

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTIVEPOWER, INC.,
Petitioner,

v.

CUTSFORTH, INC.,
Patent Owner.

Case IPR2013-00274
Patent 7,990,018 B2

Before TRENTON A. WARD, MIRIAM L. QUINN, and CARL M. DeFRANCO,
Administrative Patent Judges.

WARD, *Administrative Patent Judge.*

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

I. INTRODUCTION

A. Background

MotivePower, Inc., Petitioner, filed a Petition to institute an *inter partes* review of all the claims 1–24 (the “challenged claims”) of U.S. Patent No. 7,990,018 B2 (Ex. 1001, “the ’018 patent”) pursuant to 35 U.S.C. §§ 311–19. Paper 1 (“Pet.”). The Board granted the Petition and instituted trial for all asserted claims. Paper 7 (“Dec.”). Although Petitioner proposed nine grounds of unpatentability, we instituted trial on only the following ground: Claims 1–24 would have been obvious in view of in view of Bissett,¹ Kartman,² and Ohmstedt.³ Dec. 25.

During trial, Cutsforth, Inc., Patent Owner, filed a Patent Owner Response (“PO Resp.”) addressing the grounds involved in trial and relying on the Declaration of Dr. Thomas A. Keim, (Ex. 2019). Paper 12. Petitioner filed a Reply to Patent Owner’s Response. Paper 21 (“Pet. Reply”). An oral hearing was held on September 16, 2014, and a transcript of the hearing is included in the record. Paper 30 (“Tr.”).

We have statutory authority under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has met its burden to prove by a preponderance of the evidence that claims 1–24 of the ’018 patent are unpatentable.

¹ U.S. Patent No. 3,432,708 (Ex. 1005) (“Bissett”).

² U.S. Patent No. 5,043,619 (Ex. 1004) (“Kartman”).

³ U.S. Patent No. 3,864,803 (Ex. 1003) (“Ohmstedt”).

B. Related Proceedings

Petitioner indicates that the '018 patent is currently the subject of a co-pending federal district court case, *Cutsforth, Inc. v. MotivePower, Inc.*, No. 0:12-cv-01200-SRN-JSM (D. Minn.). Pet. 2; Paper 5, 2. In addition, the patents listed below are related to the '018 patent and are the subject of *inter partes* review as follows:

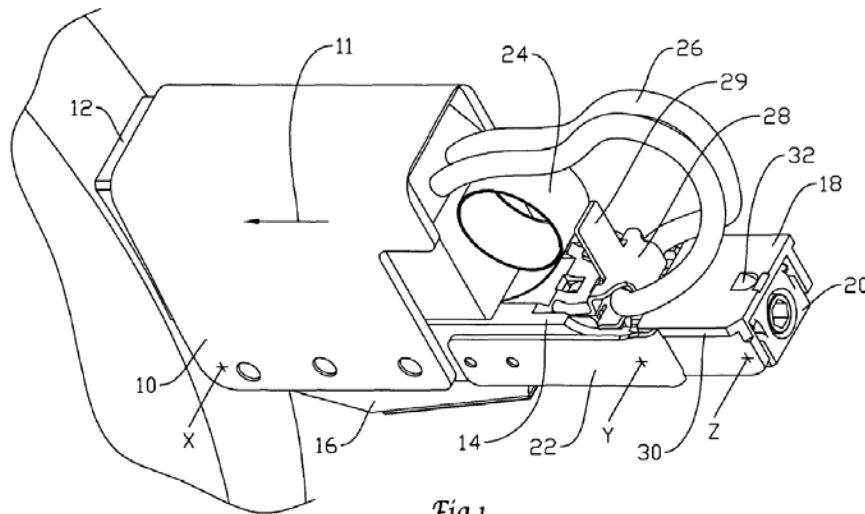
U.S. Patent No.	<i>Inter Partes</i> Proceeding
7,122,935 B2	IPR2013-00267
7,141,906 B2	IPR2013-00268
7,417,354 B2	IPR2013-00270
8,179,014 B2	IPR2013-00272

C. The '018 Patent

The '018 patent generally relates to a brush holder assembly for use in electrical devices and slip ring assemblies. Ex. 1001, 1:25–27. In particular, the patent describes that a brush is used in an electrical device to pass electrical current from a stationary contact to a moving contact surface, and vice versa. *Id.* at 1:31–33. The brush is typically in contact with a moving surface; thus, the surface of the brush wears down, reducing the quality of the electrical contact. *Id.* at 1:42–61. The '018 patent describes that when the brush is so worn that it requires replacement, the moving contact surface may need to be halted, which may be difficult or expensive. *Id.* at 2:8–11. Alternatively, the '018 patent describes that maintaining the relative motion during replacement of the brush may be unsafe

because of the risk of arcing and an accidental short circuit in the electrical components. *Id.* at 2:12–15. The patent describes that it would be an advantage to remove or replace a worn brush without stopping the moving parts involved. *Id.* at 2:6–10.

One embodiment of the '018 patent describes a brush holder assembly with a mounting bracket in an “engaged” configuration, relative to a lower mount block. *Id.* at 2:66–3:2. For example, Figure 1 of the '018 patent, reproduced below, illustrates an “engaged” configuration where brush 12, surrounded by brush box 10, contacts a conducting surface because brush spring 24 pushes the brush toward the bottom edge of box 10. *Id.* at Fig.1, 4:27–45,6:20–34.



According to Figure 1 above, brush box 10 is affixed to beam 14, which is affixed, via a hinged attachment, to lower mount block 16. *Id.* at 4:34-38. In the “engaged” position, as shown in Figure 1, a conductive path is formed from brush 12 through brush conductor 26, terminal 28, and conductor strap 34 (not in Figure 1 but shown in Figure 2, reproduced below). *Id.* at 7:11–14.

The '018 patent further describes a “disengaged” configuration, shown in particular with respect to Figure 2, reproduced below.

