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28268	7590	06/05/2020	EXAMINER	
Stanley Black & Decker, Inc. 6201 Greenleigh Avenue, MR045 Middle River, MD 21220			SEIF, DARIUSH	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* JASON MCROBERTS, DAVID MILLER, and  
OLEKSIY SERGYEYENKO

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Appeal 2019-000159  
Application 14/174,496  
Technology Center 3700

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Before MICHAEL C. ASTORINO, CYNTHIAL. MURPHY, and  
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

MURPHY, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant<sup>1</sup> appeals from the Examiner's rejections of claims 1, 13–16, 18–20, 24, and 25 under 35 U.S.C. § 103(a). We REVERSE.<sup>2</sup>

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<sup>1</sup> The Appellant is the “applicant” as defined by 37 C.F.R. § 1.42 (e.g., “the inventor or all of the joint inventors”). “The real party in interest in the present application is Black & Decker Inc.” (Appeal Br. 3.)

<sup>2</sup> We have jurisdiction under 35 U.S.C. §§ 6(b) and 134(a). A hearing was held on May 28, 2020.

## STATEMENT OF THE CASE

The Appellant's invention "relates to a chuck assembly for attachment of accessories to a power tool, and more particularly to a chuck sleeve suitable for use in a power tool such as a drill or driver." (Spec. ¶ 2.)

### *Illustrative Claim*

1. A power tool comprising:
  - a housing;
  - a motor disposed in the housing and defining an axis of rotation;
  - a gear case coupled to the motor, the gear case including a proximal end and a distal end, the proximal end of the gear case coupled to the housing;
  - a bearing assembly extending from the distal end of the gear case along the axis of rotation, the bearing assembly supporting a driveshaft for rotation about the axis of rotation;
  - and
    - a chuck assembly rotatably coupled to the driveshaft, the chuck assembly including a chuck sleeve annularly surrounding the bearing assembly about the axis of rotation;
    - wherein the chuck assembly includes chuck jaws and a chuck body and the chuck sleeve is rotatably coupled to the chuck body;
    - wherein the chuck sleeve annularly surrounds at least one bearing of the bearing assembly about the axis of rotation;
    - wherein the gear case is substantially cylindrical and has a first outer diameter;
    - wherein the bearing assembly includes a housing that is substantially cylindrical and includes a second outer diameter;
    - wherein the second outer diameter is less than the first outer diameter;
    - wherein the chuck sleeve includes a chuck sleeve outer surface that is substantially cylindrical and is adjacent to the gear case, the chuck sleeve outer surface having a third outer diameter that is equal to or less than the first outer diameter;
    - wherein the chuck sleeve includes a proximal end and a distal end, and wherein the distal end of the gear case and the

proximal end of chuck sleeve define a gap extending a distance X1 along the axis of rotation;

wherein X1 is less than or equal to five millimeters;

wherein the chuck sleeve surrounds an entire circumference of the bearing assembly;

wherein the chuck assembly includes a flange portion and the flange portion is operable to prevent the chuck sleeve from moving relative to the chuck body along the axis of rotation; and

wherein the flange portion is coupled to the chuck body.

### *Rejections*

The Examiner rejects claims 1, 13–16, 18–20, 24, and 25 under 35 U.S.C. § 103(a) as unpatentable over Herr (US 2012/0111594 A1, published May 10, 2012). (Final Action 3.)

The Examiner rejects claims 1, 13, and 15 under 35 U.S.C. § 103(a) as unpatentable over Herr and Leong (US 8,727,034 B2, issued May 20, 2014). (Final Action 10.)

### ANALYSIS

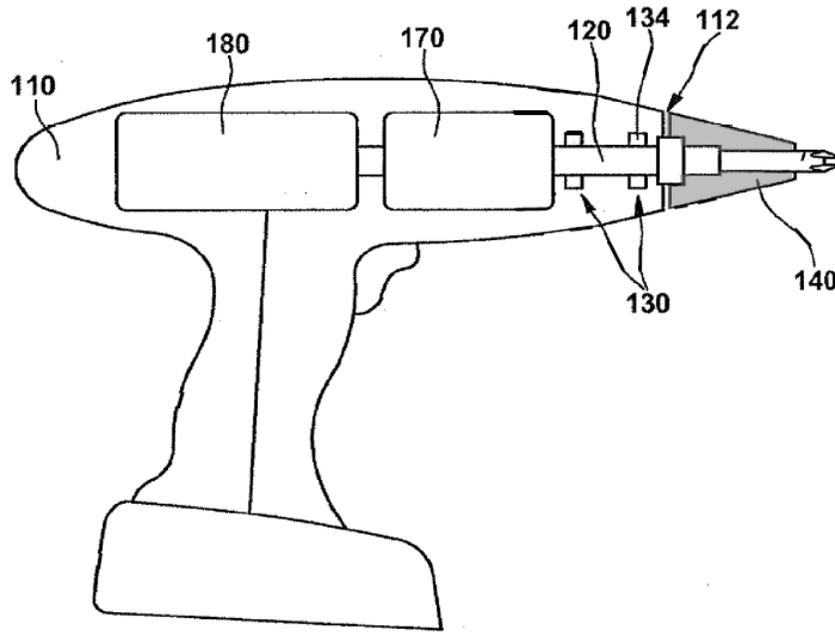
Independent claim 1 sets forth a power tool comprising a “housing,” a “driveshaft,” a “bearing assembly,” a “chuck assembly,” a “gear case,” and a “motor.” (Appeal Br., Claims App.) The Examiner finds that Herr discloses a power tool comprising these elements. (*See* Final Action 3–4.)

Herr discloses a power tool 100 comprising a “housing 110,” a “drive shaft 120,” a “bearing configuration 130,” a “tool holder 140,” a “gear unit 170,” and a “motor 180.” (Herr ¶ 24; *see also* Fig. 1.)<sup>3</sup> Herr discloses that its gear unit 170 and its motor 180 may be “[d]isposed in housing 110” (Herr ¶ 23), that the “[b]earing configuration 130 may be attached to

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<sup>3</sup> Our quotations to Herr omit the bolding of drawing reference numerals.

housing 110” (*id.* ¶ 24), and that the tool holder 140 may be “situated in the area of an end face 112 of housing 110” (*id.*). These elements are shown in the annotated version of Herr’s Figure 1 presented below.



As shown in the above drawing, Herr’s bearing configuration 130 includes a bearing 134 which is annularly surrounded by the housing 110. Also, the tool holder 140 (colored gray) is positioned completely proximate of the housing’s end face 112.

Independent claim 1 requires the chuck assembly to include a “chuck sleeve” that “annularly surrounds at least one bearing of the bearing assembly.” (Appeal Br., Claims App.) The Examiner determines that it would have been obvious to modify Herr’s tool holder 140 so that its clamping sleeve annularly surrounds bearing 134. (Final Action 4.)<sup>4</sup> According to the Examiner, this modification would consist of moving the

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<sup>4</sup> Herr’s tool holder 140 has “a clamping sleeve 246” (Herr ¶ 28; *see also* Fig. 2) which, according to the Examiner, extends the entire axial length of the tool holder 140 (*see* Answer 3–4).

housing's end face 112 "rearward" a certain distance and extending the tool holder 140 "rearward" this same distance. (Answer 5.)

In other words, the Examiner proposes modifying Herr's power tool 100 by: 1) shortening the housing 110 so that it no longer annularly surrounds the bearing 134; and 2) lengthening the tool holder 140 so that it annularly surrounds the bearing 134.

We note at this point that independent claim 1 does not just require a chuck sleeve that somehow annularly surrounds a bearing. Claim 1 requires the chuck sleeve to be part of "a chuck assembly" that is "rotatably coupled to the driveshaft," the chuck assembly to include "chuck jaws," "a chuck body," and "a flange portion," the chuck sleeve to be "rotatably coupled to the chuck body," the flange portion to be "coupled to the chuck body," and the flange portion to be "operable to prevent the chuck sleeve from moving relative to the chuck body along the axis of rotation." (Appeal Br., Claims App.) Claim 1 also requires the motor to be "disposed in the housing," the gear case to be "coupled to the housing," the bearing assembly to "include a housing," and the bearing assembly to extend "from the distal end of the gear case." (*Id.*) Claim 1 additionally requires the bearing housing's diameter to be "less than" the gear case's diameter, and the chuck sleeve's diameter to be "equal or less than" the gear case's diameter. (*Id.*) Claim 1 further requires the chuck sleeve's "distal end" and the gear case's "proximal end" to "define a gap" extending a distance of "less than or equal to five millimeters" along the axis of rotation. (*Id.*) As the Appellant correctly contends, any proposed modification to Herr's power tool 100 must "meet the claimed configuration." (*Id.* at 15.)

In any event, the Examiner's rejections are premised upon the proposed modification "not requir[ing] the redesign of any interior components" because it is "a simple matter of lengthening the sleeve 140 while shortening the housing 110." (Answer. 5.) The Appellant argues that "other parts" of Herr's power tool 100 would need to be redesigned to accommodate the Examiner's proposed modification. (Appeal Br. 15.) We are persuaded by the Appellant's position.

As pointed out by the Appellant, Herr's power tool 100 is structured so that its bearings are "held" by an annularly surrounding housing (i.e., housing 110). (Reply Br. 12.) For example, the bearing 134 has an outer ring 293 that is disposed in a cylindrical retention element 266 which is "secured axially and radially immovably in housing 110" and particularly "in the area of its end face 112." (Herr ¶ 31.)

Put another way, in the disclosed version of Herr's power tool 100, the bearing 134 is radially aligned with a portion of the housing 110 and its outer ring 293 is secured to this radially-aligned portion of the housing 110. (See Herr, Fig. 2.) But in the modified version of Herr's power tool 100, the bearing 134 is no longer annularly surrounded by the housing 110, and, therefore, is not radially aligned with a portion of the housing 110. As such, with the Examiner's proposed modification, the bearing's outer ring 293 must be secured to the housing 110 in another manner.

Thus, at the very least, the proposed modification would require a redesign of the interior components used to secure the outer ring 293 of the bearing 134 to the housing 110. As such, the premise of the Examiner's rejection (i.e., the proposed modification does not require a redesign of any interior components) is inaccurate. And the record contains no findings that

one of ordinary skill in the art would infer, from the teachings of Herr, that such a redesign of interior components could be accomplished in an obvious manner. As for Leong, the Examiner finds that it “teaches a longer, substantially cylindrical extended sleeve that annularly surrounds at least one bearing of the bearing assembly.” (Final Action 11.) But the Examiner does not rely upon Leong to show or suggest a redesign of Herr’s interior components to accommodate such an extended sleeve. (*See id.*)

Thus, on the record before us, we cannot sustain the Examiner’s rejections of independent claim 1 due to the above-discussed shortcomings. The Examiner’s further determinations and findings with respect to the rest of the claims on appeal do not compensate for these shortcomings (*see* Final Action 6–10, 13–16), and so we likewise do not sustain their rejections.

CONCLUSION

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/ Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 13–16, 18–20, 24, 25	103	Herr		1, 13–16, 18–20, 24, 25
1, 13, 15	103	Herr, Leong		1, 13, 15
<b>Overall Outcome</b>				1, 13–16, 18–20, 24, 25

REVERSED