

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ORTHOCISION, INC.,
Petitioner,

v.

PAIN TEQ, LLC,
Patent Owner.

Patent No. 11,020,129
Title: Drill-Less Method of Fusing a Sacroiliac Joint

Inter Partes Review No. IPR2023-00625

PATENT OWNER'S PRELIMINARY RESPONSE

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IPR2023-00625

US Patent No. 11,020,129

PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	Declaration of Christopher J. Bovinet, D.O. in Support of Patent Owner's Preliminary Response to Petition for <i>Inter Partes</i> Review of U.S. Patent No. 11,020,129
2002	Christopher J. Bovinet, D.O., C.V.

I. INTRODUCTION

Patent Owner Pain TEQ, LLC (“Patent Owner”) provides this preliminary response (“Preliminary Response”) to the *inter partes* review petition (“Petition”) filed by Orthocision, Inc. (“Petitioner”) challenging claims 1, 2, 9, and 10 (“Challenged Claims”) of the U.S. Patent No. 11,020,129 (“’129 Patent”). The Petition presents five obviousness grounds against the Challenged Claims. All five grounds suffer from fatal defects. Therefore, the Board should deny the Petition.

II. SUMMARY OF THE ARGUMENT

A. Dispositive defects that doom the Petition

First, Petitioner’s proposed construction of the term “releasing means” is improper. Under the correct construction, Sharma—which is the only reference cited for this limitation—does not teach a slide hammer assembly having the claimed “releasing means.”

Second, Petitioner failed to state its invalidity grounds clearly and with peculiarity. Instead of identifying and explaining the precise combinations of the prior art elements that Petitioner deems to be invalidating, Petitioner takes a shotgun approach, wherein the Petition presents a repository of prior art references, citing them in a redundant manner against individual limitations of the Challenged Claims.

Third, claim 1 recites an abrading device having “abrading surfaces” and “an open tip.” For the “abrading surfaces” limitation, the Petition cites a first set of surgical instruments: Compton’s broach (Grounds 1 and 3), Schifano’s rasp (Ground

2), and Black's rasp (Grounds 4 and 5). For the "open tip" limitation, the Petition cites a second set of different surgical instruments: Donner's joint preparation tool (Ground 1), Otte's box chisel (Ground 1), Schifano's box chisel (Ground 2), Martz's chisel tool (Grounds 2-5), and Black's box chisel (Grounds 4 and 5). The Petition does not contemplate combining the surgical instruments from the first set with the surgical instruments from the second set. Thus, the Petition fails to establish obviousness of the claimed abrading device having *both* features.

Fourth, the stated reasons for combining the cited prior art references are generic and conclusory and therefore are legally insufficient to establish a *prima facie* case of obviousness. The only cited support for Petitioner's conclusory reasons for combining references is Dr. Drewry's declaration, which should be awarded little to no weight because it merely parrots Petitioner's conclusory statements, without any additional analysis.

B. Ground-specific deficiencies

In addition to the defects summarized above, each of which constitutes an independent legal basis for denying the Petition, there are also ground-specific deficiencies explained below.

In Grounds 1 and 3, the primary prior art reference—Compton—requires creating a diamond-shaped void within an SI joint for insertion of a correspondingly shaped implant. The invalidity challenges in these grounds rely on the surgical

instruments taught in Donner, Otte, or Martz to allege obviousness of the claimed abrading device. However, none of these surgical instruments is configured to form a diamond-shaped void that Compton requires. Thus, a person of ordinary skill in the art (“POSA”) would not be motivated to combine Compton with Donner, Otte, or Martz because such combination would render Compton’s joint fusion method inoperable.

In addition, Ground 1 is deficient because the cited cutting edges of Donner’s joint preparation tool are not disposed at the leading edge as claim 1 requires. Furthermore, under the correct claim construction, the cited embodiment of Donner does not have an “open tip.”

Grounds 2-5 base their obviousness challenges on a premise that the cited embodiment of Martz’s chisel has an “open tip comprising a cutting edge disposed at a leading edge ... configured to cut bone tissue.” However, Martz explicitly states that the distal cutting edges of its chisel are configured to cut disc material—not bone. In addition, Petitioner’s proposed construction of the term “open tip” is untenably broad and would render the “open tip” limitation meaningless. Under the correct construction of this term, the cited embodiment of Martz’s chisel does not have an “open tip.”

III. OVERVIEW OF THE ‘129 PATENT

The ‘129 Patent discloses and claims a method for repairing a sacroiliac joint (“SI joint”). Ex. 1001 at Abstract. Prior to the ‘129 Patent, the SI joint repair procedures generally involved the use of a drill to create a pilot hole in an SI joint for receiving a fusion implant. *Id.* at 1:45-48. After creating the pilot hole, the prior art SI joint repair procedures commonly required the use of a broach, a rasp, or similar abrading device to decorticate the bone inside the SI joint. *Id.* at 1:55-58. Operation of these prior art abrading devices commonly required “attach[ing] a separate slap hammer, or slide hammer, to the abrading device such that pull-out forces can be applied to the abrading device.” *Id.* at 1:65-2:2.

The inventors of the invention claimed in the ‘129 Patent recognized that the prior art SI joint procedures that require the use of a drill and multiple surgical tools to create an implant-receiving void “are complex and time consuming, often leading to suboptimal results.” *Id.* at 1:45-50. The inventors also recognized that “past slide hammer assemblies are cumbersome to operate, difficult to attach to the abrading device, and difficult to operate.” *Id.* at 2:3-6. The ‘129 Patent addressed these shortcomings of the prior art by disclosing an innovative “slide hammer integrated into the abrading device in a single tool, which eliminates the need for using a rotary cutting instrument.” *Id.* at 2:7-11. Specifically, claim 1 requires that the multi-functional abrading device must comprise the following structural components: (1)

abrading surfaces on the opposite sides of the abrading head; (2) an open tip; (3) a cutting edge disposed at the leading edge of the open tip; (4) the cutting edge must be configured to cut bone tissue; (5) a slide hammer assembly; and (6) a releasing means for transitioning the slide hammer assembly between the locked position and the released position. *Id.* at 12:66-13:17.

IV. THE LEVEL OF ORDINARY SKILL IN THE ART

The Challenged Claims recite a method and surgical tools for forming an implant-receiving void specifically within a sacroiliac joint. Ex. 1001 at 12:49-51. Notably, outside of a single limitation in claim 9 that recites a “fusion implant having a generally rectangular cross sectional shape,” the Challenged Claims do not pertain to the design and use of implants. Nevertheless, Petitioner’s proposed definition of the level of ordinary skill in the art focuses on a POSA’s experience with orthopedic implants and their design and use, but fails to require any experience with the sacroiliac joint fusion procedures or the surgical tools required to perform them. Pet. 16. Thus, the Board should decline Petitioner’s proposed definition of the level of ordinary skill in the art.

In accord with the subject matter recited in the Challenged Claims of the ‘129 Patent, Patent Owner proposes that a POSA would have had an engineering or a medical degree and would have had at least three years of experience with the

sacroiliac joint fusion procedures and the surgical tools required to perform them.

Ex. 2001 at ¶13.

V. THE DECLARATION OF PETITIONER’S EXPERT SHOULD BE GIVEN LITTLE TO NO WEIGHT

A. Dr. Drewry is not a POSA with respect to the Challenged Claims

Dr. Drewry may be an experienced biomedical engineer and a prolific inventor in the field of spinal orthopedic implants. *See generally* Ex. 1018. However, neither his curriculum vitae nor the Petition provides any indication that he possesses the requisite experience and expertise in the field of sacroiliac joint fusion and the surgical tools for performing sacroiliac joint fusion procedures. *See* Pet. 3-5. Because the ‘129 Patent claims a method and surgical instruments specifically for creating an implant-receiving void within a sacroiliac joint, Dr. Drewry does not qualify as a POSA with respect to the Challenged Claims.

B. Dr. Drewry’s declaration copies the Petition word-for-word

It is well established that “[e]xpert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.” 37 C.F.R. § 42.65(a). Recently, the USPTO director designated as precedential the Board’s decision in *Xerox Corp. et al. v. Bytemark, Inc.*, in which the Board found that an expert declaration that “copies, word-for-word, Petitioner’s conclusory assertions” is entitled to little weight. IPR2022-00624, Paper 12 at 5 (Feb. 10, 2023) (designated precedential).

In this case, the sections of the Petition and Dr. Drewry's declaration setting forth the summaries of the prior art references and the obviousness grounds are identical copies of one another. *Compare* Pet. 24-86, with Ex. 1017 at ¶¶65-102, 111-205. In fact, they even contain the same typographical errors. *Compare, e.g.*, Pet. 69, 74, 81 ("a cutting tool that are [sic] operable), with Ex. 1017 at ¶¶154, 170, 188 ("a cutting tool that are [sic] operable"). Thus, analogously to *Xerox*, Dr. Drewry's declaration "sets forth Petitioner's conclusory assertions as though they are facts, rather than setting forth facts and evidence in support of Petitioner's assertions." *Xerox Corp.*, IPR2022-00624, Paper 12 at 5. Thus, under the legal precedent set forth in *Xerox*, Dr. Drewry's declaration is entitled to little or no weight.

