Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

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Ex parte NAM JONG HUR

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Appeal No. 2001-1548
Application No. 08/907,512

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ON BRIEF

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Before McQUADE, NASE and BAHR, Administrative Patent Judges.

BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 4 and 5, which are all of the claims pending in this application.

BACKGROUND

The appellant’s invention relates to a pump having a structure suitable for the feeding of semi-liquid substance having high viscosity, in which the feeding is achieved

consecutively rather than intermittently (specification, page 1). A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The examiner relied upon the following prior art references in rejecting the appealed claims:

Kristapovich et al. (Kristapovich)	4,350,022	Sep. 21, 1982
Perrine et al. (Perrine)	4,515,516	May 7, 1985
Zanarini	4,761,118	Aug. 2, 1988

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Perrine in view of Zanarini.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kristapovich in view of Zanarini.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer (Paper No. 12) for the examiner's complete reasoning in support of the rejections and to the brief and reply brief (Paper Nos. 11 and 13) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. For the reasons which follow, we cannot sustain the examiner's rejections.

Claim 4

Claim 4 recites, *inter alia*, first and second cylinders, an intermediate block sandwiched between respective ends of the first and second cylinders, a top block positioned against an end of the first cylinder opposite the intermediate block, a bottom block positioned against an end of the second cylinder opposite the intermediate block, a first sensor positioned in a wall of the first cylinder, a second sensor positioned in a wall of the second cylinder, a first heating jacket placed around at least a portion of the first cylinder and a second heating jacket placed around at least a portion of the second cylinder. According to the examiner, Perrine's cylinders 10, 11 respond to the first and second cylinders, respectively, and the center divider 14 and opposite end members 15 and 16 respond, respectively, to the intermediate, top and bottom blocks. The examiner also reads the first and second sensors of claim 1 on the sensors 56 and 57 received in the cylinder ends 15 and 16 (answer, pages 4-5 and 9). The examiner concedes that Perrine does not disclose first and second heating jackets placed around at least a portion

of the first and second cylinders but finds suggestion to provide such a feature on the Perrine apparatus in the teachings of Zanarini, as explained on page 5 of the answer.

The problem with the examiner's reading of the sensors recited in claim 4 on Perrine's sensors 56, 57 is that the sensors 56, 57 are received in the structure of Perrine's apparatus (the cylinder ends 15, 16) which, according to the examiner, respond to the top and bottom blocks recited in claim 4, not in the walls of the first and second cylinders, as required by claim 4.[1] Apparently perceiving a deficiency in the location of the sensors in the Perrine device, the examiner (answer, page 9) points to Perrine's teaching in column 5, lines 19-29, that other sensing techniques may be used, instead of the magnetic sensors 56, 57, for sensing when the dividers (pistons) 19, 20 of the cylinders have reached a desired position and concludes from this that "therefore it would have been well within the level of skill in the art of pump fabrication to have positioned the sensor anywhere, as long as it was able to determine the end of the piston's stroke" (answer, page 9). As pointed out by appellant on page 3 of the reply brief, however, "Perrine nowhere indicates or suggests that the disclosed sensors can be mounted in the cylinder walls as compared to wells in the bottoms of the pistons or cylinders." The mere fact that the prior art could be so modified would not have made the modification obvious unless

[1] It is apparent from a reading of claim 4 that the walls of the first and second cylinders are structures distinct from the top, bottom and intermediate blocks recited in claim 4. Thus, the cylinder end members 15, 16 of Perrine cannot provide structural response for both the top and bottom blocks and the walls of the first and second cylinders.

the prior art suggested the desirability of the modification. See In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992) In re Mills, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). From our perspective, the only suggestion for locating piston position sensors in the walls of the cylinders as called for in claim 4 is found in the luxury of hindsight accorded one who first viewed the appellant's disclosure. This, of course, is not a proper basis for a rejection. See Fritch, 972 F.2d at 1266, 23 USPQ2d at 1784. For this reason alone, the examiner's rejection of claim 4 must fail.

