

Here, Petitioner proposes that “the broadest reasonable interpretation of ‘light emitting head’ should encompass a light housing.” Pet. 10–11. Petitioner contends that “Patent Owner argued and the district court agreed that the plain and ordinary meaning controls for claim terms of the ’234 patent.” Pet. 10 (citing Ex. 1008, 18; 1009, 17). Petitioner submitted the

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<sup>2</sup> Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”).

Opinion and Order in the District Court case, which includes analysis regarding the term “light emitting head.” Ex. 1009, 15–16.

Patent Owner contends “[t]he claim terms of the ’234 patent should be given their plain and ordinary meaning.” Prelim. Resp. 8. Patent Owner does not provide further contentions regarding construction of claim terms. *Id.*

1. “*light emitting head*”

The term “light emitting head” is recited in independent claims 1 and 8. Regarding Petitioner’s proposal that “the broadest reasonable interpretation of ‘light emitting head’ should encompass a light housing” (Pet. 10–11), Petitioner does not set forth a construction, but instead provides contentions regarding what the term should encompass.

In support of its contentions, Petitioner points to (Pet. 10) the following in the ’234 patent Specification: “[a] light housing 202 supports and surrounds the LEDs and the lens.” Ex. 1001, 7:10–11.<sup>3</sup> We do not regard the above-quoted text as setting forth the inventor’s special definition for the term “light emitting head,” such that it encompasses a housing that does not emit light.

Further, although we are not bound by the district court’s construction interpreting the claim terms at issue here, we have considered the District Court Claim Construction Order, which indicates “[t]he meaning of the phrase ‘light emitting head’ is clear in view of the intrinsic evidence, including the specifications as delineated in Stryker’s argument.” Ex. 1009, 16. Regarding Patent Owner’s argument in that proceeding, the District

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<sup>3</sup> Bold omitted from reference numerals in patents throughout.

Court Claim Construction Order indicates “Stryker asserts that the specification supports the plain meaning inasmuch as it describes a light assembly that includes a ‘light source 201, disposed adjacent to a lens’ and indicates that ‘[t]he light source is preferably one or more light-emitting diodes (LEDs).’” *Id.* at 15 (citations omitted). The District Court concludes “[p]ersons of ordinary skill of this art would understand what this phrase means without further construction.” *Id.* at 16.

The ’234 patent Specification indicates that “[l]ight assembly 200 includes a light generating unit, light source 201, disposed adjacent to a lens (not shown).” Ex. 1001, 7:3–7. The ’234 patent Specification also indicates “[t]he light source is preferably one or more light-emitting diodes (LEDs).” *Id.* at 7:6–7.

The broadest reasonable interpretation must reasonably reflect the plain language and disclosure. In light of the ’234 patent Specification, we are not persuaded by Petitioner that the broadest reasonable interpretation of “light emitting head” encompasses a housing that does not emit light. On this record, we determine no further construction of “light emitting head” is needed to resolve a controversy in this proceeding.

2. “*flows over said light assembly*”

For the purposes of this Decision, we find it necessary to construe the claim term “flows over said light assembly” expressly. Each of claims 1 and 8 recites a “light assembly . . . located below the front nozzle opening so that air discharged through the front nozzle opening *flows over said light assembly*” (emphasis added).

A dictionary sets forth plain and ordinary meanings of “over” as follows: “[a]bove,” “[a]cross to another or opposite side,” “[a]cross an

intervening distance,” and “[s]o as to be completely enclosed or covered.” THE AMERICAN HERITAGE DICTIONARY 602 (4<sup>th</sup> ed. 2001) (“The American Heritage Dictionary,” Ex. 3001). Another dictionary sets forth plain and ordinary meanings of “over” as follows: “directly above,” “on the top of,” and “via the top or upper surface of.” COLLINS ENGLISH DICTIONARY 1159 (8<sup>th</sup> ed. 2006) (Ex. 3002). The broadest reasonable interpretation is not the broadest dictionary definition. Instead, claims should be read in light of the specification.