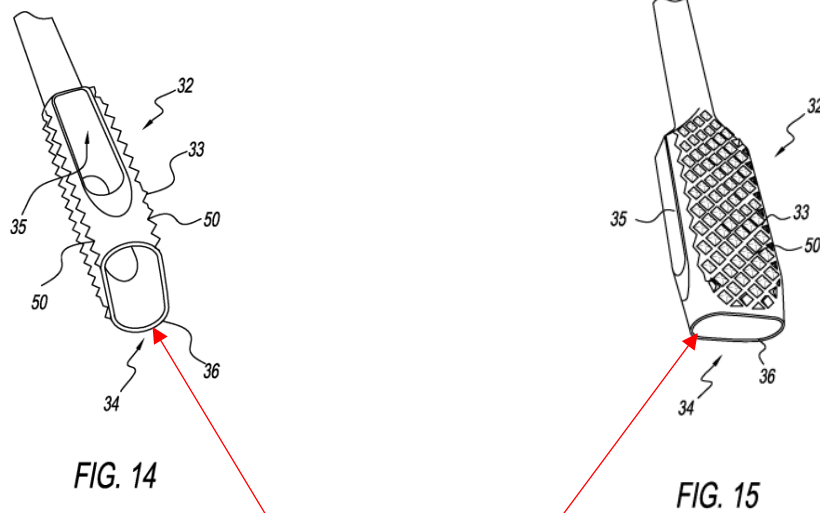
VI. CLAIM CONSTRUCTION

Petitioner provides a chart listing its proposed construction for eleven claim terms. The only purported support for each proposed construction is limited to a single-sentence quotation from the specification of the '129 Patent, without any additional analysis or explanation. Pet. 18-20. Most importantly, Petitioner's proposed constructions for the terms "open tip" and "releasing means" are untenably broad and legally improper. Construction of each of these terms is addressed under a dedicated heading below.

A. “Open tip”

Petitioner proposes that the claim term “open tip” be construed as “a structure on the abrading head having an exposed tapered edge.” *Id.* at 19. This construction fails to give any meaning to the terms “open” and “tip.” Furthermore, Petitioner’s proposed construction would effectively read the limitation “open tip” out of claim 1, rendering this term redundant with respect to the limitation “a cutting edge”—which element *is* the structure on the abrading head having an exposed tapered edge.

Under the legal principles set forth in *Phillips*, the term “open tip” should be construed according to its plain and ordinary meaning, in light of the specification and drawings of the ‘129 Patent. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). The ‘129 Patent most clearly depicts the open tip in Figures 14 and 15, which are reproduced and annotated below.



Open tip (34) is the distal portion of the hollow abrading head. The terminal edges of the abrading surfaces (33) and lateral sides (35) merge together to collectively form the leading edge of the open tip, which encloses the opening to the interior void of the abrading head.

The ‘129 Patent describes the structure of the abrading head as follows: “abrading surfaces 33 and lateral sides 35 form a box-like abrading head 32 having a void therein.” Ex. 1001 at 6:31-33. With respect to the structure of the “open tip,” the specification states that “each side of the first pair of opposing sides is a substantially planar member having a distal edge terminating at the open tip 34,” and “[e]ach side of the second pair of opposing sides may comprise a curved distal portion terminating at the open tip 34.” *Id.* at 6:39-45. Thus, all four sides of the box-like abrading head terminate at the open tip.

As shown in Figures 14 and 15, the “open tip 34” refers to the distal end of the box-like abrading head. *Id.* at FIGS. 14, 15. Consistent with the passages from the specification quoted above, Figures 14 and 15 depict that the terminal edges of the four sides of the abrading head collectively form the leading edge of the open tip. *Id.*; *see also* Ex. 2001 at ¶29. This leading edge encloses an opening into the interior void of the abrading head and provides a passage thereto, so that “as the cutting edge 36 cuts bone tissue inside the SI Joint 3, the dislodged bone tissue falls into the void.” *Id.* at 6:35-37; *see also* Ex. 2001 at ¶29.

Thus, based on the drawings and the specification of the ‘129 Patent, the term “open tip” should be construed as “a distal end of the abrading head whose leading edge encloses an opening thereinto.” Ex. 2001 at ¶30.

B. “Releasing means”

1. Petitioner’s construction is deficient

Patent Owner agrees with Petitioner that the term “releasing means” is a mean-plus-function limitation that should be construed in accordance with 35 U.S.C. § 112(f). *See* Pet. 19-20. Petitioner proposes that the term “releasing means” be construed as “[a] mating threaded connection, a quick disconnect attachment, a depressible tab, a latch, a clasp, a clip, a clamp or other equivalent connection structure.” Pet. 19. Petitioner’s proposed construction is limited to a single-sentence quotation from the ‘129 Patent, without any supporting rationale.

Patent Owner disagrees with Petitioner's proposed construction because it fails to identify the claimed function and provides an incomplete description of the corresponding structure. With respect to construction of the means-plus-function limitations, the Patent Trial and Appeal Board Consolidated Trial Practice Guide ("TPG") states the following:

[w]here claim language may be construed according to 35 U.S.C. § 112(f), a petitioner *must* provide a construction that includes *both* the *claimed function* and the specific portions of the specification that *describe the structure, material, or acts* corresponding to each claimed function. 37 C.F.R. § 42.104(b)(3) ... A petitioner who chooses not to address construction under § 112(f) risks failing to satisfy the requirement of 37 C.F.R. § 42.104(b)(3).

TPG at 45 (emphasis added).

The Petitioner failed to comply with this rule. In its proposed construction, Petitioner did not identify the claimed function associated with the limitation "releasing means." In addition, Petitioner ignores the definition provided in the specification, which affirmatively defines the term "releasing means" and associates it with the claimed function: "[t]he releasing means *is* any means for *releasably connecting the hammer sleeve 31 to the base 51*, thereby transitioning the slide hammer assembly between its released position and its locked position." Ex. 1001 at 7:5-9 (emphasis added).

2. The proper construction of the term “releasing means” requires that the recited connecting structures must releasably connect the hammer sleeve to the base of the sliding hammer assembly

“Construing a means-plus-function claim term is a two-step process. The [Board] must first identify the claimed function. Then, the [Board] must determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015).

First step: In the present case, the claimed function associated with the term “releasing means” is “transitioning the slide hammer assembly between the locked position and the released position.” Ex. 1001 at 13:14-17.

Second step: The ‘129 Patent provides the following affirmative definition of the term “releasing means,” explicitly identifying the structure corresponding to the claimed function:

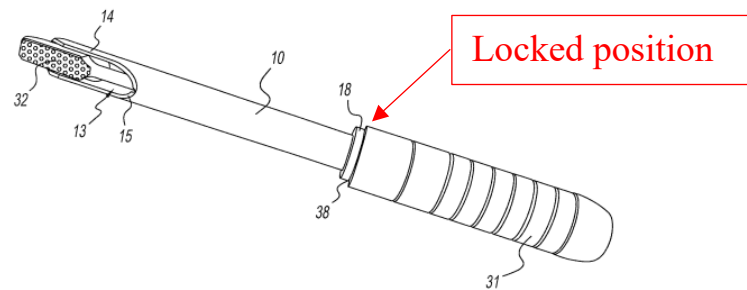
[t]he releasing means *is* any means for ***releasably connecting the hammer sleeve 31 to the base 51***, thereby transitioning the slide hammer assembly between its released position and its locked position. The releasing means could be ***a mating threaded connection, a quick disconnect attachment, a depressible tab, a latch, a clasp, a clip, a clamp, or other equivalent connection structure.***

Ex. 1001 at 7:5-12 (emphasis added); *see also* Ex. 2001 at ¶33 (identifying the first quoted sentence as “a direct definition” of the term “releasing means”).

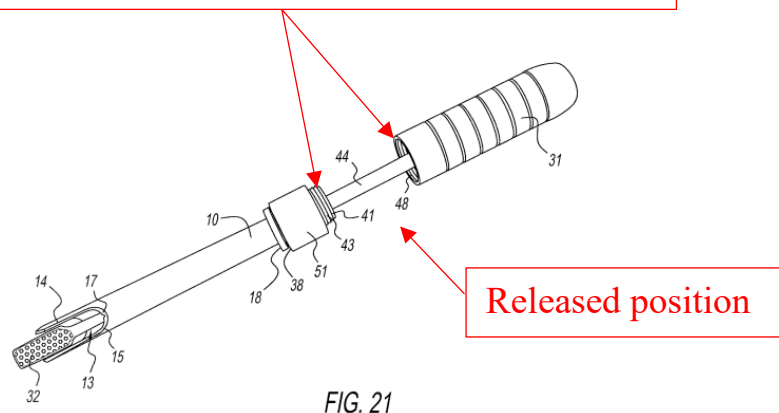
Additionally, the '129 Patent provides the following description of the structure corresponding to the claimed function of transitioning the slide hammer assembly between the locked and released positions:

[t]he threaded connector 48 in the hammer sleeve 31 is then *mated to the external threads 43 on the collar 41* to promote a secure connection... In this configuration, shown in FIG. 20, the slide hammer assembly 40 is in its locked position. To operate the slide hammer assembly 40, the threaded connector 48 is disengaged from the external threads 43 of the collar 41, placing the slide hammer assembly 40 in its released position, which is shown in FIG. 21.

Id. at 7:30-40 (emphasis added). Figures 20 and 21 referenced in this passage are reproduced and annotated below.

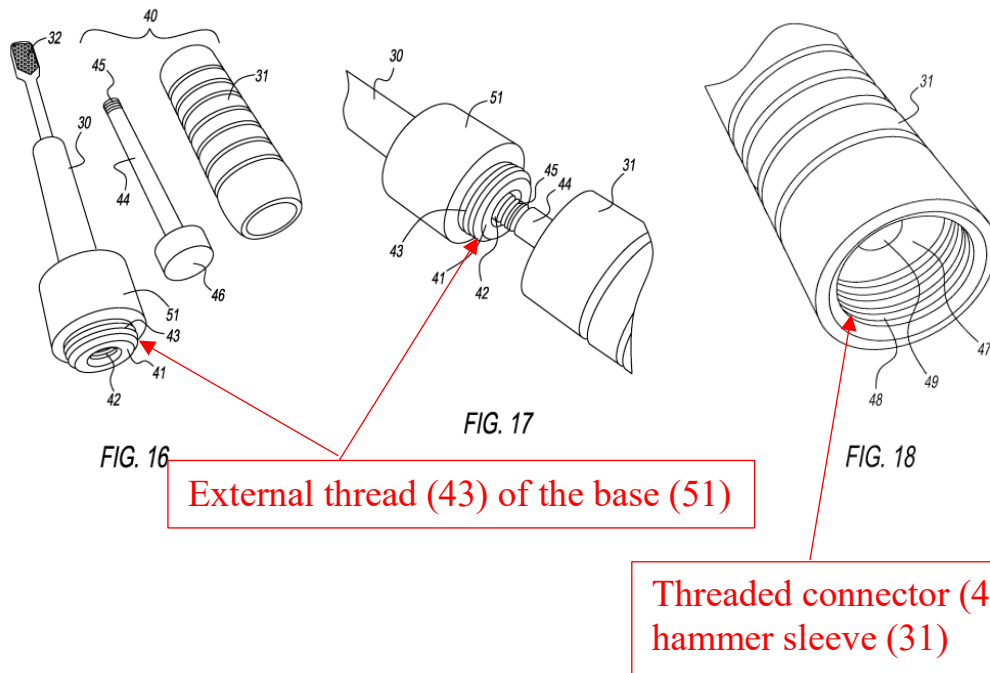


External threads (43) on the collar (41) and the threaded connector (48) within the distal end of the hammer sleeve (32) releasably connect the slide hammer (31) to the base (51).



In addition to the passages quoted above, the term “releasing means” is recited in the specification of the ‘129 in the following three instances: (1) “a releasing means that *releasably connects a hammer sleeve to the base*;” (2) “a releasing means that *releasably connects a hammer sleeve 31 to the base 51*,” and (3) “in FIGS. 16, 17, and 18, the releasing means is a mating threaded connection.” *Id.* at 2:60-62 (emphasis added); 7:2-4 (emphasis added); 7:13-14. Figures 16, 17, and 18—which

are reproduced and annotated below—depict the mating threaded connection that releasably connects the hammer sleeve *to the base*.



The discussion set forth above demonstrates that the drawings and the specification of the ‘129 Patent provide a clear, deliberate, and precise definition for the term “releasing means” that requires “releasably connecting the hammer sleeve to the base.” See *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (“[A]n inventor is indeed free to define the specific terms used to describe his or her invention, [when] this [is] done with reasonable clarity, deliberateness, and precision.”). Furthermore, the ‘129 Patent makes it clear that the inventors envisioned and disclosed only a specific embodiment of the invention, in which the “releasing means” is a connecting structure that releasably connects the hammer sleeve *to the*

base. Indeed, the interface between the base and the distal end of the hammer sleeve is the only location specified in the ‘129 Patent for disposing the “releasing means.” Ex. 2001 at ¶36. Thus, the term “releasing means” should be construed as follows: “a mating threaded connection, a quick disconnect attachment, a depressible tab, a latch, a clasp, a clip, a clamp, or other equivalent connection structure releasably connecting the hammer sleeve to the base for transitioning the slide hammer assembly between the locked position and the released position.” *Id.*

3. The Federal Circuit case law supports Patent Owner’s proposed construction

It is well established that “a means clause does not cover every means for performing the specified function.” *Nomos Corp. v. Brainlab USA, Inc.*, 357 F.3d 1364, 1368 (Fed. Cir. 2004) (internal citation omitted). On the contrary, if the specification indicates that the inventors envisioned a specific embodiment of the means-plus-function element, “the corresponding structure is limited to that embodiment.” *Id.* Furthermore, a proper construction of a mean-plus-function limitation should include not only the disclosed structures and their equivalents, but also their specific location as envisioned by the patentee. *Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001, 1015 (Fed. Cir. 2023). The two Federal Circuit cases cited above and their pertinence to the present case are discussed in more detail below.

a. Nomos Corp. v. Brainlab USA, Inc.

In *Nomos*, the Federal Circuit addressed construction of the term “a means for generating at least one ultrasound image.” *Nomos Corp.*, 357 F.3d at 1366. With respect to this limitation, one sentence in the patent specification stated that “[p]referably the means for generating 420 an ultrasound image 421 is a conventional, commercially available ultrasound probe 422,” while another sentence provided a more specific description stating “the means for generating the ultrasound image may be an ultrasound probe, *including a means for mounting the ultrasound probe to a radiation therapy device.*” *Id.* at 1367-68 (emphasis added).

The parties disputed whether the construction of the claim term “means for generating at least one ultrasound image” should include just “an ultrasound probe and nothing more” or “should include both an ultrasound probe *and* a fixation device that secures the probe to the treatment table.” *Id.* (emphasis added). The Federal Circuit found that “the invention envisioned and claimed by the applicant included a fixation device that secures the probe to the treatment table.” *Id.* For this reason, the Court held that “the corresponding structure is limited to that embodiment, which includes a fixation device, and its equivalents.” *Id.*

Returning to the present case, the specification of the ‘129 Patent affirmatively states that the “releasing means *is* any means for *releasably connecting the hammer sleeve 31 to the base 51.*” Ex. 1001 at 7:5-7 (emphasis added).

Furthermore, in all instances in which the term “releasing means” appears in the specification, the ‘129 Patent reiterates that the releasing means *connects the sleeve to the base*. *Id.* at 2:60-62, 7:2-4. Likewise, all figures depicting the releasing means clearly show a releasable connection between the hammer sleeve and the base. *Id.* at FIGS. 16-18, 21. Thus, analogously to *Nomos*, it is clear that the inventors envisioned the invention in which the hammer sleeve was releasably connected to the base. Ex. 2001 at ¶36. Therefore, the Federal Circuit precedent in *Nomos* directs that this structural aspect of the “releasing means” must be included in the construction of this term.

b. Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC

Another Federal Circuit case with analogous facts involving construction of a means-plus-function limitation is *Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001 (Fed. Cir. 2023). In that case, the claim term at issue was “a means for driving said rotor.” *Id.* at 1006, 1015. The patent specification stated that a rotor “could be driven to rotate with any means such as directly driven *at the bottom of the cell body* with dynamic seal, etc.” *Id.* at 1015 (emphasis added). The parties disagreed as to whether this language defining the location of the rotor—i.e., “at the bottom of the cell body”—should be included in the claim construction. *Id.* The party opposing inclusion of this language argued that

“means-plus-function claims must be limited to disclosed structures and equivalents, *not* locations of disclosed structures.” *Id.* (emphasis added). The Federal Circuit disagreed:

[w]e reject Grace’s attempt to disassociate the disclosed structure from the location of the disclosed structure. The specification indicates that the invention envisioned and claimed by the patentee was a direct drive attached to the bottom of the cell body.

Id. (citing *Nomos Corp.*, 357 F.3d at 1367–68).

In the present case, analogously to the facts in *Grace Industries*, the ‘129 Patent makes it clear that the interface between the distal end of the hammer sleeve and the base is the only envisioned location for disposing the connecting structure that accomplishes the claimed function of transitioning the hammer sleeve between the locked and released positions. Ex. 1001 at 7:5-9; FIG. 21. The holding in *Grace Industries* prohibits dissociation of the disclosed structure from its location—i.e., the interface between the hammer sleeve and the base.

Thus, the Federal Circuit precedent for construing means-plus-function limitation set forth in *Nomos* and *Grace Industries* confirms that Patent Owner’s proposed construction for the term “releasing means” is correct and legally proper.

