

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ORTHOCISION, INC.  
Petitioner

v.

PAINTEQ, LLC  
Patent Owner.

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Case No. IPR2022-00625

U.S. Patent No. 11,020,129

Issue Date: June 1, 2021

Title: Drill-Less Method of Fusing a Sacroiliac Joint

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**REPLY TO PATENT OWNER'S RESPONSE TO THE PETITION**

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## **I. INTRODUCTION**

Petitioner hereby replies to Paten Owner's Response to the Petition. (Paper No. 16, "PO Response"). The arguments in the PO Response are addressed in sequence below. A second declaration by Troy Drewry (Ex. 1022) is submitted herewith.

## **II. CLAIM CONSTRUCTION.**

### **1. "OPEN TIP"**

#### **a. "Interior Void" should not define the "Open Tip"**

In the Decision Granting Institution (Paper 10), the Board adopted the following construction of "open tip": the tip of the abrading head is open to an interior void of the abrading head. (Paper 10,19). This construction imports the term "interior void" into the claims unnecessarily. The term "open tip" is comprehensible without an "interior void". The '129 Patent contemplates additional embodiments beyond the embodiment of Figures 14-15 thereof. (Ex.1001, 6:18-25; Ex.1022, ¶22). Consequently, the claims terms should not be interpreted to unnecessarily narrow the scope of "open tip" to the embodiment shown in the Figures of the '129 Patent.

Moreover, the function of the open tip (cutting bone tissue away from the sacrum or the ilium to form a decorticated implant void) may be

accomplished without an “interior void”. (Ex. 1022, ¶23). For example, an abrading head may alternatively have a wedge structure behind the open tip that diverts bone tissue from the cutting edge as the abrading device is advanced into the sacroiliac joint, allowing the abrading head to advance without obstruction. (Ex. 1022, ¶23). This is not an embodiment expressly disclosed by the ‘129 Patent, but the ‘129 Patent contemplates additional embodiments, and this is a functional alternative that meets the claim language. (*Ibid*). The Board’s construction narrows the scope of the claim unnecessarily, and “interior void” should be removed from the construction of “open tip”. A court “may not import . . . structural limitations from the written description that are unnecessary to perform the claimed function.” *Wenger Manufacturing, Inc. v. Coating Machinery Systems, Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001).

Petitioner offers an alternative construction of open tip consistent with its recited function: *an open cutting edge that allows the passage of bone tissue during the advancement of the abrading head.*

**b. Patent Owner’s proposed “open tip” construction is improper (Response to Paper 16, Sect. II(1))**

Patent Owner proposes the following construction: the tip of the

abrading head is open to an interior void disposed behind the abrading surfaces of the abrading head and is configured to enable the dislodged tissue to enter into the interior void. (Paper 16:8-9). This definition is not only convoluted, it attempts to improperly import limitations from the specification to craft an unreasonably narrow construction favorable to its arguments and avoid invalidation. (Ex.1022, ¶26). A POSITA would not interpret the “open tip” limitation to be slavishly limited to the embodiment shown in the Figures of the ‘129 Patent. (Ex.1022, ¶¶25-26). Claims are not be read restrictively limited to preferred embodiments unless the patentee has demonstrated a clear intention to limit the claim scope during prosecution. *Evolusion Concepts, Inc. v. HOC Events, Inc.*, 22 F.4th 1361 (Fed. Cir. 2022).

The definition of “open tip” offered by Patent Owner appears to be a second attempt to have the Board define the abrading head as having an enclosed void, which the Board has already rejected. (Paper 10, 18). This construction is transparently designed to avoid the abrading tools disclosed by Ex. 1006 (Donner) and Ex. 1008 (Martz) that have an open side. However, this proposed construction is inconsistent with the scope of the claims the Patent Owner chose to pursue in its prosecution the corresponding patent application.

The '129 Patent discusses an open tip generally as “open tip comprising a cutting edge” (see Abstract) and in reference to the drawings as an “open tip 34 comprises a cutting edge 36 around all or part of the leading edge of the open tip 34, the cutting edge 36 configured for cutting bone tissue inside the SI Joint 3, such as the sacrum 1 or ilium 2” (Ex.1001, 6:28-31). This description of the “open tip” does not require an enclosed, interior void or any of the additional details of an interior void offered by Patent Owner. The Patent Owner’s proposed construction goes well beyond meaning of “open tip” in the eyes of a POSITA. (Ex.1022, ¶27).