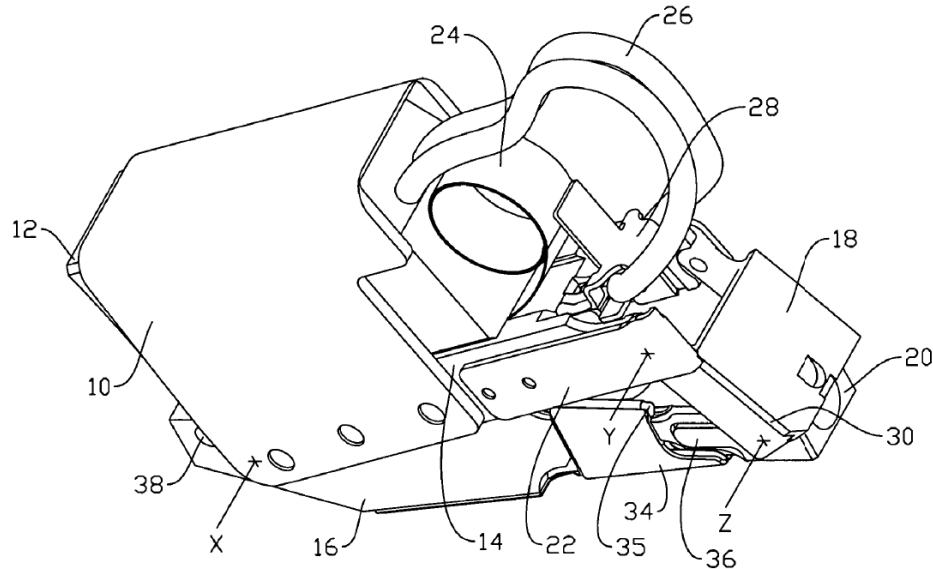


Fig.2

As illustrated in Figure 2 above, a hinging action takes place at certain pivot lines, such as pivot line “X,” about which beam 14 moves with respect to lower mounting block 16. *Id.* at 6:46–56. In the disengaged position, conductor strap 34 breaks contact with terminal 28, thus interrupting the current flow before the brush breaks contact with the conductive surface. *Id.* at 10:64–63.

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

1. A brush holder assembly for holding a brush having a conductive element, the brush holder assembly comprising:

an elongate mounting block having a major axis, an upper end and a lower end, and first and second outer side surfaces substantially parallel to said major axis, and including a stationary brush release proximate said lower end; and

a brush holder component adapted for removably mounting to the mounting block, the brush holder component comprising a brush

box and a channel for receiving a portion of the mounting block therein, the channel including first and second inner side surfaces;

the brush holder component further comprising a brush catch having a first position and a second position, the brush catch preventing sliding movement of a brush within the brush box in the first position, and the brush catch permitting sliding movement of a brush within the brush box in the second position;

wherein the stationary brush release is positioned on the mounting block so that when the brush holder component is mounted on the mounting block, the stationary brush release engages with the brush catch, moving the brush catch into the second position.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Claim terms also are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Also, we must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (“limitations are not to be read into the claims from the specification”).

In the Decision on Institution, we interpreted the term “mounting block” of the ’018 patent to mean “a base for affixing to another structure.” Dec. 8. Furthermore, we interpreted the term “removably mounting” to mean “mounting in

a manner that is not permanent.” *Id.* at 10. Patent Owner argues that the constructions should be modified. Each of these terms is analyzed in turn.

1. “*mounting block*”

Patent Owner argues that the construction for “mounting block” must reflect the “specification’s requirement that the mounting block must be fixed to a location.” PO Resp. 8. In support of this argument, Patent Owner relies on Figure 15B of the ’018 patent as depicting that lower mounting block 16, i.e., the “mounting block,” is fixed in place to mount base 41 via bolts 43. *Id.* at 9–10. Patent Owner further points to descriptions of various embodiments of the attachment of the “mounting block” to a base or to a location. *Id.* Neither Figure 15B nor the statements in the specification identified by Patent Owner *require* the non-moveable, or “fixed,” aspect. Figure 15B does not show that the attachment excludes any ability to adjust the block. Indeed, the bottom surface of the mount is not depicted, leaving us to speculate concerning the shape of mount holes 96, because a round hole would suggest there is no adjustability, while a slotted or elongated hole would suggest adjustability. *But see* Ex. 1001, Fig. 9 (not cited by Petitioner, but confirming that elongated holes 96 are contemplated). The lack of description and depiction of the shape of the holes compels us to reject Patent Owner’s characterization of Figure 15B as supporting a “fixed” or non-moveable attachment. Furthermore, as for the descriptions of how the mount is attached, the specification uses the word “secure” and describes various embodiments of the attachment, none of which requires non-movability of the mount after the brush holder component is installed. *See* Ex. 1001, 12:35–36 (bolts and washers “*secure* the lower mount block 16 to a mount base” (emphasis added)), 14:56–58 (“mount holes 96 may include threading or other elements that allow for attachment to a

mount base”), 16:25–28 (“in other embodiments, a welded, keyed, pinned or other attachment scheme may be used to *secure* the lower mount block 16 to a mount base” (emphasis added)). In fact, the specification makes a point of not limiting the attachment of the mount to any particular method, fixed or not fixed. *See id.* at 12:37–41 (“or other attachment scheme may be used to secure the lower mount block 16 to a mount base near a moving conductive surface or in position to move relative to a conductive surface”). Nor does the language of the claim recite any method of attachment that limits the mounting block to something that cannot be adjusted, shifted, re-positioned, or otherwise moved, after attachment to the base.

Patent Owner further proposes that the written description teaches that all embodiments include a “fixed” mounting block, and, therefore, the “mounting block” should be so construed. PO Resp. 10–12. The specification states: “with the lower mount block 16 being the only portion that must be ‘fixed’ to a location, attachment steps are simplified.” Ex. 1001, 15:13–15. We are not persuaded by Patent Owner’s argument. Although the specification uses the word “fixed” with respect to lower mount block 16, that portion of the specification is focused on describing “*the present embodiment*” of a lower mount block shown in Figure 14, which illustrates a lower mount block “*for use in several embodiments,*” not *all* embodiments, as Patent Owner argues. *Id.* at 14:40–41, 15:10–17 (emphasis added). Moreover, that portion of the specification does not describe *the invention* as a fixed lower mount block. Indeed, Patent Owner’s characterization of the “fixed” lower mount block may stretch the specification too far, as it may be

inferred by the use of the word “fixed,” shrouded in quotation marks, that its use in that passage is not to be taken literally.⁴

In our Decision on Institution, we noted that the specification does not define the term “mounting block,” and that nothing in the claim language indicates that the term is used other than in accordance with its plain and ordinary meaning. Dec. 8. Guided by evidence of the plain and ordinary meaning consistent with the specification, we determined that the word “block” means “a base, platform or supporting frame.”⁵ *Id.* at 8–9. Patent Owner, however, objects to the word “base” as defining the “mounting block” because the claims recite another base, the “stationary base.” PO Resp. 11–12. Accordingly, to avoid confusion, Patent Owner proffers that the construction of “mounting block” should refer to a block, not a base. *Id.*

Petitioner argues that the proposal to define “mounting block” to mean a block does not clarify any issues and that Patent Owner has not argued that the prior art does not disclose a “block.” Pet. Reply 4. Consequently, the clarification is unnecessary. *Id.* We agree with Petitioner. Although the claims recite a “base” and a “block” distinctly, the claims, however, may recite these two terms in a synonymous ordinary meaning, to indicate that the two distinct structures have similar functions, as bases.

