UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN M. TREASE

Appeal 2006-3055
Application 10/440,124
Technology Center 3700

Decided: February 28, 2007

Before TERRY J. OWENS, ROBERT E. NAPPI and LINDA E. HORNER, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

STATEMENT OF THE CASE

The Appellant seeks our review under 35 U.S.C. § 134 (2002) of the Examiner's final rejection of claims 1-10. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We REVERSE and REMAND the application to the Examiner pursuant to 37 C.F.R. § 41.50(a)(1) for further consideration of the claims.

THE INVENTION

The Appellant's claims relate to an engine having a retaining plate that engages a camshaft and retains the camshaft in position. Claims 1, 5, and 7, reproduced below, are representative of the subject matter on appeal.

1. An engine comprising:

an engine block having at least one cylinder, a crankcase and a cam chest, the crankcase separated from the cam chest by a divider wall,

at least one camshaft extending from the divider wall into the cam chest, and

a retaining plate secured to said divider wall and retaining said at least one camshaft to maintain the at least one camshaft in position.

5. An engine comprising:

an engine block having a first and second cylinder and a cam chest,

a front camshaft and rear camshaft extending through the cam chest for actuating cylinder valves, and

a retaining plate in said cam chest, said retaining plate having a pair of notches, said notches formed in the edge of the retaining plate and engaging said camshafts.

7. An engine comprising:

an engine block having at least one cylinder, a crankcase and a cam chest, the crankcase separated from the cam chest by a divider wall,

at least one camshaft extending through the divider wall

into the cam chest, the at least one camshaft having a first end and a second end, and

a retaining plate having at least one notch, said at least one notch engaging the at least one camshaft between the first and second ends.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Frank	US 2,887,900	May 26, 1959
Yordi	US 3,051,149	Aug. 28, 1962

The following rejections are before us for review.

1. Claims 1, 3, and 7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Frank.
2. Claims 5 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Frank.
3. Claims 2, 4, 6, 9, and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Frank and Yordi.

We refer to the following evidence in our remand of the application to the Examiner for further consideration:

Lambert	US 5,230,321	Jul. 27, 1993
Smith	US 6,305,242 B1	Oct. 23, 2001

ISSUES

The Appellant contends that Frank does not anticipate claims 1, 3, and 7 and does not render obvious claims 2, 4-6, and 8-10, when taken alone or in combination with Yordi, because neither Frank nor Yordi discloses, teaches, or suggests a retaining plate that maintains the camshaft in position or a retaining plate that has a notch that engages the camshaft (Br. 3-4). The Examiner contends Frank discloses a retaining plate that retains a camshaft to maintain it in position, and the retaining plate has at least one notch engaging the camshaft between the first and second ends (Answer 3). The issues before us are: (1) whether the Appellant has shown that the Examiner erred in finding that Frank anticipates claims 1, 3, and 7; and (2) whether the Appellant has shown that the Examiner erred in finding that Frank, alone or in combination with Yordi, renders obvious claims 2, 4-6, and 8-10.

FINDINGS OF FACT

A preponderance of the evidence establishes the following facts:

The engine of claim 1 includes a retaining plate "retaining said at least one camshaft to maintain the at least one camshaft in position."

This recitation requires the retaining plate to prevent the camshaft from any movement along its longitudinal axis into or out of the cam chest.

The engine of claim 5 includes a retaining plate having a pair of notches "formed in the edge of the retaining plate and engaging said camshafts."

The engine of claim 7 includes a retaining plate having at least one notch "engaging the at least one camshaft between the first and second ends."

The specification does not provide any definition for "notch."

A common meaning of "notch" is "a V-shaped indentation or hollow (as in a surface or edge)." Webster's Third International Dictionary (unabridged) 1543 G. & C. Merriam Co., 1971 (excerpt attached).

We find that one having ordinary skill in the art at the time of the invention would have understood "notch," in view of the specification, to have meant an indentation on the edge of the retaining plate.

Frank discloses an engine 10 having a camshaft member 22 and a camshaft thrust plate 62 (Frank, Figure 1, col. 1, ll. 66-69 and col. 2, l. 27).

The only description provided by Frank of the camshaft thrust plate 62 is as follows: "The camshaft thrust plate 62 is also formed to include passages 63 and engine wall 52 is cut back as at 64 to insure the accessibility of lubricant in the vicinity of the eccentric 36, bushing 44 and control arm 30." (Frank, col. 2, ll. 27-31).

The only depiction of the camshaft thrust plate 62 is in Figure 1 of Frank. Figure 1 shows that camshaft 22 has a wider diameter to the right side and a narrower diameter to the left side of camshaft thrust plate 62. As such, camshaft thrust plate 62 is disposed in engine 10 so that it prevents camshaft 22 from moving in the left direction but it does not prevent camshaft 22 from moving in the right direction (Frank, Figure 1).

Frank does not describe or show how the thrust plate 62 fits about and engages camshaft 22. Frank shows only a partial cross sectional view of the engine 10 in Figure 1 and an end view in Figure 2 (Frank, col. 1, ll. 59-65).

It is not clear from Frank's drawings and disclosure whether thrust plate 62 has an aperture, notch, or other configuration for engaging the camshaft 22.

Yordi discloses camshaft housing 10 for housing a camshaft 12 and a thrust plate 19 (Yordi, col. 1, ll. 35-37 and col. 2, l. 1).

The only description provided by Yordi of the thrust plate 19 is as follows: "A thrust plate 19, fastened through bolts 40 to the motor block 18, a portion of which is shown, is used to keep the camshaft in position and also to hold the disk 15 firmly against the end bearing 41." (Yordi, col. 2, ll. 1-4).

Figure 1 of Yordi shows that camshaft 12 has a narrower diameter to the right side and a wider diameter to the left side of thrust plate 19. Thrust plate 19 is disposed in housing 10 so that it prevents camshaft 12 from moving in the right direction but does not prevent camshaft 12 from moving in the left direction (Yordi, Figure 1).

Yordi does not describe or show how the thrust plate 19 fits about and engages camshaft 12. Yordi shows only a partial cross sectional view of the housing 10 in Figure 1 and a transverse sectional view in Figure 2 (Yordi, col. 1, ll. 29-33).

It appears from Yordi's drawings that thrust plate 19 has an aperture through which the camshaft 12 extends.

Yordi does not disclose a thrust plate 19 with at least one notch engaging the camshaft 12.

ANALYSIS

Claim 1 is not anticipated by Frank because Frank does not disclose a retaining plate that maintains the camshaft in position. Rather, the thrust plate of Frank would not prevent the camshaft from moving out of the engine block. As such, the thrust plate of Frank does not function as a retaining plate because it does not maintain the camshaft in position. As such, we find that claim 1, and its dependent claim 3, are not anticipated by Frank.

Claim 7 is also not anticipated by Frank because Frank does not disclose a retaining plate with at least one notch engaging the camshaft. Although the thrust plate of Frank engages the camshaft between its first and second ends, Frank does not disclose how the thrust plate fits about the camshaft. As such, it would be speculative to find that Frank discloses a plate having a notch. Accordingly, we find that claim 7 is not anticipated by Frank.

Claims 5 and 8 are not rendered obvious by Frank because these claims require that the retaining plate have a pair of notches. Based on our finding that Frank's thrust plate does not have a single notch, we find no teaching, suggestion, or motivation that would have led one having ordinary skill in the art to have made a thrust plate with two notches. As such, claims 5 and 8 are not obvious in view of Frank.

Claims 2, 4, 6, 9, and 10 are not rendered obvious by Frank and Yordi because Yordi does not cure the deficiencies of Frank. Claims 2 and 4 depend

from claim 1. Yordi does not disclose a retaining plate that maintains a camshaft in position. Similar to our reasoning for Frank, Yordi likewise has a thrust plate that prevents movement of the camshaft only in one direction. In this case, Yordi's thrust plate would not prevent the camshaft from moving into the camshaft housing. As such, the thrust plate of Yordi does not function as a retaining plate, as recited in claim 1, because it does not maintain the camshaft in position. As such, we find that dependent claims 2 and 4 are not obvious in view of Frank and Yordi.

Claim 6 depends from claim 5, and claims 9 and 10 depend from claim 7. Yordi does not cure the deficiencies of Frank because Yordi does not disclose a retaining plate having at least one notch engaging the camshaft. Rather, it appears from Yordi's drawings that its thrust plate has an aperture through which the camshaft extends. As such, we find that dependent claims 6, 9, and 10 are not obvious in view of Frank and Yordi.

CONCLUSIONS OF LAW

We conclude that the Examiner erred in finding claims 1, 3, and 7 anticipated by Frank and erred in finding claims 2, 4-6, and 8-10 obvious in view of Frank, taken alone or in combination with Yordi.

REMAND

We find it necessary to remand this application to the Examiner for consideration of the following issues:

1) During any further prosecution of the application, the Examiner should consider whether a rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Lambert is appropriate.

2) During any further prosecution of the application, the Examiner should consider whether a rejection of claims 5 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Lambert and Smith is appropriate.[1]

Since we are primarily a Board of review, we address only independent claims 1, 5, and 7. We leave it to the Examiner to further consider the patentability of the dependent claims in light of the prior art discussed *infra* and any other pertinent prior art.

Lambert discloses an engine comprising an engine block 10 having at least one cylinder 14, a crankcase and a cam chest (see Figure 2B), the crankcase separated from the cam chest by a divider wall (portion of wall 10 shown in Figure 2B between camshaft 72 and crankshaft 18) (Lambert, col. 7, ll. 35-46). Lambert shows in Figure 2B that the camshaft 72 extends from the divider wall 10 into the cam chest. Lambert further shows a retaining plate 108 secured to the divider 10 by a bolt (Lambert, col. 8, ll. 34-36). Lambert discloses that the retaining plate 108

[1] The Examiner referred to Lambert and Smith on page 7 of the Answer as evidence of prior art thrust plates but did not rely on them as part of a rejection of the claims.

engages a groove 112 on the camshaft 72 thereby retaining the camshaft and maintaining it in position (Lambert, col. 8, ll. 36-37).

Smith discloses a camshaft 10 that is retained in the engine block by means of a retaining plate (thrust plate 28), which is secured to the engine block by bolts 30 (Smith, col. 2, ll. 35-36). As shown in Figure 1 of Smith, the retaining plate 28 has an indentation cut out of the plate in the form of a notch. The notch appears to engage a groove machined on camshaft 10, when the retaining plate and camshaft are assembled.

The retaining plates of Lambert and Smith are both provided to maintain a camshaft in position within an engine block. The Examiner should determine whether it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the retaining plate of Lambert with the notch of Smith to engage the camshaft. The Examiner should also determine whether it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the engine of Lambert to have two camshafts and to have further modified the retaining plate of Lambert, as modified by the notches of Smith, to have two corresponding notches.

We remand this application to the Examiner pursuant to 37 C.F.R. § 41.50(a)(1) for further consideration. Accordingly, 37 C.F.R. § 41.50(a)(2) applies if a supplemental Examiner's Answer is written in response to this remand by the Board. Whenever a decision of the Board includes a remand, that decision shall not be considered final for judicial review. When appropriate, upon conclusion of proceedings on remand before the examiner, the Board may enter an

order otherwise making its decision final for judicial review. *See* 37 C.F.R. § 41.50(e).

DECISION

The decision of the Examiner to reject claims 1-10 is reversed and the application is remanded to the Examiner for further consideration of the claims.

REVERSED AND REMANDED

TERRY J. OWENS Administrative Patent Judge	)	
ROBERT E. NAPPI Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LINDA E. HORNER Administrative Patent Judge	)	

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