

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN PETERSON, ROBERT PULFORD JR., and ADAM SZEPESI

Appeal No. 1998-1844
Application No. 08/601,726

ON BRIEF

Before HAIRSTON, KRASS, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, 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 1-4, 6-24, 27-31, and 34-41.

We affirm-in-part.

BACKGROUND

The disclosed invention is directed to an assembly which provides both linear and rotary motion in a single output shaft, useful in robotic applications. Claim 1 is reproduced below.

1. A linear/rotary motor, comprising:
 - (a) a primary housing;
 - (b) an output shaft extending from said primary housing;
 - (c) a rotary motor disposed entirely within said primary housing, said output shaft being given rotational motion by said rotary motor;
 - (d) a linear motor disposed entirely within said primary housing;
 - (e) a linear shaft moveable by said linear motor to impart linear motion to said output shaft; and
 - (f) coupling means to join said linear shaft and said output shaft to permit imparting of said linear motion to said output shaft by said linear shaft, but to isolate rotational motion of said output shaft from said linear shaft, such that linear and rotational motions of said output shaft can be controlled independently of one another.

The examiner relies on the following references:

Westmoreland	3,407,680	Oct. 29, 1968
Balter	4,768,911	Sep. 6, 1988

Claims 1-4, 6-24, 27-31, and 34-41 stand rejected under 35 U.S.C. § 103 as being unpatentable over Balter and Westmoreland. Claims 5, 25, 26, 32, and 33 have been

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canceled. Claim 42 has apparently been allowed (see Advisory Action mailed December 22, 1997 (Paper No. 7)).

We refer to the Final Rejection (Paper No. 5) and the Examiner's Answer (Paper No. 11) for a statement of the examiner's position and to the Brief (Paper No. 10) for appellants' position with respect to the claims which stand rejected.

OPINION

The examiner offers the references of Balter and Westmoreland as evidence of obviousness of the claimed subject matter. Appellants contend (Brief, pages 5-6) that instant claim 1, requiring that each of the rotary motor and the linear motor be disposed entirely within the same housing, thus distinguishes over the prior art.

We agree with appellants that the references as applied fail to establish prima facie obviousness of the subject matter of instant claim 1. As appellants point out (Brief, page 5), in Balter a major portion of rotary motor 80 (Fig. 1) is disposed outside housing 12. About one-half of the driving portion of the linear "motor" is disposed outside housing 12; that is, inner magnet 66 is located within the housing, while outer magnet 70 is disposed outside the housing.

We agree with the examiner's finding that Westmoreland contains a clear suggestion (column 5, lines 34-44) for coaxial positioning of motors, as shown in Figure 2

of that reference. However, in our opinion, that objective teaching was not sufficient to lead the artisan to the arrangement required by appellants' claim 1, absent impermissible hindsight of the instant invention. Westmoreland discloses a central shaft having a screw-threaded portion 34 (Fig. 2) and splined portion 38, with the portions being "joined together as one." See Westmoreland, column 3, lines 61-63. Screw-threaded portion 34 and splined portion 38 are driven, respectively, by electric screw motor assembly 22 and electric spline motor assembly 23 to impart linear and rotary motion to the central shaft. While each motor assembly is disposed entirely within the housing of "arrangement" 20, it is not apparent how the teachings of Westmoreland would be applicable to the arrangement of Balter, as illustrated in Balter's Figure 1. Moreover, a suggestion for coaxial positioning of the two motors does not necessarily mean that the motors would be "disposed entirely within said primary housing," as set forth in claim 1.

Perhaps the examiner has discounted clear language of instant claim 1. "In addition, Examiner believes that it is reasonable to interpret that Balter show[s] both linear and rotary motors disposed within the housing **12**." (Answer, page 4.) If the statement means that both motors are thought to be entirely within housing 12, we disagree with the finding. If the statement means that each motor is at least partially within housing 12, we agree with the finding, but find it of little relevance in view of the clear requirements set forth by claim 1.

