

The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LAWRENCE D. BRILL and TOMAZ DOPICO VARELA

Appeal No. 2007-2426
Application No. 11/058,146
Technology Center 3600

Decided: September 13, 2007

Before WILLIAM F. PATE, III, TERRY J. OWENS and DAVID B. WALKER,
Administrative Patent Judges.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

The Appellants appeal from a rejection of claims 1-16 and 18-23. Claim 17 has been canceled.

THE INVENTION

The Appellants claim a vehicle wheel assembly and a method for disassembling it. Claim 1 is illustrative:

1. A vehicle wheel assembly comprising:
 - an input gear set;
 - a planetary gear set driven by said input gear set;
 - an output shaft driven by said planetary gear set; and
 - a brake component mounted for rotation with said output shaft wherein said brake component is removable from the vehicle wheel assembly without requiring removal of said planetary gear set.

THE REFERENCES

Mann	US 2002/0134597 A1	Sep. 26, 2002
Thompson	US 2004/0116228 A1	Jun. 17, 2004

THE REJECTION

Claims 1-16 and 18-23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mann in view of Thompson.

OPINION

We reverse the aforementioned rejection. We need to address only the independent claims, i.e., claims 1, 12 and 18. Each of those claims requires an input gear set.

Mann discloses an electrical individual wheel drive used in mobile vehicles such as golf carts (¶¶ 0001-0002). Mann states that “[t]he problem on which this invention is based is to provide an electrical individual wheel drive which is very compactly constructed and stands out by a light weight” (¶ 0004). The electrical

individual wheel drive comprises an electric motor (2) having an output shaft (1) connected as one piece with a transmission's (4) inner central gear (3) (¶ 0011). The output shaft is supported by first (7) and second (8) bearings. *See id.* The second bearing is supported on a planet carrier (9) which supports planet gears (10) and constitutes an output (¶ 0011; fig. 1). The planet carrier is connected by an output flange (15) to a brake (16) and a rim (17). *See id.*

Thompson discloses a drive configuration for a skid steered vehicle such as a military tank (¶ 0001). The drive configuration comprises a controlled differential device that preferably comprises two epicyclic gear trains (¶¶ 0013, 0017). The Examiner relies upon the embodiment in Thompson's figure 2 (Ans. 4-5). Thompson describes the controlled differential in that embodiment as follows (¶ 0037):

As can be seen from **FIG. 2**, a preferred arrangement of a controlled differential comprises a steer motor (21) mounted on a cross-shaft (22). A pair of epicyclic gear trains are arranged such that two planet carriers are connected by a shaft (23) which passes through the centre of two sun gears (24 and 25). The sun gears (24, 25) are in turn coupled with spur gears (26a, 26b, 26c, 27a, 27b) to the steering shaft. Idler gear (26b) is used on one side to reverse the direction of rotation of the sun gear. Two annuli (28, 29) of the epicyclic gear trains are coupled to output shafts (30, 31) of the controlled differential and are shown connected to two propulsion motors (32, 33).

The Examiner relies upon Thompson's spur gears 27a and 27b as corresponding to the Appellants' input gear set (Ans. 4). The Examiner argues that “[i]t would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the input gear set of Thompson with the drive wheel of Mann in order to provide a connection between said planetary gear set and said electric motor while allowing those components to be located in positions

where their shafts are not directly aligned” (Ans. 5). The Examiner argues that “[o]ne of ordinary skill in the art would understand the advantage and flexibility for component location inherent in a separate axis alignment of said input and said output shafts” (Ans. 6-7).

The Examiner has not established that the flexibility gleaned by the Examiner from Thompson’s disclosure regarding skid steered vehicles would have been desired by one of ordinary skill in the art in Mann’s electrical individual wheel drive for a vehicle such as a golf cart wherein, Mann indicates (¶ 0004), compact construction and light weight are desired. Mann teaches (¶ 0007) that “[b]y virtue of the arrangement of the transmission adjacent to the electric motor within the electric motor housing, a very compact unit is obtained”, and “[b]y disposing the transmission in the electric motor housing, the weight of the electrical individual drive can be reduced.” The Examiner argues that “[w]hile a multiple axis drive configuration would, by requiring additional components, be less compact than a single axis drive configuration, the drive wheel of Mann would lend its lightweight and compact structure to either configuration” (Ans. 7). The Examiner, however, does not explain, and it is not apparent, why, in view of Mann’s disclosure that the compactness and light weight are the result of a single axis drive (¶ 0007), that would be so.

We therefore conclude that the Examiner has not established a *prima facie* case of obviousness of the Appellants’ claimed invention.

DECISION

The rejection of claims 1-16 and 18-23 under 35 U.S.C. § 103 over Mann in view of Thompson is reversed.

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REVERSED

JRG

CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009