

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**BLACK & DECKER, INC.,**  
*Appellant*

v.

**POSITEC USA, INC., RW DIRECT, INC.,**  
*Cross-Appellants*

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2015-1646, 2015-1647

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Appeals from the United States Patent and Trade-  
mark Office, Patent Trial and Appeal Board in  
No. IPR2013-00502.

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Decided: May 18, 2016

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Before LOURIE, MOORE, and CHEN, *Circuit Judges*.

CHEN, *Circuit Judge*.

These appeals arise from an inter partes review of U.S. Patent No. 5,544,417 (the '417 patent) owned by Black & Decker, Inc. The United States Patent and Trademark Office, Patent Trial and Appeal Board instituted review on the petition of Positec USA, Inc. and RW Direct, Inc. (collectively, Cross-Appellants). In its final written decision, the Board found: (1) claims 16 and 17 unpatentable under 35 U.S.C. § 103 as obvious over U.S. Patent No. 4,498,237 (Mack); and (2) claims 7 and 10 not obvious over Mack and U.K. Patent Application GB 2 115 665 A (Laverick). Black & Decker appeals the Board's finding that claims 16 and 17 would have been obvious; Cross-Appellants appeal the Board's finding that claims 7 and 10 would not have been obvious. For the reasons stated in this opinion, we *reverse* the Board's decision that claims 16 and 17 would have been obvious and *affirm* its decision that claims 7 and 10 would not have been obvious.

## BACKGROUND

### I. The '417 Patent

The '417 patent is directed to a manner of mounting a motor in the housing of a string trimmer. '417 patent, 1:22–28. Specifically, the patent discloses the use of a “motor mounting plate” supported by the string trimmer's housing such that the motor does not contact the interior surface of the housing. *Id.*

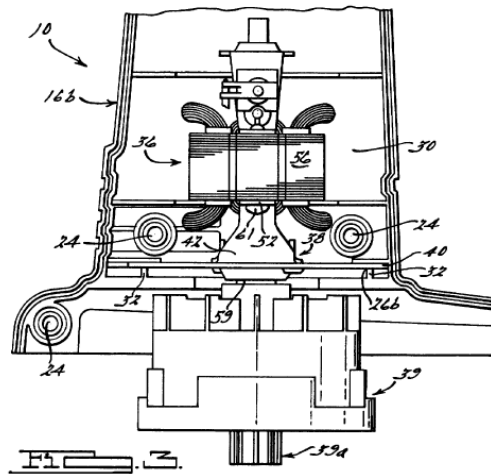
The claimed invention's motor-mounting scheme allegedly decreases manufacturing costs of prior art string

trimmers by eliminating the need for “ribs” molded into the interior surface of the housing otherwise necessary to prevent the motor from moving. *Id.* at 1:41–2:8. As the patent specification explains:

While [the prior art] mounting arrangement operates satisfactorily to support a motor within a housing of a string trimmer, this mounting arrangement does require relatively precisely-positioned ribs on the interior surfaces of the housing halves. These ribs somewhat complicate the construction of the two housing halves, which are typically molded from plastic and requires more complex and expensive molds or dies for producing the two housing halves. Additionally, if the ribs are not relatively precisely positioned or of a relatively precise height, then the motor may be able to wobble or otherwise move or cause vibration during operation of the string trimmer. Still further, precisely formed and positioned ribs are often difficult to achieve when certain types of plastic are used to construct the housing.

*Id.* at 1:52–66.

The '417 patent describes a string trimmer that uses a rib-less housing as show in the patent's Figure 3:



The motor (36) makes no direct contact with the inner surface of the housing (30). *Id.* at 5:25–31. Rather, the motor is attached to the housing via a motor mounting plate assembly (38). *Id.* at 4:30–33. During manufacture, the motor is attached to the motor mounting plate assembly. *Id.* at 2:36–39. The assembly’s plate member (40) is then inserted into a groove that is “formed circumferentially about an interior of each housing half,” thereby holding the structure in place. *Id.* at 2:34–42.

Claims 7 and 16 are the independent claims at issue in these appeals. Claim 7 is an apparatus claim. It states:

7. A line trimming apparatus for trimming vegetation, comprising:
- a trimming line;
  - a motor drivingly connected to the line;
  - a housing having an interior wall surface, said interior wall surface including a mounting area in the form of a groove formed thereon; and

a mounting plate assembly fixedly secured to said motor for mounting said motor within said housing such that said at least a portion of said mounting plate assembly is supported within said groove in said interior wall surface of said housing such that said motor is supported within said housing without the need for direct contact of any portion of said motor with said interior wall surface of said housing.