Patent Owner points to expert witness, Troy Drewry’s first deposition (Ex.1017, “First Deposition”) as providing support for its proposed construction of “open tip”. (Paper 16, 6-7). However, Mr. Drewry’s deposition merely discusses that he is aware of tools have a cutting edge and a void. (Ex.1022, ¶27). The conclusion that a POSITA would interpret the “open tip” recited in the claims of the '129 Patent as proposed by Patent Owner does not follow from Mr. Drewry’s statements cited in the Response. (*Ibid*). Dr. Bovinet’s comments on the meaning of an open tip (Paper 16, 8-9) are inaccurate, as they are consistent with Patent Owner’s proposed construction of the term “open tip”, and inconsistent with the understanding of a POSITA. (Ex.1022, ¶¶53-61).

## **2. “Releasing Means”**

### **a. The Board’s preliminary construction of “releasing means” (Response to Paper 16, Sect. II(2))**

Independent claim 1 of the ’129 Patent recites the following means-plus-function limitation: “a releasing means for transitioning the slide hammer assembly between the locked position and the released position.” (Ex.1001, 13:15-17). The Board provided a correct construction of the structure of the “releasing means”. (Paper 10, 24).

Patent Owner seeks to further restrict the interpretation by adding location-specific language not found in the claims of the ’129 Patent, proposing the releasing means is located “at an interface between a distal end of [the] hammer sleeve and [the] base.” (Paper 16, 16). The Patent Owner’s proposed construction is improper, and is not supported by cases cited in the PO Response.

The “base” need not be defined by a particular location. (Ex.1022, ¶28). Patent Owner argues that the term “base” in the Board’s preliminary construction of “releasing means” should *itself* be construed such that it is located at a distal end of a slide hammer shaft. (Paper 16, 11). However, the term “base” is not a claim term to be construed. (Paper 10, 23). “Releasing means” is a means-plus-function limitation that is construed by referral to

the specification, which supplies several different embodiments therefor. (Ex.1001, 7: 9-12). The releasing means is certainly not limited to a single embodiment, despite the insistence of Patent Owner and Dr. Christopher Bovinet to the contrary. (Ex.1022, ¶¶29-30; Ex.1001, 7:9-12).

The recited function of the “releasing means” is “transitioning the slide hammer assembly between the locked position and the released position” (the “Releasing Means Function”). (Paper 10, 20). The listed embodiments of the releasing means are “a mating threaded connection, a quick disconnect attachment, a depressible tab, a latch, a clasp, a clip, [or] a clamp.” (Ex.1001, 7:9-12). These various disclosed embodiments of connecting devices are operable to attach to various structures in a slap hammer assembly. (Ex.1022, ¶30). Dr. Bovinet acknowledged that a hammer sleeve can be locked and unlocked from the slide hammer shaft itself, thereby accomplishing the Releasing Means Function. (Ex.1021, 32:18-21). The corresponding means-plus-function structure must be limited to only that which is necessary to perform the recited function. (Paper 10, 23). Thus, a base to which the “releasing means” attaches should cover a broad set of structures and the construction of the “releasing means” should not be limited to the structure or location of base 51 depicted in the Figures of the ‘129 Patent. (Ex.1022, ¶¶29-33).

Patent Owner’s proposed construction of “releasing means” goes far beyond the interpretation of a POSITA. (Ex.1022, ¶31). Patent Owner additionally insists on a “construction” of the term “base” to specify that the base is positioned between distal end of the slide hammer assembly and the surgical device. (Paper 16, 22-23). Patent Owner is trying a slight-of-hand here to get a more specific definition of “releasing means” by insisting that the term “base” is itself in need of a separate construction. However, a “base” is not a claim term and is only relevant as part of the construction of “releasing means”. (Paper 10, p. 23). Patent Owner’s further interpretation would impermissibly read additional limitations into claim 1. (Ex. 1022, ¶32).

**3. Cases Cited by the Patent Owner Support the Board’s  
Preliminary Construction of “Releasing Means”**

**i) *Micro Chemical, Inc. v. Great Plains Chemical Co.***

The Patent Owner first refers to the case of *Micro Chemical, Inc. v. Great Plains Chemical Co.*, 194 F.3d 1250 (Fed. Cir. 1999). The Patent Owner correctly states that the Board properly relied on the *Micro Chemical* case for the proposition that in construing claim terms under 35 U.S.C. § 112(f), the Board may not incorporate structure from the written description beyond that which is necessary to perform the claimed function. *Id.* at 1258.

In the *Micro Chemical* case, the District Court narrowly construed the claim term “weighing means” to “sequential and cumulative weighing” found in the preferred embodiment, but overlooked other alternative embodiments disclosed in the specification. *Id.* The Federal Circuit reversed, holding that “[b]ecause alternative structures corresponding to the claimed function were described, the district court incorrectly limited ‘weighing means’ to the specific structures of the preferred embodiment.” *Id.* “When multiple embodiments in the specification correspond to the claimed function, proper application of § 112, ¶ 6 generally reads the claim element to embrace each of those embodiments.” *Id.*

The Patent Owner attempts to distinguish the *Micro Chemical* case by arguing that the specification of the ‘129 Patent discloses a single embodiment of the “releasing means”. (Paper 16, 13). However, the ‘129 Patent discloses multiple different embodiments for the “releasing means” so the *Micro Chemical* case is directly supports the Board’s construction of releasing means.

**ii) *Nomos Corp. v. Brainlab USA, Inc.***

The Patent Owner next refers to the case of *Nomos Corp. v. Brainlab USA, Inc.*, 357 F.3d 1364 (Fed. Cir. 2004). In *Nomos*, the Federal Circuit first noted that it must be “careful to limit the corresponding structure to

only that which is *necessary to perform the recited function.*” *Id.* at 1368; emphasis added. The court in *Nomos* noted that “the patent consistently states that the ultrasound probe is to be ‘disposed on’ or ‘secured to’ the treatment table.” *Id.* The court in *Nomos* therefore concluded that the “means for generating” required the structural elements of the ultrasound probe being mounted to the treatment table by a fixation device. *Id.* Here, the Board noted that every embodiment described in the ‘129 Patent described the “releasing means” connects a hammer sleeve to a base. Following *Nomos*, the Board concluded that the structural configuration for the “releasing means” called for “a sliding hammer sleeve and a base to which it may be locked and unlocked.” (Paper 10, 23). The board therefore properly reached its preliminary interpretation of “releasing means” without specifying the location of the base. (Paper 10, 24). A specific location for the base on the slide hammer assembly is not necessary for the releasing means to perform its recited function.

**iii) *Grace Instruments Indus., LLC v. Chandler Instruments Co.***

The case of *Grace Instruments Indus., LLC v. Chandler Instruments Co.*, 57 F.4th 1001 (Fed. Cir. 2023) is distinguishable from the present situation. Importantly, in *Grace Instruments* the means-plus-function element at issue was “means for driving said rotor to rotate *located in* at

least one bottom section.” (Emphasis supplied.) Thus, in *Grace Instruments* the language of the claim itself called for a location, which must be included in the claim interpretation. By contrast, the “releasing means” of claim 1 of the ‘129 Patent contains no “base”, let alone a particular location for a base. Thus, there is no requirement to construe the “releasing means” to include a base having a particular location on the slide hammer assembly.

### **III. The Grounds of Unpatentability**

#### **A. Grounds 1-5 are not undermined by Patent Owner’s unsupported interpretation of Sharma (Addressing Paper 16, Section III(A))**

##### **1. Patent Owner’s Assertion of that Sharma does not teach a “releasing means” is based on unreasonable construction of the term**

Patent Owner’s arguments regarding Sharma rest entirely on its proposed location for a “base” on a slide hammer assembly. (Ex.1022, ¶¶35-38). Patent Owner argument that Sharma does disclose a “releasing means” because the proximal button 42 (“releasing means”) is on the proximal impaction end 41, rather than on a distal end of the hammer sleeve fails. (*Ibid*). This argument requires a construction of “releasing means” that is inconsistent with construction provided by the Board and the interpretation of “releasing means” by a POSITA. The claims of the ‘129 Patent do not

recite a base or a location of a base and Patent Owner's position is based on the hope that the board will adopt its proposed, but improper construction of "releasing means".

Sharma discloses a releasing means that expressly matches the limitations of the claims and provides the Releasing Means Function. In one embodiment, this locking mechanism allows the tip of the central shaft to "click into place and thereby turn[] the device into an impactor" and a spring-loaded button 42 can be pressed to release the connection between the shaft and handle 11 to turn the device into a slap hammer. (Ex.1009, 20:6-17). This kind of locking mechanism is a quick release. (Ex.1022, ¶40). The quick release mechanism of Sharma expressly meets the claim limitation of the "releasing means" and performs the Releasing Means Function.

## **2. Dr. Bovinet's opinion regarding the "releasing means" is based on flawed construction**

Dr. Bovinet's Second Declaration states that the locking mechanism 42 of Sharma serves a similar function to the "releasing means" recited in the claims of the '129 Patent. (Ex.2005, ¶39). However, Dr. Bovinet makes distinctions between the function of the "releasing means" and the locking mechanism 42 of Sharma based on Patent Owner's improper proposed definition of a base. (Ex.2005, ¶ 41; Ex.1022, ¶36).