**VII. PETITIONER FAILED TO ESTABLISH A REASONABLE
LIKELIHOOD THAT ANY OF THE CHALLENGED CLAIMS ARE
UNPATENTABLE**

A. The cited prior art does not teach or suggest all limitations of claim 1

1. Grounds 1-5 fail because the cited prior art does not teach or suggest the claim limitation “releasing means”

a. The sections of the Petition setting forth the invalidity grounds fail to identify any prior art structure for the “releasing means”

The law dictates that “[i]t is not the Board’s job to cobble together assertions from different sections of a petition or citations of various exhibits in order to infer every possible permutation of a petitioner’s arguments. Arguments in a petition must be made with particularity, not opacity...” *Microsoft Corp. v. FG SRC, LLC*, 860 Fed.Appx. 708, 713 (Fed. Cir. 2021). Thus, Petitioner carries the burden of production to identify the exact prior art disclosure that Petitioner deems to teach the claimed limitation, and Petitioner must do so, with particularity, in the section of the Petition attributed to that limitation. Petitioner failed to satisfy this burden.

In Ground 1, Section X.D.2.ix is attributed to the invalidity challenge of the limitation “releasing means.” Pet. 58. In that section, Petitioner’s discussion directed specifically to the limitation “releasing means” is limited to a single sentence. *Id.* (“The universal impactor and slap hammer includes *a locking mechanism* that, when locked, allows the universal tool to function as an impact hammer and, when unlocked, allows the universal tool to act as a slap hammer.”) (emphasis added). In

support of this sentence, Petitioner cites Sharma at page 3, lines 1-3. *Id.* (“An object of the invention is to provide universal impactor with slap hammer having *a unique locking mechanism* which when locked acts as impact hammer and when unlocked becomes a slap hammer.”) (emphasis added). The cited portion of Sharma is a single sentence describing a function of “a unique locking mechanism”—***but not its structure.***

Thus, Section X.D.2.ix does not identify any disclosure in Sharma—or any other prior art reference—describing ***the structure*** necessary to satisfy the “releasing means” limitation. In fact, the entire Section X.D., which sets forth Petitioner’s invalidity challenge in Ground 1, does not identify any *structure* in Sharma—or elsewhere—corresponding to the “releasing means” limitation. Thus, Petitioner failed to meet its burden of production of identifying, in the designated section of the Petition, the exact prior art structure that Petitioner deems to read on the “releasing means” limitation.

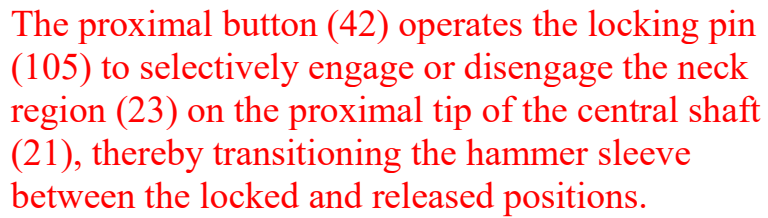
The remaining Grounds 2-5 do not provide any independent analysis with respect to the limitation “releasing means,” and instead cite Section X.D.2.ix, thereby inheriting its fatal deficiencies. *See* Pet. 67, 71-72, 79, 84 (all citing Section X.D.2.ix of the Petition).

Under the legal precedent set forth in *Microsoft Corp.*, Petitioner’s failure to meet its burden of production of identifying, with particularity, the exact prior art

structure for the “releasing means” limitation is a sufficient reason for the Board to deny institution. 860 Fed.Appx. at 713.

b. Under the correct construction of the term “releasing means,” claim 1 requires that the hammer sleeve must be releasably connected to the base, whereas the cited locking mechanism of Sharma connects the hammer sleeve to the proximal tip of the central shaft

Even if the Board were to “cobble together assertions from different sections” of the Petition by looking beyond the sections setting forth the invalidity grounds—which it should not—the only other section of the Petition that discusses Sharma’s locking mechanism is Petitioner’s summary of Sharma in Section X.B.7. Pet. 48-50. There, Petitioner references Sharma’s “proximal button 42” as the locking mechanism and cites Sharma’s disclosure stating that “[t]he locking mechanism may be a quick connect device operated by a spring-biased button, a threaded screw connection, or a taper lock.” *Id.* at 48 (citing Ex. 1009 at p. 4, ll. 24-32). With respect to this locking mechanism, Sharma explains that “[t]he mechanical locking mechanism ... is achieved by the *locking of proximal tip of central shaft* by pressing the proximal button located on proximal impaction end [of the hammer sleeve].” Ex. 1009 at p. 4, ll. 24-26 (emphasis added); *see also id.* at p. 20, ll. 4-16. This locking mechanism is illustrated in Figure 4, which is reproduced and annotated below.

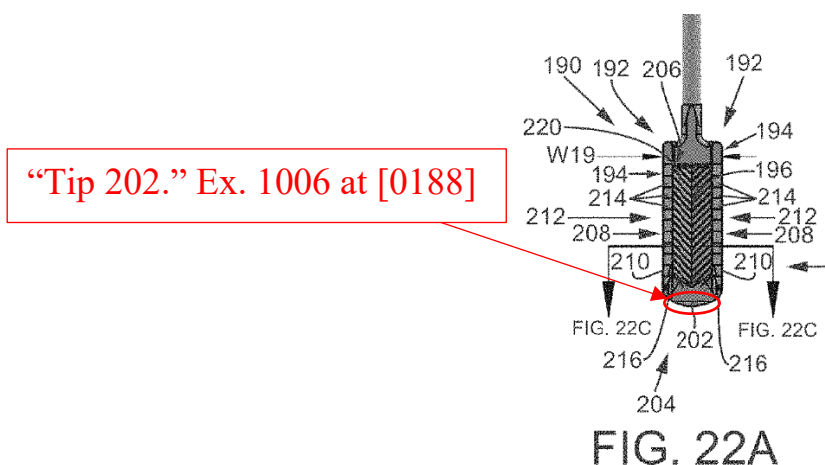


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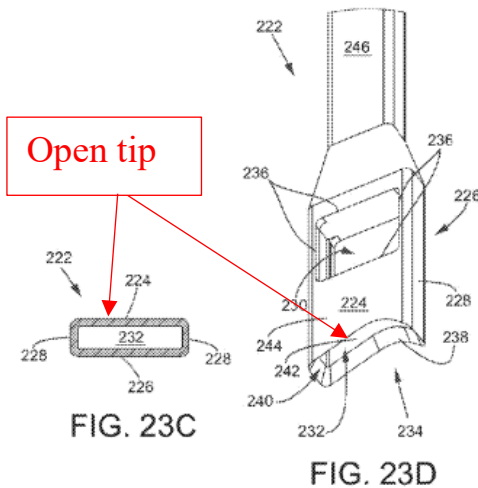
Therefore, because under the correct claim construction, the term “releasing means” requires a connection structure releasably connecting the hammer sleeve *to the base*, Petitioner failed to prove that Sharma’s locking mechanism teaches or suggests the “releasing means” of clam 1. *Id.* at 40. Because Sharma is the only reference cited in the Petition for this limitation across all grounds, this deficiency dooms the entire Petition.

2. In Ground 1, the cited embodiment of Donner’s joint preparation tool does not have an “open tip”

In Ground 1, Petitioner relies on the embodiment of Donner’s joint preparation tool depicted in Figures 22A-22D to allege obviousness of the claimed abrading device having an “open tip.” Pet. 56. Figure 22A of Donner, which is reproduced and annotated below, depicts that the “tip 202” is a solid member, without any openings.



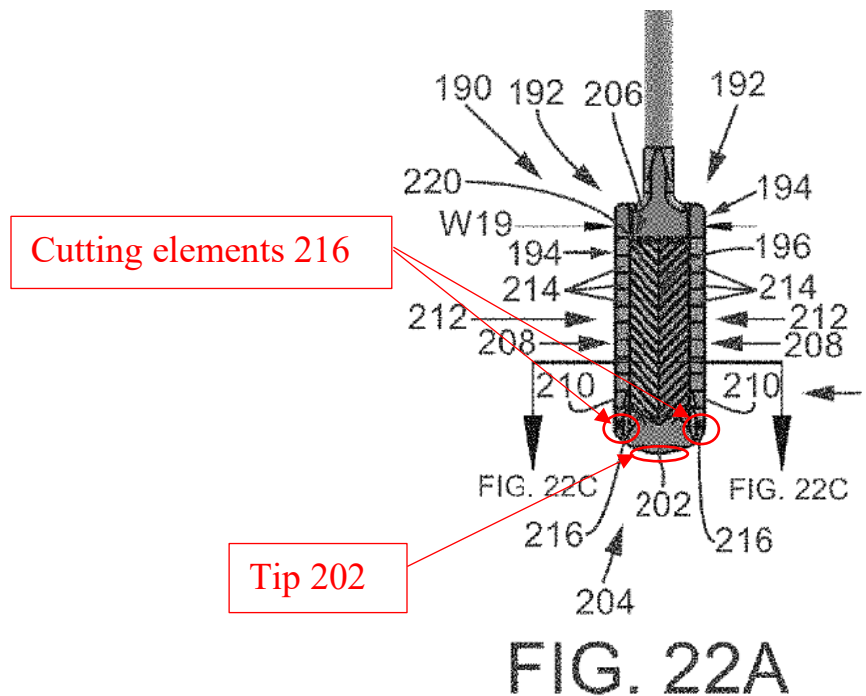
In contrast to the embodiment of Figures 22A-22D, Donner discloses another embodiment that does have an open tip, as depicted in Figures 23C-23D, which are reproduced and annotated below.