*Id.* at 8:35–49. Claim 16 is a method claim. It states:

16. A method for assembling an outdoor power tool, the method comprising:

forming a first housing section having a circumferential groove formed in an interior wall thereof;

forming a second housing section having a circumferential groove formed in an interior wall thereof;

fixedly securing a motor mounting plate to a motor;

inserting a portion of said motor mounting plate into said circumferential groove in said second housing section;

placing said first housing section against said second housing section to cause a portion of said mounting plate to engage within said circumferential groove in said interior wall of said first housing section, to thereby cause said mounting plate to be supported at a plurality of positions by said circumferential grooves, to thereby enable said motor to be supported within said first and second housing sections

without said motor contacting any portion of said interior walls of said first and second housing sections; and

securing said first housing section to said second housing section.

*Id.* at 10:11–31. Dependent claims 10 and 17 include additional limitations related to the motor mounting plate assembly. *Id.* at 9:8–14, 10:32–41.

## II. Procedural History

Cross-Appellants requested inter partes review of claims 1, 2, 4, 5, 7, 10, 12–14, 16, and 17 of the '417 patent. In response, Black & Decker disclaimed claims 1, 2, 4, 5, and 12–14. The Board then instituted review of claims 7, 10, 16, and 17 on the following grounds: (1) claims 7 and 10 as unpatentable under 35 U.S.C. § 103(a) as obvious over Laverick and Mack; and (2) claims 16 and 17 as unpatentable under 35 U.S.C. § 103(a) as obvious over Mack. In its final written decision, the Board found that claims 7 and 10 would not have been obvious over Laverick and Mack and claims 16 and 17 would have been obvious over Mack. *Positec USA, Inc. v. Black & Decker Inc.*, IPR2013-00502, 2015 WL 5440722, at \*1 (PTAB Jan. 29, 2015) (*Final Written Decision*).

Laverick discloses a prior art string trimmer. Laverick, 1:4–9. Its housing consists of two “clam-shell” portions joined longitudinally. *Id.* at 1:92–97. Each portion contains a rib molded into the inner surface of the housing. *Id.* at 2:24–27. The rib works in conjunction with other design features, including flanges on the motor that engage a groove on the inner surface of the housing, to hold the string-trimmer’s motor in place. *Id.* at 2:17–44.

Mack discloses an electric-powered hair trimmer. Mack, 1:6–7. Like Laverick, Mack’s housing consists of two “clam-shell” portions joined longitudinally. *Id.* at

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2:31–35. The inner surfaces of Mack’s portions include a groove designed to hold a mounting structure for the trimmer’s motor. *Id.* at 3:18–24. The motor is attached to the mounting structure with a motor mounting yoke made of spring grade wire. *Id.* at 3:5–24.

With respect to claims 7 and 10, the Board focused its analysis on the “fixedly secured” and “without the need for direct contact” limitations of the claims. The Board construed “fixedly secured” to mean “fastened such that relative movement is prevented.”<sup>1</sup> *Final Written Decision*, 2015 WL 5440722, at \*4. The Board then found that Mack did not disclose this limitation. It explained that the flex in the spring grade wire used to attach the motor to the mounting structure coupled with the small contact surface between the motor and the mounting structure allowed the motor to move. *Id.* at \*10–11, \*12. The Board also found that Laverick did not disclose the “without the need for direct contact” limitation as its housing directly contacted the motor at multiple points in order to hold the motor in place. *Id.* at \*12. Finally, the Board rejected Cross-Appellants’ argument that “one of ordinary skill in the art would have arrived at the ‘fixedly secured’ and ‘without need for direct contact’ limitations simply by scaling-up Mack’s mounting plate assembly for use with Laverick’s bigger motor.” *Id.* at \*13. The Board thereby concluded that the claims would not have been obvious.

Turning to claims 16 and 17, the Board’s analysis again focused on the “fixedly securing” and “without . . . contacting” limitations. Consistent with its analysis of claims 7 and 10, the Board found that Mack did not disclose the “fixedly securing” limitation. *Id.* at \*16.

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<sup>1</sup> In construing the claim this way, the Board rejected a broader construction proposed by Cross-Appellants: “securely placed or fastened.” *Final Written Decision*, 2015 WL 5440722, at \*4.