The Summary of the Invention set forth in the Specification of the ’234 Patent describes the invention as follows:

The system of this invention includes a ventilation unit for supplying ventilation air underneath the toga/hood of wearer. There is a light unit. The light unit has a light source positioned *in line* with the air discharged from the ventilation unit.

Ex. 1001, 2:11–14 (emphasis added).

The ’234 patent Specification further describes the position of the light source with respect to the front air outlet as follows:

The light housing 202 and, more particularly, the light source 201, are positioned *directly under* the front air outlet opening 35. By positioning as such, the air discharged from opening 35 blows the warm air surrounding the light assembly 200 away from the light assembly.

*Id.* at 7:66–8:3 (emphasis added).

In light of the ’234 patent Specification, “flows over” in the context of claims 1 and 8 and the ’234 patent Specification means air is discharged directly above or in-line with the light source so as to cover completely the light source and blow air from the light assembly. Accordingly, for the reasons given above, we determine that in light of

the '234 Patent Specification, the broadest reasonable interpretation of “flows over” is “flows directly above.”

We turn to the meaning of “said light assembly.” The American Heritage Dictionary sets forth a plain and ordinary meaning of “assembly” as follows: “[t]he act of assembling or the state of being assembled.” Ex. 3001, 51. The American Heritage Dictionary also sets forth plain and ordinary meanings of “assemble” as follows: “[t]o bring or gather together,” and “[t]o fit together the parts of.” *Id.*

Each of claims 1 and 8 recites the parts that are fit together. In particular, the term “said light assembly” derives antecedent basis from “a light assembly including a light source and a light emitting head,” as recited in claims 1 and 8. Claims should be read in light of the specification. The '234 patent Specification reinforces the requirement that is clear from the claim language. In particular, the '234 patent Specification describes “[l]ight assembly 200 includes a light generating unit, light source 201, disposed adjacent to a lens (not shown).” Ex. 1001, 7:3–5.

Accordingly, the broadest reasonable interpretation of “flows over said light assembly,” in light of the '234 Patent Specification, is “flows directly above an assembled light source and light emitting head.”

### III. ANALYSIS

#### A. *Anticipation by Clupper*

Petitioner asserts that claims 1, 5–8, 13, and 14 are unpatentable, under 35 U.S.C. § 102(e), as anticipated by Clupper. Pet. 15–31. The Petition includes discussion identifying where Clupper purportedly discloses the elements of each of these challenged claims. *Id.*

1. *Principles of Law*

Anticipation, under 35 U.S.C. § 102, requires a lack of novelty. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). To establish anticipation, each and every element in a claim, arranged as is recited in the claim, must be found in a single prior art reference. *Id.*

2. *Clupper*

Clupper discloses a surgical head gear helmet that includes a lighting system using circuit board mounted light emitting diode (LED) clusters. Ex. 1004, Abstract. Figure 1 of Clupper is reproduced below.

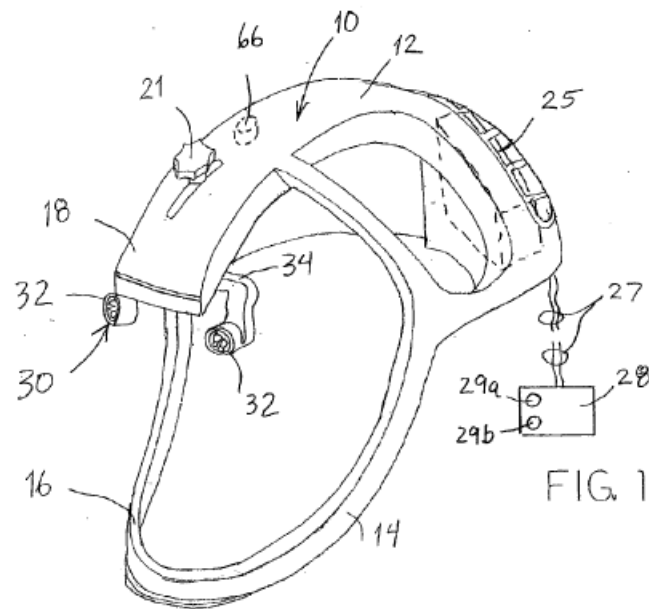


Figure 1 illustrates a surgical helmet with a light array.

As shown in Figure 1, light array 30 is mounted on surgical helmet 10. Ex. 1004 ¶ 25. Light array 30 includes a pair of sources 32 situated on either side of helmet 10, and on opposite sides of ventilation duct 18. *Id.*

3. *Claims 1 and 8*

Regarding the light assembly limitation recited in each of claims 1 and 8, Petitioner contends that Clupper discloses the following:

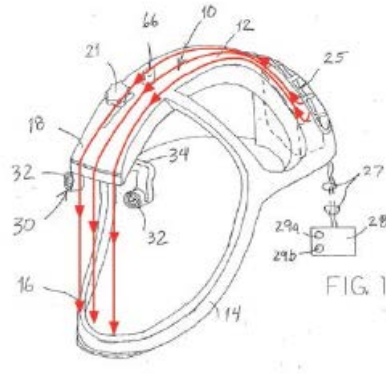
*Clupper* discloses a light array 30 (identified in Figure 2) mounted to a helmet 10. See Ex. 1004 at Title, Abstract, ¶¶ [0012], [0025]–[0026]. . . . Each light source 32 is “situated above an eye of the wearer so that the light beam produced by the LED light source is aligned with the viewing field of the wearer.” *Id.* at ¶ [0012]. Each housing 39 is connected to a mounting bracket 44 by an arm. *Id.* at ¶ [0025]. *Clupper* discloses that “[t]he arms 42 are preferably sized to support the light sources 32 below the ventilation opening 19 at the forward end of the duct 18” so that air discharged through ventilation opening 19 flows over light source 32 and light sources 32 are positioned to illuminate the “viewing field of the wearer.” See *id.* at ¶¶ [0012], [0025], [0029], Figs. 1–3. *Clupper* teaches that “[t]he proximity of the light sources 32 to ventilation opening 19 facilitates heat dissipation from the LED clusters.” *Id.* at ¶ [0029]. See also Ex. 1002, ¶ 26([1.f]).

Pet. 23–24.

As Petitioner acknowledges, Clupper describes that the light sources are situated above each eye of the wearer (Ex. 1004 ¶ 12) on either side of the helmet (*id.* ¶ 25). Petitioner additionally relies on the declaration testimony of Mr. Jones. Pet. 23–24 (citing Ex. 1002 ¶ 26([1.f])). Mr. Jones’s testimony is substantially the same as Petitioner’s contentions presented above. Compare Ex. 1002 ¶ 26[1.f] with Pet. 23–24.

Patent Owner contends “the lighting structure of Clupper, including the LED clusters, is not located in the path of airflow being discharged from the front ventilation duct opening.” Prelim. Resp. 16. Patent Owner, more specifically, provides annotations to Figure 1 of Clupper depicting what Patent Owner contends is “[t]he anticipated flow of air from the front

ventilation duct opening.” *Id.* Patent Owner’s annotated Figure 1 is reproduced below.



Annotated Figure 1 illustrates downward airflow from the front ventilation duct opening of the surgical helmet.

As discussed above with respect to claim construction, “flows over said light assembly” means “flows directly above an assembled light source and light emitting head.” Additionally, as discussed above with respect to claim construction, we are not persuaded by Petitioner that the broadest reasonable interpretation of “light emitting head” encompasses a housing that does not emit light.

