

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. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte CHARLES MENDLER

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Appeal No. 2000-1279  
Application No. 09/053,025

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ON BRIEF

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Before COHEN, ABRAMS, and NASE, Administrative Patent Judges.  
COHEN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 22, all of the claims in the application. Claims 1 and 17 were amended (Paper No. 9) subsequent to the final rejection.

Appellant's invention pertains to a high efficiency vehicle and engine, and a method for increasing the efficiency of, and for reducing the torsional vibration of, a

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reciprocating piston four-stroke spark ignition internal combustion engine. A basic understanding of the invention can be derived from a reading of exemplary claims 1, 10, 18,<sup>1</sup> and 21, respective copies of which appear in the APPENDIX to the main brief (Paper No. 10).

As evidence of obviousness, the examiner has applied the documents listed below:

Hedelin	4,539,946	Sep. 10, 1985
Hitomi et al	4,958,606	Sep. 25, 1990

The following rejections are before us for review.

Claims 10 through 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hitomi.

Claims 1 through 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hitomi in view of Hedelin.

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<sup>1</sup> The copy of claim 18 appended to the brief includes an obvious typographical error; on lines 5 and 6 of the claim "a cylinder .... maximum power" duplicates language already present in the claim.

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The full text of the examiner's rejections and response to the argument presented by appellant appears in the final rejection and the answer (Paper Nos. 5 and 11), while the complete statement of appellant's argument can be found in the main and reply briefs (Paper Nos. 10 and 12).

#### OPINION

In reaching our conclusion on the obviousness issues raised in this appeal, this panel of the board has carefully assessed appellant's specification and claims,<sup>2</sup> the applied teachings,<sup>3</sup> and the respective viewpoints of appellant and the

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<sup>2</sup> As to claims 18 and 21, in light of the underlying specification (page 25), we understand the "increasing" step to relate to the different first and second engine settings.

<sup>3</sup> In our evaluation of the applied prior art, we have considered all of the disclosure of each document for what it would have fairly taught one of ordinary skill in the art. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966). Additionally, this panel of the board has taken into account not only the specific teachings, but also the inferences which one skilled in the art would reasonably have been expected to draw from the disclosure. See In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

(continued...)

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examiner. As a consequence of our review, we make the determination which follows.

We do not sustain the respective rejections of appellant's claims under 35 U.S.C. § 103(a).

Obviousness under § 103 is a legal conclusion based on **factual evidence**. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). An examiner may not resort to speculation or unfounded assumptions to supply deficiencies in establishing a factual basis. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967). In other words, the subjective opinion of an examiner as to what is or is not obvious, without evidence in support thereof, does not provide a factual basis upon which the legal conclusion of obviousness can be reached. Instead, it is well settled that in order to establish a **prima facie** case of obviousness the prior art teachings must be sufficient to suggest to one of ordinary skill in the art making the modification needed to arrive at

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<sup>3</sup>(...continued)

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the claimed invention. See In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984).

A critical step in analyzing the patentability of claims pursuant to 35 U.S.C. § 103(a) is casting the mind back to the time of an invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

Most if not all inventions arise from a combination of old elements. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). To establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by an appellant. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Even when

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obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000).

We turn now to the circumstances in the present appeal. It is readily apparent to this panel of the Board that the examiner's conclusion that appellant's claimed subject matter is unpatentable under 35 U.S.C. § 103(a) is simply not supported by the applied evidence of obviousness. As to claims 10 through 22, the examiner acknowledges that there is no explicit recitation in the Hitomi reference of engine use in any automobile (final rejection, page 2). Relative to the rejection of claims 1 through 9, which applies the Hitomi and Hedelin documents, the examiner does not focus upon any use in an automobile for the Hedelin engine. The above deficiency in the references as to any engine and vehicle relationship whatsoever is particularly problematic in that each of appellant's independent claims 1, 10, 18, and 21 expressly requires "an engine maximum power output to vehicle weight ratio of at least 0.055 kilowatts of

engine power per kilogram of vehicle weight." Additionally, and of particular importance,<sup>4</sup> is the lack of any teaching in the applied references proffered by the examiner of an engine having fewer than three reciprocating pistons, a specific and express limitation of independent claims 1 and 10. The examiner

dismisses the number of "cylinders" as a matter of engineering design or a matter of design choice (final rejection, page 4), but later contends that "it is known to put motorcycle engines into very small vehicles" (answer, page 5).<sup>5</sup> Quite

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<sup>4</sup> As appellant's "SUMMARY OF THE INVENTION" section of the specification reveals a "single cylinder" engine is employed in a vehicle.

<sup>5</sup> The "BACKGROUND OF THE INVENTION" section of appellant's specification (pages 1 through 7) offers an extensive discussion of the state of the art, at the time of the present invention. In the background section, appellant mentions Japanese micro cars and hybrid vehicles. As to the Japanese micro cars, the main brief (page 12) clarifies for us that these cars have three or four cylinders. On the other hand, we are informed by the background section (specification, page 2) that hybrid vehicles have one, typically very small engine for efficiently generating base load power requirements of approximately 10 kilowatts. It is not apparent how many cylinders this very small engine has. We note that, apart from dependent claims 8 and 16, independent claims 1, 10, 18, and 21 are not restricted to the claimed engine being the only motive power source of a vehicle, i.e., a non-hybrid vehicle.

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appropriately, appellant points out that the examiner's contention is not supported by a reference (reply brief, page 2) and that the examiner has used "broadbrush general statements" (reply brief, page 4) to imply that the subject matter of the claims on appeal would have been obvious. At least for the reasons set forth above, the respective rejections before us cannot be sustained.

In summary, this panel of the board has not sustained each of the rejections on appeal.

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REVERSED

IRWIN CHARLES COHEN	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
NEAL E. ABRAMS	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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JEFFREY V. NASE	)	
Administrative Patent Judge	)	

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COHEN

APPEAL NO. 2000-1279 - JUDGE

APPLICATION NO. 09/053,025

APJ COHEN

APJ NASE

APJ ABRAMS

DECISION: **REVERSED**

Prepared By:

**DRAFT TYPED:** 19 Nov 02

**FINAL TYPED:**