

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for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ENZO PADUANO

Appeal No. 2006-0026
Application No. 10/012,518

ON BRIEF

Before McQUADE, CRAWFORD and BAHR, Administrative Patent Judges.
McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Enzo Paduano originally took this appeal from the final rejection of claims 1-6. As the appellant has since canceled claims 2, 4 and 6 and amended claims 1 and 3, the appeal now involves claims 1, 3 and 5, all of the claims currently pending in the application.

THE INVENTION

The invention relates to a ball joint having an angular movement restriction arrangement. Representative claim 1 reads as follows:

1. Ball joint with angular movement restriction system comprising:

a ball type pin member having a ball portion that is disposed between an upper bearing and a lower bearing;

a box at least partially enclosing the upper bearing and lower bearing, said box including an oblong opening;

a cover member enclosing one end of said box;

a spring disposed between said upper bearing and said cover;

said ball type pin member having a pin portion projecting from said box through said oblong opening and an extension member extending in a direction substantially opposite said pin portion, said pin portion adapted for attachment to a connecting rod;

wherein said cover member is formed to restrict movement of said extension member to thereby restrict movement of said ball type pin member, and

wherein an orientation of said oblong portion is aligned with an orientation of said oblong opening to restrict movement of said extension member.

THE PRIOR ART

The items relied on by the examiner to support the final rejection are:

Bellamy et al. 4,613,251 Sep. 23, 1986
(Bellamy)

Schmidt et al. 6,413,003 Jul. 02, 2002
(Schmidt)

The admission on page 2 of the appellant's specification that

the state of the art utilizes the oblong opening of the joint box, common in this type of construction where it is projected to the body of the ball type pin, in such a way that the narrowest side of the opening; namely, the side that allows smaller angularity in the movement of the ball type pin, becomes coincident with the pin to restrict the movement of the ball type pin. This arrangement prevents the bar from spinning around its longitudinal axle [the admitted prior art].

THE REJECTION

Claims 1, 3 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bellamy in view of Schmidt and the admitted prior art.

Attention is directed to the main and reply briefs (filed October 27, 2003 and April 12, 2004) and the final rejection and main and supplemental answers (mailed March 26, 2003, February 10, 2004, May 27, 2004 and July 25, 2004) for the respective positions

of the appellant and examiner regarding the merits of this rejection.

DISCUSSION

I. New rejection

The following new rejection is entered pursuant to 37 CFR § 41.50(b).

Claims 1, 3 and 5 are rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter the appellant regards as the invention.

The reference to "said oblong portion" in the last clause of claim 1 lacks any antecedent basis. This discrepancy renders the scope of claim 1, and dependent claims 3 and 5, unclear due to the attendant failure of the claims to define, with a reasonable degree of precision and particularity, the relationship between the oblong portion and the other elements of the claimed ball joint.

The problem here presumably arose when claim 1 was amended, apparently inaccurately and inadvertently, to incorporate the subject matter set forth in now canceled claim 2 which had recited that "said cover [member] is formed with an oblong portion to restrict movement of said extension member." Should claim 1 be amended during the course of further prosecution to include such

language, this rejection shall be overcome. See 37 CFR § 41.50(c).

II. The examiner's rejection

Normally, we would not consider the merits of a prior art rejection of an indefinite claim since to do so would call for speculative assumption as to the meaning of the claim. See In re Steele, 305 F.2d 859, 862-63, 134 USPQ 292, 295 (CCPA 1962). In order to expedite prosecution in this case, however, we shall proceed to review the examiner's 35 U.S.C. § 103(a) rejection of claims 1, 3 and 5 under the assumption that the appellant intended claim 1 to include the limitation which had been recited in canceled claim 2, to wit: that the oblong portion is formed in the cover member to restrict movement of said extension member. As indicated above, the inclusion of such language in claim 1 would obviate the indefiniteness problem.

Turning now to the merits of the § 103(a) rejection, Bellamy discloses a ball joint for use in the steering system of an automobile. As shown in Figure 2, the ball joint comprises a socket 12 mounted on a steering system track rod 6, an aperture 14 at one end of the socket 12, a ball pin having (1) a spherical head 17 disposed within the socket 12, (2) a mating part 15 extending from the spherical head 17 through the aperture 14 for connection

to a control arm 4 of the steering system, and (3) a cylindrical extension 18 projecting from the spherical head 17 opposite the mating part 15, a nylon liner 16 in the socket 12 providing a bearing surface for the spherical head 17, a metal slug 19 of square outer cross section having a circular aperture fitted over the cylindrical extension 18 in a freely rotatable and slidable manner, and a plug 22 closing the end of the socket 12 opposite the aperture 14 and having a elongated rectangular aperture 21 receiving the extension 18 and surrounding slug 19. Of particular interest is the relationship between the slug 19 and the plug aperture 21:

[a]s shown in FIG. 3, the aperture 21 in the plug 22 is of rectangular cross section with rounded corners. The greater dimension of this rectangular cross section is in a direction axially of the track rod 6 and the lesser dimension has only a slightly greater dimension than the dimension of the sides of the square slug 19 so that there is a minimal clearance, e.g. 0.127mm, between two opposite side walls of the slug 19 and the longer walls of the aperture 21. This leaves spaces 25 between the other sides of the slug and the shorter end walls of the aperture 21 [column 3, lines 29-39].

According to Bellamy, the foregoing arrangement eliminates ball joint fatigue caused by the neck of the ball pin striking the surrounding edges of the socket aperture through which it extends (see column 1, lines 15-32). As described in the reference,

[i]n operation the ball pin is free to rotate through 360° by rotation of its spherical head 17 within its lubricating bearing 16 and rotation of the extension 18 within the slug 19.

The close fit of the sides of the slug 19 to the longer side walls of the aperture 21 ensure that the joint is prevented from angular movement about a second axis extending along the length of the track rod 6 and thereby resists twisting due to any torsion in the track rod tending to twist the joint about the axis of the track rod. The clearance 25 between the slug 19 and the ends of the aperture 21 permit a total angular movement of, for example 8°, of the ball pin axially relative to the track rod thereby permitting some joint movement about a third axis which is horizontal and perpendicular to said second axis along the length of the track rod.

By this arrangement movement of the joint to accommodate operation of the vehicle suspension is permitted and forces exerted by the track rod on the joint can be accommodated while reducing the tendency for the mating part 15 of the ball pins to strike the edge of

the apertures 14 in the track rod sockets 12 [column 3, line 55, through column 4, line 9].

The examiner (see page 3 in the final rejection and page 5 in the answer) concedes that Bellamy does not respond to the limitations in claim 1 requiring (1) the box to include an oblong opening through which the pin portion projects and (2) the orientation of the oblong portion to be aligned with the

orientation of the oblong opening to restrict movement of the extension member. Although Bellamy's box (socket 13) includes an opening (aperture 14) through which a portion (mating part 15) of the ball pin projects, Bellamy does not describe the opening as having any particular shape, let alone an oblong shape which is aligned with the oblong portion (aperture 21) in the cover member (plug 22). The examiner's reliance on the admitted prior art to overcome this deficiency in Bellamy is unsound.

According to the examiner, it would have been obvious in view of the admitted prior art to provide an oblong opening as recited in the appealed claims to the ball joint box/socket disclosed by Bellamy "since this arrangement will provide a double safe arrangement where both the oblong opening and the oblong portion will ensure proper angular movement of the ball joint along a

predetermine[d] orientation where one system will function as a backup if the other system breaks during operation" (answer, page 6). Reasonably construed, however, the combined teachings of Bellamy and the admitted prior art portray the oblong portion of Bellamy and the oblong opening of the admitted prior art as alternative angular movement restriction means rather than redundant backups. Indeed, Bellamy clearly teaches away from the use of an oblong opening as in the admitted prior art because it results in premature ball joint fatigue. Considered in this light, the only suggestion for combining Bellamy and the admitted prior art in the manner advanced by the examiner stems from hindsight knowledge impermissibly derived from the appellant's disclosure. Moreover, this flaw in the proposed combination of Bellamy and the admitted prior art finds no cure in the examiner's application of Schmidt for its disclosure of a ball joint having a pre-loading bearing spring.

Thus, the evidence advanced by the examiner does not justify a conclusion that the differences between the subject matter recited in claim 1 and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. Accordingly, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of

independent claim 1, and dependent claims 3 and 5, as being unpatentable over Bellamy in view of Schmidt and the admitted prior art.

SUMMARY

The decision of the examiner to reject claims 1, 3 and 5 under 35 U.S.C. § 103(a) is reversed, and a new rejection of these claims under 35 U.S.C. § 112, second paragraph, is entered pursuant to 37 CFR § 41.50(b) with a recommendation under 37 CFR § 41.50(c) as to how the new rejection can be overcome.

This decision contains a new ground of rejection pursuant to 37 CFR § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 CFR § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

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37 CFR § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

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

REVERSED; 37 CFR §§ 41.50(b) and 41.50(c)

JOHN P. MCQUADE)
Administrative Patent Judge)
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) BOARD OF PATENT
MURRIEL E. CRAWFORD) APPEALS
Administrative Patent Judge) AND

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) INTERFERENCES
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