Consistent with the claim construction proposed in Section VI.A., *supra*, Donner describes the distal end of this surgical tool as follows: “[t]he cavity 232 is *open on a distal end 234* of the box osteotome head 222.” *Id.* at [0191] (emphasis added). Thus, when Donner discloses an embodiment of a joint preparation tool with an “open tip,” Donner identifies it as such. Donner’s terminology further confirms that Patent Owner’s proposed construction of the term “open tip” is correct, and that Donner’s joint preparation tool of Figures 22A-22D does not have an “open tip.”

3. In Ground 1, the cited embodiment of Donner's joint preparation tool does not have a "cutting edge" at the leading edge of the tip

Petitioner relies on Donner's "cutting edge 216" to allege that the leading edge of the tip of the Donner's joint preparation tool of Figures 22A-22D has a cutting edge. Pet. 56. This argument contradicts Donner. As clearly shown in Figure 22A, cutting elements 216 are separate from the tip 202 and are not disposed at its leading edge.

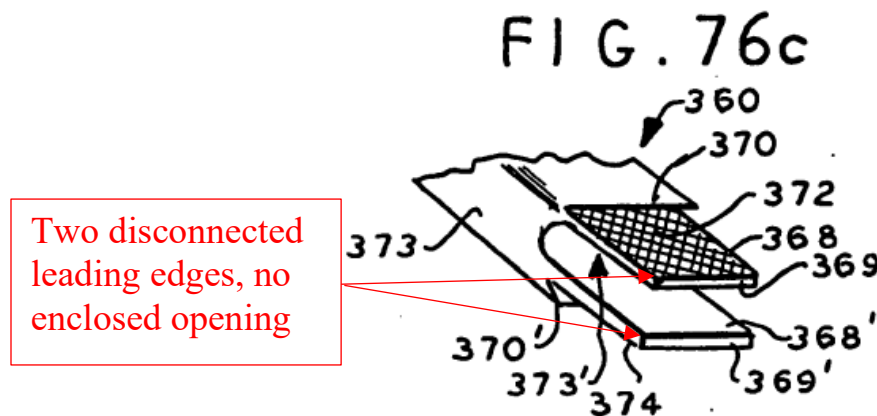


4. In Grounds 2-5, the cited embodiment of Martz's chisel tool does not have an "open tip"

Claim 1 requires that the abrading head must have an "open tip." Ex. 1001 at 13:6-7. Under Patent Owner's proposed construction, the limitation "open tip"

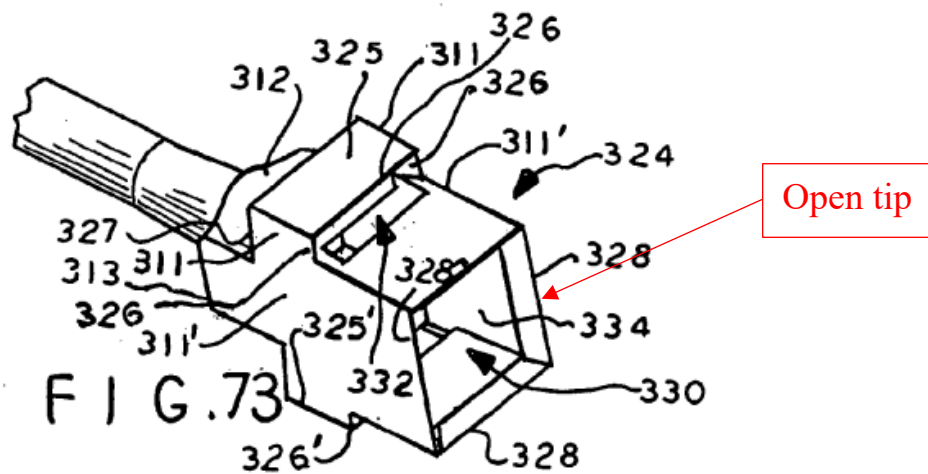
requires that the distal end of the abrading head must have a “leading edge [that] encloses an opening thereinto.” *See supra* Section VI.A.

For this limitation, in Grounds 2-5, Petitioner cites to the embodiment of Martz’s chisel tool depicted in Figures 76a-76c. Pet. 66-67. Figure 76c of Martz is reproduced and annotated below.



In the embodiment of Martz depicted in Figures 76a-76c, the distal end of the abrading head has two separate leading edges that do not enclose an opening. Thus, under the claim construction set forth in Section VI.A., *supra*, the embodiment of Martz’s chisel tool in Figures 76a-76c does not have an “open tip.”

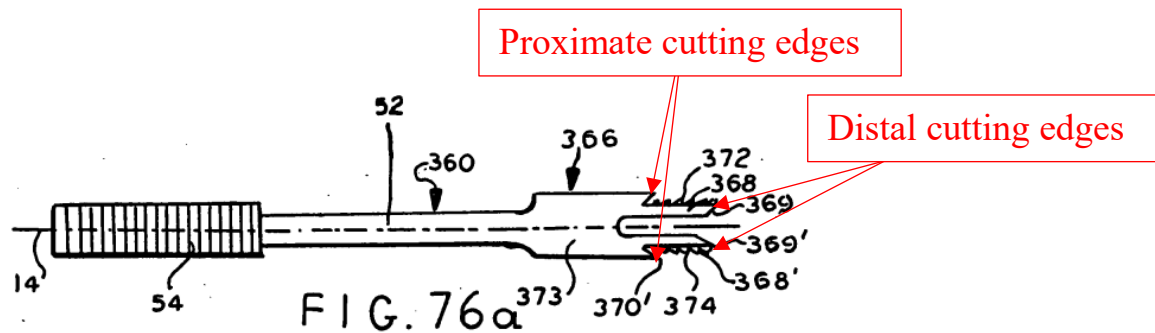
In contrast to the embodiment depicted Figures 76a-76c, another embodiment of Martz’s chisel tool depicted in Figure 73 does have an open tip. Figure 73 is reproduced and annotated below.



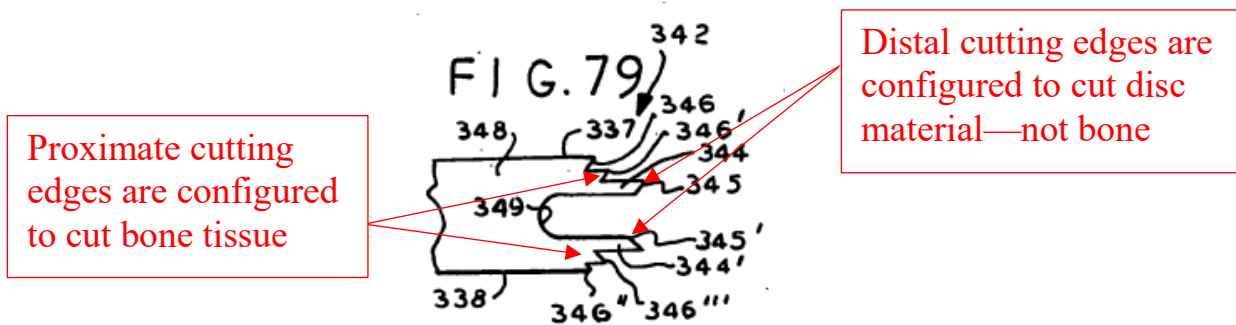
Consistent with Patent Owner’s proposed claim construction, Martz describes the distal end of the open-tip embodiment as follows: “[t]he guide member 324 terminates at *four quadrilateral oriented distal cutting edges 328 defining opening 330.*” Ex. 1008 at [0300] (emphasis added). This description indicates that when Martz discloses a chisel head with a distal opening, Martz identifies it as such. Notably, in contrast with Martz’s description of the open-tip embodiment of Figure 73, Martz’s description of the embodiment of Figures 76a-76c does not refer to the gap between the disconnected leading edges of the guide members as an “opening.” *See id.* at [0305]-[0306]. Thus, Martz’s own terminology and description of its chisel tool refutes Petitioner’s conclusory assertion that the embodiment of Figures 76a-76c has an “open tip.”