**c. Patent Owner's attack of Drewry's description of a "base" is a word game without substance**

Patent Owner attempts to undermine Mr. Drewry's credibility by arguing that Mr. Drewry identified two different bases in the figures of Sharma. (Paper 16, 27). There is no "base" in the claims and Mr. Drewry was taking meaning of the word base in a general sense. (Ex.1022, ¶43). Patent Owner makes the argument that Mr. Drewry misidentified proximal end 41 as the base, when the hammer sleeve/proximal end 41 actually connects to the proximal end of the shaft. (Paper 16, 27). However, Patent Owner's counsel was only showing Figure 1 of Sharma to Mr. Drewry during this line of questions, which does not show the proximal end of the shaft. (Ex.2004, 59:11-78:21). Mr. Drewry identified the proximal end 41 as the closest analogous structure in Figure 1. Mr. Drewry also requested to read the specification of Sharma to refresh his memory multiple times, but Patent Owner's counsel did not provide Mr. Drewry with this opportunity, instead pressing Mr. Drewry for definitions of specific structures in Figure 1. (Ex.2004, 77:1-21). Despite being pressed on questions without the opportunity to refresh, Mr. Drewry correctly stated that the button on the proximal end 41 of the slide hammer assembly is pushed to release a ball

detent and allow the sleeve to travel up and down shaft 41. (Ex.2004, 78:10-18; Ex.1022, ¶40).

**B. Ground 1 presents a *prima facie* case of obviousness**

**3. Any Known Need or Problem is Sufficient Under *Intel Corp. v. PACT XPP Schweiz AG***

The PO Response seeks to avoid obviousness through a rigid application of a “known-technique” rationale found in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007). Patent Owner erroneously asserts that the “known-technique” rationale “requires a ‘show[ing] that there was a known problem’ in the primary reference, and that the secondary reference discloses a solution ‘that helped address that issue.’” (Paper 16, 28-30). However, the actual language from the *Intel* case discloses no such “test” nor any “primary reference” or “secondary reference”. *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1381 (Fed. Cir. 2023). The actual language demonstrates a flexible approach to motivation to combine:

“It's enough for Intel to *show that there was a known problem* of cache coherency in the art, that Bauman's secondary cache *helped address that issue*, and that combining the teachings of Kabemoto and

Bauman wasn't beyond the skill of an ordinary artisan. Nothing more is required to show a motivation to combine under *KSR*[.]”

*Ibid* (emphasis added). This flexible approach to motivation-to-combine is found elsewhere in *Intel*, where the *KSR* case is referenced to observe that “***any need or problem*** known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Ibid.*, citing *KSR*, 550 U.S. at 420, 127 S.Ct. 1727; emphasis supplied.

The Patent Owner seeks to find fault in the Petitioner’s obviousness grounds because no *particular* problem is identified, but no such showing is required under *Intel*. As noted by the Board, a desire for increased efficiency, which would be accomplished by reducing the number of tools needed for surgery, has been expressly recognized by the Federal Circuit as a motivating reason to combine or modify prior art. (Paper 10, 60: citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368). This motivation has been shown in every obviousness analysis provided by Petitioner, and is more than sufficient to satisfy the requirements of *Intel*.

**4. The Petition provides a sufficient obviousness rationale for the combination of Compton, Donner, Otte, and Sharma.**

Patent Owner's arguments that the Petition does not include a sufficient prima facie case of obviousness is built on a selective view of the Petition. Patent Owner points to excerpted phrases without the context of the Petition to make these cherry-picked statements appear to be conclusory in nature. (Paper 16, 31-38). Patent Owner's selective approach to attacking the motivation to combine the references is made obvious by the heading structure of the PO Response, which discuss only specific paragraphs under Ground 1 (e.g., "First paragraph", "Second paragraph", etc.). (*Ibid*). However, the Petition explains that the instruments of the prior art relied upon in Grounds 1-5 are related and that such instruments are regularly adapted to adjust surgical approaches or to novel surgical methods to address the same or similar medical conditions. (Ex.1017, ¶6-7; Ex. 1022, 44-45).