In view of our constructions above, Petitioner does not provide contentions describing sufficiently that discharged air flows directly above an assembled light source and light emitting head. Petitioner relies on the testimony of Mr. Jones (Pet. 23–24 (citing Ex. 1002 ¶ 26([1.f]))), who testifies that “air discharged through ventilation opening 19 flows over light sources 32 of light array 30.” Ex. 1002 ¶ 26([1.f]) (citing Ex. 1004 ¶¶ 12, 25, 29, Figs. 1–3). The paragraphs and figures of Clupper cited by Mr. Jones, however, do not describe sufficiently that discharged air flows directly above an assembled light source and light emitting head. Ex. 1004 ¶¶ 12, 25, 29. In contrast, Clupper describes that the light sources are

situated above each eye of the wearer (Ex. 1004 ¶ 12) on either side of the helmet (*id.* ¶ 25). Clupper indicates that “[t]he proximity of the light sources 32 to the ventilation opening 19 facilitates heat dissipation from the LED clusters 37.” Ex. 1004 ¶ 29. The proximity of the light sources to the opening does not describe sufficiently that the air flows directly above an assembled light source and light emitting head. Additionally, in light of Patent Owner’s contentions, we are not persuaded that heat dissipation must be caused by air flow. Prelim. Resp. 18. Mr. Jones does not specify sufficiently other data or facts that he relies on. *See* 37 C.F.R. § 42.65(a). Thus, we determine that Petitioner has not shown sufficiently that Clupper discloses air flow from the front duct that flows directly above an assembled light source and light emitting head.

We, therefore, determine that Petitioner has not shown sufficiently that Clupper discloses the light assembly limitation. Accordingly, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that independent claims 1 and 8 are unpatentable on the ground that they are anticipated by Clupper.

#### 4. *Dependent Claims*

Because claims 5–7 depend directly from claim 1 and claims 13 and 14 depend directly from claim 8, we also determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that claims 5–7, 13, and 14 are unpatentable on the ground that they are anticipated by Clupper.

#### B. *Obviousness over Clupper and Paris*

Petitioner asserts that a combination of the teachings of Clupper and Paris would have rendered the subject matter of claims 1, 5–8, and 12–14

obvious to one of ordinary skill in the art at the time of the invention.

Pet. 31–47. The Petition includes discussion identifying where Clupper and Paris purportedly teach or suggest the elements of each challenged claim.

*Id.*

### 1. *Principles of Law*

A claim is unpatentable, under § 103(a), 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. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). 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) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

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*, 550 U.S. at 418. Instead, a determination of unpatentability on a ground of obviousness must include “‘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)). The obviousness evaluation “should be made explicit,” and 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.*

2. *Paris*

Paris is directed to a head gear apparatus that moves air to cool a caregiver's head. Ex. 1005, Abstract.

3. *Level of Ordinary Skill in the Art*

With regard to the level of ordinary skill in the art, we determine that no express finding is necessary, on this record, and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

4. *Claims 1 and 8*

Petitioner contends “[a]s compared to *Clupper*, *Paris* describes in further detail the structures used to assemble garment 14 and helmet 12.” Pet. 13 (citing Ex. 1002 ¶ 20). For example, Petitioner points to “hook-and-loop type fasteners 148 on shield mount 146” and “hook-and-loop type fasteners on face shield 20.” *Id.* (citing Ex. 1005, 3:65–4:2, 7:10–28, 8:37–50).

Regarding the light assembly limitation, discussed above, Petitioner contends:

As discussed above in connection with claim 1, *Clupper* discloses a light array 30 including a pair of light sources 32 and housing 39 to support each light source 32. *See supra* Section VIII.B.2.vi; *see also* Ex. 1002 ¶ 33([1.f]). As further discussed above in connection with claim 1, light array is mounted on a front portion of helmet 10 to illuminate a viewing field of the wearer and below ventilation duct opening 19 so that air discharged through ventilation opening 19 flows over light array 30. *See supra* Section VIII.B.2.vi; *see also* Ex. 1002 ¶ 33([1.f]). Pet. 37.

As evident from Petitioner's contentions above, Petitioner does not rely on *Paris* for the light assembly limitation. Petitioner relies on its

previous contentions relating to anticipation by Clupper, as well as the testimony of Mr. Jones. *Id.* Mr. Jones's testimony is reproduced below:

As I explained above in connection with claim element [1.e] in paragraph 25, *Clupper* teaches a light array 30 including a pair of light sources 32 and a housing 39 positioned to emit light through a face shield to illuminate the "viewing field of the wearer" of helmet 10 and located below ventilation duct opening 19 so that air discharged through ventilation duct opening 19 flows over light array 30.