5. Grounds 2-5 fail because, in the cited embodiment of Martz's chisel tool, the distal cutting edges are configured to cut disc material rather than the bone tissue

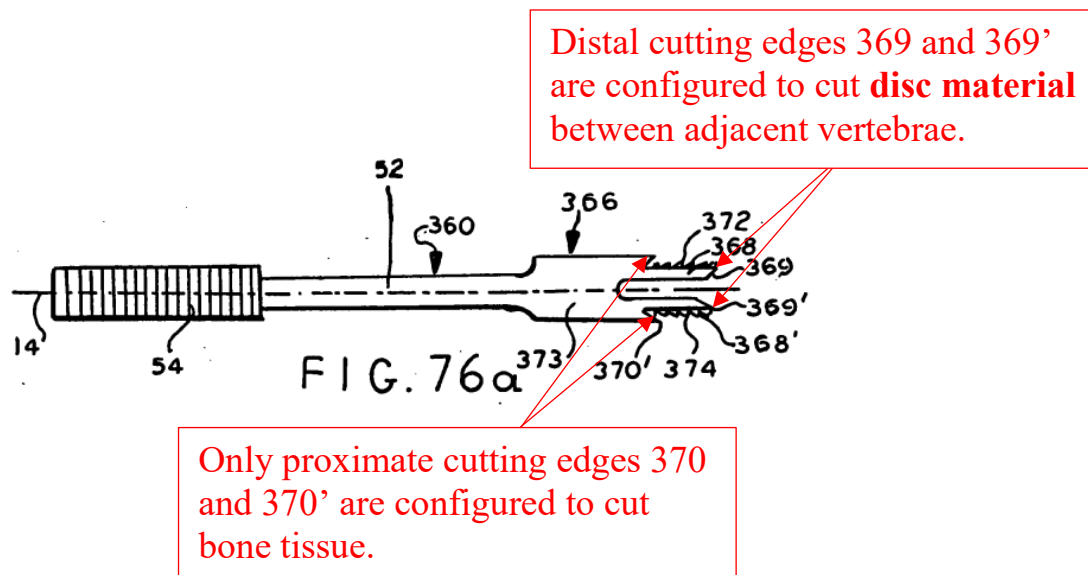
Claim 1 requires that the cutting edge on the leading edge of the open tip must be configured "to cut bone tissue in the sacroiliac joint." Ex. 1001 at 13:6-9. For this limitation, Petitioner relies on the embodiment of Martz's chisel tool depicted in Figures 76a-76c—specifically, the distal cutting edges 369 and 369' disposed at the leading edges of the guide members 368, and 368'. Pet. 66-67. Additionally, Martz's chisel tool has proximate cutting edges 370 and 370'. Ex. 1008 at [0305].



In contrast to the limitation of claim 1 requiring that the leading cutting edge must be “configured to cut bone tissue,” Martz teaches that the distal cutting edges are configured to cut *disc material* from adjacent vertebrae—*not bone*. See Ex. 1008 at [0304]. Although Martz’s description of the embodiment of Figures 76a-76c does not explicitly describe the configuration of the distal cutting edges, Martz does state that the “invention [] shown in FIGS. 76a-76c [] is similar to the previous instrument shown in FIGS. 76-79.” *Id.* at [0305]. With respect to the embodiment depicted in Figures 76-79, Martz explicitly discloses that “[t]he guide members 344 and 344’ [have] respective *cutting edges 345, 345’* [that] *cut disc material* from adjacent vertebrae while guiding the proximate cutting edges to meet and cut from adjacent vertebrae.” *Id.* at [0304] (emphasis added). Figure 79 is reproduced and annotated below, identifying the distal edges configured to cut disc material and proximal edges configured to cut the bone tissue.



In fact, Petitioner itself acknowledges that in the embodiment of Martz's chisel depicted in Figures 76a-76c, there are two pairs of cutting edges, wherein the distal cutting edges are configured to remove disc material rather than bone tissue. Pet. 46 ("The chisel removes a first portion of endplate material from at least one of two adjacent vertebrae using cutting edges and *removes disc material between the adjacent vertebrae using a second cutting edge on a distal end of the chisel.*") (emphasis added). The two pairs of cutting edges in Martz's embodiment of Figure 76a and their corresponding functions are identified in the annotated Figure 76a reproduced below.



Accordingly, because the distal cutting edges 369 and 369' are not configured to cut bone tissue, the cited embodiment of Martz does not teach or suggest the limitation “a cutting edge disposed at a leading edge of the open tip, the cutting edge configured to cut bone tissue in the sacroiliac joint.”

B. The asserted grounds allege obviousness of the claimed “abrading device” by reciting a disjointed assortment of separate surgical tools, without presenting any rationale for combining or modifying them

It is axiomatic that “[a] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 401 (2007). Yet, in every invalidity ground, Petitioner seeks to prove obviousness of claim 1 by mapping individual features of the claimed abrading device to separate prior art surgical instruments, without presenting any rationale for either combining them into a

unitary abrading device or modifying them based on each other's teachings. Under the fundamental principle of patent law from *KSR* quoted above, this deficiency is fatal.

1. Petitioner improperly attempts to establish obviousness of the claimed “abrading device” by alleging that the limitations “abrading surface” and “open tip” were present, independently, in separate surgical devices, without explaining their combination

Claim 1 of the '129 Patent claims an abrading device whose abrading head has the following structural features: (1) “abrading surfaces” and (2) “an open tip.” Ex. 1001 at 13:1-9. The Petition designates these elements as Limitation 1(d)(i)(a) and Limitation 1(d)(i)(b), respectively. Pet. ix-x. In each invalidity ground, the Petition cites a first surgical instrument to allege obviousness of the “abrading surfaces” and then cites a second, different surgical instrument to allege obviousness of the “open tip.” The Petition cites these surgical instruments independently, without contemplating their combination or modification—let alone providing a reasoned rationale as to why or how these separate surgical instruments could be combined or modified.

In Ground 1, in the section attributed to the Limitation 1(d)(i)(a), the Petition relies exclusively on Compton's “broach 148 ... having cutting teeth 166 on opposing sides” to allege that the claimed abrading surfaces were known in the prior art. *Id.* at 55-56. The Petition does not cite any other references in its discussion of

the Limitation 1(d)(i)(a). Next, in the section attributed to the Limitation 1(d)(i)(b), the Petition cites Donner's "joint preparation tool 50" and Otte's "box chisel" to allege that the claimed "open tip" was known in the prior art. *Id.* at 56-57.

The only part of Petitioner's argument in Ground 1 that mentions anything pertaining to combining references is Section X.D.1 entitled "Motivation to combine." *See id.* at 51-53. However, that section only contemplates combining "the use of joint preparation tool of Donner with the SI Joint *method* of Compton" and combining "the teachings of Otte, including the disclosed instruments and techniques, with the SI Joint fusion *methods* of Compton and Donner." *Id.* at 51-53 (emphasis added). Notably, there is no discussion, whatsoever, of combining Compton's "broach 148"—which is the only surgical tool cited for the Limitation 1(d)(i)(a)—with either Donner's "joint preparation tool 50" or Otte's "box chisel"—which are cited for the Limitation 1(d)(i)(b). The Petition also does not contemplate any modifications to any of these surgical devices. Therefore, Ground 1 merely amounts to an attempt to demonstrate that the claimed elements of the abrading head were, independently, known in the prior art. Under *KSR*, such attempt, even if successful, is legally insufficient to establish a *prima facie* case of obviousness. *See KSR*, 550 U.S. at 401.

In Ground 2, in the analysis attributed to the Limitation 1(d)(i)(a), the Petition cites exclusively to Schifano's "rasp" to allege that the claimed "abrading surfaces"

were known in the prior art. Pet. 65-66. The Petition does not cite any other references in its discussion of the Limitation 1(d)(i)(a). *See id.* Next, in the analysis attributed to the Limitation 1(d)(i)(b), the Petition cites Schifano's "box chisel" and Martz's "chisel tool." *Id.* at 66-67. The Petition, however, does not contain any discussion pertaining to combining Schifano's rasp with either Schifano's box chisel or Martz's chisel tool. Thus, Ground 2 fails for the same legal reasons as Ground 1.

In Ground 3, Petitioner does not provide a separate analysis of the Limitation 1(d)(i)(a) and instead cites to the discussion of this limitation in Ground 1. *Id.* at 71. Thus, analogously to Ground 1, Ground 3 relies exclusively on Compton's "broach 148" for the "abrading surfaces" limitation. *Id.* at 71. In the section of Ground 3 attributed to the Limitation 1(d)(i)(b), Petitioner relies exclusively on Martz's chisel tool for the "open tip" limitation. *Id.* Analogously to Grounds 1 and 2, Petitioner does not contemplate combining Compton's "broach 148" with Martz's chisel tool. Thus, Ground 3 fails for the same reasons as Grounds 1 and 2.

In Ground 4, Petitioner alleges that Black's "rasp 1000" teaches the Limitation 1(d)(i)(a). Pet. 78. Next, for the Limitation 1(d)(i)(b), Petitioner switches to two other surgical tools: Black's "box chisel 900" and Martz's chisel tool. *Id.* at 78-79. Analogously to Grounds 1-3, the Petition lacks any discussion pertaining to combining Black's "rasp 1000" with either Black's "box chisel 900" or Martz's chisel tool. Thus, Ground 4 also fails for the same reasons as Grounds 1-3.