Therefore, we construe the term “mounting block” according to the ordinary meaning of the term to mean “a base for affixing to another structure.”

⁴ See, e.g., Chicago Manual of Style, 15th edition, Section 7.58 (“When a word or term is not used functionally but is referred to as the word or term itself, it is either italicized or enclosed in quotation marks.”).

⁵ *Block Definition (4)*, WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (1993) (Ex. 3001).

2. “removably mounting”

Claims 1, 12, and 17 recite the term “removably mounting.” Patent Owner argues that our construction does not reflect the meaning the phrase would have to one skilled in the art at the time of the invention. PO Resp. 14. Specifically, Patent Owner proffers the Keim Declaration, various references, and the stated problems in the Background of the Invention to argue that the term “removable” means without requiring removal of attachment hardware like nuts and bolts. *Id.* at 14–15 (citing Ex. 2019 ¶¶ 83–84, Ex. 1001, 2:8–19, and Exs. 2004, 2005, and 2009). We are not persuaded by Patent Owner’s argument and evidence.

First, the specification of the ’018 patent does not support Patent Owner’s contention that not removing hardware attachments results from the desire to provide safe, easy removal and replacement of the brush assembly while the machine is running. The embodiments in the ’018 patent describing the removal of the brush relate to the safety aspects of discontinuing the current when the device is in the disengaged position. *See* Ex. 1001, 10:47–63, 11:5–8. These embodiments do not describe, or even imply, in any way, that “removably mounting” is accomplished because one can avoid the removal of nuts and bolts when disengaging the brush. Although the Summary section of the specification describes “readily” removing from service a brush “without removing attachment hardware such as nuts or bolts,” that description applies to “[s]ome example embodiments.” *Id.* at 2:23–25. That Summary also describes other reasons for ease of removal of the brush, for example, because the device is a “contained system” that is “easier to deal with and control during removal.” *Id.* at 2:28–34. Also instructive is the description of it “be[ing] useful to easily or reversibly disengage a brush from a commutator to determine the extent of wear and perform

repairs.” *Id.* at 17:42–44.

Accordingly, the specification of the ’018 patent describes various ways to accomplish safety and ease of removal, but does not require that such removal be accomplished without removal of attachment hardware. Patent Owner’s arguments focus on exemplary embodiments, which we are careful not to incorporate into the claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (warning “against confining the claims to those embodiments.”). Furthermore, we note that the specification describes attachment of a “*removal tool*” for “disengagement manipulation.” *See* Ex. 1001, Fig. 9, 11:49–53, 12:12–23 (emphasis added). The removal tool engages a retractable catch pin into a pin seat in the beam of the device and by pulling a release tab with the thumb, the catch pin disengages, thereby attaching and removing a catch pin into the device in order to remove the brush holder. *See id.* at 11:48–53. The embodiments of the removal tool further confirm that the ’018 patent does not contemplate the exclusion of all hardware attachments from the removal process and that by describing how the insertion and release of a pin is used in removing the brush holder, the specification does not exclude using similarly functioning structures, such as nuts.

Second, with regard to the extrinsic evidence allegedly showing evidence that the term “removably mounting” would have the meaning proffered by Patent Owner, we are not persuaded by that evidence. First, the Keim Declaration, in the passages cited, attempts to support Patent Owner’s construction by referring to the benefit of using one versus two hands when removing a brush. Ex. 2019 ¶ 83. The specification, however, does not mention, or even imply, that the objective of the safe removal is to avoid using two hands. Second, the remaining passages of the Keim Declaration do not persuade us that the term “removable” had the meaning

Patent Owner argues. For example, the argument that in 1976 an article referred to a brush holder as “removable with an insulated handle” does not support the contention that the word “removable” means without having to remove attachment hardware such as nuts and bolts. *See* Ex. 2019 ¶¶ 83–85 (relying on references that use the word “removable” in connection with brush holders). Patent Owner has not shown that the articles relied on address the claim term “removably mounting,” much less that the word “removable” somehow is unique to the situation where a brush holder is mounted in such a manner that it can be removed without removing attachment hardware. The more reasonable interpretation of those articles is that the word “removable” is used in the plain and ordinary sense of the word as known to laypersons, and not the special circumstances alleged by Patent Owner. Absent a special definition set forth in the specification and given the evidence of the broadest reasonable interpretation of the term, we are not persuaded that “removably mounting” has a different meaning to those of ordinary skill in the art. *See E-Pass Tech, Inc. v. 3Com Corp.*, 343 F.3d 1364, 1368 (Fed. Cir. 2003) (Where no explicit definition for the term “electronic multi-function card” was given in the specification, this term should be given its ordinary meaning and broadest reasonable interpretation; the term should not be limited to the industry standard definition of credit card where there is no suggestion that this definition applies to the electronic multi-function card as claimed, and should not be limited to preferred embodiments in the specification.).

