

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KIYOSHI SATOH, DAVID W. ALBRECHT, and SUNAO NEMOTO

Appeal No. 2000-0337
Application No. 08/825,449

ON BRIEF

Before THOMAS, JERRY SMITH, and LEVY, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 4-14, which are all of the claims pending in this application.

BACKGROUND

Appellant's invention relates to a spindle motor assembly having only one bonding region, which includes at least one annular recess. The bonding region is positioned axially between two ball bearings without being axially aligned with either of the two ball bearings. An understanding of the invention can be

derived from a reading of exemplary claim 8, which is reproduced as follows:

8. A disk drive system, comprising:

a disk;

a head positioned a predetermined distance above said disk;
and

a spindle motor including a motor shaft, a bearing sleeve, two ball bearings positioned between an outer periphery of said motor shaft and an inner periphery of said bearing sleeve, wherein each of said ball bearings includes a plurality of balls, a hub having an inner periphery with only one bonding region and an outer periphery attached to said disk, and a magnet attached to said hub and disposed outwardly of said bearing sleeve, said bonding region having at least one annular recess and a plurality of contact regions, wherein said bonding region is positioned axially between said two ball bearings without being axially aligned with either of said two ball bearings and between an outer periphery of said bearing sleeve and said inner periphery of said hub.

In addition to appellants' admitted prior art (AAPA), the prior art reference of record relied upon by the examiner in rejecting the appealed claims is:

Chuta et al. (Chuta)

5,138,209

Aug. 11, 1992

Claims 4-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chuta in view of appellants' admitted prior art (AAPA).

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejection, we make reference to the examiner's answer (Paper No. 16, mailed June 22, 1999) for the examiner's complete reasoning in support of the rejection, and to appellants' brief (Paper No. 15, filed June 7, 1999) and reply brief (Paper No. 17, filed August 2, 1999) for appellants' arguments thereagainst. Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejection advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention as set forth in claims 4-14.

Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings

by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner takes the position (answer, page 3) that hub 126 of Chuta has an inner periphery with a bonding region including a plurality of contact regions in contact with spacer 125, and first and second recesses 154 and 152, which provide a stress reduction portion. The examiner considers (answer, pages 3 and 4) the bonding region to be divided into thirds, where two-thirds is made up of the recesses (one-third each), and the other third is the plurality of contact regions in contact with spacer 125. The examiner further asserts (answer, page 4) that as shown in figures 3 and 4 of Chuta, "the bonding region is positioned axially between ball bearings 122/124 such that it is not axially aligned with bearings 122/124. The bonding region is also

between the outer periphery of the bearing outer races 118/120 (including annular spacer member 125) and the inner periphery of hub 126." In addition (answer, page 5) the examiner takes the position that Chuta is silent as to a specific bearing sleeve. To overcome this deficiency in Chuta, the examiner turns to figure 2 of AAPA for a bearing sleeve and a bonding region between the ball bearings. The examiner's rationale (id.) is "to improve the manufacturing process by reducing two parts to one part" to reduce assembly time and simplify the assembling process.

We observe that each of the independent claims recite that the hub has only one bonding region; that the bonding region has at least one annular recess and a plurality of contact regions, and that the bonding region is positioned axially between two ball bearings without being axially aligned with either ball bearing.

From our review of Chuta, we find that when fixing the hub member 104 to the outer races 118, and 120, an adhesive is used in combination with press fitting and that the hub 104 is supported to some degree by the outer races 118 and 120 at least at the second recess portions 152 and 154 (col. 6, lines 34-39). From this disclosure of Chuta, we agree with appellants (brief,

page 5) that Chuta discloses more than one region where the hub is bonded to the outer races. In addition, we agree with appellants (reply brief, page 1) that as shown in figures 3 and 4 of Chuta, the only surfaces of the outer races which are contiguous to hub body 126 are located above and below the ball bearings, forming more than one bonding surface, and that the bonding region is not located axially between the two ball bearings. We do not agree with the examiner that the contact between hub 104 and spacer 125 can reasonably be construed as a plurality of contact regions. The plurality of contact regions are the portions of the hub 104 which contact the outer races at locations above and below the ball bearings, as shown in figures 3 and 4 of Chuta.

In addition, we find that one of ordinary skill in the art would not have been motivated to combine the teachings of Chuta with the teachings of figure 2 of AAPA, as advanced by the examiner. In Chuta, (col. 1, lines 60-64) an object of the invention is to prevent the outer bearing member from being deformed when fixing the hub member, or as a result of temperature changes after assembly of the spindle motor. Chuta teaches (col. 2, lines 9-13) that the hub member is fixed to the outer bearing member by press fitting or shrinkage fitting, and

that the hub member is provided with an annular recess with a ball lodging groove formed on the outer bearing member. Chuta discloses (col. 4, lines 1-21) that to avoid deformation when fixing the hub to the outer sleeve 18 of the bearing means 16 by press fitting or temperature changes after assembly, an annular recess is formed on the inner peripheral surface of the hub in correspondence with one of the ball grooves 22 formed on outer sleeve 18 (figure 1, and col.4, lines 9-11). Similarly, in the second embodiment (col. 6, lines 47-56) annular recesses 144 and 146 are provided in those sections of the hub member 104 which correspond to the ball lodging grooves of outer races 118 and 120 so that the thin walled portions of the outer races do not come in contact with the inner peripheral surface of the hub member 104.

Thus, from this disclosure of Chuta, we find that the recesses in the hub are placed at the locations of the ball bearings to prevent deformation during the press fitting operation or subsequent temperature changes. Turning to figure 2 of AAPA, we find that in the area between the outer bearing race 11 and the hub 14, a space already exists between the hub and the outer race at the location of the ball bearings. As stated, supra, Chuta's purpose of providing the recesses at the location

of the ball bearings is to create a space between the outer race and the hub. We find no teaching or suggestion, to provide Chuta with a bonding area having a hub recess because Chuta only teaches putting the bonding area recess at the location of the ball bearing, and figure 2 of AAPA already has a recess at this location. As to positioning the hub bonding area recess axially between the two ball bearings without being axially aligned with the ball bearings, we find no teaching or suggestion of these features, and no convincing line of reasoning has been advanced by the examiner. We find that the only suggestion for these features comes from appellants' disclosure. "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para- Ordnance Mfg. v. SGS Importers Int'l, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995) (citing W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983)). "It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) (citing In re Gorman, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991)).

Here, the examiner's broad, conclusory opinion of obviousness does not meet the requirement for actual evidence.

Because Chuta and AAPA do not suggest providing an annular recess within a bonding region, positioned axially between two ball bearings without being axially aligned with either ball bearing, we are not persuaded that teachings from the applied prior art suggests the claimed limitations. We therefore find that the examiner has failed to establish a prima facie case of obviousness. Accordingly, the rejection of claims 4-14 under 35 U.S.C. § 103(a) as obvious over Chuta considered with AAPA is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 4-14 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
)	
)	
)	
)	BOARD OF PATENT
JERRY SMITH)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
STUART S. LEVY)	
Administrative Patent Judge)	

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APPLICATION NO. 08/825,449

APJ LEVY

APJ THOMAS

APJ JERRY SMITH

DECISION: **REVERSED**

Prepared By: GJH

15 Sep 03

FINAL TYPED: