

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALVIN H. BERGER

Appeal 2008-1538
Application 10/904,120
Technology Center 3700

Decided: December 10, 2008

Before JENNIFER D. BAHR, LINDA E. HORNER, and STEFAN
STAICOVICI *Administrative Patent Judges.*

STAICOVICI, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Alvin H. Berger (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-3 and 15-17.

We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).¹

THE INVENTION

The Appellant's invention is drawn towards a variable output gerotor pump 10 having an outer rotor 42, an inner rotor 46 mounted to a driving shaft 52, inlet port 12, an outlet port 14, an output control ring 24, and a torque arm 60 which divides an annular control cavity 56 into two chambers having variable sizes (Spec. ¶¶ 28, 30, and 31 and fig. 1). The output flow of the pump is controlled by the rotational position of the output control ring 24 (¶ 10).

Claim 15 is representative of the claimed invention and reads as follows:

15. A pressure lubrication system for an internal combustion engine comprising:
 - a source of lubricating oil;
 - an oil pressure sensor for generating a pressure signal;
 - a variable output gerotor oil pump for providing lubricating oil to the engine; and
 - a controller operatively connected with said oil pump and said pressure sensor, with said controller operating said oil pump so as to control the flow rate of lubricating oil through said pump as a function of at least said pressure signal.

¹ Claims 12-14 have been allowed and claims 4-11 are objected to by the Examiner as being dependent upon a rejected base claim and otherwise indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Claims 4-14 are not part of the instant appeal.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Zumbusch	US 5,145,329	Sep. 8, 1992
Bachmann	US 6,709,245 B2	Mar. 23, 2004

The following rejections are before us for review:²

The Examiner rejected claims 1-3 under 35 U.S.C. § 102(b) as anticipated by Zumbusch.

The Examiner rejected claim 15 under 35 U.S.C. § 102(b) as anticipated by Bachmann.

The Examiner rejected claims 15-17 under 35 U.S.C. § 103(a) as unpatentable over Zumbusch in view of Bachmann.

THE ISSUE

Has the Appellant shown that the Examiner erred in interpreting the limitation in claims 1 and 15 of a “variable output gerotor pump” as simply a gerotor pump that has an output such as speed or pressure that is variable?

For the reasons set forth in our discussion below, we are persuaded by the Appellant’s arguments.

Accordingly, we REVERSE the Examiner’s rejections.

² The rejection of claims 1-3 under 35 U.S.C. § 102(b) as anticipated by Morse (US Patent No. 6,238,315) has been withdrawn by the Examiner (Ans. 2).

FINDINGS OF FACT

The record supports the following findings of fact by a preponderance of the evidence:

1. Zumbusch describes a gerotor pump including an outer gear (outer rotor) 74, an inner gear 72 (inner rotor) mounted on shaft 66, and a control ring formed by six circumferentially arranged magnets 76 (col. 4, ll. 32-36 and fig. 3).
2. Zumbusch further describes that the volume of fluid pumped varies as a function of the rotational speed of outer gear 74 (col. 5, ll. 46-50).
3. Bachmann describes a gerotor oil pump for an internal combustion engine having an outer rotor 2, an inner rotor 3, a flow inlet 4 having a suction region 5, and a flow outlet 6 having a pressure region 7 (col. 5, ll. 21-26 and fig. 1).
4. Bachmann describes a control piston 10 that is controlled by a pressure sensor to regulate the flow of fluid within the pump between the suction region 5 and the pressure region 7 such that the flow of the pump remains constant in relation to the speed (col. 4, ll. 33-48 and col. 9, ll. 4-7 and fig. 2).
5. Bachmann further describes that when a threshold speed is exceeded, the control piston 10 is moved such that fluid can flow from the pressure region 7 into the suction region 5, hence maintaining the fluid flow of the pump at a constant level (col. 5, ll. 47-60).
6. Those skilled in the art at the time of the invention understood a fixed displacement pump to refer to a pump “which pumps a given volume

- of fluid for each revolution “ (U.S. Patent No. 3,653,403 to Petit, issued Apr. 4, 1972, col. 3, ll. 12-14).
7. Those skilled in the art at the time of the invention understood a variable displacement pump to refer to a pump that “operate[s] by changing the volume of fluid which the pump can displace in a given cycle of operation” (U.S. Patent No. 3,847,515 to Caldwell, issued Nov. 12, 1974, col. 1, ll. 7-9).
 8. Those skilled in the art at the time of the invention knew that in a variable output (displacement) pump an output adjustable element is required in order to change the output of the pump (U.S. Patent No. 4,035,105 to Dantlgraber, issued Jul. 12, 1977, col. 1, ll. 11-12 and 21-26).

