

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TAKAAKI KIMURA

Appeal No. 98-1050
Application 08/558,163¹

HEARD: Aug. 5, 1999

Before CALVERT, ABRAMS, and BAHR, Administrative Patent
Judges.

ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the decision of the examiner
finally rejecting claims 1-7. Claims 8-11 have been indicated
as containing allowable subject matter. No claims have been

¹ Application for patent filed November 15, 1995.

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allowed.

The appellant's invention is directed to an internal combustion engine having a plurality of poppet-type valves with air springs associated with the valves to urge them to a closed position. The claims on appeal have been reproduced in an appendix to the Brief.

THE REFERENCES

The references relied upon by the examiner to support the final rejection are:

Greene	4,612,826	Sep. 23, 1986
Simonyi et al. (Simonyi)	4,823,647	Apr. 25, 1989
Kubis	4,915,598	Apr. 10, 1990
Umemoto et al. (Umemoto)	5,233,950	Aug. 10, 1993

THE REJECTIONS

Claims 1, 2 and 4-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Umemoto in view of Kubis and Simonyi.

Claim 3 stands rejected under 35 U.S.C. § 103 as being

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unpatentable over Umemoto in view of Kubis, Simonyi and Greene.

The rejections are explained in Paper No. 7 (the final rejection).

OPINION

In reaching our decision on the issues raised in this appeal, we have carefully assessed the claims, the prior art applied against the claims, and the respective views of the examiner and the appellant as set forth in the Answer and the Brief. As a result of our review, we have determined that both rejections should be sustained. Our reasoning in support of this conclusion follows.

We begin our analysis by noting on the record the guidance provided by our reviewing court on the issue of obviousness. A *prima facie* case of obviousness is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art (see *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993)). This is not to say, however, that the claimed invention must expressly be suggested in any

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one or all of the references, rather, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art (see **Cable Elec. Prods. v. Genmark, Inc.**, 770 F.2d 1015, 1025, 226 USPQ 881, 886-87 (Fed. Cir. 1985)), considering that a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference (see **In re Bozek**, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969)). Insofar as the references themselves are concerned, we are bound to consider the disclosure of each for what it fairly teaches one of ordinary skill in the art, including not only the specific teachings, but also the inferences which one of ordinary skill in the art would reasonably have been expected to draw therefrom (see **In re Boe**, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966) and **In re Preda**, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968)).

Independent claim 1 recites an engine block defining at least one cylinder bore, a cylinder head carrying a plurality of poppet-type valves, at least one camshaft journaled in the cylinder head for operating the valves, air springs associated

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with the valves for urging the valves to a closed position, an air compressor driven directly off of the camshaft, at least one air actuated accessory, and a supply system for supplying air under pressure to the air springs and the air operated accessory.

This claim stands rejected as being unpatentable over the combined teachings of Umemoto, Kubis and Simonyi. Umemoto discloses all of the subject matter recited in claim 1 except for the air compressor driven directly off the camshaft, the air actuated accessory, and the supply system for supplying air under pressure to the air springs and the accessory. In Umemoto, the air is supplied by an accumulator tank (80). The patent is silent as to how air is supplied thereto, but it must be assumed that it is a charged tank that is not continuously replenished during use.

Kubis discloses an internal combustion engine having an air compressor (11) that is driven directly off of the camshaft gear wheel (3). The compressor can be used to provide air to vehicle air brakes (column 1, lines 16-18). In view of the teaching of Kubis, it is our opinion that one of ordinary skill in the art would have found it obvious to

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provide the Umemoto engine with an air compressor driven directly off the camshaft to supply compressed air to the air supply system. Suggestion for this modification is found in the self evident advantages thereof, which include providing a continuous supply of compressed air, rather than one limited to the capacity of a single accumulator, so that the operating range of the engine is extended. Such an advantage would have been known to the artisan, for whom skill is presumed, rather than the lack thereof. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

Simonyi discloses a vehicle drive system in which the engine drives an air compressor that provides compressed air for multiple systems associated with the engine. The patent states that these include "conventional uses" such as braking, as well as the additional use of pressurizing the transmission system (see Abstract). From our perspective, one of ordinary skill in the art would have found suggestion in Simonyi for further modifying the Umemoto engine so that the compressed air system operated an air actuated accessory in addition to the engine valves. As was the case above, suggestion for such

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is found in the self evident advantages of making further use of the existing compressed air supply system.

It therefore is our conclusion that the combined teachings of Umemoto, Kubis and Simonyi establish a *prima facie* case of obviousness with respect to the subject matter recited in claim 1, and we therefore will sustain the rejection. Inasmuch as the appellant has chosen to group claims 2 and 5-7 with claim 1, we also shall sustain the rejection of these claims.

Claim 3 has separately been rejected as being unpatentable over the three references applied against claim 1 *et al.*, taken further with Greene. This claim adds to claim 2 the requirement that the additional air actuated system be a variable throttle mechanism. Greene discloses a throttle valve that responds to positive air pressure in order to appropriately shift the gears in the transmission. It is our view that this would have suggested to one of ordinary skill in the art that a throttle valve is one of those engine accessories that can be operated by a compressed air system, and we therefore will sustain this rejection. The appellant has argued that claim 3 requires the presence of an engine

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throttle, and not a transmission throttle, but such a requirement is not in the claim.

As for the implication in the appellant's arguments that the examiner has used hindsight reasoning in constructing the rejections, we note that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). We believe that to be the case here, for the reasons explained above.

SUMMARY

Both rejections are sustained.

The decision of the examiner is affirmed.

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

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AFFIRMED

	Ian A. Calvert)	
	Administrative Patent Judge)	
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	Neal E. Abrams)	BOARD OF
PATENT)	
	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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