There are many similarities of the function and structure of the sacroiliac joint and intervertebral joints, and professionals in the field of spinal orthopedics have been adapting instruments traditionally utilized in spinal and intervertebral disc surgeries. (Ex.1017, ¶¶29-30; Ex.1022, ¶44). The interbody fusion procedures are particularly adaptable to sacroiliac fusions as both procedures involve weight-bearing spinal bones with large, substantially planar articular surfaces. (Ex.1017, ¶36; Ex.1022, ¶44). Thus, adapting tools used in intervertebral disc fusions to SI joint fusions is an

obvious choice to a POSITA. (Ex.1017, ¶30; Ex.1022, ¶45). Drill-less spinal surgeries and their corresponding benefits over drill-based methods (e.g., reducing soft tissue retraction, creating a complementary space for an implant) were well known to a POSITA as of the filing date of the '129 Patent. (Ex.1017, ¶¶32-34; Ex.1022, ¶44). It would be obvious to apply the lessons of these spinal surgeries to SI Joint fusion procedures. (Ex.1017, ¶34; Ex.1022, ¶44).

Combinations of instruments and steps from the prior art cited in the Petition are nothing more than routine commonplace adaptations of well-known methods and instruments (e.g., cannulas, slide hammers, chisels, and rasps), guided by known anatomical attributes or constraints that achieve the same or similar functions in SI fusion procedures, and therefor yield safe and predictable results when used together. (Ex.1017, ¶¶36-37; Ex.1022, ¶45). Each of the steps and instruments combined in the grounds of unpatentability (Grounds 1-5) were well-known and the claims of the '129 Patent cover simple combinations of these known steps and instruments that would be obvious to a POSITA. (Ex.1022, ¶45).

Patent Owner's arguments regarding a failure to make a *prima facie* case completely ignore the foregoing explanation of why the combinations of cited prior art references in Grounds 1-5 would be obvious to a POSITA

and misapply the holding of the *Intel* case. (Ex.1022, ¶46). Patent Owner instead selectively picks at the distinctions between pairs of prior art references, such as pointing out how certain instruments of Donner (which are not at all discussed in grounds of unpatentability) are different from the instruments of Compton. (Paper 16, 31-32; Ex.1022, ¶46). Patent Owner cherry-picks and isolates statements from the Petition and Mr. Drewry's First Declaration in an apparent effort to obscure the full rationale for combining the prior art references.

**a. Compton and Donner**

Mr. Drewry's First Declaration states that Compton and Donner both disclose "posterior approaches for SI Joint fusion with an implant inserted into the articular space between the sacrum and ilium with similar instrumentation". (Ex.1017; ¶111; Ex.1022, ¶47). Patent Owner summarizes this statement in a conclusory manner ("significant overlap in both instrumentation and methodology"), while accusing Mr. Drewry's statements of being conclusory. (Paper 16, 31).

Despite Patent Owner's arguments, there is significant overlap in the methodology of Compton and Donner, as both utilize a posterior cannula approach, both utilize a rasping tool to decorticate the bone prior to insertion of a fusion implant, and both utilize a fusion implant that is inserted between

the articular surfaces of the sacrum and ilium. (Ex.1022, ¶47). Patent Owner takes issue with the statement that “[b]oth Compton and Donner discuss using rasps and chisels for preparing the SI Joint for a fusion implant”. (Paper 16, 33). While Compton does not expressly disclose the use of a chisel, this statement was due to drafting oversight, and there remains significant overlap between the disclosures of Donner and Compton. (Ex.1022, ¶48). Moreover, Compton uses multiple tools (a drill and broach) to accomplish the formation of a void in the SI joint for a fusion implant. (Ex. 1004, 4:14-44). The rationale for combining the joint preparation tool of Donner with the method of Compton still holds 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” and both are posterior sacroiliac approaches that use well known types of surgical tools to accomplish the same purpose of sacroiliac fusion. (Ex. 1017, ¶111; Ex.1022, ¶48).

Patent Owner’s statement that Donner doesn’t disclose a chisel is plainly false. (Paper 16,32). The Board acknowledged that Donner discloses a box chisel. (Paper 10,40). Furthermore, the tooling head 52 shown in Figures 23A-23D acts as a chisel, with cutting elements 192 having a leading cutting edge 216 that cut bone. (Ex. 1006, ¶188; Ex.1022, ¶49).

Patent Owner also tries to undermine the combination of Compton and Donner by pointing to the various instruments in Donner that are not present in Compton. (Paper 16, 31-32). This is not how a POSITA would interpret the disclosures of Compton and Donner. (Ex.1022, ¶50). A POSITA aware of the disclosures of Compton and Donner would recognize the utility and improved efficiency of the joint preparation tool of Donner and apply it to the method of Compton, rather than focusing on distinctions between the disclosed methods and instrumentation. (Ex.1022, ¶50).

