



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/515,030	01/31/2005	Mats Webjorn	P / 4447-4	9952
2352	7590	02/13/2013	EXAMINER	
OSTROLENK FABER LLP 1180 AVENUE OF THE AMERICAS NEW YORK, NY 10036-8403			SAETHER, FLEMMING	
			ART UNIT	PAPER NUMBER
			3677	
			MAIL DATE	DELIVERY MODE
			02/13/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MATS WEBJORN

Appeal 2011-005428
Application 10/515,030
Technology Center 3600

Before STEVEN D.A. McCARTHY, STEFAN STAICOVICI, and
BARRY L. GROSSMAN, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Mats Webjorn (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's decision finally rejecting claims 15-17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 under 35 U.S.C. § 112, second paragraph, for being indefinite and under 35 U.S.C. § 103(a) as unpatentable over Ward (EP 1 182 366 A1, published February 27, 2002). Claims 1-14, 18, 22, 25, 29, 32, and 36 have been canceled. We have jurisdiction over this appeal under 35 U.S.C. § 6.

THE INVENTION

Appellant's invention relates to a bolted joint including a first part having an internal thread and a second part having an external thread, wherein when the parts are tightened together the threads are machined to provide an additional play in the axial direction without altering the play in the radial direction. Spec., Abstract and fig. 4.

Claim 15 is illustrative of the claimed invention and reads as follows:

15. A bolted joint having two thread-provided parts, the bolted joint comprising:

- an internal thread-provided part of the two thread-provided parts comprising an internal thread comprising a plurality of turns; and

- an external thread-provided part of the two thread-provided parts comprising an external thread having a plurality of turns, the internal thread and the external thread configured such that in screwing the internal thread-provided part and the external thread-provided part together the external thread-provided part is inside the internal thread-provided part, the thread of a first thread-provided part of the two thread-provided parts conforming to a characteristic profile configured to provide play in both a radial direction and an axial direction when the two thread-provided parts are screwed together and are unstressed, the external thread-provided part being configured to be prestressed with an axial tensile force,

wherein the characteristic profile provides an additional play S_a between the two thread-provided parts only in the axial direction for every turn of the plurality of turns compared to a standard profile while the play in the radial direction is unaltered compared with the standard profile and provides a thread coverage length between the internal thread and the external thread unchanged compared with the standard profile,

wherein a second thread-provided part of the two thread-provided parts conforms to the standard profile, and

wherein the standard profile is within the definition of at least one of the ISO or the American Unified standard basic profile.

SUMMARY OF DECISION

We AFFIRM.

ANALYSIS

The indefiniteness rejection

The Examiner states that:

[I]t is unclear what are the intended meets and bounds of the characteristic profile threads because they are claimed in a first configuration as having a certain play in both the radial and axial direction (claim 15, lines 11-13) and then are claimed in the second configuration as having an “additional play” and since both configurations cannot co-exist it is unclear which structure applicant intends.

Ans. 3-4. According to the Examiner, the claimed “additional play” cannot be determined “without the original play also being claimed.” Ans. 6-7.

Moreover, the Examiner contends that, “the claimed ‘play’ or ‘additional play’ does not impart any structural limitations to the article.” Ans. 7.

The test for definiteness under 35 U.S.C. § 112, second paragraph, is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety*

Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). Claims must “particularly point-out and distinctly claim[] the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, para. 2. In this case, we agree with Appellant that independent claims 15, 23, and 30 “define the additional play provided by the characteristic profile as being play in addition to the play provided by a standard profile.” Reply Br. 2; *see also* App. Br., Claims App’x. Since independent claims 15, 23, and 30 define the “standard profile” as “within the definition of at least one of the ISO or the American Unified standard basic profile,” we agree with Appellant that “the term ‘additional play’ is play or clearance in addition to the play provided by the standard profile.” Reply Br. 2. Hence, the claimed “characteristic profile” includes an “additional play . . . in the axial direction” when compared to the axial play of a standard profile, which is known to be “at least one of the ISO or the American Unified standard basic profile.”

In conclusion, because the claimed “characteristic profile” is reasonably clear and no further detail is necessary to know the metes and bounds of the claims, we shall not sustain the indefiniteness rejection of claims 15-17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 under 35 U.S.C. § 112, second paragraph.

The obviousness rejection

Appellant argues the rejection under 35 U.S.C. § 103(a) of claims 15-17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 together as a group. App. Br. 6, 11. Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii) (2011), we have selected claim 15 as the representative claim to decide the appeal, with

claims 16, 17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 standing or falling with claim 15.

Pointing to Figures 2 and 4 of Ward, the Examiner found that Ward discloses a bolted joint in which an “inner thread-provided part has a different thread profile than an outer thread-provided part.” Ans. 4. According to the Examiner, because the pitch diameter of a first thread-provided part (shown at the right side of Ward’s Figures 2 and 4) has a characteristic profile in which the pitch diameter is reduced relative to the pitch diameter of the other thread-provided part shown on the left side of Ward’s Figures 2 and 4, the distance between mating flanks increases “which in turn increases the ‘play’ in the axial direction.” *Id.* Furthermore, the Examiner opines that “since the distance between the crest of the characteristic profile and the root of the thread of the other thread[ed] part [is unchanged] the radial ‘play’ would not be [a]ffected.” *Id.* Moreover, “since the height remains unchanged and in turn the radial extent of the flanks remains unchanged [] the thread coverage also remains unchanged.” Ans. 4-5.