PRINCIPLES OF LAW

1. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, *cert. denied*, 484 U.S. 827 (1987).
2. It is elementary that to support an obviousness rejection all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).
3. When construing claim terminology in the United States Patent and Trademark Office, claims are to be given their broadest reasonable interpretation consistent with the specification, reading claim language in light of the specification as it would be interpreted by one

of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004)).

OPINION

The Appellant argues that the term “variable output pump” is known by those skilled in the art to mean that a “pump’s chambers push a variable volume of fluid per revolution” (“App. Br. 4) (underlining in original). In response, the Examiner takes the position that the term “variable output pump” is much broader such that “the output of the pump can be the output speed, output pressure, etc., not only volume per revolution” (Ans. 5). Between the Appellant and the Examiner we believe the Appellant has the better argument here.

We find that a person skilled in the art would understand a fixed output (displacement) pump to be a pump that delivers the same amount of fluid on each cycle (FF 6). Further, we find that a person skilled in the art would understand a variable output (displacement) pump to be a pump in which the output volume (displacement) varies throughout a cycle of operation (FF 7). Furthermore, in a variable displacement pump an output adjustable element is required in order to change the output of the pump (FF 8).

Zumbusch describes a gerotor pump (FF 1). However, the fluid pumped by the pump of Zumbusch varies as a function of the rotational speed of the pump (FF 2). In other words, the output volume can be changed only by changing the rotational speed of pump, that is, the pump delivers the same amount of fluid on each cycle. Hence, in contrast to the

Appellant's claimed invention, the pump of Zumbusch is a fixed output (displacement) pump.

Bachmann describes a gerotor pump for an internal combustion engine (FF 3). The output flow of Bachmann's pump is maintained constant by moving a control piston 10 (FF 4). Specifically, when a threshold pressure is exceeded in the pressure region 7, the control piston 10 is pushed downward such that fluid can flow from the pressure region 7 into the suction region 5, hence maintaining the fluid flow of the pump at a constant level (FF 5). It appears that the output flow in the pump of Bachmann is determined by the fluid flow between the pressure region 7 and the suction region 5, which is similar to how a pressure-regulating valve functions. The Examiner has not shown and we could not find any teachings in Bachmann that would lead a person skilled in the art to understand that during a cycle of operation of the pump the volume of the pressure region 7 or the suction region 5 changes. Furthermore, the Examiner has not shown which element of Bachmann's pump can be adjusted so as to modify the volume of the pressure region 7 or the suction region 5 during a cycle of operation and thereby increase or decrease the volume of fluid pumped per cycle. In conclusion, the Examiner has not shown and we could not find any teachings in Bachmann that would lead a person skilled in the art to understand that Bachmann's pump is a variable output (displacement) pump.

In conclusion, the Examiner improperly interprets the limitation in independent claims 1 and 15 of a "variable output gerotor pump" as simply a gerotor pump that has an output, such as speed or pressure, which is variable. Accordingly, the rejection of claim 1, and claims 2 and 3 depending from claim 1, under 35 U.S.C. § 102(b) as anticipated by

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Zumbusch cannot be sustained. For the same reasons, the rejection of claim 15 under 35 U.S.C. § 102(b) as anticipated by Bachmann, likewise, cannot be sustained.

With respect to claims 15-17, we find that the application of Bachmann does not make up for the deficiencies in Zumbusch as discussed above. Hence the rejection of claims 15-17 under 35 U.S.C. § 103(a) as unpatentable over Zumbusch in view of Bachmann is also reversed.

DECISION

The decision of the Examiner to reject claims 1-3 and 15-17 is reversed.

REVERSED

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