As stated in our Decision on Institution, the claim language and the specification are evidence of the plain and ordinary meaning. In the claim language, the specific structures associated with the function of “removably mounting” include a brush holder component “for removably mounting to the

mounting block.” Claim 1 further recites the brush holder component’s relationship with the “mounting block”; it recites that the brush holder component comprises a “channel for receiving a portion of the mounting block therein.” The specification describes several embodiments describing the interaction between the beam (described as having a “channel-like structure”) and the mounting block, such as the “engaged” position, the “disengaged” position, and intermediate stages. *See* Ex. 1001, 4:27–30, *see also* 14:7–21, Figs. 13A–13C (illustrating a disengaged position of beam 132 having a pivot point “X” coupled with lower mount 130 through the groove there shown). Furthermore, “[i]n several embodiments, the beam 14 may be completely removed/separated from the lower mount block 16.” *Id.* at 4:41–43. These positions and the described removal of beam 14 are consistent with the *removability* of the beam with respect to the lower mount block. That is, the beam is mounted on the mounting block in a manner that is not permanent so it can be removed as needed.

Based on the foregoing, we conclude that the construction proffered by Petitioner is consistent with the plain and ordinary meaning of the term “removably mounting”: “mounting in a manner that is not permanent.”

B. Obviousness over Bissett, Kartman, and Ohmstedt

With respect to the alleged ground of unpatentability based on obviousness over Bissett, Kartman, and Ohmstedt, we have reviewed the Petition, the Patent Owner Response, and Petitioner’s Reply, as well as the relevant evidence discussed in each of those papers.

1. Overview of Bissett (Ex. 1005)

Bissett relates to a brush assembly for a dynamoelectric machine. Ex. 1005, 1:9–10. The Bissett brush assembly is removable so that the brush can be replaced

while the machine is running. *Id.* at 1:10–13. Figure 1 of Bissett is reproduced below.

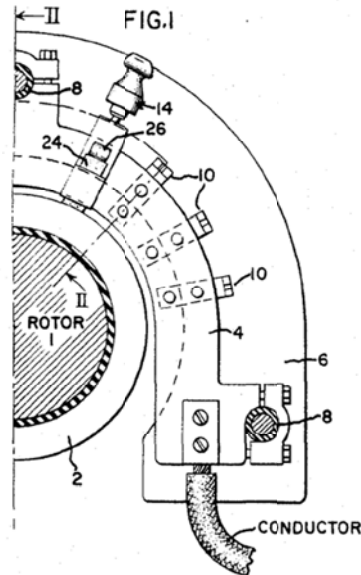


Figure 1 shows the general arrangement of a brush mounted in relation to the machine. *Id.* at 1:41–43. Brush 24 and spring 26, as shown in Figure 1, are disposed on a brush support backplate 10 around brush frame 4 such that brush 24 contacts the surface of the rotating collector ring 2. *Id.* at 1:51–57. Removable handle 14 operates to detach the brush assembly from brush frame 4 to allow removal of worn generator brush 24. *Id.* at 2:44–62.

Illustrating the removed brush assembly 12 is Figure 4 of Bissett, reproduced below.

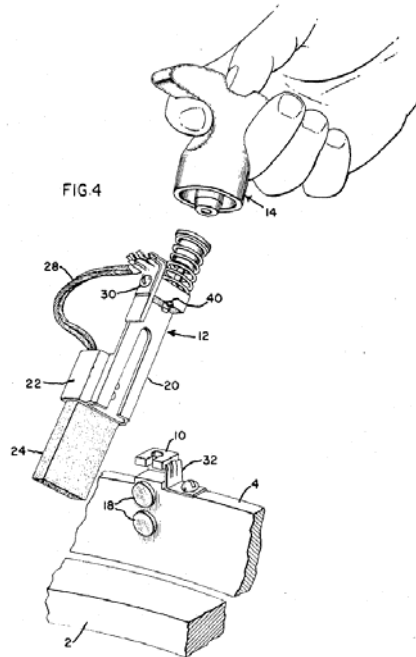


Figure 4 depicts brush assembly 12 disconnected from backplate 10 and removable handle 14 disconnected from brush assembly 12. *Id.* at 2:63–67. Brush assembly 12 comprises L-shaped member 20 configured as an elongated side that slides into a securely held position relative to dovetails 18. *Id.* at 1:68–72. L-shaped member 20 further comprises brush holder 22 configured as a hollow rectangular structure that accommodates brush 24. *Id.* at 2:1–5.

2. Overview of Ohmstedt (Ex. 1003)

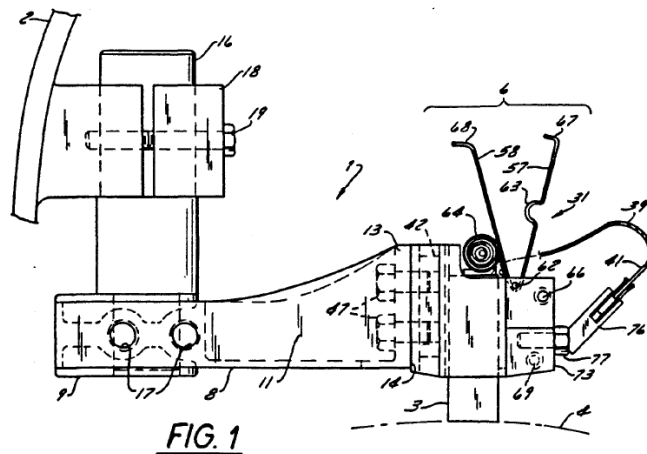
Ohmstedt discloses a brush mounting device that allows “brush maintenance [to] occur while the machine is under load and voltage is applied to the brushes.” Ex. 1003, 2:64–66. Figure 1 of Ohmstedt is reproduced below.

exerted by coil spring 29. *Id.* at 2:37–44. Additionally, Ohmstedt discloses inwardly extending teeth 25 for tightly gripping the electrically conductive brush 27. *Id.* at 2:15–17.

3. *Overview of Kartman (Ex. 1004)*

Kartman discloses a brush holder assembly for use in a dynamoelectric machine, such as a motor or generator. Ex. 1004, Abstract, 3:34. The assembly is mounted on a frame of the machine such that the brushes engage with the machine’s rotatable commutator. *Id.* at 3:35–36. The components of the brush holder assembly are concentrated in a central location and in closely spaced relation to each other to allow for fast and safe service, such as adjustment or removal of the brush or brush holder. *Id.* at 3:37–41, 4:25–31, 5:46–51. Furthermore, the brush holders are attached, side-by-side, to the assembly, each by a detachable connection that permits their individual replacement. *Id.* at Abstract.

One embodiment of the Kartman brush holder assembly 1 mounted on frame 2 of a machine is depicted in Figure 1, reproduced below.