Ex. 1002 ¶ 33 ([1.f]).

For the reasons we discussed above, we are not persuaded that Clupper anticipates claims 1 and 8 because Petitioner has not shown sufficiently that Clupper discloses air flow from the front duct that flows directly above an assembled light source and light emitting head. Mr. Jones's testimony referring back to his testimony provided for anticipation is not persuasive for the same reasons discussed above.

Regarding Mr. Jones's testimony regarding the flow of air over light array 30, we are not persuaded in view of the teachings of Clupper. As illustrated in Figure 3 of Clupper, light sources 32 are carried by mounting element 34, which defines a pair of housings 39 for supporting light sources on either side of helmet 10 and on opposite sides of ventilation duct. Ex. 1004 ¶ 25; Fig. 3. As illustrated in Figure 1, the air duct is between, not over light sources 32. *Id.* ¶ 25; Fig. 1. Therefore, we are not persuaded by Mr. Jones's testimony that Clupper teaches the discharge of air through ventilation duct opening 19 that flows directly above an assembled light source and light emitting head. Mr. Jones also does not provide further persuasive testimony that the light assembly limitation would be obvious to one of ordinary skill in the art in light of Clupper's teachings.

We, therefore, determine that Petitioner has not shown sufficiently that the combination of Clupper and Paris teaches the light assembly limitation. Accordingly, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that independent claims 1 and 8 are unpatentable on the ground that they would have been obvious over the combination of Clupper and Paris.

5. *Dependent Claims*

Because claims 5–7 depend directly from claim 1 and claims 12–14 depend directly from claim 8, we also determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that claims 5–7 and 12–14 are unpatentable on the ground that they would have been obvious over the combination of Clupper and Paris.

C. *Obviousness of Dependent Claim 12 over Clupper and other art*

Petitioner asserts that a combination of the teachings of Clupper and Hyde or a combination of the teachings of Clupper, Paris, and Hyde would have rendered the subject matter of claim 12 obvious to one of ordinary skill in the art at the time of the invention. Pet. 47–48. The Petition includes discussion identifying where Clupper and Hyde purportedly teach or suggest the further recitation of dependent claim 12. *Id.* Petitioner additionally relies on the testimony of Mr. Jones. Pet. 47–48 (citing Ex. 1002 ¶¶ 41–42). In light of the contentions and evidence presented by Petitioner, including the testimony of Mr. Jones, we are not persuaded that Petitioner has remedied the deficiency noted above with respect to the light assembly limitation.

Accordingly, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that claim 12 is unpatentable

on the ground that it would have been obvious over either the combination of Clupper and Hyde or the combination of Clupper, Paris, and Hyde.

*D. Obviousness over Diaz and Hyde*

Petitioner asserts that a combination of the teachings of Diaz and Hyde would have rendered the subject matter of claims 1, 5–8, and 12–14 obvious to one of ordinary skill in the art at the time of the invention.

Pet. 48–59. The Petition includes discussion identifying where Diaz and Hyde purportedly teach or suggest the elements of each challenged claim.

*Id.*

*1. Diaz*

Diaz teaches an air filtration system for filtering air between a head and body of a user and an environment external to the user. Ex. 1006, 1:12–14. The air filtration system is used in the medical profession during surgical procedures. *Id.* at 1:14–16. The air filtration system of Diaz includes a helmet assembly. *Id.* at 2:64–65. Additionally, the air filtration system has a front air exit, which distributes air towards the face of the user. *Id.* at 3:36–37.

*2. Hyde*

Hyde teaches a light that can be worn on the head of a user. Ex. 1007 Abstract. The light is retained on a headband by a pivot. *Id.* at 3:30–31.

*3. Claims 1 and 8*

Petitioner acknowledges “Diaz is silent concerning the use of a light assembly with helmet assembly.” Pet. 50–51. Petitioner contends “[h]owever, as the ’234 patent acknowledges, it was well-known in the art to provide a light with a helmet assembly for illuminating a surgical field.” Pet. 51 (citing Ex. 1001, 1:43–45, 1:56–67).