**b.     Otte**

The increases in efficiency by combining the joint preparation tool of Donner with the posterior approach of would be predictable, particularly when combined with the teachings of Otte. (Ex.1017; ¶111; Ex.1022, ¶51). Otte discloses methods and instruments for preparing the intervertebral disc space for implants in a spinal fusion surgery and methods of preparing the spinal disc space. (Ex 1007, ¶¶[0056]-[0059]). Patent Owner's statement that Mr. Drewry's explanation of the motivation to combine Otte with Compton and Donner is "generic" (Paper 16, 36) conveniently ignores the explanation of close relatedness of spinal fusion surgeries to SI Joint fusion surgeries as provided in ¶¶29-39 of Mr. Drewry's First Declaration. (Ex.1022, ¶51).

**c.     Sharma**

With regard to Sharma, the Patent Owner states that Petitioner fails to explain the “predictable improvements in efficiency” offered by combining the teachings of Sharma with Compton and Donner. (Paper 16, 37-38). However, a POSITA would recognize that Sharma discloses a device that is essentially the same in function as the joint preparation tool of Donner with the additional feature of a locking mechanism for arresting the slide hammer to allow it to function as an impactor. (Ex.1022, ¶52). The petition points out that it would be obvious to incorporate the additional functionality provided by the teachings of Sharma to the combination of Compton and Donner. (Paper 1, 53). The benefit of the additional functionality is sufficient motivation for a POSITA, and it would be self-evident to a POSITA that the combination of a locking mechanism with the joint preparation tool of Donner would be functional. (Ex.1022, ¶52).

**C. DONNER TEACHES AN “OPEN TIP” AND “INTERIOR VOID”**

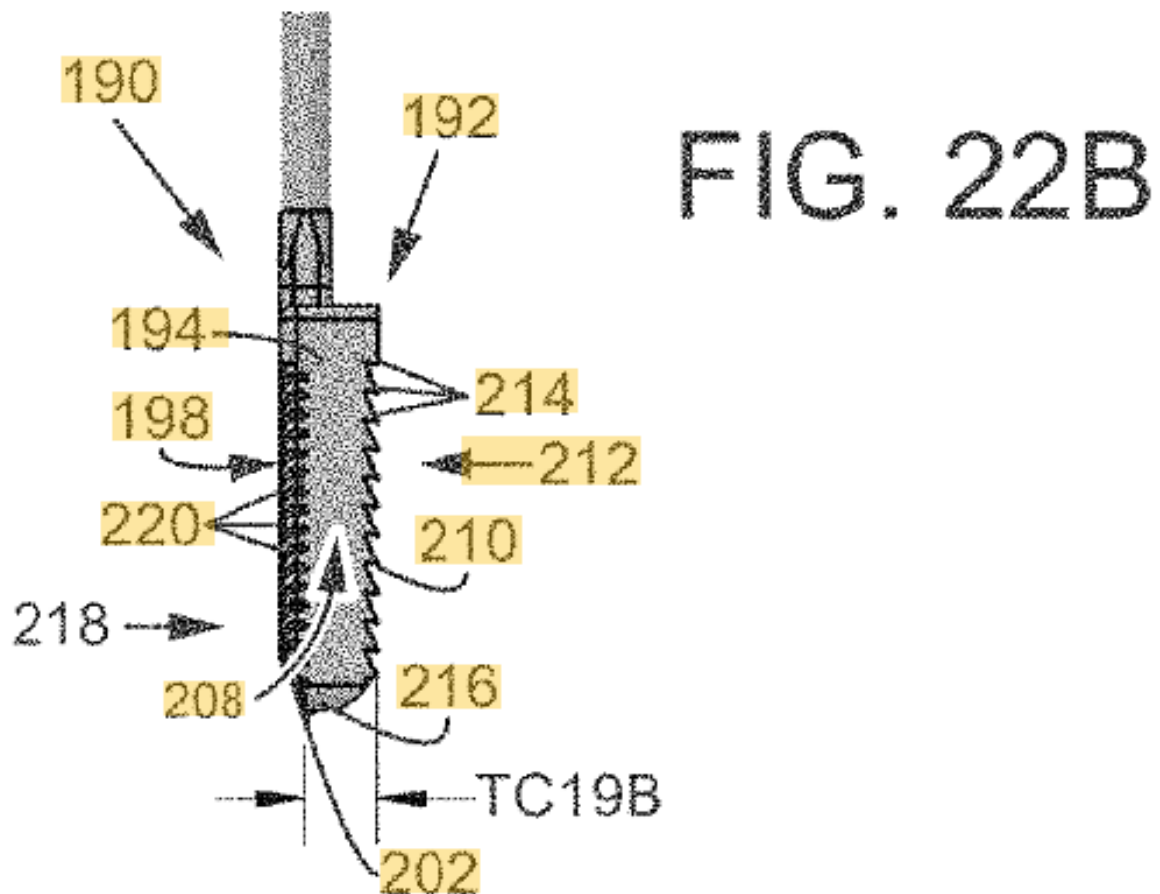
Patent Owner relies on an unduly narrow construction of “open tip” in its arguments that Donner fails to disclose an open tip, as explained herein. Furthermore, Patent Owner mischaracterized statements in the Petition, saying that the Petition relies on Donner to allege obviousness of an “open

tip” in the claims of the ‘129 Patent. (Paper 16, 39). This is inaccurate and ignores the discussion of the Otte reference. (Paper 3, 56-57).

