

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD J. FADLER,
LOREN A. AHAUS, and
JEFFREY K. LEICHT

Appeal 2008-1060
Application 10/227,096
Technology Center 3600

Decided: June 13, 2008

Before TERRY J. OWENS, LINDA E. HORNER, and
STEVEN D.A. McCARTHY, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellants appeal from a rejection of claims 14-17 and 24-27, which are all of the pending claims.

THE INVENTION

The Appellants claim a pulley comprised of two brazed-together disks. Claim 14 is illustrative:

14. A pulley comprising:

a first disk and a second disk, each disk having an interior surface and an opposite exterior surface, each disk having a center hole with a center axis, each disk having a flat connection surface on the interior surface of the disk that extends around the center hole, each disk having a drive surface that extends around the connection surface and is oriented at an angle relative to the connection surface, the connection surface of the first and second disks being secured together by a brazing material interposed between the first and second disks, and the first and second disks each having a slot in the connection surface that contained the brazing material and the slots of the first and second disks do not axially oppose each other.

THE REFERENCES

Moore	US 516,398	Mar. 13, 1894
Hasegawa (as translated)	JP 52-034159	Mar. 15, 1977
Enters	US 4,016,770	Apr. 12, 1977
Matsumoto	US 4,496,336	Jan. 29, 1985

THE REJECTIONS

The claims stand rejected under 35 U.S.C. § 103 as follows:
claims 14-17 over Moore in view of Hasegawa, and claims 24-27 over
Moore in view of Hasegawa, Matsumoto and Enters.

OPINION

We reverse the Examiner's rejections.

We need to address only the independent claims, i.e., claims 14 and 26. Each of those claims requires "the connection surface of the first and second disks being secured together by a brazing material interposed

between the first and second disks”, and “the first and second disks each having a slot in the connection surface that contained the brazing material and the slots of the first and second disks do not axially oppose each other”. In the Appellants’ figure 12, those slots are numbered “86” and they contain a braze slug numbered “94”. The Appellants disclose (Spec. 14:17-24):

The slot 86 formed in each connection surface 88, 92 is filled with a copper braze slug 94. Thus, in this embodiment of the invention it is not necessary to provide the brazing material separate from the two pulley disks. The brazing material is provided with each pulley disk in the slot of the disk. The previously formed disks are positioned side by side with their connection surfaces 88, 92 in engagement and the slugs 94 on opposite sides of the center axis, and the pulley is heated forming the brazed connection between the two pulley disks 82, 84.

Thus, the Appellants’ claims require that each of the first and second disks has a slot in its connection surface that is not axially opposed to the slot in the other disk, and that the disks’ connection surfaces are secured together by a brazing material in the way that results when the brazing material has been provided in the slots.

For a disclosure of slots the Examiner relies upon Hasegawa (Ans. 3). Hasegawa discloses a friction welded sheet metal V-pulley comprised of two dish-like, flat-bottomed circular parts (1, 1’), each having a ring-like groove (2, 2’) around its flat bottom (p. 3; fig. 1). A sheet metal ring (3) is placed in each groove, and then the edges of the rings are friction welded to each other and to the bottoms of the concave grooves (pp. 3-4; fig. 3). Hasegawa states that enclosing the ring inside the grooves eliminates the finishing operation of removing a protrusion after the friction welding, and that the friction welding makes the pulley strong (p. 4).

The Appellants argue that Hasegawa fails to disclose slots that do not axially oppose each other (Br. 7).

The Examiner argues that “[i]t would have been obvious to one having ordinary skill in the art to provide the slots so that they do not axially oppose each [other] as an obvious matter of design choice, since applicant has not disclosed that the slots of the first and second disks not opposing each other solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with slots in the first and second disks that are axially opposed to each other” (Ans. 4).

The Examiner has the initial burden of establishing a *prima facie* case of obviousness. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976). To do that, the Examiner must provide an apparent reason why one of ordinary skill in the art would have modified the prior art as proposed by the Examiner. *See KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-41 (2007) (“Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue”).

The Examiner’s arguments that the Appellants have not disclosed that their non-axially-opposed slots solve any stated problem or have any particular purpose, and the Examiner’s assertion that the Appellants’ pulley would perform equally well if the slots were axially opposed (Ans. 4), do not provide the required apparent reason as to why one of ordinary skill in the

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art would have been led to modify Hasegawa's grooves such that they are not axially opposed.

The Examiner, therefore, has not established a prima facie case of obviousness of the Appellants' claimed invention.

DECISION

The rejections under 35 U.S.C. § 103 of claims 14-17 over Moore in view of Hasegawa, and claims 24-27 over Moore in view of Hasegawa and Matsumoto are reversed.

REVERSED

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