However, the Board found that a person of ordinary skill “would have known” how to fixedly secure Mack’s motor and “could have” done so “using bolts or screws instead of the spring grade wire.” *Id.* Because the person of ordinary skill also would have understood that Mack’s motor did not contact the inner surface of its housing, the Board found claims 16 and 17 obvious. *Id.* at \*16–17.

Black & Decker filed a timely appeal from the Board’s decision, and Cross-Appellants filed a cross-appeal.<sup>2</sup> We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

For clarity, we address the issues on appeal in the same order they were initially addressed by the Board. Therefore, we depart from our normal practice and address the cross-appeal first.

##### I. Claim Construction

Cross-Appellants challenge the Board’s construction of “fixedly secured” (claim 7) and “fixedly securing” (claim 16) to mean “fastened/fastening such that relative movement is prevented.” Cross-Appellants contend that the terms should be more broadly construed as “fixedly se-

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<sup>2</sup> The Director intervened on two narrow grounds: (1) Cross-Appellants waived any appeal to the Board’s decision not to institute review on certain grounds; and (2) the doctrine of prosecution disclaimer did not require the Board to give effect to Black & Decker’s contemporaneous argument-based disclaimer of patent claim scope during the inter partes review proceeding. Cross-Appellants did not challenge the Board’s institution decision in their appeal. Moreover, we do not reach the issue of prosecution disclaimer in resolving the parties’ appeals. We thus do not address the Director’s arguments.



cured or fastened.” Cross-Appellants’ Opening Br. at 34 (“Positec respectfully asks this Court to reverse the Board’s claim construction . . . and adopt Positec’s proposed construction: ‘securely placed or fastened.’ Under the proper broadest reasonable interpretation, the terms do not require fastening ‘such that relative movement is prevented.’” (emphasis in original)).

We apply the framework established in *Teva Pharmaceuticals U.S.A., Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015), when reviewing a claim construction adopted by the Board. *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015). Under that framework, we review the Board’s ultimate claim construction de novo with any underlying factual determinations involving extrinsic evidence reviewed for substantial evidence. *Id.* (citing *Teva*, 135 S. Ct. at 841–42).

As an initial matter, we note that the Board applied the “broadest reasonable interpretation” when construing the claims at issue. While this is the proper standard when construing claims of an unexpired patent, *In re Cuozzo Speed Techs.*, 793 F.3d 1268, 1279 (Fed. Cir. 2015), the ’417 patent expired in October 2014—approximately three months before the Board’s final written decision. Claims of an expired patent are given their ordinary and customary meaning in accordance with our opinion in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).<sup>3</sup> See *In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012).

Despite the Board’s use of an improper standard, applying the *Phillips* standard, we find that its ultimate construction of “fixedly secured/securing” is nonetheless correct. The Board properly consulted the ’417 patent’s specification in construing the term. *Phillips*, 415 F.3d at

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<sup>3</sup> No party raised this issue in its briefs.

1315 (“[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” (internal quotation marks and citation omitted)). The specification describes the manner in which the motor and mounting plate assembly—the components that are “fixedly secured”—are attached as “rigidly coupled.” *Final Written Decision*, 2015 WL 5440722, at \*4 (citing ’417 patent, 5:5–7). The Board properly understood “‘rigidly coupled,’ in this context, to signify that the coupled components cannot move relative to one another.” *Id.* The specification further describes the use of threaded screws to assemble the motor mounting plate assembly and attach it to the motor. *Id.* (citing ’417 patent, 4:40–42, 5:8–10). Moreover, Black & Decker during prosecution overcame an anticipation rejection by arguing that Mack’s motor is attached to the motor mounting assembly by “yoke 43 . . . formed from a ‘spring grade wire’” and, thus, is not “fixedly secured to the motor mounting plate assembly, as is the case with Applicant’s invention.” J.A. 195 (emphasis in original). Based on the intrinsic evidence, the Board properly concluded that components that are “fixedly secured,” in this context, cannot move relative to each other.