As shown in Figure 1 above, brush holder assembly 1 comprises casting 8 with mounting surface 14, “to which a plurality of individual brush holders are

detachably connected.” *Id.* at 3:51–52. Each individual brush holder 31 is connected—detachably, mechanically, and electrically—to mounting surface 14. *Id.* at 3:62–64. Brush holder 31 slidably receives brush 3, which is held in the operative position against the curved surface of commutator 4 by constant brush force applying means 54 that includes force spring 64. *Id.* at 4:32–36, 45–48.

An exploded view of brush holder assembly 1, illustrating details of brush holder 31, brush 3, and constant brush force applying means 54, is shown in Figure 3, reproduced below.

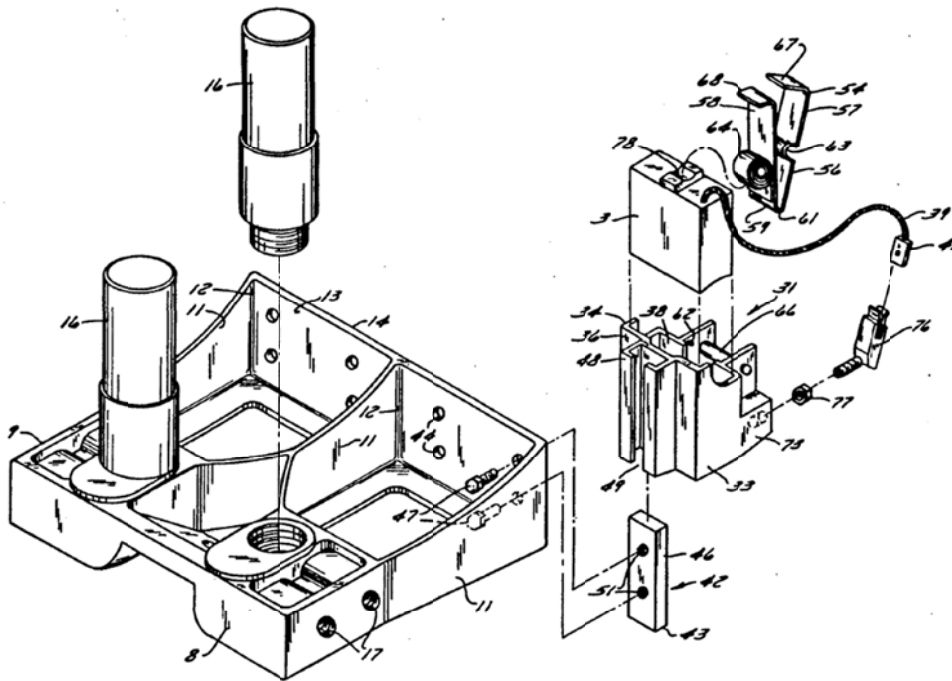


FIG. 3

Figure 3 further depicts detachable connecting means 42 for connecting brush holder 31 to mounting surface 14. *Id.* at 3:62–66. Means 42 comprises quick-release clamp bar 46, having a pair of threaded apertures 51 that align with the pair of vertically spaced-apart holes 44 on mounting surface 14. *Id.* at 4:9–14. Sliding quick-release clamp bar 46 into rear channel 48 of brush holder 31 and

tightening cap screws 47 through threaded apertures 51 results in a compressive force on clamp bar 46 that secures brush holder 31 to casting 8 of brush holder assembly 1. *Id.* at 4:19–26. Unscrewing slightly cap screws 47 to an unclamped position releases clamp bar 46 from the compressive force, thus permitting the adjustment or removal of the brush box. *Id.* at 4:26–31.

4. *Analysis*

Concerning independent claim 1, Petitioner contends that Bissett discloses a brush holder component (brush assembly 12) adapted for removably mounting to the mounting block (dovetails 18) by providing a channel for receiving a portion of the mounting block (dovetails 18). Pet. 16 (citing Ex. 1005, 1:61–2:1, Figs. 3–4). Furthermore, Petitioner argues that it would have been obvious to adapt the brush holder (brush assembly 12) of Bissett to include the brush catch of Ohmstedt, whereby divergent portion 23 of Ohmstedt would extend downward from the Bissett channel such that teeth 25 of Ohmstedt engage the Bissett brush 24. Pet. 10 (citing Ex. 1003, 1:14–18, 28–50; Ex. 1005, Fig. 4). Accordingly, Petitioner argues that the brush catch of Ohmstedt (divergent portion 23 and teeth 25) has a first position preventing sliding movement of a brush and a second position permitting sliding movement of a brush. Pet. 16 (Ex. 1003, 2:5–49, 3:8–12, Figs. 1, 2). Additionally, Petitioner argues that it would have been obvious to include the Ohmstedt brush release (ramps 59) in a position to engage the brush catch below the mounting structure (dovetails 18). Pet. 10–11, 17 (citing Ex. 1003, 2:15–17, 39–43, Fig. 2). The Petitioner also argues that it would have been obvious to adapt the mounting block of Bissett (dovetails 18) with the mounting block of Kartman. Pet. 11–12 (citing Ex. 1004, 4:19–22 and Ex. 1005, 1:63–64). More particularly, Petitioner proposes that the “T” shaped channel in Bissett may

be modified to incorporate the elongated mounting block structure of Kartman (detachable connecting means 42), which also is configured to slidably engage a “T” shaped channel. Pet. 12–13 (citing Ex. 1004, 4:19–22, Fig. 3; Ex. 1005, 1:63–64, Fig. 4).

Patent Owner argues that the proposed combination of Bissett, Ohmstedt, and Kartman fails to render any claims obvious. PO Resp. 17–50. We address Patent Owner’s arguments in turn.

a. Patent Owner’s Arguments Against the Combination of Bissett and Kartman

Patent Owner argues that the Board should reject Petitioner’s proposed modification of the mounting block of Bissett with the mounting block of Kartman. PO Resp. 18–19. Specifically, Patent Owner argues that Bissett teaches brush replacement based on the “one hand rule,” in which an operator should not place two hands on an electrified device. *Id.* at 19–20 (citing Ex. 2019 ¶ 47). Patent Owner further argues that Kartman’s detachable connecting means 42 requires the operator to use two hands in manipulating tools to loosen cap screws 47. PO Resp. 25–26 (citing Ex. 1004, 4:22–25; Ex. 2019 ¶ 134). Thus, Patent Owner argues that Kartman’s detachable connecting means 42 would make Bissett’s device inoperable for its intended purpose by requiring the operator to violate the “one hand rule” to manipulate cap screws 47.

We are not persuaded by Patent Owner’s argument because Patent Owner fails to identify any disclosure in Bissett that requires operation in accordance with a “one hand rule.” In an attempt to support Patent Owner’s arguments that Bissett requires the “one hand rule,” Patent Owner cites the following disclosure in Bissett:

In collector brush assemblies generally known to the prior art, the manipulation[s] required to replace a brush are sometimes rather involved, usually calling for the shutdown of the generator.

PO Resp. 24 (citing Ex. 1005, 1:14–25). We are not persuaded by Patent Owner’s assertion that this disclosure requires the Bissett device to use the “one hand rule,” as the cited disclosure merely states that prior art devices usually required shutting down the generator to change brushes. *See* Ex. 1005, 1:14–25. Additionally, Patent Owner cites the following disclosure of Bissett as providing an “express invocation against the use of []tools” (PO Resp. 27) to manipulate the mounting block:

Each brush assembly is installable and removable by an insulated handle[,] which is itself removable from each brush assembly so that only one such handle is required to service an entire generator.

PO Resp. 27 (citing Ex. 1005, 1:36–40). We are not persuaded that this disclosure is an “express invocation against the use of [] tools” to manipulate the mounting block, but rather, a statement regarding the ability of an operator to use a single insulated handle with multiple Bissett brush assemblies.

These cited disclosures from Bissett do not instruct an operator to use the “one hand rule.” In fact, the term “one hand rule” is not mentioned in Bissett. As we are not persuaded by Patent Owner that the Bissett brush assembly requires compliance with a “one hand rule,” we not persuaded that the modification of the mounting block of Bissett with the mounting block of Kartman would be contrary to the intended purpose of the Bissett brush assembly.

b. Patent Owner’s Arguments Against the Combination of Ohmstedt with Bissett and Kartman

Patent Owner argues that Petitioner fails to offer any evidence to support the combination of Ohmstedt with Bissett and Kartman. PO Resp. 32–33.

First, Patent Owner argues that that the Ohmstedt inventors were aware of the Bissett brush assembly at the time of invention, but did not “do what [Petitioner] argues would have been a ‘common sense alternative’ and modify Bissett with the ‘brush catch and brush release of Ohmstedt.’” PO Resp. 34. We are not persuaded that simply because one group of inventors did not make the combination proposed by Petitioner, that a person of ordinary skill in the art would not have found it obvious to make the combination. The action, or inaction, of the Ohmstedt group of inventors is not determinative of the obviousness of Petitioner’s proposed combination.

Second, Patent Owner argues that Bissett and Ohmstedt use different structures, and that Ohmstedt teaches away from the Bissett brush assembly. PO Resp. 35–37. Specifically, Patent Owner argues that Ohmstedt teaches a permanently mounted brush box 13, which is contrary to Bissett’s bolts 16 that provide dovetails 18 and backplate 10 for affixing the removable brush holder. PO Resp. 36–37 (citing Ex. 1003, Fig. 1; Ex. 1005, 1:61–66, 2:5–11, 16–29; Ex. 2019 ¶¶ 95–96, 168). Patent Owner’s arguments regarding Ohmstedt’s brush box 13 are unpersuasive, because Petitioner’s challenge does not rely upon Ohmstedt’s brush box 13 as teaching the mounting block, but relies upon brush holder component 11 of Ohmstedt to modify brush holder component 12 of Bissett. *See* Pet. 15–17. Moreover, although Petitioner has shown that brush box 13 of Ohmstedt compares to the claimed mounting block, that comparison is made with regard to teaching a brush release positioned on the mounting block, for which, again, Petitioner relies on Bissett and Kartman. *See id.*

Third, Patent Owner argues that a person of ordinary skill in the art would not have combined Ohmstedt with Bissett and Kartman because the two designs are incompatible. PO Resp. 37. More particularly, Patent Owner argues that teeth

25, divergent portions 23, and ramps 59 disclosed in Ohmstedt are not suitable for incorporation into the Bissett brush assembly, because Ohmstedt's two ramps 59 remain in a fixed position and serve to separate divergent portions 23, so as to release the brush. PO Resp. 38 (Ex. 2019 ¶¶ 146, 166). Patent Owner alleges that incorporating Ohmstedt's mechanism would mean keeping the brush holder fixed in the machine. PO Resp. 39. In addition to arguing incompatibility, Patent Owner argues that Ohmstedt's brush box 13 could not be removed for cleaning while the machine was in operation. *Id.*

Petitioner's challenge proposes to "add a stationary brush release 59" from Ohmstedt "to the Bissett/Kartman mounting block, proximate the lower end." Pet. 15 (Ex. 1003, 2:37–49, Figs. 1, 2). Therefore, Petitioner proposes modifying the Bissett/Kartman mounting block by adding the brush release of Ohmstedt to the lower end of the Bissett/Kartman mounting block, not by adding brush box 13 of Ohmstedt to the Bissett/Kartman mounting block. *See id.* Accordingly, we are not persuaded by Patent Owner's argument.

c. Patent Owner's Arguments That the Combination Would Not Result in the Claimed Invention

Patent Owner argues that the proposed combination of Ohmstedt with Bissett and Kartman would not result in the claimed invention. PO Resp. 40. We address Patent Owner's arguments in turn.

First, Patent Owner argues that the proposed Bissett/Kartman mounting block would not "affix" the brush holder component in place, and, thus, does not meet the construction of "mounting block," "a base for affixing to another structure." PO Resp. 40–41. Specifically, Patent Owner argues that if the clamping action of Kartman's detachable connecting means 42 is not incorporated into Bissett's mounting block, then nothing would "affix" the brush holder

component in place, and it would be ejected from the flat bar at 72 inches per second. PO Resp. 41 (Ex. 2019 ¶ 114).

In response, Petitioner identifies that Bissett's mounting block does, in fact, "affix" the brush holder because Bissett discloses that its brush assembly comprises "L-shaped member 20, the long side of which is bifurcated and modified with suitable shoulders so as to slide into a *securely held position* relative to dovetails 18." Pet. Reply 6 (citing Ex. 1005, 1:68–72) (emphasis added). In view of this disclosure in Bissett, we are not persuaded that Bissett's mounting block does not affix the brush holder.

Second, Patent Owner argues that the proposed Bissett/Kartman mounting block would not practice the claimed "mounting block" limitation because Bissett teaches away from the clamping action taught in Kartman, as Bissett teaches compliance with the "one hand rule." PO Resp. 44. As discussed above, we are not persuaded that the Bissett disclosure requires compliance with the so-called "one hand rule." Furthermore, Patent Owner argues that Kartman's detachable connecting means 42 operates by lifting clamp bar 46, sliding the brush holder into position, and tightening cap screws 47. PO Resp. 44–45. Patent Owner argues that the upward and downward motion of clamp bar 46 "is not 'fixed,' and thus [Petitioner's] proposed apparatus lacks a 'mounting block.'" *Id.* at 45. Contrary to Patent Owner's arguments, we determine that Kartman teaches that tightening cap screws 47 secures the brush holder into position, and, thus, serves as a "a base for affixing to another structure." Ex. 1004, 3:62–4:31 ("cap screws 47 may be tightened to a clamp position applying a compressive force to the clamp bar"), 5:16–19 ("The cap screws 47 are then tightened causing the clamp bar 46 to

compressively engage the rear channel 48 and lock it into position against the mounting surface 14.”).

Third, Patent Owner argues that Petitioner’s proposed combination would not satisfy the “removably mounting” limitation under Patent Owner’s proposed construction of the term. PO Resp. 45. As discussed above, we do not adopt Patent Owner’s proposed construction of the term “removably mounting”; thus, Patent Owner’s argument is moot.

d. Claim 5

Claim 5 recites that the “mounting block includes a spring that applies spring force against at least a portion of the brush holder component.” PO Resp. 46. Petitioner relies upon the “spring [] lead receptacle 32” of the mounting block disclosed in Bissett as applying a force against at least a portion of the brush holder, namely, knife-edge clip 30 of the brush holder. Pet. 19–20 (citing Ex. 1005, 2:12–15, Fig. 4).

Patent Owner argues that the proposed Bissett/Kartman mounting block does not meet the limitations of claim 5 because lead receptacle 32 is not part of Bissett’s mounting block. PO Resp. 47. Contrary to Patent Owner’s assertion, Petitioner argues that “one of ordinary skill in the art would understand that the modified Bissett/Kartman mounting block includes a spring (lead receptacle 32).” Pet. 19 (citing Ex. 1005, 2:12–15, Fig. 4). Furthermore, as Petitioner points out, the position of “spring lead receptacle 32” is a mere design choice and its position relative to dovetails 18 does not change the overall shape of Bissett’s mounting structure. Pet. Reply 12 (citing Ex. 1013, 90:14–20). We determine that positioning spring lead receptacle 32 on the Bissett/Kartman mounting block is a matter of design choice because its placement there would not alter the operation of the modified mounting block. *See In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975)

(holding that the particular placement of a contact in a conductivity measuring device was an obvious matter of design choice within the skill in the art).

Accordingly, we are not persuaded by Patent Owner's arguments with respect to claim 5.

e. Claims 7, 13, and 17

Claims 7, 13, and 17 prohibit the "mounting block" from extending through a plane defined by a planar surface of the base on which the mounting block is mounted. Patent Owner argues that bolts 16 in the Bissett mounting block extend completely through the base of frame 4 and, thus, fail to meet the limitations of claims 7, 13, and 17. PO Resp. 47–48.

Petitioner counters that dovetails 18 in Bissett are positioned entirely on one side of base 4. Pet. Reply 12. Petitioner further argues that a person of ordinary skill in the art would have understood that, rather than using a shank extending from the head, Bissett's dovetails 18 could have been created with screws or bolts that engage threads in the heads. *Id.* We agree that one of ordinary skill in the art could have readily modified dovetails 18 in Bissett to comply with the limitations in claims 7, 13, and 17. Accordingly, we are not persuaded by Patent Owner's arguments with respect to claims 7, 13, and 17.

f. Claim 8

Claim 8 recites that the "mounting block includes a portion that is movable relative to the remainder of the mounting block." Petitioner argues that one of ordinary skill in the art would understand to modify crosspiece 40 in Bissett to be located on the mounting block to provide a moveable portion of the mounting block. Pet. 21.

Patent Owner argues that moving Bissett's crosspiece 40 to the mounting block would "create substantial design difficulties." PO Resp. 51. As Petitioner

points out, Patent Owner, however, fails to identify any of these design difficulties. Pet. Reply 13. Accordingly, we are not persuaded that Petitioner's proposed combination fails to teach the claimed moveable portion.

g. Remaining Claim Elements

As for the remaining elements recited in claims 1–24, which were not disputed by Patent Owner, we also determine that these claim elements would have been obvious in view of Bissett, Kartman, and Ohmstedt according to the comparisons between the cited art disclosures presented in the Petition and the claim limitations. *See* Pet. 14–27.

5. *Objective Indicia of Nonobviousness*

Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the '018 patent's invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the claimed invention would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–1472 (Fed. Cir. 1984). Secondary considerations may include any of the following: long-felt but unsolved needs, failure of others, unexpected results, commercial success, copying, licensing, and praise. *Graham*, 383 U.S. at 17. Patent Owner argues that numerous objective indicia demonstrate the non-obviousness of its claimed invention. PO Resp. 52.

We note that it is not sufficient that a product or its use merely be within the scope of a claim in order for objective evidence of nonobviousness tied to that product to be given substantial weight. There must also be a causal relationship,

termed a “nexus,” between the evidence and the claimed invention. *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1376 (Fed. Cir. 2005). A nexus is required in order to establish that the evidence relied upon traces its basis to a novel element in the claim, not to something in the prior art. *Institut Pasteur & Universite Pierre Et Marie Curie v. Focarino*, 738 F.3d 1337, 1347 (Fed. Cir. 2013). Objective evidence that results from something that is not “both claimed and novel in the claim,” lacks a nexus to the merits of the invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011).

