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| NORTON ROSE FULBRIGHT US LLP<br>1301 Avenue of the Americas<br>NEW YORK, NY 10019-6022 |             |                      | LONG, ROBERT FRANKLIN |                  |
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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* HEIKO ROEHM and TOBIAS HERR<sup>1</sup>

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Appeal 2017-004359  
Application 12/801,822  
Technology Center 3700

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Before EDWARD A. BROWN, GEORGE R. HOSKINS, and  
LEE L. STEPINA, *Administrative Patent Judges*.

STEPINA, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Heiko Roehm and Tobias Herr (Appellants) seek our review under 35 U.S.C. § 134(a) of the Examiner's decision to reject claims 1, 2, 5, 8–10, 14, 16, 18, 20–23, 26–28, and 33–38. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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<sup>1</sup> The Appeal Brief lists ROBERT BOSCH GmbH as the real party in interest. Appeal Br. 1.

### THE CLAIMED SUBJECT MATTER

The claimed invention is directed to a hand-guided power tool with a detent mechanism. Spec. ¶ 7. Claim 1 is the sole independent claim and is reproduced below.

1. A hand-guided power tool, comprising:
  - a housing;
  - a drive shaft which is rotatably supported in said housing;
  - a tool holder disposed on said drive shaft;
  - at least one first bearing which is rotatably supporting said drive shaft;
  - at least one second bearing which is rotatably supporting said drive shaft; and
  - a detent mechanism for impact generation for the drive shaft embodied between the first bearing and the tool holder, wherein the detent mechanism has at least one first detent disk integrally formed onto or secured to the drive shaft and at least one second detent disk, which second detent disk has a face-end set of teeth which in an impact mode of operation of the power tool is in operative engagement with a face-end set of teeth of the first detent disk for impact generation for the drive shaft,
  - wherein the detent mechanism is arranged closer to the tool holder than both the first bearing and the second bearing.

Claims App. 1.

### REFERENCES RELIED ON BY THE EXAMINER

|           |                    |                |
|-----------|--------------------|----------------|
| Kasabian  | US 3,807,815       | Apr. 30, 1974  |
| Lovingood | US 4,223,744       | Sept. 23, 1980 |
| Bourner   | US 5,458,206       | Oct. 17, 1995  |
| Toyama    | US 2004/0245005 A1 | Dec. 9, 2004   |
| Gehret    | US 2006/0185870 A1 | Aug. 24, 2006  |

### THE REJECTIONS ON APPEAL<sup>2</sup>

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<sup>2</sup> Claims 29–32 were allowed by the Examiner. Non-Final Act. 15.

(I) Claims 1 and 38 are rejected under 35 U.S.C. § 103(a) as unpatentable over Bourner.

(II) Claims 1 and 38 are rejected under 35 U.S.C. § 103(a) as unpatentable over Lovingood and Bourner.

(III) Claims 1, 14, 16, 18, 20–23, 26–28, and 33–35 are rejected under 35 U.S.C. § 103(a) as unpatentable over Toyama, Lovingood, and Bourner.

(IV) Claims 2, 5, 8–10, and 36–38 are rejected under 35 U.S.C. § 103(a) as unpatentable over Toyama, Lovingood, Bourner, and Gehret.

(V) Claim 23 is rejected under 35 U.S.C. § 103(a) as unpatentable over Toyama, Lovingood, and Bourner, or, in the alternative, over Toyama, Lovingood, Bourner, Gehret, and Kasabian.

## ANALYSIS

### *Rejection (I)*

The Examiner finds that Bourner discloses all the elements required by claim 1, including a first bearing (314), second bearing (382), and detent mechanism (316/274 and 378/376) for impact generation for a drive shaft (312/302) embodied between the first bearing and a tool holder, but fails to disclose that a first detent disk (376) of the detent mechanism is integrally formed onto or secured to the drive shaft. *See* Non-Final Act. 3–4.

Addressing this deficiency in Bourner, the Examiner determines that it would have been obvious to integrally form the first detent disk onto the drive shaft “since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only

routine skill in the art.” *Id.* at 4 (citing *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893)).

Appellants contend that the Examiner erred in finding that balls 382 of Bourner correspond to the second bearing recited in claim 1 because shaft 302 of Bourner is supported by bush 314 and bearing 316, and balls 382 are part of a detent mechanism and do not support shaft 302. Appeal Br. 3. In the Answer, the Examiner does not address Appellants’ contention on this point. *See* Ans. 3–5.