Appellant argues that, “Ward does not disclose or suggest additional clearance only in the axial direction while clearance in the radial direction is unaltered.” App. Br. 7; *see also* Reply Br. 4. Furthermore, according to Appellant, “Ward does not disclose or suggest changing the pitch diameter such that the thread coverage length between the internal thread and the external thread is unchanged compared with the standard profile.” App. Br. 8.

At the outset, we agree with the Examiner that Ward discloses increasing thread clearance between mated external (*i.e.*, screw) and internal

(*i.e.*, nut) threads by either increasing the pitch diameter (mean diameter) of the internal thread or by decreasing the pitch diameter of the external thread, and hence, increasing the distance between the pitch diameters of the screw and the nut. Ans. 8; *see also* Ward, paras. [0017] and [0018]. Similarly, Appellant's Specification describes obtaining an additional axial play between a screw 1 and a nut 2, while maintaining the radial play and the thread coverage length unchanged, by increasing the distance between "mean diameter D_2' of the nut [2] and the mean diameter d_2 of the screw 1." Spec. 6, ll. 13-21; *see also* Appellant's figs. 2 and 4. We further note the similarity between Appellant's Figure 5 and Ward's Figure 4. Just as in Appellant's threaded connection where only one flank of a thread profile is machined in order to decrease the width of the thread ridge, and hence obtain an additional axial play without altering the radial play and the thread coverage length, in Ward's Figure 4, one flank of a thread profile is likewise machined. *Compare* Spec. 7, ll. 5-13 and Ward, para. [0027]; *see also* Ans. 9.

Thus, because a thread profile in Ward's threaded connection is modified in a similar manner as the claimed thread profile, *i.e.*, machining one flank of a thread of a threaded connection to increase the distance between the pitch diameters of the internal and external threads, we find that the threaded connection of Ward would likewise have an additional axial play while maintaining the radial play and the thread coverage length so as to shift the burden to Appellant to show that this is not the case. *In re Spada*, 911 F.2d 705, 708 (Fed Cir. 1990) ("[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not."); *see also*

In re Best, 562 F.2d 1252, 1255 (CCPA 1977). Here, Appellant has not come forward with any persuasive evidence to satisfy this burden.

Appellant's argument that in Ward's Figure 2 "the teeth as a whole, is moved back toward the central axis of the threaded part" (*see* Reply Br. 4) is not persuasive because Ward specifically compares the embodiment of Figure 2 to the embodiment of Figure 4 in which one flank of a tooth of an internal thread is machined. *See* Ward, para. [0016] ("FIG. 2 illustrates . . . an increased clearance . . . that is 200% in relation to the clearance illustrated in FIG.4."). What a reference teaches a person of ordinary skill is not limited to what a reference specifically "talks about" or what is specifically "mentioned" or "written" in the reference. *Syntex (U.S.A.) LLC v. Apotex, Inc.* 407 F.3d 1371, 1380 (Fed. Cir. 2005). Since Ward specifically compares the embodiments of Figure 2 and 4, we agree with the Examiner that Ward reasonably discloses that upon machining one flank of an internal thread (as in Ward's Figure 4), the pitch diameter of the internal thread increases and thus the thread clearance increases (as in Ward's Figure 2), that is, the axial play increases. Furthermore, although we appreciate Appellant's argument that Figures 2 and 4 of Ward are not drawn to scale (*see* Reply Br. 5), nonetheless, a drawing teaches all that it reasonably discloses and suggests to a person of ordinary skill in the art. *In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979). In this case, we agree with the Examiner that upon machining the one flank shown in Ward's Figure 4, the pitch diameter of the internal thread in Ward's Figure 2 has increased. *See* Ans. 8. We further agree with the Examiner that Figure 4 of Ward does not show any change in the thread height because only the flank of the thread is machined and as such, because the radial spacing between the threads of the

threaded connection remains unchanged the radial play is not affected. *See* Ans. 10.

Lastly, we are not persuaded by Appellant's position that because Ward discloses an "asymmetric flank configuration," Ward does not disclose providing an additional play "for every turn of the plurality of turns," as called for by independent claim 15. App. Br. 10. Here, Ward specifically discloses a "thread having an asymmetric flank configuration." Ward, para. [0027]. Since the term "asymmetric" modifies the term "flank," and not the term "thread," and because only one flank of a tooth is machined in Ward's Figure 4, the resulting tooth only has a *flank* configuration that is "asymmetric." Thus, we agree with the Examiner that the entire thread of Ward's Figure 2 has a reduced flank ("asymmetric flank configuration") and as such, Ward discloses an additional axial play "for every turn of the plurality of turns," as called for by independent claim 15. Ans. 11.

In conclusion, for the foregoing reasons, we sustain the rejection of independent claim 15, and claims 16, 17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 standing or falling with claim 15 as unpatentable over Ward.

SUMMARY

The Examiner's decision to reject claims 15-17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 under 35 U.S.C. § 112, second paragraph, as being indefinite, is reversed.

The Examiner's decision to reject claims 15-17, 19-21, 23, 24, 26-28, 30, 31, and 33-35 under 35 U.S.C. § 103(a) as unpatentable over Ward is affirmed.

Appeal 2011-005428
Application 10/515,030

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

AFFIRMED

mls