Dr. Bovinet acknowledged in his deposition that the tooling head 52 of Donner includes two parallel cutting elements 192 that are arranged on opposing sides of surface 196 and that there is a “gap” between them (Figures 22A-22D). (Ex. 1021, 88:22-90:11; Ex.1022, ¶53). There is no meaningful distinction in the relevant art between “void” and “gap”. (Ex.1022, ¶53). This void is bordered on three sides by the cutting elements 192 and the rasping surface 196 to create a void with a rectangular cross-section, as shown in FIG. 22C of Donner. (Ex.1022, ¶54). The Board defined an “open tip” as being open to an interior void of the abrading head, which does not require an enclosure of a void on all sides, as suggested by Dr. Bovinet. (Paper 10, 19). Donner discloses a tooling head having opposing sides with a gap between them, each opposing side having a leading cutting edge and abrading surfaces (teeth), each opposing side leading cutting edges that cut bone tissue, and an open tip that leads to the “gap”. (Ex.1022, ¶56). Furthermore, the tooling head 52 of Donner performs all of the functions of an abrading head as described in the plain language of Claim 1 of the ‘129 Patent. (Ex.1022, ¶57).

**c. Donner discloses a leading cutting edge capable of  
dislodging tissue**

Patent Owner also raises the issue that the leading edges 216 of cutting elements 192 are not a leading cutting edge or “tip” of the tooling head 52 shown in FIGS. 22A-22D of Donner. (Paper 16, 42; Ex. 1021, 93:24-94:3;98:4-9). Patent Owner’s position is apparently that only tip 202 can be considered the tip or leading cutting edge. Dr. Bovinet states in his deposition that leading edges 216 of cutting elements 192 are not the leading edge of the tooling head 52. (Ex. 1021, 93:24-94:3;98:4-9). This position is inconsistent with the disclosure of Donner. (Ex.1022, ¶58). Figure 22A of Donner may be seen as showing tip 202 of extending beyond cutting edges 216. However, the other views provided in Figures 22B and 22D show that cutting edges 216 are co-extensive with tip 202, as shown in the enlarged view provided below. (Ex.1022, ¶58).



Furthermore, Donner describes a version of tooling head 52 in which tip 202 extends beyond the distal most part of cutting element 216 as an alternative embodiment. (Ex. 1006, ¶188; Ex.1022, ¶58).

### C. MARTZ TEACHES AND SUGGESTS A LEADING CUTTING EDGE

Petitioner position that Martz (Ex. 1008) does not disclose cutting edges disposed at a leading edge of an open tip that cut bone tissue assumes

that a POSITA can only imagine applying the chisel in the exact form shown in Figures 76a-76c. (Ex.1022, ¶62). Dr. Bovinet stated that the rasping surface of Martz does not remove any bone tissue from the bony tissue of the intervertebral bodies. (Ex. 1021, 118:10-21). This is inconsistent with the description provided by Martz and is incorrect. (Ex.1022, ¶64). Martz states that “[t]he rasp surface 372 preferably thus is on the top and bottom opposite surfaces of both of the guide members 368 and 368’ and may be used to scrape disc material and bone from adjacent vertebrae. (Ex. 1008, ¶306, emphasis added; Ex.1022, ¶64). Rasps generally are used to decorticate bone surfaces and the rasping surfaces of Martz would decorticate the intervertebral bodies. (Ex.1022, ¶¶63,65).

A POSITA as defined by the Board would understand that the goal of a SI fusion procedure is to get the ilium and sacrum to fuse or heal together and that this is achieved by removing the cartilage and cortical bone and decorticating the bone along surfaces of the sacroiliac joint to expose bleeding bone and to provide a biological and cellular environment where the bones will heal and fuse together. (*Ibid*). A POSITA as defined by the Board would have sufficient knowledge and skill to adapt the box chisel of Martz to a sacroiliac procedure like that of Schifano (Ex. 1003), Compton (Ex. 1004), or Black (Ex. 1005) such that leading edge would be sufficiently

sharp and appropriately spaced to cut the sacrum and ilium while the abrading surfaces 372 and 374 decorticate the bone tissue. (*Ibid*). Martz itself discloses that rasp surfaces 372 and 374 may be positioned at different locations on the cutting head. (Ex. 1008, ¶306). This would suggest to a POSITA that the rasp surface can be positioned on a bone cutting surface of a box chisel. (Ex.1022, ¶63).

#### **IV. GROUNDS 1-5 PROVIDE SUFFICIENT RATIONALE FOR THE COMBINED ABRADING DEVICE**

Each Ground 1-5 sets out each element of the Claims 1, 2, 9, and 10, and the prior art references relevant to such element. For example, Ground 1 addresses the limitations “an open tip comprising a cutting edge disposed at a leading edge of the open tip, the cutting edge configured to cut bone tissue in the sacroiliac joint” discussing the combination of Donner and Otte, and the features of Donner and Otte relating to these limitations. A POSITA would understand from the context of the petition that it would be routine step with predictable results to combine the chisel head of Otte shown in the cited Figures with the joint preparation tool of Donner to prepare an implant void in a sacroiliac joint. Patent Owner’s further arguments with respect to Grounds 2-5 are of a similar nature. All of these arguments ignore these

rationales for combining the prior references and the level of skill of a POSITA, which is high in this context. Additionally, all of the Grounds of obviousness are underlain by the rationale of a desire for increased efficiency, which would be accomplished by reducing the number of tools needed for surgery, has been expressly recognized by the Federal Circuit as a motivating reason to combine or modify prior art. (Paper 10, 60: citing *DyStar*, 464 F.3d 1356, 1368).

#### **V. PETITIONER'S ATTEMPTS TO UNDERMINE MR. DREWRY'S CREDIBILITY ARE UNFOUNDED**

Patent Owner made several attempts to discredit Mr. Drewry in the PO Response. However, the Patent's arguments were either unfounded or overblown.

As explained above, the argument that Mr. Drewry's rationale for combining the prior art is conclusory was inaccurate.

Dr. Bovinet's discussion of differences in instruments between Compton and Donner is irrelevant, as explained above.

The discussion of a chisel with respect to Compton was mere drafting error, as explained above.

Patent Owner's argument that my characterizations of Sharma are inaccurate is based on word games and an aggressive approach to cross-

examination that included showing figures that did not show the mechanism for connecting the hammer sleeve and refusing to provide time to review the Sharma reference. Patent Owner provides Figure 4 of Sharma in the PO Response to discuss the connection between the slap hammer shaft and the hammer sleeve, but pursued questioning with Mr. Drewry based on Figure 1.

Patent Owner's position with respect to Donner is simply wrong, and thus its arguments here fail.

With regard to Patent Owner's claim that Mr. Drewry misstated facts about human anatomy, the Patent Owner is wrong and its arguments fail. Mr. Drewry correctly described the anatomy of an intervertebral disc. (Ex.1022, ¶¶66-67).

## **VI. Conclusion**

For the foregoing reasons, Petitioner has demonstrated that the challenged claims are obvious and invalid.

Dated: March 29, 2024

By /William K. Nelson/

WILLIAM K. NELSON  
Attorney for Patent Owner,  
Orthocision Inc.

**CERTIFICATE OF TYPE VOLUME LIMITATIONS  
UNDER 37 C.F.R. § 42.24**

Pursuant to 37 C.F.R. §42.24(d), the undersigned certifies that the foregoing Petitioner's Reply to Patent Owner's Resposne exclusive of the parts exempted as provided in 37 C.F.R. §42.24(a), contains 5700 or fewer words and thus complies with the type-volume limitations of 37 C.F.R. 42.24(c).

Dated: March 29, 2024

SIERRA IP LAW, PC  
A Professional Corporation

By /William K. Nelson/

WILLIAM K. NELSON  
Attorney for Patent Owner,  
Orthocision Inc.

**CERTIFICATE OF SERVICE**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, I certify that on this 29<sup>th</sup> day of March 2024, I caused to have served a copy of the foregoing **REPLY TO PATENT OWNER'S RESPONSE TO PETITION** by electronic mail per prior agreement of the parties under 37 C.F.R. § 42.6(e) to the lead and back up counsel of record for Petitioner at the following email addresses:

Stephen E. Kelly <stephen.kelly@hwhlaw.com>;

Thomas Banks <thomas.Banks@hwhlaw.com>;

Andriy Lytvyn <andriy.lytvyn@hwhlaw.com>

SIERRA IP LAW, PC  
A Professional Corporation

By /William K. Nelson/

WILLIAM K. NELSON  
Attorney for Patent Owner,  
Orthocision Inc.