

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD B. WRIGHT

Appeal No. 2002-1704
Application No. 09/240,313

ON BRIEF

Before ABRAMS, FRANKFORT, and NASE, Administrative Patent Judges.
FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 14 through 20 and 22. Claim 21, the only other claim pending in this application, has been objected to by the examiner and indicated to be allowable if rewritten in independent form. Claims 1 through 13 have been canceled.

Appellant's invention relates to an asymmetrical, high torque wrenching system wherein both the wrench and the fastener to be driven each include driving surfaces thereon that generate

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a higher torque in the tightening direction than in the loosening direction. Independent claims 14 and 22 are representative of the subject matter on appeal and a copy of those claims can be found in Exhibit 1 of appellant's brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Dmitroff	2,685,812	Aug. 10, 1954
Grimm et al. (Grimm)	3,354,757	Nov. 28, 1967
Kesselman	5,228,250	Jul. 20, 1993
Whittle	5,449,260	Sep. 12, 1995
Grünbichler	5,713,705	Feb. 3, 1998

Claims 14, 18 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Whittle.

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Whittle.

Claims 14, 17, 18 and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dmitroff in view of Whittle.

Claims 14 through 18 and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grimm in view of Whittle.

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Claims 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Whittle, Dmitroff in view of Whittle, or Grimm in view of Whittle, each as applied above, further in view of Kesselman or Grünbichler.

Rather than reiterate the examiner's full commentary with regard to the above-noted rejections and the conflicting viewpoints advanced by appellant and the examiner regarding those rejections, we make reference to the examiner's answer (Paper No. 29, mailed March 27, 2002) for the reasoning in support of the rejections, and to appellant's brief (Paper No. 28, filed January 11, 2002) and reply brief (Paper No. 30, filed June 6, 2002) for the arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by appellant and the examiner. As a consequence of our review, we have made the determinations which follow.

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In rejecting claims 14, 18 and 22 under 35 U.S.C. § 102(b) as being anticipated by Whittle the totality of the examiner's statement in the answer (page 3) is that we should "[n]ote figure 1, surface '2' and the asymmetrical wrench '7' in figure 7." Some further insight is provided in the "Response to Argument" section of the examiner's answer (pages 7-8), wherein the examiner urges that

Whittle discloses all of the claimed structure. Applicant is arguing a method of use of an old and well known structure. Note that a new use for an old structure must be in the form of a process claim. If the shown structure is capable of performing the claimed function, then the reference clearly anticipates the claims. Whittle is clearly capable of performing the claimed function. Note figures 1, 3, and 7 of Whittle wherein an outer surface of the fastener is defined by driving surfaces and surfaces capable of loosening. Figure 7 clearly shows a socket having a corresponding configuration to the fastener. Engagement of the fastener with the socket would allow rotation in either direction. The intended use disclosed by Whittle does not negate the showing of an outer surface of the fastener (or of the socket) being defined by driving surfaces and surfaces capable of loosening. Whittle discloses a torque wrenching system. The term "high" torque is a relative term and does not further define the device.

Having reviewed and evaluated the Whittle patent, we must agree with the examiner that the bolt (1) and wrench (7) of Whittle anticipate the asymmetrical wrenching system and wrench defined in claims 14 and 22 on appeal. While it is true that

Whittle describes the teeth (2) on the outer periphery of head (3) of the bolt therein as being used in conjunction with a matching driver socket (7) for tightening the bolt (see col. 4, lines 23-26, and Figs. 4 and 7) and provides a blind axial recess or socket (6) with ratchet teeth (5) therein used in conjunction with a second driver (8) for releasing the bolt (Fig. 9), we nonetheless share the examiner's view that the teeth (2) on the bolt head (3) and complementary teeth on the driver socket (7), as best seen in Figure 4 of Whittle, include fastener tightening surfaces and what appear to be fastener loosening surfaces associated therewith, wherein the fastener tightening angle of the tightening surfaces is smaller than the fastener loosening angle of the loosening surfaces, as broadly claimed by appellant. As is apparent from viewing Figures 1, 3 and 4 of Whittle, the fastener tightening surfaces allow the bolt (1) to be rotated in a clockwise manner for tightening and the surface connecting the top of each tightening surface to the bottom of an adjacent tightening surface appears to be of a configuration which would allow such surfaces to act as fastener loosening surfaces when the wrench (7) is rotated in a counter-clockwise direction to permit some level of force to be applied to loosen the bolt, especially if it were not tightened down completely. Although we

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recognize that Whittle does not expressly describe any such use of the teeth (2) for loosening the bolt, we are convinced that the teeth (2) and wrench (7) as shown in Figure 4 would be viewed by one of ordinary skill in the art as having such capability, especially where the bolt is not initially tightened down completely.

With particular regard to claim 22 on appeal, we see no distinction between the wrench (7) of Whittle and that defined in appellant's claim 22. Nor has appellant provided any argument specifically directed to claim 22 as to why the wrench (7) of Whittle fails to anticipate the wrench of claim 22. Again, looking to Figure 4 of Whittle, it is our view that the wrench (7) seen therein has both a plurality of tightening surfaces and a plurality of loosening surfaces formed in the manner broadly required in claim 22 on appeal and wherein the tightening surfaces are capable of applying a force to tightening surfaces of the fastener to tighten the fastener and the loosening surfaces are capable of applying a force to loosening surfaces of the fastener to loosen the fastener, especially where the fastener is not completely tightened down when the decision is made to apply a loosening force to the fastener, e.g., such as

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where the bolt (1) is not threading into tapped hole (18) properly.