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In addition to having outer magnet 70 outside housing 12, Balter uses bevel gears 98, 32 to impart rotational motion to square shaft 40. Balter supplies linear motion to shaft 40 by means of a separate assembly comprised of drive shaft 58, attaching to holder 46 and rear end 43 of shaft 40. Balter thus discloses independent linear motion and rotary motion, as opposed to the effectively single shaft of Westmoreland. While clearly motors could be coaxially arranged entirely within housing 12 of the Balter device, the test for obviousness is more restrictive than determining what could be done.

The mere fact that the prior art could be modified to result in the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. See, e.g., In re Laskowski, 871 F.2d 115, 117, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989). Prior art references in combination do not make an invention obvious unless something in the prior art would suggest the advantage to be derived from combining their teachings. In re Sernaker, 702 F.2d 989, 995-96, 217 USPQ 1, 6-7 (Fed. Cir. 1983). Our reviewing court requires rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., In re Dembiczak, 175 F.3d 994, 998-99, 50 USPQ2d 1614, 1616-17 (Fed. Cir. 1999). We conclude that the objective teachings from the prior art before us are not sufficient to establish a prima facie case for obviousness of the subject matter as a whole of instant claim 1, and therefore cannot sustain the rejection. The rejection of dependent

claims 2-4 and 6-12 is also not sustained, since each dependent claim contains at least the limitations of claim 1.

Turning to independent claim 13, appellants argue that the claim “is directed to a linear/rotary motor having coaxial shafts and a coupling to permit axial motion but to isolate rotational motion.” (Brief, page 7.) “Balter fails to disclose this arrangement....” (*Id.*)

We disagree with the bare assertion that Balter fails to disclose the above-quoted arrangement. Balter discloses a linear/rotary motor (Fig. 1) having coaxial shafts 58, 40 and a coupling to permit axial motion (of both shaft 58 and 40), but isolating shaft 58 from the rotational motion of shaft 40. As detailed at column 3, line 49 through column 4, line 21 of the reference, a coupling comprised of cupshaped bearing holder 46, ball bearing 50, outer race 52, inner race 54, balls 56, and stop-ring 60 isolates linear-motion drive shaft 58 from shaft 40 (which is rotated by rotary-motion unit 80). The arrangement disclosed by Balter is, in fact, similar in construction to the shaft coupling 42 disclosed by appellants (Fig. 1), comprised of inner bearing member 40, outer bearing member 44, and snap ring 46.

The limitations alleged to be missing from the prior art are thus found within the four corners of the Balter disclosure. Appellants have not shown any error in the rejection of claim 13. We therefore sustain the examiner’s section 103 rejection of the claim.

Appellants’ reference to the claims dependent on 13 (14-19), appearing at the bottom of page 7 of the Brief, does not rise to the level of providing arguments for separate

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patentability of the dependent claims.¹ We therefore select claim 13 as representative of the subject matter, and hold claims 14-19 as falling with independent claim 13. See 37 CFR § 1.192(c)(7).

Appellants have provided no response with respect to the rejection of claims 20-24, 27-31, and 34-41. Independent claims 20, 31, and 38 are clearly different in scope from claims 1 and 13, for which arguments have been submitted. Because the references are directed to subject matter pertinent to appellants' invention, because the prima facie rejection of the claims submitted by the examiner appears reasonable, and because appellants have not contested the rejection, we sustain the section 103 rejection of claims 20-24, 27-31, and 34-41. See 37 CFR § 1.192(a) ("Any arguments or authorities not included in the brief will be refused consideration by the Board of Patent Appeals and Interferences, unless good cause is shown.").

CONCLUSION

We have reversed the section 103 rejection of claims 1-4 and 6-12, but have affirmed the rejection of claims 13-24, 27-31, and 34-41. The examiner's decision in rejecting claims 1-4, 6-24, 27-31, and 34-41 is thus affirmed-in-part.

¹ We also note that the claims dependent on claim 13 are not "similar" to the claims dependent on claim 1, since each of the claims incorporate the limitations of its respective base claim. The scope of claim 1 is clearly different from the scope of claim 13, and appellants have submitted different reasons for why claim 1 and claim 13 are believed to be patentable over the references.

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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

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
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Administrative Patent Judge)	AND
)	INTERFERENCES
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HOWARD B. BLANKENSHIP)	
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