As discussed in column 5, lines 6–14 of Bourner, balls 382 engage with detents 384 when knob 360 is operated. Bourner is silent as to any bearing-related function performed by balls 382. Instead, as asserted by Appellants, Bourner describes bearing bush 314 and front bearing 316 as supporting spindle 302. *See* Bourner, 4:10–14. Thus, we are persuaded of Examiner error, and we do not sustain the Examiner’s rejection of claim 1, and claim 38 depending therefrom, as unpatentable over Bourner.

#### *Rejection (II)*

The Examiner relies on Lovingood to teach all the limitations recited in claim 1, except for the requirement that the first detent disk is integrally formed onto or secured to the drive shaft. *See* Non-Final Act. 5–6. The Examiner finds that Bourner teaches a detent mechanism fixedly attached to a drive shaft, and the Examiner reasons that it would have been obvious, in light of Bourner’s teachings, “to have the first detent disk integrally formed onto or secured to the drive shaft of Lovingood, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art.” *Id.* at 6 (citing *Howard*, 150 U.S. 164).

Appellants' sole argument specifically addressing Lovingood is that independent claim 1 recites the feature of *the at least one first detent disk is integrally formed onto or secured to the drive shaft*. In contrast, nowhere do the cited references disclose or suggest this feature. For example, Lovingood discloses a set or selector ring 116, which the Office Action considers to be a first detent disk. However, set or selector ring 116 is not **integrally formed onto or secured** to spindle 38 of Lovingood.

Appeal Br. 3. Thus, Appellants assert that Lovingood fails to disclose the “integrally formed onto” or “secured to” connection between the first detent disk and drive shaft required by claim 1.

Appellants' argument on this point does not apprise us of Examiner error. Specifically, the Examiner's rejection *modifies* the detent disk of Lovingood to provide an integral connection with the drive shaft on which it is located; the rejection does not rely on Lovingood to explicitly teach or suggest such a connection. *See* Non-Final Act. 4–6. Additionally, Appellants' statement that none of the cited references teaches or discloses such a connection is unavailing because, although the Examiner's rejection must be based on

“some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” . . . the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

*KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). The Examiner finds that Bourner teaches first detent disk 376 fixedly attached on drive shaft 302 (Non-Final Act. 6), and Appellants do not contest this finding. Further, Appellants make no attempt to explain why the Examiner's rationale for

modifying Lovingood, based in part upon the above-noted finding, is inadequate. Accordingly, we sustain the rejection of claim 1, and claim 38 depending therefrom, as unpatentable over Lovingood and Bourner.

*Rejection (III)*

The Examiner finds that Toyama teaches many of the features recited in claim 1, including “a detent mechanism (21,8 or alternatively 30) for impact generation . . . wherein the detent mechanism has at least one first detent disk (30) disposed on the drive shaft (2) and at least one second detent disk (39, figs. 7–8),” but relies on Lovingood to teach teeth used to engage first and second detent disks, and on Bourner to teach a disk fixedly attached to a drive shaft. Non-Final Act. 7–9. The Examiner reasons that modifying the drill/driver disclosed by Toyama to incorporate the above-noted teachings of Lovingood would have been obvious to provide impact generation. *Id.* at 9. The Examiner applies the rationale discussed above regarding Rejection (II), based in part on the teachings of Bourner, in proposing to modify the drill/driver of Toyama such that its detent disk would be formed integrally with its drive shaft. *Id.*

Appellants assert that the Examiner erred in finding that elements 30 and 39 of Toyama are “detent disks,” and, instead, elements 8 and 21 of Toyama perform this function. *See* Appeal Br. 4.

We agree with Appellants on this issue. Appellants’ Specification describes first and second detent disks as capable of impact generation (*see* Spec. ¶ 45), which corresponds to the configuration of rotary cam 8 and slide cam 21 of Toyama (*see* Toyama ¶ 45). In contrast, switching member 39 and switching ring 30 of Toyama are linkages that allow switching handle 29 to activate a vibrating mode of the drill/driver. *See* Toyama ¶ 55.

Appellants also assert that, even if switching ring 30 and switching member 39 of Toyama are to be considered first and second detent disks, switching ring 39 is not closer to the tool holder of Toyama than are bearings 6 and 7. *See* Appeal Br. 4. Therefore, according to Appellants, the Examiner erred in finding that Toyama discloses a detent mechanism arranged closer to the tool holder than both the first and second bearings. Appeal Br. 4; *see also* Non-Final Act. 8.

