UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEREMY R. BERNARD,
JOHN L. CAGNEY, and
JAMES A. MORLEY

Appeal 2008-1842
Application 10/270,862
Technology Center 3600

Decided: July 18, 2008

Before TERRY J. OWENS, ROBERT E. NAPPI, and
ANTON W. FETTING, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellants appeal from a rejection of claims 1-9 and 11-18. Claims 10 and 19 stand objected to but allowable if rewritten in independent form, and claim 20 stands allowable.

THE INVENTION

The Appellants claim an assembly, and disclose that the assembly is a vibration damper for internal combustion engines (Spec. ¶ 0001). Claims 1 and 11 are illustrative:

> 1. An assembly comprising:
>
> a hub including a guide in which a plurality of mounting holes are formed in a fixed pattern, wherein the guide is adapted to engage a shaft;
>
> a damping element disposed on an outer perimeter of the hub;
>
> an inertia ring disposed on an outer perimeter of the damping element;
>
> a reinforcing plate disposed on the hub, wherein two or more mounting holes are formed in the fixed pattern in the reinforcing plate, such that threaded fasteners secure the reinforcing plate and the guide through the two or more mounting holes in the reinforcing plate and through the plurality of mounting holes in the hub.
>
> 11. An assembly comprising:
>
> a hub including a pilot comprising a platform disposed on a cylinder wall, wherein a plurality of mounting holes are formed in the platform in a fixed pattern, and wherein the pilot is adapted to engage a shaft;
>
> a reinforcing plate disposed on the hub, wherein a plurality of mounting holes are formed in the fixed pattern in the reinforcing plate, such that threaded fasteners secure the platform between the reinforcing place and the shaft through the plurality of mounting holes in the reinforcing plate and through the plurality of mounting holes in the hub.

THE REFERENCES

Sisco	US 5,231,893	Aug. 3, 1993
Colford	US 5,695,176	Dec. 9, 1997
Allport	US 6,062,104	May 16, 2000

THE REJECTIONS

The claims stand rejected as follows: claims 1-6, 8, 9, 11-15, 17 and 18 under 35 U.S.C. § 102(b) over Allport, and claims 7 and 16 under 35 U.S.C. § 103 over Allport alone or in view of Colford or Sisco.

OPINION

The rejection under 35 U.S.C. § 102(b) is affirmed as to claims 1, 3-6, 8 and 11-14, and reversed as to claims 2, 9, 15, 17, and 18. The rejections under 35 U.S.C. § 103 are affirmed.

Rejection under 35 U.S.C. § 102(b)

The Appellants argue the claims in the following groups: 1) claim 1, 2) claim 2, 3) claims 5, 6 and 14, 4) claim 11, 5) claims 9, 17 and 18, and 6) claim 15 (Br. 8-15; Reply Br. 5-12). We therefore limit our discussion of the affirmed rejections to one claim in each group, i.e., claims 1, 6 and 11. Claims 3, 4, 8, 12 and 13, which are not in the argued groups, stand or fall with the argued claim from which they depend. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Claim 1

Allport discloses "a device for isolating fluctuations in the actual drive torque of a drive shaft of a machine about a nominal drive torque level" (col. 1, ll. 17-20). The device (10) comprises:

1) a peripheral ring (17), first annular member (11), disc (13) and central hub (15) which, together with the corresponding structure on the other side of the shaft (S) in figure 1, corresponds to the Appellants' hub,

2) a hub portion from first annular member 11 to central hub 15 which, together with the comparable structure on the other side of rotary shaft S, corresponds to the Appellants' guide (That portion has a plurality of mounting holes (30, for bolts 31) formed in a fixed pattern (fig. 3) and is adapted to engage shaft S (fig. 1)),

3) an intermediate elastomeric layer (19, fig. 1) which corresponds to the Appellants' damping element disposed on an outer perimeter of the hub,

4) an annular inertia member (18, fig. 1) which corresponds to the Appellants' inertia ring disposed on an outer perimeter of the damping element, and

5) a support ring (28), a portion of which is between bushing 32 and the nut attaching bolt 31 in figure 1, which corresponds to the Appellants' reinforcing plate (Threaded fasteners (bolts 31) secure, through holes (30), support ring 28 and the above-discussed portion corresponding to the Appellants' guide).

The Appellants argue that Allport's central hub 15, not disc 13, engages the shaft (Br. 8; Reply Br. 3).

As pointed out above, Allport's central hub 15 is part of the structure corresponding to the Appellants' guide that is adapted to engage a shaft.

The Appellants argue that it is impossible for fasteners to go through both Allport's reinforcing plate and guide because holes 30 do not line up with hole 14 in central hub 15 (Br. 9).

The Appellants' claim 1 requires that the guide is secured to the reinforcing plate by fasteners and that the guide is adapted to engage a shaft. The portion of Allport's hub corresponding to the Appellants' guide, as set

forth above, is fastened to a reinforcing plate using bolt 31 and is adapted to engage a shaft at central hub 15.

The Appellants argue that claim 1 requires that the threaded fasteners are secured to the shaft because otherwise the hub, damping element and inertia ring have no purpose (Reply Br. 7-8).

Claim 1 does not require that the threaded fasteners are secured to the shaft. The threaded fasteners merely must secure the reinforcing plate and the guide. The claim is open to the shaft being secured by other means.

For the above reasons we are not persuaded of reversible error in the rejection of claim 1 or claims 3, 4 and 8 that stand or fall therewith.

Claim 6

Non-argued claim 3, which depends from claim 1, requires that "the hub further comprises a plurality of reduction holes formed in a wall of the hub. Claim 6, which depends from claim 3, requires that "the reduction holes reduce vibrations when the assembly rotates on the shaft."

Each of Allport's rectangular apertures (20, 26, 29, figs. 1, 2) retains and compresses a block of elastomeric material (33) that reduces cyclic fluctuations (vibrations) in the actual drive torque of rotary driving shaft S so that the fluctuations are not transmitted to the driven equipment (col. 3, ll. 56-62; col. 4, ll. 17-21). The rectangular apertures, which correspond to the Appellants' reduction holes, reduce vibrations by retaining and compressing the elastomeric block.

The Appellants argue that one of skill in the art would not conclude that Allport's holes would reduce vibrations, especially given that they are rectangular (Reply Br. 11-12).

Allport's rectangular apertures 20, 26 and 29 reduce vibrations as set forth above. The Appellants have not explained, and it is not apparent, why rectangular apertures cannot reduce vibrations.

We therefore are not convinced of reversible error in the rejection of claim 6 or claims 5 and 14 that stand or fall therewith.

Claim 11

As set forth above, Allport's peripheral ring (17), first annular member (11), disc (13) and central hub (15), plus the corresponding structure on the other side of the shaft (S) in figure 1, correspond to the Appellants' hub. The portion of that hub from first annular member 11 to central hub 15, plus the corresponding structure on the other side of shaft S, corresponds to the Appellants' pilot. That portion includes a platform (first annular member 11, disc 13 and central hub 15) disposed on a cylindrical wall (peripheral ring 17),[1] has a plurality of mounting holes (30, for bolts 31) formed in the platform in a fixed pattern (fig. 3), and engages shaft S (fig. 1). Allport's structure corresponding to the Appellants' reinforcing plate is set forth above.

The Appellants argue that Allport does not disclose a plurality of mounting holes in the platform (Br. 9).

Allport's platform (first annular member 11, disc 13 and central hub 15) has a plurality of fixing holes (30) (fig. 1) which correspond to the Appellants' mounting holes.

[1] The Appellants' platform likewise is integral with the cylindrical wall (fig. 4).

The Appellants argue that their claim 11 requires that the pilot is between the reinforcing plate and the shaft (Br. 9; Reply Br. 8).

Claim 11 does not require the pilot to be between the reinforcing plate and the shaft. That claim requires 1) a hub including a pilot that is adapted to engage a shaft and comprises a platform having a plurality of mounting holes therein, and 2) a reinforcing plate disposed on the hub and secured to the platform. As set forth above, Allport's structure corresponding to the Appellants' pilot is the portion of the hub from first annular member 11 to central hub 15, plus the corresponding structure on the other side of shaft S. That portion is adapted to engage a shaft at central hub 15 and comprises a platform (first annular member 11, disc 13 and central hub 15) having a plurality of fixing holes (30) therein. The platform is secured to a reinforcing plate (support ring 28, a portion of which is between bushing 32 and the nut attaching bolt 31 in fig. 1).

We therefore are not convinced of reversible error in the rejection of claim 11 and claims 12 and 13 that stand or fall therewith.

Claims 2, 9, 15, 17 and 18

Claim 2, which depends from claim 1, recites "wherein a stronger joint between the reinforcing plate and the shaft results than when the threaded fasteners are fastened through the plurality of mounting holes in the hub only, such that the hub is not deformed when the shaft rotates." Thus, claim 2 implicitly requires a joint between the reinforcing plate and the shaft that is encompassed, but not required, by claim 1.

The Examiner argues that a "wherein" or "whereby" clause that merely states the inherent results of limitations in a claim adds nothing to patentability (Ans. 5).

Claim 2 limits claim 1 by requiring that the claim 1 assembly provides a joint between the reinforcing plate and the shaft. The Examiner has not established that Allport discloses such a joint. There is no joint between Allport's shaft S and the portion of Allport's structure set forth above as corresponding to the Appellants' reinforcing plate (fig. 1). The Examiner's argument that Allport's bolts 31 are capable of being inserted into a shaft which, instead of fitting in central hub 15 as shown in figure 1, is large enough to extend past the bolts (Ans. 4), is not well taken because the Examiner has not established that Allport's device is capable of functioning with that shaft configuration.

Hence, the Examiner has not established a prima facie case of anticipation of the invention claimed in the Appellants' claim 2.

Claim 9, which depends from claim 1, requires that "the inertia ring comprises an unbalance." Claim 15, which depends from claim 11, requires that "an unbalance for the assembly is located in the reinforcing plate." Claim 17, which depends from claim 11, requires that an "inertia ring has an internal unbalance." Claim 18, which depends from claim 11, requires that an "inertia ring has an external unbalance."

The Examiner merely asserts that Allport's annular inertia member, which corresponds to the Appellants' inertia ring, has an imbalance (Ans. 5-6). The Examiner has not pointed out where such an imbalance is indicated

by Allport. The Examiner asserts that Allport's reinforcing plate inherently has an unbalance (Ans. 6), but provides no supporting explanation.

The Examiner, therefore, has not established a prima facie case of anticipation of the inventions claimed in the Appellants' claims 9, 15, 17 and 18.

Rejections under 35 U.S.C. § 103

Claim 7, which depends from claim 1, and claim 16, which depends from claim 11, require that "the hub is comprised of one of stamped steel and spun steel."

The Examiner finds that steel is a notoriously well known material in the hub art (Ans. 7). Because the Examiner's finding is reasonable and the Appellants have not challenged it, we accept it as fact. *See In re Kunzmann*, 326 F.2d 424, 425 n.3 (CCPA 1964).

The Appellants argue that "[w]hether steel is 'notoriously well-known' in the hub art is immaterial, as the claims particularly set forth stamped steel and spun steel, neither of which are taught or suggested by the references cited by the Examiner" (Reply Br. 13).

Colford's sheet steel (col. 2, l. 32) appears to be stamped steel. Regardless, one of ordinary skill in the art would have used as Allport's hub metal a conventional hub metal such as spun or stamped metal which, the Appellants acknowledge, was known in the art (Spec. ¶ 0016).

Accordingly, we are not convinced of reversible error in the rejection of claims 7 and 16.

DECISION

The rejection of claims 1-6, 8, 9, 11-15, 17 and 18 under 35 U.S.C. § 102(b) over Allport is affirmed as to claims 1, 3-6, 8 and 11-14, and reversed as to claims 2, 9, 15, 17 and 18. The rejections of claims 7 and 16 under 35 U.S.C. § 103 over Allport and over Allport in view of Colford or Sisco are affirmed.

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

AFFIRMED-IN-PART

tf/ls

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