Cross-Appellants’ arguments in support of their proposed construction miss the mark. First, Cross-Appellants claim that various passages in the specification suggest a broader construction of “fixedly secured” and “fixedly securing.” Cross-Appellants’ Opening Br. at 32–33. However, each passage Cross-Appellants cite relates to connections between components other than those claimed to be “fixedly secured” (i.e., the motor and mounting plate assembly). *Id.* (citing descriptions of connections between (1) the motor mounting plate assembly and housing, and (2) the fan and armature shaft). The specification explicitly describes the connection between the motor and the mounting plate assembly as “rigidly

coupled,” as the Board found. Second, Cross-Appellants claim that the Board improperly relied upon dictionary definitions and Mack in construing the terms. However, the Board made clear that its construction was based on the ’417 patent’s claims and specification. *Final Written Decision*, 2015 WL 5440722, at \*4 (“*In light of the Specification*, therefore, the broadest reasonable interpretation of ‘fixedly secured’ is ‘fastened such that relative movement is prevented.’” (emphasis added)). It cited dictionary definitions, J.A. 217–18, and Mack, *Final Written Decision*, 2015 WL 5440722, at \*4, only as additional support. The Board’s use of extrinsic evidence in this way is not improper. *See Phillips*, 415 F.3d at 1317 (authorizing the use of extrinsic evidence in claim construction, but describing it as “less significant than the intrinsic record” (citation omitted)).

## II. Obviousness

Obviousness is a question of law based on underlying findings of fact. *In re Kubin*, 561 F.3d 1351, 1355 (Fed. Cir. 2009). The underlying findings of fact include: “(1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art at the time the invention was made; and (4) objective evidence of nonobviousness, if any.” *Id.*; *see also Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). In an appeal of a Board decision, we review the Board’s underlying factual findings for substantial evidence. *Merck & Cie v. Gnosis S.P.A.*, 808 F.3d 829, 833 (Fed. Cir. 2015). We review the Board’s ultimate determination of obviousness de novo. *Id.*

### A. Claims 7 and 10

Cross-Appellants contend that the combination of Laverick and Mack teach the two limitations the Board found lacking: (1) the motor is “fixedly secured” to the mounting plate assembly; and (2) the motor is supported within the housing “without the need for direct contact”

between the motor and the housing. Cross-Appellants' Opening Br. at 35–44. Cross-Appellants further contend that the Board committed legal error when it found that a person of ordinary skill in the art would not exercise common sense and combine Laverick and Mack to form the patented invention. *Id.* at 44–50.

We hold that the Board's finding that Mack does not disclose the "fixedly secured" limitation is supported by substantial evidence. Mack's motor is attached to the mounting structure with a motor mounting yoke made of spring grade wire. Mack, 3:5–24. The Board credited the testimony of Black & Decker's expert, Mr. Philip J. O'Keefe, that "the *flex* in the spring grade wire of yoke 43, and the *small contact surface* between motor 25 and flat portion 45, allow the motor both to move axially and to wobble from side-to-side." *Final Written Decision*, 2015 WL 5440722, at \*10 (emphases in original). We find no fault in the Board's decision to credit Mr. O'Keefe's testimony. *See id.* at \*11. The testimony is consistent with Mack's disclosure, which describes the yoke as working with other features of Mack to prevent motor rotation, not axial or lateral movement. Mack, 3:18–24. Moreover, Cross-Appellants offered no expert testimony of their own to rebut Mr. O'Keefe. Because Mack's motor can "move axially" and "wobble from side-to-side," it is not "fixedly secured."

We further agree with the Board that Cross-Appellants did not meet their burden in establishing that it would have been obvious to one of skill in the art to modify Laverick with Mack's mounting plate assembly in a way that would satisfy the "fixedly secured" and "without the need for direct contact" limitations of claim 7.<sup>4</sup>

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<sup>4</sup> Because we find that it would not have been obvious to modify Laverick in this way, we need not address Cross-Appellants' argument that the Board failed to

Cross-Appellants contend that a person of ordinary skill would substitute the flange and groove assembly in Laverick with the plate and groove assembly in Mack. Cross-Appellants' Opening Br. at 48. However, as the Board explained, these features serve different purposes. *Final Written Decision*, 2015 WL 5440722, at \*13 (stating that "Mack's groove/plate . . . secures Mack's motor against rotation" while "the groove/flange of Laverick . . . prevent[s] the motor from wobbling or otherwise moving and causing vibration"). Therefore, it is unclear why a person of ordinary skill would make this substitution.