The Examiner states, in response, “[s]ince the switching ring 30 is in cooperative engagement with the detent[] disk 21 during the vibrating mode examiner contends the ring 30/39 is a part of the disks 8/21 (see Toyama et al. [0045]).” Ans. 4. It appears that the Examiner’s position is that, the “detent mechanism” in Toyama includes rotary cam 8, slide cam 21, switching ring 30, and switching ring 39; and although rotary cam 8, slide cam 21, and switching ring 39 of Toyama fail to satisfy the requirement that the detent mechanism be arranged closer to the tool holder than both the first bearing and the second bearing, switching ring 30 meets this requirement.

In reply, Appellants contend that the Examiner’s position in the Answer is incorrect because claim 1 requires *both* detent rings of the detent mechanism to be arranged closer to the tool holder than are the first and second bearings. Reply Br. 2. Thus, Appellants assert, the location of switching ring 30, by itself, fails to meet the limitation discussed above. Appellants also repeat the assertion that switching ring 30 is not a detent disk. *Id.*

Appellants have the better position. During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the Specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367

F.3d 1359, 1364 (Fed. Cir. 2004). The correct inquiry “is an interpretation that corresponds with what and how the inventor describes his invention in the specification.” *In re Smith Int’l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017). Appellants’ Specification explains that conventional detent mechanisms include two detent disks, which are “disposed between the first bearing of the drive shaft and a second bearing that is disposed in the vicinity of a gear mechanism that drives the shaft, or between that second bearing and the gear mechanism,” and such arrangements occupy an undesirably large amount of space. Spec. ¶¶ 4–5. The Specification further explains that this problem is addressed by providing “[a] detent mechanism for impact generation for the drive shaft . . . embodied between the first bearing and the tool holder.” Spec. ¶ 8. We understand the “detent mechanism” referred to in paragraph 8 to encompass both detent disks. This is consistent with the recitation in claim 1 that the detent mechanism embodied between the first bearing and the tool holder has both a first detent disk and a second detent disk. Consistent with this explanation in the Specification, the broadest reasonable interpretation of the last paragraph of claim 1 requires both the first detent disk and the second detent disk to be arranged closer to the tool holder than both the first bearing and the second bearing. This interpretation comports with what is depicted in all of the figures provided in the present Application. *See* Figs. 1 and 2.

Under the broadest reasonable interpretation of claim 1, consistent with Appellants’ Specification, we find persuasive Appellants’ argument that Toyama fails to teach the limitation recited in the last paragraph of claim 1. Figure 1 of Toyama depicts rotary cam 8 and slide cam 21 (first and second detent disks) of Toyama disposed between bearings 6 and 7.

The tool holder (chuck) of Toyama is not illustrated in the figures, but we understand that it is located outside of bearings 6 and 7, which support spindle 2. *See* Toyama ¶ 36. In other words, the tool holder of Toyama is closer to one of the bearings in Toyama than it is to either detent disk. Thus, Toyama fails to disclose a detent mechanism arranged closer to a tool holder than both of first and the second bearings. Accordingly, we do not sustain the Examiner's rejection of independent claim 1, and claims 14, 16, 18, 20–23, 26–28, and 33–35 depending therefrom, as unpatentable over Toyama, Lovingood, and Bourner.

*Rejections (IV)–(V)*

The Examiner's use of Gehret and Kasabian does not remedy the deficiency discussed above regarding Rejection (III) (*see* Non-Final Act. 11–14), and, for the same reasons, we do not sustain Rejections (IV) and (V).

DECISION

(I) We reverse the rejection of claims 1 and 38 as unpatentable over Bourner.

(II) We affirm the rejection of claims 1 and 38 as unpatentable over Lovingood and Bourner.

(III) We reverse the rejection of claims 1, 14, 16, 18, 20–23, 26–28, and 33–35 as unpatentable over Toyama, Lovingood, and Bourner.

(IV) We reverse the rejection of claims 2, 5, 8–10, and 36–38 as unpatentable over Toyama, Lovingood, Bourner, and Gehret.

(V) We reverse the rejection of claim 23 as unpatentable over Toyama, Lovingood, and Bourner, and, alternatively, over Toyama, Lovingood, Bourner, Gehret, and Kasabian.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART