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. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES B. HOKE

Appeal No. 2003-0093
Application No. 09/292,137

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 1-5 and 9. Claims 6-8 have been withdrawn from consideration as being directed to a non-elected invention.

We REVERSE.

BACKGROUND

The appellant's invention relates to a fuel injector. An understanding of the invention can be derived from a reading of exemplary claim 1, which has been reproduced in an appendix to the Brief.

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

Sharpe	3,713,588	Jan. 30, 1973
Mancini et al. (Mancini)	4,798,330	Jan. 17, 1989
Russell	4,941,617	Jul. 17, 1990
Richardson	5,417,070	May 23, 1995
Prociw et al. (Prociw)	6,082,113	Jul. 4, 2000 (filed May 22, 1998)

Claims 1, 4 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mancini.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mancini in view of either Russell or Sharpe.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mancini.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mancini.[1]

[1]The grounds which form the basis of this second rejection of claim 4 differ from those applied against claims 1, 4 and 9.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mancini in view of either Richardson or Prociw.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 21) and the final rejection (Paper No. 14) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 20) and Reply Brief (Paper No. 22) 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 directed to coke resistant fuel injectors for gas turbine engines which produce a thoroughly blended fuel-air mixture for reducing nitrogen oxide. The appellant’s claim 1, which is the only independent claim before us, recites a pressure atomizing core nozzle disposed along an injector centerline and having a fuel discharge orifice, first and second partitions circumscribing the nozzle to define an inner air passage, a third partition circumscribing the second partition and defining a secondary fuel passage, an outer wall circumscribing the third partition and forming an annular outer air passage, and

> an air distribution baffle having a cap that extends radially across the inner air passage, the cap having an outer edge radially spaced from the second partition to define an air injection annulus and also penetrated by a radially and circumferentially distributed plurality of air injection orifices.

The examiner has rejected this claim as being obvious[2] in view of the teachings of Mancini. In the course of arriving at this conclusion, the examiner apparently acknowledges that Mancini fails to disclose or teach "a radially and circumferentially distributed plurality of air injection orifices" in the cap, for he states:

> One of ordinary skill in the art at the time of the claimed invention, aiming to substantially increase the number of the Mancini holes 74, would have had no alternative but to add a second row of holes 74, that would have resulted in a radial and circumferential distribution, as presently claimed.

The appellant urges that no suggestion exists for modifying the Mancini injector in the manner proposed by the examiner. We agree.

At the outset, we point out that in view of the disclosure of the invention in Figure 5 and 5A, as well as the arguments advanced by the appellants in the Briefs, we interpret the phrase "radially and circumferentially distributed" to mean that the orifices

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[2]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).

are distributed along a plurality of circumferences which are spaced at different radial distances from the nozzle axis, i.e., along concentric annular rings. From the examiner's explanation of the rejection, he also interpreted the limitation in that fashion.

Mancini discloses in Figure 1 a nozzle structure having at its downstream end a primary fuel discharge opening 52 surrounded by an inner air passage 82, which terminates at face 75 comprising a "multiple circumferentially spaced air discharge apertures 74" (column 4, line 61 et seq.). There is no mention of the apertures being positioned at different radii from nozzle axis A, and such cannot be ascertained from Figure 1. Figure 6 illustrates an embodiment of the "face" of an embodiment of the nozzle that is provided with a single circumferential array of apertures, although the explanation does not explicitly relate it to the air apertures 74 of Figure 1. Thus, it is our view that Mancini fails to disclose or teach providing orifices located at different radii from the nozzle axis in the air distribution baffle that extends radially across the inner air passage, as is required by claim 1.

We cannot agree with the examiner that one of ordinary skill in the art would have found it obvious to modify Mancini by adding an additional ring of orifices 74 to cap 75, for no evidence has been provided in support of such; the examiner relies upon his unsubstantiated opinion. 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. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). We fail to perceive any teaching, suggestion or incentive which would have led one of

ordinary skill in the art to modify Mancini in the manner proposed by the examiner, other than the hindsight afforded one who first viewed the appellant's disclosure. This, of course, is not a proper basis for a rejection. In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

It therefore is our conclusion that Mancini fails to establish a prima facie case of obviousness with regard to the subject matter recited in claim 1, and we will not sustain the rejection.

Nor, it follows, will we sustain the two rejections of dependent claim 4 and the single rejection of dependent claim 9 on the same grounds. We note in passing that there is no evidence to support the examiner's conclusion in the second rejection of claim 4 that "it was conventional in the art" to have air swirls in the same direction in this type of nozzle.

Dependent claim 2 stands rejected on the basis of Mancini plus either Russell or Sharpe. However, the shortcoming in Mancini is not overcome by the teachings of either of the secondary references, which were cited as evidence of the obviousness of using flared inlets in the air passages. The rejection of claim 2 is not sustained.

Claim 3, which depends from claim 9, has been separately rejected as being unpatentable over Mancini, with the examiner opining that it would have been obvious to optimize the air flow rates of the Mancini injector. In addition to the fact that there is no evidence in support of this conclusion, claim 3 inherits the defect in the rejection applied against claim 1, and this rejection cannot be sustained.

We reach the same conclusion with respect to claim 5, which depends from claim 1 through claim 4, for the reasons expressed above with regard to claims 1 and 4.

CONCLUSION

None of the rejections are sustained.

The decision of the examiner is reversed.

REVERSED

NEAL E. ABRAMS Administrative Patent Judge	)
CHARLES E. FRANKFORT Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
JOHN P. McQUADE Administrative Patent Judge	)

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APPEAL NO. 2003-0093 - JUDGE ABRAMS
APPLICATION NO. 09/292137

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DECISION: **REVERSED**

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DRAFT TYPED: 12 May 04

FINAL TYPED: