

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte TATSUYUKI MASUDA and MASANORI MIYAMOTO

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Appeal No. 1999-0954  
Application 08/656,919

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HEARD: MARCH 8, 2000

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Before McCANDLISH, Senior Administrative Patent Judge, McQUADE  
and CRAWFORD, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Tatsuyuki Masuda et al. appeal from the final rejection of claims 1 through 20, all of the claims pending in the application.

The invention relates to "a precombustion form of diesel

engine that is particularly adapted for use in motor vehicles”

(specification, page 1). Claim 1, the only independent claim on appeal, is illustrative and reads as follows:

1. A two-cycle diesel engine for a vehicle, said engine being comprised of a cylinder block containing at least one cylinder bore closed at one end by a cylinder head and at the other end by a crankcase member for forming a crankcase chamber, a piston reciprocating in said cylinder bore, a crankshaft journaled in said crankcase chamber, a connecting rod connecting said piston to said crankshaft for driving said crankshaft, an exhaust port formed in one side of said cylinder bore and valved by the reciprocation of said piston, and a precombustion chamber formed in said cylinder head on said one side of said cylinder bore and communicating with a main combustion chamber formed by said cylinder head, said cylinder bore and said piston through a throat directed away from said exhaust port, the direction of rotation of said crankshaft being such that said piston tends to rotate about its connection with said connecting rod in a direction during the expansion stroke for moving the upper edge of said piston into engagement with the side of said cylinder bore where said exhaust port is formed.

The references relied upon by the examiner as evidence of anticipation and obviousness are:

Okui et al. (Okui)	5,257,674	Nov. 2, 1993
Okubo et al. (Okubo)	5,501,190	Mar. 26, 1996 (filed Aug. 9, 1994)
Masuda	5,511,523	Apr. 30, 1996 (filed Jul. 19, 1994)

Claims 1, 2, 3 and 7 stand rejected under 35 U.S.C. §

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102(e) as being anticipated by Masuda.

Claims 4 through 6 and 8 through 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Masuda in view of Okubo.

Claims 15 through 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Masuda in view of Okui.

Reference is made to the appellants' brief (Paper No. 13) and to the examiner's answer (Paper No. 14) for the respective positions of the appellants and the examiner with regard to the merits of these rejections.

Masuda, the examiner's primary reference, discloses a two-cycle automotive diesel engine 1 having a cylinder block 2, cylinder bores 2c, a cylinder head 5, a crankcase member 3, crankcase chambers 4, pistons 7, a crankshaft 12, connecting rods 9, exhaust ports 18, precombustion chambers 22, precombustion chamber throats 21b and main combustion chambers 8. Figure 3 shows the general relationship between these components.

The sole issue raised by the appellants with regard to the 35 U.S.C. § 102(e) rejection is whether Masuda meets the limitation in claim 1 requiring the direction of rotation of

the crankshaft to be such that the piston tends to rotate about its connection with the connecting rod in a direction during the expansion stroke to move the upper edge of the piston into engagement with the side of the cylinder bore where the exhaust port is formed. In the appellants' words,

[t]his depends upon the direction of rotation of the crankshaft which is shown in Masuda's Figure 3 and is identified at 12. This figure is basically in the same orientation as Appellants' Figure[s] 9-11 and if the crankshaft rotates in a clockwise direction as shown in this figure (Figure 3) then Appellants' [sic] will concede the reference anticipates the invention even though it does not describe it or, in fact, teach this important result to those skilled in the art [brief, pages 3 and 4].

As partially indicated by this passage, Masuda does not literally describe the relationship required by claim 1 between the exhaust port, the precombustion chamber, the throat and the crankshaft rotation direction, or the combustion efficiencies attributed thereto by the appellants' specification. Nonetheless, the law of anticipation does not require that the reference teach what the subject application teaches, but only that the claim read on something disclosed in the reference, i.e., that all of the limitations in the claim be found in or fully met by the reference. Kalman v.

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Kimberly Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984). Our review of claim 1 and the Masuda reference confirms the appellants' framing of the issue: if Masuda's crankshaft 12 rotates in a clockwise direction in Figure 3, then the subject matter recited in claim 1 reads on, and thus is anticipated by, Masuda.

Masuda's Figure 7, which shows the crankshaft 12 rotating in a clockwise direction, assumes critical importance here because it offers the only clue in the reference as to the crankshaft's rotational direction in Figure 3. Figures 3 and 7 are cross-sectional views taken along viewlines 3-3 and 7-7, respectively, in Figure 4. The arrows on these viewlines point in the same direction, thus indicating that the crankshaft depictions in Figures 3 and 7 are from the same directional perspective. It would seem to follow that since the crankshaft rotates in a clockwise direction in Figure 7, it also rotates in a clockwise direction in Figure 3.

The appellants submit (see pages 4 through 6 in the brief), however, that the oil level representations L7, L2 and L3 in Masuda's Figure 7 and discrepancies between Figures 3

and 7 as to the relative positions of the crankshaft 12 and balancer shaft 28 demonstrate that the arrows for viewline 7-7 in Figure 4 should point in the opposite direction. As a result, the appellants contend, the crankshaft in Figure 3 actually rotates in a counter-clockwise direction.

The examiner, on the other hand, argues (see pages 5 through 7 in the answer) that the arrows for viewline 7-7 in Masuda's Figure 4 are correct as shown, and that the drawing incongruities noted by the appellants are due instead to an inaccurate depiction of angular orientation in Figure 7.

Masuda's Figure 7 is in fact inconsistent with the other drawing figures in the reference, particularly Figure 3, and the reference itself sheds no definitive light on which of the two competing explanations offered by the appellants and the examiner, if either, is correct. Hence, the disclosure of Masuda as to the direction of crankshaft rotation in Figure 3 is, at best, ambiguous. It is well settled that an anticipation rejection cannot be predicated on an ambiguous reference. In re Turley, 304 F.2d 893, 899, 134 USPQ 355, 360 (CCPA 1962). Accordingly, we shall not sustain the standing 35 U.S.C. § 102(e) rejection of claim 1, or of dependent



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JOHN P. McQUADE  
Administrative Patent Judge

MURRIEL E. CRAWFORD  
Administrative Patent Judge

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