As was made clear in In re Schreiber, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997), by choosing to define an element functionally as in appellant's claims 14 and 22 on appeal, appellant assumes a risk, that risk being that where the U.S. Patent and Trademark Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied upon. In the present case, appellant has provided no evidence to prove that the teeth (2) in the wrenching system of Whittle are incapable of applying some level of force to loosen the bolt if the bolt were not tightened down completely.

An additional point appellant seems to have overlooked is that claims 14 and 22 on appeal are drafted in an open "comprising" format and thus do not preclude the presence of an

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additional set of teeth and loosening surfaces like those in the central recess or socket (6) of Whittle.

For the above reasons, we will sustain the examiner's rejection of claims 14 and 22 under 35 U.S.C. § 102(b) as being anticipated by Whittle.

As is apparent from appellant's statement of the grouping of claims on page 5 of the brief, appellant has chosen not to argue claim 18 separately from independent claim 14, from which it depends. Accordingly, we consider that for the § 102(b) rejection claim 18 will fall with claim 14.

The next rejection for our review is that of claims 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Whittle. While we agree with appellant that the Whittle patent does not disclose any specific degrees of tightening or loosening angles regarding the teeth (2) therein and clearly does not teach the specific angles of 22.25° and 60° set forth in claim 17 on appeal, we nonetheless agree with the examiner that the disclosure of Whittle leaves it up to one of ordinary skill in the art to select or determine an appropriate set of angles for

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the tightening and loosening surfaces of the teeth (2). In this regard, we consider that one of ordinary skill in the art would take into account the desired head size, material of manufacture, and torque requirements for a given situation in determining an appropriate set of angles for the tightening and loosening surfaces of the teeth (2) on bolt (1). Accordingly, we share the examiner's view that the selection of appropriate angles for the tightening and loosening surfaces of the teeth (2) in Whittle would have been viewed by the skilled artisan as constituting a result effective variable. It is well settled that the discovery or determination of an optimum value of a result effective variable is ordinarily within the skill of the art and thus obvious. See In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). In our opinion the fact that Whittle has not expressly set forth an angular relationship for the surfaces of the teeth (2) is indicative of the fact that the determination of such an angular relationship is within the ambit of one of ordinary skill of the art. For this reason, we will sustain the examiner's rejection of claim 17 under 35 U.S.C. § 103(a).

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Appellant has again not argued claim 18 separately and, as a result, we consider that for this rejection claim 18 will fall with claim 17.

As for the rejection of claims 14, 17, 18 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Dmitroff in view of Whittle, we agree with appellant (brief, pages 12-14) that there is no teaching, suggestion, or motivation for combining the constant torque nut of Dmitroff, which seeks to limit tightening torque to a preset maximum by using flexible teeth (26) on the inner cylindrical wall of the driving ring (20), with the tamper-evident bolt of Whittle. We consider that any such combination as posited by the examiner would be the result of pure hindsight reconstruction and require such substantial reconstruction and redesign of the elements of the nut in Dmitroff as to destroy that reference for its intended purpose. Thus, we will not sustain the examiner's rejection of claims 14, 17, 18 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Dmitroff in view of Whittle.

Regarding the examiner's rejection of claims 14 through 18 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Grimm

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in view of Whittle, we again find ourselves in agreement with appellant (brief, pages 16-17, and reply brief, pages 6-7) that the examiner's rejection is the result of hindsight reconstruction and is totally contrary to the teachings in Grimm regarding providing wrenching splines on the fastener (Figs. 1-3) and wrench (Fig. 4) therein having the particular symmetrical configuration seen in Figures 5 and 6 of that patent. Since we have determined that the teachings and suggestions that would have been fairly derived from Grimm and Whittle would not have made the subject matter as a whole of claims 14 through 18 and 22 on appeal obvious to one of ordinary skill in the art at the time of appellant's invention, we must refuse to sustain the examiner's rejection of those claims under 35 U.S.C. § 103(a).

The last of the examiner's rejections for our consideration is that of claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Whittle, Dmitroff in view of Whittle, or Grimm in view of Whittle, each as applied above, further in view of Kesselman or Grünbichler. Claims 19 and 20 collectively define a fastener which has an upper head with fastener tightening and loosening surfaces thereon as provided for in claims 14 and 18, and a lower head attached to the upper head by a neck and wherein

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tightening of the upper head to a predetermined torque by the wrench causes the upper head and the neck to sever from the lower head. As is apparent from appellant's grouping of the claims on page 5 of the brief, claims 19 and 20 have not been argued separately from independent claim 14 from which they ultimately depend. Accordingly, with regard to the combination as it relates to Whittle in view of Kesselman or Grünbichler, we conclude that claims 19 and 20 will fall with claims 14 and 18.

As for the other combinations set forth by the examiner in this § 103 rejection, we find nothing in either Kesselman or Grünbichler which in any way makes up for the deficiencies we pointed out above regarding the examiner's proposed basic combinations of Dmitroff and Whittle, or Grimm and Whittle. Accordingly, these rejections of claims 19 and 20 will not be sustained.

In summary, the decision of the examiner rejecting claims 14, 18 and 22 under 35 U.S.C. § 102(b) as being anticipated by Whittle is affirmed, as are the rejections of claims 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Whittle, and claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable

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over Whittle in view of Kesselman or Grünbichler. Each of the other rejections under 35 U.S.C. § 103(a) posited by the examiner have been reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

NEAL E. ABRAMS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHARLES E. FRANKFORT)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JEFFREY V. NASE)	
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