All types of objective evidence of nonobviousness must be shown to have nexus. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995) (nexus generally); *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996) (commercial success); *Wm. Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1364 (Fed. Cir. 2012) (copying); *Rambus Inc. v. Rea*, 731 F.3d 1248, 1256 (Fed. Cir. 2013) (long-felt need); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008) (praise). The stronger the showing of nexus, the greater the weight accorded the objective evidence of nonobviousness. *See Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 306 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986).

a. Long Felt Need

Patent Owner argues that nearly 27 years passed from the date that Bissett and Ohmstedt were known and readily available, but there is no evidence anybody combined Ohmstedt’s brush catch with Bissett. PO Resp. 53. Patent Owner further states that the substantial intervening time between the prior art’s teaching and the ’018 patent speaks volumes to the nonobviousness of the claims at issue. *Id.*

Contrary to Patent Owner's arguments, the simple passage of time between the prior art and the reduction to practice of the claimed invention is not alone sufficient objective evidence of nonobviousness. To establish evidence of a long felt but unresolved need, a patent owner must show that there was a persistent problem that was recognized by those of ordinary skill in the art. *See In re Gershon*, 372 F.2d 535, 539 (CCPA 1967). The problem must not have been solved previously by another, and the claimed invention must, in fact, satisfy the long-felt need. *See Newell Co. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988).

Patent Owner fails to establish that a persistent problem was recognized by those of skill in the brush assembly art or that the problem was satisfied by Patent Owner's claimed invention. Patent Owner merely alleges that it introduced its EASYchange holder product into the market in 2002. *See PO Resp. 53*. Patent Owner fails to offer sufficient evidence that its EASYchange holder product satisfied a persistent problem in the market.

For the foregoing reasons, the objective evidence proffered by Patent Owner is insufficient to establish a long-felt, but unmet, need.

b. Industry Praise

Patent Owner alleges that its EASYchange brush holder has received substantial industry praise. *PO Resp. 54*. Specifically, Patent Owner cites to materials which describe Patent Owner's EASYchange brush holder as providing brush replacement that is "easily and quickly accomplished" and that the "[w]ell designed, removable brush holders greatly simplify brush replacement." *PO Resp. 54-55* (citing Exs. 2057, 2058, 2005 at 104) (emphasis omitted).

Patent Owner fails to establish sufficiently how alleged praise in the materials cited relate to the novel elements of any of the challenged claims of the

'018 patent. In fact, the statements in the materials relied upon by Patent Owner are general descriptions of the operator experience with the EASYchange brush holder, but Patent Owner fails to tie any of this praise to elements of the claimed invention. Accordingly, we are not persuaded that this “objective indicia of non-obviousness [is] tied to the novel elements of the claim at issue.” *Institut Pasteur*, 738 F.3d at 1347; *Kao*, 639 F.3d at 1068.

For the foregoing reasons, the objective evidence proffered by Patent Owner is insufficient to establish industry praise.

c. Copying

Patent Owner alleges that Petitioner copied the EASYchange brush holder when it designed the competing brush holder product, the FC-101 holder. PO Resp. 56–57. Specifically, Patent Owner alleges that its patent application embodying the EASYchange brush holder was published in 2003 and the FC-101 holder did not enter the market until 2005. PO Resp. 56 (citing Ex. 2050 ¶ 24).

Patent Owner alleges that both products include a brush box, brush catch, a beam, and a channel. PO Resp. 58. Patent Owner fails, however, to identify any novel elements of the claimed invention that were copied by the FC-101 product. Accordingly, we are not persuaded that this “objective indicia of non-obviousness [is] tied to the novel elements of the claim at issue.” *Institut Pasteur*, 738 F.3d at 1347; *Kao*, 639 F.3d at 1068.

For the foregoing reasons, the objective evidence proffered by Patent Owner is insufficient to establish copying.

d. Commercial Success

Patent Owner alleges that its EASYchange brush holder has enjoyed tremendous commercial success shown by the significant sales of the product. PO Resp. 59 (citing Exs. 2050 ¶ 18, 2051). In support of its allegation of

commercial success, Patent Owner provides its sales figures for the EASYchange brush holder since 2002. Ex. 2050 ¶ 18; Ex. 2051.

Evidence of commercial success “is only significant if there is a nexus between the claimed invention and the commercial success.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006). To establish a proper nexus between a claimed invention and the commercial success of a product, a patent owner must offer “proof that the sales [of the allegedly successful product] were a direct result of the unique characteristics of the claimed invention—as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.” *In re Huang*, 100 F.3d at 140.

We determine that Patent Owner’s evidence of commercial success is insufficient because Patent Owner fails to establish how its sales figures relate to the overall market. Information solely on numbers of units sold is insufficient to establish commercial success. *In re Baxter Travenol Labs*, 952 F.2d 388, 392 (Fed. Cir. 1991) (“Information solely on numbers of units sold is insufficient to establish commercial success.”); *see also In re Huang*, 100 F.3d at 140 (“Declining to find evidence of commercial success because ‘[a]though [the inventor’s] affidavit certainly indicates that many units have been sold, it provides no indication of whether this represents a substantial quantity in this market.’”).

In addition to failing to provide evidence of Patent Owner’s sales figures relative to the overall market, Patent Owner also fails to provide evidence that the sales of EASYchange product were a direct result of unique characteristics of the claimed invention. Accordingly, we are not persuaded that this “objective indicia of non-obviousness [is] tied to the novel elements of the claim at issue.” *Institut Pasteur*, 738 F.3d at 1347; *Kao*, 639 F.3d at 1068. Therefore, we determine that Patent Owner’s proffered evidence of commercial success is unpersuasive.

For the foregoing reasons, the objective evidence proffered by Patent Owner is insufficient to establish commercial success.

e. Conclusion Regarding Objective Indicia of Nonobviousness

We have considered the scope and content of the prior art; the differences between the prior art and the challenged claims; the level of ordinary skill in the art; and all of the objective indicia of nonobviousness asserted by Patent Owner. *See Graham*, 383 U.S. at 18–19. We determine that the objective evidence proffered by Patent Owner is insufficient to establish nonobviousness.

III. CONCLUSION

Based on our review of the record, we conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–24 would have been obvious over Bissett, Kartman, and Ohmstedt.

IV. ORDER

Accordingly, it is hereby:

ORDERED that Petitioner has shown by a preponderance of the evidence that claims 1–24 of the '018 patent are unpatentable; and

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

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Patent 7,990,018 B2

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