Lastly, *in Ground 5*, Petitioner does not provide independent discussion of the Limitations 1(d)(i)(a) and 1(d)(i)(b) and instead cites to the corresponding sections of Ground 4. *Id.* at 83. Accordingly, Ground 5 inherits the fatal defects of Ground 4 and fails for the same reasons.

In conclusion, the elements of claim 1 designated in the Petition as the Limitations 1(d)(i)(a) and 1(d)(i)(b) recite structural features of the claimed abrading head. In every ground, Petitioner relies on separate surgical instruments for each of these limitations, without identifying how or why these surgical instruments could be combined or modified to achieve the claimed abrading head. Because “[a] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art,” all asserted invalidity grounds fail to set forth a *prima facie* case of obviousness relative to claim 1 and claims 2, 9, and 10 which are dependent therefrom. *See KSR*, 550 U.S. at 401. This failure is yet another independently dispositive reason for denying the Petition.

2. The Petition fails to address combining the cited surgical tools of Donner, Otte, and Martz with Sharma’s universal hammer assembly

Claim 1 requires that the abrading device must have a multifunctional abrading head and a slide hammer assembly with a releasing means. Ex. 1001 at 12:66-67, 13:10-17. For the abrading device with an abrading head, the Petition relies on Donner’s joint preparation tool (Ground 1), Otte’s box chisel (Ground 1),

or Martz's chisel tool (Grounds 2-5). Pet. 56, 66, 71, 78, 83. For the slide hammer assembly with a releasing means, Petitioner relies exclusively on Sharma across all grounds. *Id.* at 58, 62, 71-72, 79, 84.

Thus, to prevail in its obviousness challenge with respect to any asserted ground, Petition must establish that it would have been obvious to combine Donner's join preparation tool, Otte's box chisel, or Martz's chisel tool with Sharma's universal slide hammer. The Petition, however, fails to provide *any* discussion with respect to Donner-Sharma, Otte-Sharma, or Martz-Sharma combinations. *See id.* at 53, 63, 69, 74, 82. This failure presents yet another dispositive reason for denial of the Petition. *See Playtika Ltd. v. Nexrf Corp.*, IPR2021-00952, Paper 14 at 12-13 (PTAB Nov. 6, 2021) (denying institution where "Petitioner only addresse[d] motivation to combine [the primary reference] with other individual references, and provide[d] no explanation of combinations including more than two of those [multiple] references.").

C. Petitioner failed to set forth its invalidity grounds with particularity

The Federal Circuit case law dictates that "[i]n an IPR, 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) (emphasis added); *see also Intelligent Bio-Sys., Inc. v. Illumina Cambridge*

Ltd., 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim.’”). Furthermore, “[b]ecause the Board’s practice, in light of SAS, is to institute on all grounds asserted in a petition, the Board may consider whether a lack of particular[ity] as to one or more of the asserted grounds justifies denial of an entire petition.” *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 at 17 (PTAB Mar. 6, 2019) (designated informative).

The Board has well-established precedent for denying IPR petitions that cite multiple references against the same claim limitation, without explaining how the cited references are being combined. For example, in *Avant Tech., Inc. v. Anza Tech., Inc.*, the Board denied institution because the petition cited descriptions from multiple prior art references against a single claim element, without “explain[ing] how a person of ordinary skill in the art would have combined these individual elements identified in the various prior art references to arrive at an embodiment of the claimed invention ...” IPR2018-00828, Paper 7 at 11-12 (PTAB Oct. 16, 2018) (internal citation omitted).

Another example of non-institution due to ambiguous grounds is *ADT LLC, v. Vivint, Inc.* IPR2022-00634, Paper 7 (PTAB Oct. 4, 2022). In *ADT*, the petitioner presented an obviousness ground in which two prior art references were cited

“individually without any discussion of the interplay between these two references.”

Id. at 14. The Board declined “to scour the prior art references and piece together an obviousness ground based on [their] combination.” *Id.* Instead, the Board denied the petition, finding that “the lack of clarity in [a petitioner’s] asserted obviousness ground might enable [the petitioner] to deviate from the arguments initially presented in the Petition in a manner that may prejudice [the patent owner].” *Id.* (citing *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) (explaining that “[s]hifting arguments” during the course of a trial are “foreclosed by statute, [Federal Circuit] precedent, and Board guidelines”)).

Another non-institution example involving redundant prior art references is *Hunting Titan, Inc. v. Dynaenergetics Eur. GmbH.*, PGR2020-00080, Paper 7 (PTAB Feb. 12, 2021). In that case, the Board denied a “[p]etition [that] cite[d] a litany of references one after another in near laundry-list fashion, which result[ed] in a lack of focus and congruity.” *Id.* at 11. The Board explained that

[t]his approach requires the panel and Patent Owner to attempt to formulate a ground or grounds of unpatentability by essentially picking and choosing various features from among the numerous references cited. The burden to establish, and cogently explain, the proposed grounds of patentability, however, is on Petitioner, not the panel or Patent Owner.

Id.

Turning to the present case, in every ground, there are multiple limitations for which Petitioner cites an assortment of prior art references, without any rationale as to why multiple references are being cited. This approach creates uncertainty as to whether these multiple references are cited in combination, in alternative, or whether they are strategically presented in a redundant manner to allow Petitioner to shift its arguments during trial.

By way of example, the redundant prior art references asserted in Ground 1 against claim 1 are explained below. *First*, in the Section X.D.2.i attributed to the preamble of claim 1, Petitioner cites Compton and Donner, separately, without any explanation for this redundancy. *Second*, in the Section X.D.2.viii attributed to the “open tip / cutting edge” limitation, Petitioner cites Donner’s joint preparation tool and Otte’s box chisel, without explaining the interplay between them. *Third*, in the Section X.D.2.ix dedicated to the slide hammer, the Petition provides independent descriptions of Donner’s slide hammer and Sharma’s universal impactor, without explaining why both slide hammers are being cited and what the relationship is between them. *Finally*, Petitioner concludes its obviousness challenge of claim 1 with a nebulous catch-all clause— “[t]o the extent that Compton does not teach all of the limitations of step (1(e)), Donner discloses”

The remaining Grounds 2-5 follow the same model. An excellent visual representation of Petitioner’s shotgun approach is provided in the chart in Appendix

A of Dr. Drewry's declaration. Ex. 1017 at 105-107. This chart shows multiple references recited with a conjunction "or" for various elements of the Challenged Claims.¹ Thus, Petitioner's invalidity grounds are insolubly ambiguous because it is unclear which prior art elements are being combined together and how. In the words of the Board:

Petitioner has sketched out myriad paths and invited Patent Owner and the Board to choose their own adventure to arrive at the challenged claims. That is not the Board's role, nor is it fair to Patent Owner to have to defend against such ill-defined and multifarious challenges.

Playtika Ltd. v. Nexrf Corp., No. IPR2021-00952, Paper 14 at 14-15 (PTAB Nov. 6, 2021) (denying institution) (citing *Microsoft Corp. v. FG SRC, LLC*, 860 Fed.Appx. 708, 713 (Fed. Cir. 2021)).

For the reasons set forth above, the Petition fails to comply with the legal requirement of stating its invalidity grounds with particularity and precision. The Board should follow its precedent and deny institution.

¹ For example, for claim 1 under Ground 1 alone, the chart lays out 144 permutations of combining four different prior art references.

D. Petitioner’s reasons for combining the cited prior art are generic, conclusory, and myopic

It is well settled that “obviousness grounds 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.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval* in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The Federal Circuit further explained that “obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (emphasis in original). Furthermore, an obviousness ground must explain “*how* the combination of the two references was supposed to work.” *Personal Web Technologies, LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (emphasis in original).

1. Petitioner’s reasons for combining Compton, Schifano, and Black with Sharma are generic and conclusory

As established in Section VII.B.2., *supra*, the Petition does not contemplate combining the cited surgical instruments of Donner, Otte, and Martz with Sharma’s universal impactor with a slap hammer. Furthermore, the reasons presented in the Petition for combining the primary prior art references—i.e., Compton, Schifano, and Black—with Sharma are conclusory and generic.

For example, in Ground 1, Petitioner contends that

[i]t would be obvious to a POSITA that [Sharma's] universal impactor with a slap hammer device would be beneficially used with the tools (e.g., the box chisel and rasp) used in the method of Compton *with predictable improvements in efficiency*, particularly in view of the disclosure of the joint preparation tool of Donner.

Pet. 53 (emphasis added). Petitioner, however, does not articulate any specific improvements to the method of Compton that would have been achieved by combining it with Sharma. Furthermore, Petitioner's cryptic statement about Donner's joint preparation tool providing a reason for the Compton-Sharma combination only introduces uncertainty: Petitioner does not explain what specific aspect of Donner's joint preparation tool would have motivated a POSA to combine Compton with Sharma, and for what reason. Merely stating that a prior art combination would result in "a predictable improvement in efficiency," without identifying or explaining the alleged improvement, is insufficient to support a conclusion of obviousness. *See, e.g., ADT LLC, v. Vivint, Inc.* IPR2022-00634, Paper 7 at 17 (PTAB Oct. 4, 2022) ("[Petitioner's] assertion that combining the teachings of [the prior art] 'provide[s] the expected benefits of better monitoring and management of personnel, asset and field devices' is a generic statement of motivation to combine that cannot, without more, support a conclusion of obviousness.").