And, even assuming that the substitution were made, Cross-Appellants presented no evidence to the Board that a person of ordinary skill would have made the various structural changes necessary to prevent relative movement between the motor and mounting plate without the need for direct contact with the housing. As the Board explained, "the groove/flange of Laverick is just one component of a composite support structure comprising precisely molded supporting ribs, protrusions, and surfaces that, together, function to clamp Laverick's motor along its length and to prevent the motor from wobbling or otherwise moving and causing vibration." *Id.* Cross-Appellants offered mere attorney argument to explain why a person of ordinary skill would remove these various structures, including the supporting rib, and instead "fixedly secure" the motor by making Mack's mounting arrangement "beefier." J.A. 791–92 (conceding that "[t]here's no testimony" to support Cross-Appellants' obviousness contention). Based on this record, we agree with the Board's conclusion that it would not have been obvious to the person of ordinary skill "to make all of the

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consider whether Mack disclosed the "without the need for direct contact limitation." Cross-Appellants' Opening Br. at 43–44.

functional and structural changes needed to prevent relative movement between the plate and the motor and to support the motor without use of direct contact with the housing.” *Final Written Decision*, 2015 WL 5440722, at \*13.

We therefore affirm the Board’s decision that claims 7 and 10 would not have been obvious.

#### B. Claims 16 and 17

Although the Board properly concluded that apparatus claims 7 and 10 would not have been obvious in view of Laverick and Mack, the Board nonetheless concluded that closely-related method claims 16 and 17 would have been obvious in view of Mack alone. Black & Decker contends that the Board committed legal error in two ways in finding claims 16 and 17 obvious. First, Black & Decker argues that the Board improperly relied on figures that are not drawn to scale when it found that Mack met the “without . . . contacting” limitation. Appellant’s Opening Br. at 38–45. Second, Black & Decker argues that the Board failed to articulate a reason why a person of ordinary skill in the art would modify Mack to meet the “fixedly securing” limitation. *Id.* at 45–54.

We agree that the Board failed to explain why a person of ordinary skill in the art would “fixedly secure” the motor in Mack. Our precedent requires that the Board explain a rationale why a person of ordinary skill would have modified Mack’s motor. *See Ball Aerosol & Specialty Container, Inc. v. Limited Brands, Inc.*, 555 F.3d 984, 993 (Fed. Cir. 2009) (explaining that the skilled artisan’s motivation “should be made explicit”). In its decision, the Board stated that Mack “suggests” the limitation. *Final Written Decision*, 2015 WL 5440722, at \*16. It went on to state what one of skill in the art “would have known” or “could have” done to meet the limitation. *Id.* This is not sufficient. Our precedent required that the Board explain why one of skill in the art would have adapted or replaced

Mack's motor mounting yoke to ensure that the motor did not move relative to the motor mounting structure. The Board did not do so.

Moreover, the Board's finding that Mack suggests "fixedly securing" the motor to the mounting structure is not supported by substantial evidence. See *Kinetic Concepts, Inc. v. Blue Sky Med. Grp., Inc.*, 554 F.3d 1010, 1019 (Fed. Cir. 2009) (describing the scope and content of the prior art as a factual question reviewed for substantial evidence). The only evidence cited by the Board states that the motor is "positioned and supported *against rotation.*" Mack, 3:18–24 (emphasis added). Nothing in Mack suggests that the motor should be further supported against lateral or axial movement.

In fact, the proposed modification to Mack's device seems to run counter to the intended purpose of Mack's design. The Board stated that "[a] person of ordinary skill would have known, for example, that plate 45 could have been fixedly secured to motor 25 using bolts or screws instead of spring grade wire." *Final Written Decision*, 2015 WL 5440722, at \*16. Yet, Mack's hair trimmer was designed to improve on prior art units that had "relatively high costs and complex constructions which make assembly, repair and cleaning difficult." Mack, 1:27–29. Mack therefore disclosed "an easily manipulated, efficient, quiet, hair trimmer *having relatively few components* that is particularly well-adapted for self-use." *Id.* at 1:39–42 (emphasis added). Replacing Mack's yoke with bolts or screws, as the Board suggests, would increase the number of components necessary to mount the motor and, thereby, increase assembly and repair costs. Such a modification is inconsistent with Mack's stated goal.

We therefore reverse the Board's decision that claims 16 and 17 would have been obvious.<sup>5</sup>

CONCLUSION

For the foregoing reasons, we *affirm* the Board's decision that claims 7 and 10 would not have been obvious and *reverse* its decision that claims 16 and 17 would have been obvious.

**AFFIRMED-IN PART, REVERSED-IN-PART**

COSTS

No Costs.

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<sup>5</sup> Because we find that it would not have been obvious to modify Mack to meet the "fixedly securing" limitation, we need not address Black & Decker's argument that the Board erred by relying on certain figures in Mack to meet the "without . . . contacting" limitation. We likewise need not reach Black & Decker's additional arguments regarding analogous art and the effect of claim 16's preamble on the obviousness analysis.