The '234 patent indicates “[i]t is further known to mount a light to the helmet. This light which is directed through the face shield illuminates the surgical site.” Ex. 1001, 1:43–45. The '234 patent, however, further indicates “while it is known to provide light with the helmet, it has proven difficult to provide a workable light.” *Id.* at 1:56–57. The '234 patent, more specifically, describes difficulties with providing a workable light as follows.

This is because in one proposed system, it is proposed that the actual light be emitted by a source at a static console. The light is supplied to the helmet for emission therefrom through a fiber optic cable. Thus with this system, the wearer is essentially tethered to the light source. This both limits the mobility of the individual and requires other operating room personnel to navigate around the tether. Alternatively, the light source could be mounted in the helmet. Such light sources generate heat. This heat can cause the temperature beneath the toga/hood to rise to an uncomfortable level.

Ex. 1001, 1:56–67.

The '234 patent describes known problems with mounting a light source in the helmet such as the rise in temperature to an uncomfortable level. *Id.* at 1:64–67. Although the background of the '234 patent indicates a need to solve this problem, we are not persuaded by Petitioner that the '234 patent alone is sufficient to demonstrate that “it was well-known in the art to provide a light with a helmet assembly,” as Petitioner contends (Pet. 51).

Petitioner additionally relies on Hyde. For example, Petitioner points to Hyde’s disclosure “that the light is ‘mounted to a headband that can be used as a surgical headlight.’” *Id.* (citing Ex. 1007, 3:19–20). Petitioner contends “[g]iven *Hyde*’s teachings, it would have been obvious to one

skilled in the art to modify helmet assembly 12 of Diaz to include a light assembly having a housing containing a light source mounted onto a front portion 148 of Diaz's front-adjustable support 128." *Id.* (citing Ex. 1002 ¶ 43 ([1.f]); Ex. 1003, 359). Petitioner relies on the testimony of Mr. Jones, as well as the prosecution history of the '234 patent.

Mr. Jones testifies as follows:

Given *Hyde*'s teachings, in my opinion, one skilled in the art would have modified helmet assembly 12 of *Diaz* to include a light assembly having a housing containing a light source mounted onto a frontal position 148 of *Diaz*'s front-adjustable support 128 positioned to emit light through *Diaz*'s face shield 96. In *Hyde*, housing 12 is retained on headband 18 by pivot 20. See Ex. 1007 at 3:30–31, Figs. 1, 5–7. In my opinion, a person of ordinary skill in the art would have similarly mounted a light assembly to frontal portion 148 of front-adjustable support 128 to allow the wearer to adjust the direction of the light source. As front-adjustable support 128 is mounted to base section 32 by both a hinge 150 and rear support 130, in my opinion, one skilled in the art would have understood that a light assembly pivotally mounted to front-adjustable support 128 would also be pivotally mounted to base section 32 of helmet assembly 12. See Ex. 1006 at 15:20–27, 15:64–[1]6:2.

Ex. 1002 ¶ 43 ([1.f]).

Mr. Jones's testimony above pertains to his proposal to modify Diaz's helmet by mounting Hyde's light. In particular, Mr. Jones testifies regarding how the light could be attached to the helmet. Although the knowledge of how to fasten the light of Hyde to the helmet of Diaz is a consideration, in this case, we find that this knowledge alone is not sufficient to demonstrate that the modifications needed were within the technical grasp of one of ordinary skill in the art. For instance, as Mr. Jones also testifies (*id.*), Hyde teaches that "[t]he lamp is cooled by a combination of a fan similar to that

used to cool personal computers, and fins that act as a heat sink to conduct heat away from the light to the surrounding air, where it is carried away by convection.” Ex. 1007, 2:24–27. Thus, mounting the helmet requires more than fastening the light to the helmet. Also, Mr. Jones’s testimony above, without more, does not provide an articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Mr. Jones further testifies as follows:

*Hyde* recognizes that “[i]t is desirable for physicians . . . to have a light that can be worn on the doctor’s head while they are examining a patient, which can be cooled to prevent it from overheating” and provides components for cooling the light. Ex. 1007 at 1:9–12, 2:24–27, 3:24–30. *Diaz* teaches directing cool air to the face of the wearer by discharging air from a front air exit 76. *See, e.g.*, Ex. 1006 at 3:36–38, 5:47–52, 8:20–24, 8:31–34. . . . In my opinion, one of ordinary skill in the art would have recognized that the air discharged from front air exit 76 toward the face of the user would flow over the light assembly pivotally mounted to frontal section 148 and would convectively dissipate heat generated by the light source of the light assembly. In my opinion, the air discharged from front air exit 76 would have led one of ordinary skill in the art to have mounted the light assembly without the additional cooling components taught in *Hyde* in order to provide a lightweight head band and light assembly.

Ex. 1002 ¶ 43 ([1.f]).

Mr. Jones’s testimony above provides further specificity regarding the modifications needed to *Hyde* and *Diaz* to mount the light on the helmet. However, Mr. Jones’s testimony regarding what one of ordinary skill in the art would have recognized is not supported sufficiently by the citations that he provides to *Hyde* and *Diaz*. For instance, Mr. Jones’s testimony that “*Diaz* teaches directing cool air to the face of the wearer by discharging air from a front air exit” (*id.*), without more, does not support sufficiently that

this face-cooling technique would have been known by one of ordinary skill in the art to pertain to cooling a light. Mr. Jones's testimony does not specify sufficiently other data or facts that he relies on. *See* 37

C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.")

Additionally, Mr. Jones's testimony above regarding the light assembly is not sufficient in light of Mr. Jones's understanding of the claims. Claims 1 and 8 recite that the light assembly includes a light source and a light emitting head. Mr. Jones testifies "I understand that Petitioner has offered that the broadest reasonable construction of 'light emitting head' should encompass a light housing." Ex. 1002 ¶ 16. Mr. Jones also testifies "I have used this construction unless otherwise noted." *Id.* Mr. Jones's testimony above regarding the position of the light assembly, in light of his testimony considered in its entirety, encompasses the positioning of a housing that does not emit light. For this additional reason, we are not persuaded that this testimony is sufficient to support obviousness of the light assembly limitation, under the broadest reasonable interpretation of the term.

Furthermore, Mr. Jones's testimony does not provide an articulated reasoning with rational underpinning to support the legal conclusion of obviousness. 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*, 550 U.S. at 418. The obviousness evaluation "should be made explicit." *Id.* Mr. Jones's testimony does not provide a sufficiently explicit reasoning for combining the teachings in the manner claimed.

Petitioner also includes a citation to the prosecution history. Pet. 51 (citing Ex. 1003, 359). The page on which Petitioner relies is a diagram of a helmet and does not remedy the deficiencies above.

We, therefore, determine that Petitioner has not shown sufficiently that the combination of Diaz and Hyde teaches the light assembly limitation. Accordingly, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that independent claims 1 and 8 are unpatentable on the ground that they would have been obvious over the combination of Diaz and Hyde.

#### 4. *Dependent Claims*

Because claims 5–7 depend directly from claim 1 and claims 12–14 depend directly from claim 8, we also determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that claims 5–7 and 12–14 are unpatentable on the ground that they would have been obvious over the combination of Diaz and Hyde.

### IV. CONCLUSION

For the foregoing reasons, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail on any of the challenges to patentability of the '234 patent set forth in the Petition.

### V. ORDER

For the foregoing reasons, it is:

ORDERED that the Petition is *denied* and no *inter partes* review is instituted.

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PETITIONER:

Naveen Modi  
Srikala Atluri  
Paromita Chatterjee  
PAUL HASTINGS LLP  
875 15<sup>th</sup> St. N.W.  
Washington, DC 20005

PATENT OWNER:

Eligio C. Pimentel  
Christopher M. Scharff  
Stephanie F. Samz  
McANDREWS, HELD & MALLOY LTD.  
500 West Madison Street, 34<sup>th</sup> Floor  
Chicago, IL 60662