

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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAJI S. EL-KASSOUF

Appeal No. 2002-1569
Application No. 09/356,431

ON BRIEF

Before ABRAMS, FRANKFORT, and McQUADE, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-19. Claim 20, the only other claim, has been indicated as containing allowable subject matter.¹

We REVERSE.

¹Paper No. 12, page 6.

BACKGROUND

The appellant's invention relates to a brake assembly. An understanding of the invention can be derived from a reading of exemplary claim 1, which has been reproduced below.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Heidenreich	5,228,543	Jul. 20, 1993
Daniels	5,762,584	Jun. 9, 1998

Claims 1-19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Heidenreich in view of Daniels.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejection, we make reference to the Answer (Paper No. 12) for the examiner's complete reasoning in support of the rejection, and to the Brief (Paper No. 11) and Reply Brief (Paper No. 13) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

The appellant's invention is an improvement to wet disc brake assemblies. It utilizes in the brake housing a fluid which changes its viscosity upon application of electric current thereto, in order to increase the drag upon the brake discs and thus provide braking force. Claim 1 sets forth the invention in the following manner.

1. A reduced drag wet disc brake assembly comprising:
 - a brake housing defining a cavity;
 - a hub rotatably connected to said brake housing;
 - at least one rotating plate disposed within said cavity and rotatably connected to said hub;
 - at least one non-rotating plate disposed within said cavity adjacent said at least one rotating plate and connected to said brake housing;
 - a current source selectively connected to said housing; and
 - a fluid filling said cavity which has a viscosity that can be controlled by application of said current source.

Looking first to independent claim 1, the examiner is of the view that Heidenreich discloses all of the subject matter recited except for the current source and the fluid that has a viscosity controlled by the application of current. However, the examiner's position is that it would have been obvious to one of ordinary skill in the art to modify the Heidenreich system by replacing the fluid disclosed therein with the claimed current responsive fluid in view of the teachings of Daniels. The appellant has provided several arguments in opposition to this conclusion, including the assertion that Daniels is not analogous art, that the examiner's understanding of the teachings of Daniels is not

correct, and that no suggestion exists to modify Heidenreich in the manner proposed by the examiner.

The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

Heidenreich discloses a wet disc brake for vehicles which comprises a brake cavity having a sealed housing within which are a plurality of non-rotating brake discs connected to the housing interspersed with a plurality of rotating brake discs connected to the hub to be braked. The housing is filled with fluid for the purposes of prolonging the life of the brake and reducing its operating temperature (column 1, lines 28-30). The braking force in the Heidenreich system is provided by a plurality of springs 68

which normally force the rotating and non-rotating discs into contact with one another. This force is mitigated by actuation of the brake pedal by the vehicle operator, which causes pressurized fluid to operate a piston to counteract the force of the springs to lessen their effect on the discs. Heidenreich fails to disclose or teach that the fluid in the brake housing is of the type that changes its viscosity upon the application of electrical current, or that there is a current source selectively connected to the housing.

Daniels is directed to an exercise machine for providing variable resistance in opposition to a user applied force. This is accomplished by attaching cables, or other means by which the user applies force, to a resistance device comprising a sealed housing encasing fixed and rotatable discs immersed in a liquid whose viscosity can be varied by the application of electric current. In response to the application of a selected current, the resistance device applies a force to counteract the force applied by the user, "by varying the applied potential, the amount of shear stress necessary for the rotatable member to rotate is varied, thereby providing a variable resistance exercise apparatus" (column 4, lines 35-38). Contrary to the examiner's assertion, it is quite clear to us that Daniels would not have suggested to one of ordinary skill in the art that the disclosed wet disc resistance device also had utility as a brake for vehicles. In this regard, Daniels mentions bicycle, car and motorcycle caliper disc brakes, however, rather than suggesting that the wet disc resistance device from the exercise apparatus be used as a brake for vehicles, the reference proposes the opposite, that is, that a

caliper disc brake of the type found in vehicles be utilized in the exercise system to provide a fixed resistance means as an adjunct to, or as a substitute for, the wet disc variable resistance device (columns 30, lines 15-41).

With regard to the appellant's argument that Daniels is non-analogous art, we note that the test for analogous art is first whether the art is within the field of the inventor's endeavor and, if not, whether it is reasonably pertinent to the problem with which the inventor was involved. See In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it logically would have commended itself to an inventor's attention in considering his problem because of the matter with which it deals. See In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992). Daniels, which discloses an exercise device, clearly is not within the field of vehicle brakes, which is the subject to which the appellant's invention is directed. Nor, in our view, would Daniels logically have commended itself to the attention of an inventor seeking to solve problems present in wet disc brakes for vehicles, for it deals with the problem of providing resistance to the force exerted by a human being in attempting to initiate rotation of a member at rest, which is far removed from the problem of overcoming the force present in a rotating wheel of a vehicle to bring it to rest.

Moreover, even considering, arguendo, Daniels to be analogous art, the mere fact that the prior art structure could be modified does not make such a modification

obvious unless the prior art suggests the desirability of doing so,² and for the reasons set forth above in our discussion of Daniels we fail to perceive any teaching, suggestion or incentive in either of the applied references which would have led one of ordinary skill in the art to modify the Heidenreich wet disc vehicle brake in the manner proposed by the examiner. In our opinion, suggestion to modify the Heidenreich system in the manner proposed by the examiner is found only in the hindsight afforded one who first viewed the appellant's disclosure. This, of course, is not a proper basis for a rejection under Section 103.³

Thus, the combined teachings of the two applied references fail to establish a prima facie case of obviousness with regard to the subject matter recited in independent apparatus claim 1, and the rejection of this claim cannot be sustained. The same limitations are present in independent apparatus claim 11 and independent method claim 19, and therefore the like rejection of these claims also is not sustained. Nor, it follows, will we sustain the rejection of dependent claims 2-10 and 12-18.

CONCLUSION

The rejection is not sustained.

The decision of the examiner is reversed.

²See, In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

³In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

NEAL E. ABRAMS
Administrative Patent Judge

JOHN P. McQUADE
Administrative Patent Judge

CHARLES E. FRANKFORT
Administrative Patent Judge

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Appeal No. 2002-1569
Application No. 09/356,431

Page 9

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Return to Lesley

APPEAL NO. 2002-1569 - JUDGE ABRAMS
APPLICATION NO. 09/356,431

APJ ABRAMS

APJ McQUADE

APJ FRANKFORT

DECISION: **REVERSED**

Prepared By: Lesley Brooks

GAU: 3600

OB/HD

DRAFT TYPED: 13 Mar 04

FINAL TYPED:

NOTE: Please change the panel members on our records.