

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MATTHEW L. SCHNEIDER, ABHAY P. BHAGWAT,
ALFRED SCHUPPE, and GEORGE M. KUHNS

Appeal No. 2000-2000
Application No. 09/105,124

ON BRIEF

Before JERRY SMITH, LALL, and LEVY, Administrative Patent Judges.
LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-16, which constitute all the claims in this application.

According to appellants (brief at pages 2 and 3), the present invention involves the sensing of crankcase blow-by gases by measuring the volumetric flow of such gases rather than the prior art method of measuring the pressure of these gases. Volumetric flow of the blow-by gases is accomplished by routing a portion of these gases through a venturi which has high pressure

and low pressure taps therein. A differential pressure sensor is then attached to the high and low pressure taps in order to measure the pressure differential between the taps. This differential pressure is related to the volumetric flow of blow-by gases through the venturi, and hence the volumetric flow of blow-by gases around the engine pistons. Both the instantaneous measurement of this volumetric flow, as well as the historical trend analysis, provide useful information in determining the health of the engine as well as to predict future needs for service of the engine. The sensor will therefore yield data suitable for trend analysis to aid diagnostics and prognostics, and can be used to avoid catastrophic failure. The following claim is further illustrative of the invention.

1. An internal combustion engine, comprising:

at least one cylinder;

at least one piston slidingly disposed within the at least one cylinder in order to define a combustion chamber above the piston;

an air intake system operable to supply air to the combustion chamber;

a crankcase coupled to the at least one cylinder, wherein an interior of the crankcase is in fluid communication with an interior of the at least one cylinder below the at least one piston, wherein combustion gases which blow-by the at least one piston may enter the crankcase;

a venturi having an inlet port and an outlet port, wherein

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the inlet port is coupled to the crankcase interior and the outlet port is coupled to the air intake system such that gas within the crankcase may flow through the venturi;

a high pressure tap extending from an exterior of the venturi to an interior of the venturi;

a low pressure tap extending from the venturi exterior to the venturi interior; and

a sensor coupled to the venturi and operative to measure a differential pressure between the high pressure tap and the low pressure tap.

The examiner relies on the following references:

Gluntz	3,445,335	May 20, 1969
Obata	4,345,573	Aug. 24, 1982

Claims 1-16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Obata in view of Gluntz.

Rather than repeat the arguments of appellants and the examiner, we make reference to the brief (Paper No. 7), the reply brief (Paper No. 9) and the examiner's answer (Paper No. 8) for the respective details thereof.

OPINION

We have considered the rejection advanced by the examiner and the supporting arguments. We have, likewise, reviewed the appellants' arguments set forth in the briefs.

We reverse.

As a general proposition, in an appeal involving a rejection under 35 U.S.C. § 103, an Examiner is under a burden to make out

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a prima facie case of obviousness. If that burden is met, the burden of going forward then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness, is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

At the outset, we note that appellants elect to have all the claims stand or fall together, see brief at page 3. We take claim 1 as representative of the group. In response to the rejection of claim 1 under 35 U.S.C. § 103 over Obata in view of Gluntz (final rejection at pages 2 and 3), appellants argue (brief at page 6) that:

The Examiner's assumptions of what would have been obvious to one having ordinary skill in the art are therefore in direct contravention to the teachings of the prior art of record [Obata and Gluntz]. Only Applicant has recognized that there is a reason to measure the volume of blow-by gases removed from the engine crankcase: they are a direct indication of the health of the engine, specifically the health of the piston rings which seal the combustion chambers.

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Appellants therefore argue that there is no motivation in the prior art to modify the Obata reference with the teaching of Gluntz to arrive at the claimed invention. The examiner responds (answer at page 4) that:

Here, the motivation indeed does come from the prior art. It does not necessarily spring from the explicit teachings of the cited references, but instead it rises from an appreciation of the knowledge generally available to one of ordinary skill in the art. Specifically, it is notoriously well-known in the art to control the air/fuel ratio of an internal combustion engine to an optimum point (as at least suggested by col. 4 of the Obata reference). It is also known that blow-by gas, when recirculated in a PCV-type system, alters the overall a/f ratio (again, this fact is at least alluded to in col. 4 of Obata).

Appellants respond (reply brief at page 2) that "[n]owhere does the Examiner explain why one having ordinary skill in the art would be motivated when Obata '573 teaches that it is not necessary [to measure the volumetric flow of the blow-by gases for any reason at all]."

The Federal Circuit states that "[the] mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), (citing In re Gordon, 773 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)). "Obviousness may not be established

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using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordinance Mfg. v. SGS Importers Int'l, 73 F.3d at 1087, 37 USPQ2d at 1239 (Fed. Cir. 1995) (citing W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1551, 1553, 220 USPQ 311, 312-13 (Fed. Cir. 1983)).

In the present case, we find that the examiner has not pointed to any specific teaching in the prior art to modify Obata with the disclosure of Gluntz in such a way that it meets the recited claim limitations. The mere assertions by the examiner for the suggested modification without any specific reference to any evidence in the prior art relied upon in the rejection is sheer speculation on the part of the examiner. Whereas it may be well known to an artisan to run an internal combustion engine with an optimum air-fuel ratio, to make the jump from that to the specifics recited in the claim is not justified within the meaning of obviousness requirements under 35 U.S.C. § 103. Therefore, we do not sustain the obviousness rejection of claim 1 and of the other independent claims 7 and 13 which contain limitations similar to those in claim 1.

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Accordingly, the rejection of independent claims 1, 7, and 13 and the dependent claims 2-6, 8-12, and 14-16 is reversed.

REVERSED

Jerry Smith)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
Parshotam S. Lall)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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Stuart S. Levy)	
Administrative Patent Judge)	

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Woodward, Emhardt, Naughton, Moriarty & McNett
Bank One Center Tower
111 Monument Circle, Suite 3700
Indianapolis, IN 46204-5137

PSL/tdl