In Grounds 3, 4, and 5, Petitioner does not provide any additional reasons for combining Compton or Black with Sharma—instead, Grounds 3, 4, and 5 simply reference the discussion of the Compton-Sharma combination in Ground 1. Pet. 69, 74, 82. Thus, Grounds 3, 4, and 5 inherit the legal deficiency of Ground 1 established above.

In Ground 2, Petitioner alleges that the motivation for making the Schifano-Sharma combination is “to predictably reduce the number of steps in the surgical procedure and improve the efficiency of the procedure of Schifano with predictable success.” Pet. 63. Petitioner, however, does not identify which specific steps in Schifano’s method would be eliminated by combining Sharma’s universal impactor with slap hammer with Schifano’s box-chisel and rasp. Likewise, Petitioner does not explain what specific improvements in efficiency would have been achieved by such combination. Therefore, the stated conclusory reasons for the Schifano-Sharma combination are legally insufficient to establish a *prima facie* case of obviousness.

2. Similarity in the subject matter, by itself, is insufficient to establish a motivation to combine prior art reference

The Board recognizes that “it is well-settled that similarity in subject matter is insufficient, by itself, to establish that a person having ordinary skill in the art would have been motivated to combine references.” *ADT LLC, v. Vivint, Inc.*, IPR2022-00634, Paper 7 at 16 (PTAB Oct. 4, 2022) (internal citations omitted). Yet,

most of Petitioner's discussion with respect to rationales for combining prior art is dedicated to highlighting similarities in their subject matter. In some instances, the overlap in the subject matter is the *sole* stated reason for combining prior art.

For example, in Ground 1, the discussion of the Compton-Otte combination is limited to three sentences. Pet. 52-53. The first sentence identifies the subject matter disclosed in Otte. *Id.* at 52. The second sentence, which is reproduced below in its entirety, draws parallels between spinal and SI joint surgeries:

[s]pinal fusion surgeries are closely related to SI Joint fusion surgeries as they both deal with fusion of vertebral bones, both are performed by orthopedic spinal surgeons, and they use similar tool sets in similar manners.

Id. The third sentence concludes, "it would be obvious to a POSITA to combine the teachings of Otte, including the disclosed instruments and techniques, with the SI Joint fusion methods of Compton and Donner." *Id.* at 52-53. The Petition provides no further explanation for making these combinations. This conclusory argument, based solely on the alleged similarities in the subject matter, is legally insufficient for establishing motivation to combine Otte with Compton and Donner.

3. Inoperable combinations

In Ground 1, Compton teaches a method that requires creating a diamond-shaped void for a correspondingly shaped implant. This method involves two steps:

(1) drilling a circular pilot hole, and (2) using a broach to transform the circular hole into the diamond-shaped void. Ex. 1004 at 8:18-27. This void-creation process is illustrated in a series of diagrams in Figure 15.

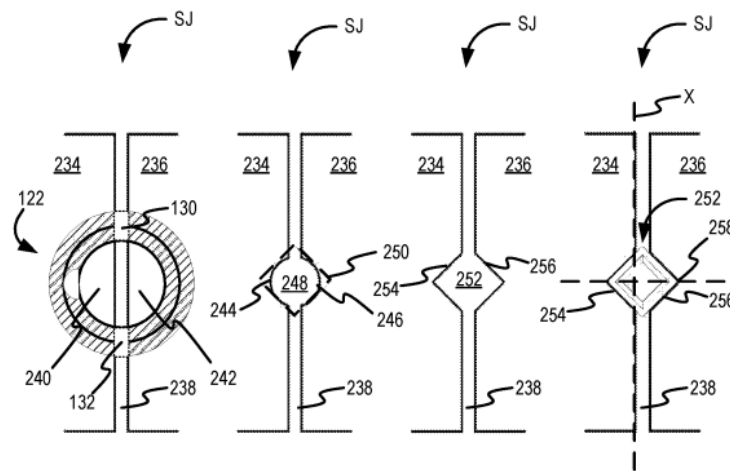
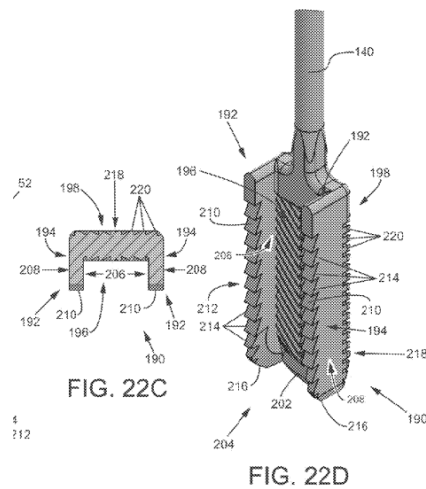


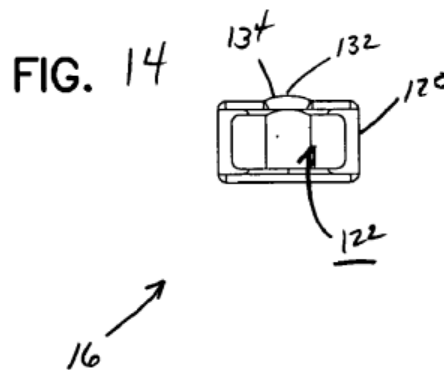
FIG. 15

Petitioner alleges that it would have been obvious to use Donner's joint preparation tool depicted in Figures 22A-22D to create the implant-receiving void in Compton's method. Pet. 51-52. The cited embodiment of Donner's joint preparation tool has a dual-keel abrading head for "mak[ing] dual keel-cuts into either the sacrum or the ilium for the subsequent delivery of an implant having similarly featured keels." Ex. 1006 at [0190].



Unless the shape of Donner's abrading head is modified—which the Petition does not contemplate—the dual-keeled abrading head is incapable of creating a diamond-shaped void required in Compton. Thus, the cited embodiment of Donner's joint preparation tool is not suitable for use with Compton's implant, and therefore, the alleged Compton-Donner combination is inoperable.

Analogous defect dooms the Compton-Otte combination. Petitioner does not explain how or why Otte's box chisel with a rectangular cutting edge would be used to create a diamond-shaped void required in Compton. Figure 14 of Compton depicting the rectangular shape of the cutting edge is reproduced below.



4. Petitioner presents manufactured rationales based on factually erroneous premises

In several instances, Petitioner's reasons for combining prior art are based on factually erroneous statements about the prior art. For example, in Ground 1, Petitioner alleges that

[i]t would be obvious to a POSITA to combine the use of joint preparation tool of Donner with the SI Joint method of Compton because the joint preparation tool of Donner prepares the SI Joint and articular surfaces of the SI Joint with a single tool, instead of *multiple separate tools such as a chisel, a rasp, and other tools*.

Pet. 52 (emphasis added). However, Compton does not teach "separate tools such as a chisel, a rasp, and other tools." Instead, Compton teaches a drill for making a circular pilot hole and a broach for shaping the circular pilot hole into a diamond-shape void. Ex. 1004 at 8:18-27. Thus, Petitioner's alleged reason for combining Donner's joint tool with Compton's method is based on a factually erroneous premise.

Analogously, with respect to the Compton-Sharma combination in Ground 1, Petitioner asserts that “[i]t would be obvious to a POSITA that the universal impactor with a slap hammer device would be beneficially used with *the tools (e.g., the box chisel and rasp)* used in the method of Compton.” Pet. 53 (emphasis added). As explained in the preceding paragraph, Compton’s method does not use either a box chisel or a rasp—only a drill and a broach. Accordingly, Petitioner alleged reasons for making the Compton-Sharma combination are also based on a factually erroneous premise.

In conclusion, the Federal Circuit case law dictates that “the Board must base its decision on arguments that were advanced by a party, and to which the opposing party was given a chance to respond.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (citing *SAS Inst., Inc. v. ComplementSoft, LLC*, 825 F.3d 1341, 1351 (Fed. Cir. 2016)). In the present case, the arguments that were advanced by Petitioner are fundamentally flawed and fail to establish a *prima facie* case of obviousness with respect to any of the Challenged Claims.

VIII. CONCLUSION

For the reasons set forth above, Patent Owner respectfully requests denial of the Petition.

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION

Pursuant to Rule 37 C.F.R. § 42.24(d), the undersigned hereby certifies that, based upon the word count of the word-processing system used to prepare this Preliminary Response, the number of words in this Preliminary Response is 9,547, which is in compliance with 37 C.F.R. § 42.24(a)(1)(i).

Dated: June 29, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b), the undersigned certifies that on June 29, 2023 a copy of this Patent Owner's Preliminary Response to Petition was electronically served on the Petitioner's counsel of record as follows:

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