Additionally, we find no suggestion in the references applied by the examiner to place first and second heating jackets around at least a portion of the first and second cylinders, as also called for in claim 4. We note, at the outset, that Zanarini discloses a cooling jacket, not a heating jacket placed about a cylinder of a compressor (see column 3, lines 41-48). While it is true that both heating jackets and cooling jackets include heat exchanger structure, we are confident that one skilled in the art would not consider a "cooling jacket" as taught by Zanarini to be a "heating jacket" as that terminology is used in claim 4. Thus, the placement of cooling jackets around portions of the cylinders of Perrine's apparatus would not, in our opinion, yield the subject matter of claim 4. In any event, the examiner has pointed to nothing in the disclosure of Zanarini or Perrine which

would have suggested placement of a heating or cooling jacket on the cylinders 10, 11 of the Perrine apparatus.

In explaining the motivation for making the proposed modification, the examiner asserts that

> [i]t was old and well known in the art that the use of a conventional fluid filled jacket was an advantageously efficient way to transfer heat to and from a cylinder. Therefore, it would have been obvious to one of ordinary skill in the art of pump fabrication at the time the invention was made to have used the standard liquid filled jacket taught by Zanarini, on the cylinders disclosed by Perrine et al., to have advantageously increased the efficiency of the unit [answer, page 5].

Even accepting the examiner's statement that it was old and well known in the art that the use of a conventional fluid filled jacket was an advantageously efficient way to transfer heat to and from a cylinder, it is not apparent to us how this led the examiner to the conclusion that it would have been obvious to use a fluid filled jacket on Perrine's cylinders to increase the efficiency of the unit.[2] As our reviewing court made clear in In re Lee, ___ F.3d ____, ____ 61 USPQ2d 1430, 1435 (Fed. Cir. 2002),

> when [the USPTO relies] on what [it asserts] to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record. The failure to do so is not consistent with either effective administrative procedure or effective judicial review. The [USPTO] cannot rely on conclusory statements when dealing with particular

[2] Perrine's cylinders are used for compressing and pumping a gas. The use of heat transfer to or from the cylinders to effect or assist this process is not taught or suggested by Perrine.

> combinations of prior art and specific claims, but must set forth the rationale on which it relies.

In this case, the examiner has not provided any evidence or rationale to support the conclusory statement that it would have been obvious to use a fluid filled jacket on Perrine's cylinders to increase the efficiency of the unit and, thus, has failed to set forth a *prima facie* case of obviousness of the subject matter of appellant's claim 4.

Claim 5

Claim 5, like claim 4, recites first and second cylinders and a heating jacket placed around at least a portion of the second cylinder. Appellant and the examiner agree that Kristapovich, the jumping off point for the examiner's rejection, lacks a heating jacket. As set forth on pages 7 and 8 of the answer, the examiner once again relies upon the teachings of Zanarini for a suggestion to provide such a feature around the cylinder 22 of the pump 13 of Kristapovich's refrigerant transfer system. For the reasons expressed *supra* with respect to the rejection of claim 4, we find no suggestion in Zanarini's teaching of a cooling jacket to provide any type of heat exchange jacket, much less a heating jacket, on the cylinder of the pump 13 of Kristapovich's refrigerant transfer system. Further, even accepting the examiner's statement (answer, page 7) that it was old and well known in the art that the use of a conventional fluid filled jacket was an advantageously efficient way to transfer heat to and from a cylinder, it is not apparent to us how this supports the

examiner's conclusion that it would thus have been obvious to use a fluid filled jacket on the cylinders of Kristapovich's pump 13 to increase the efficiency of the unit.

In light of the above, we reach the conclusion that the examiner has failed to provide a *prima facie* case of obviousness of the subject matter of appellant's claim 5.

CONCLUSION

To summarize, the decision of the examiner to reject claims 4 and 5 under 35 U.S.C. § 103(a) is reversed.

REVERSED

JOHN P. McQUADE Administrative Patent Judge	)
JEFFREY V. NASE Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
JENNIFER D. BAHR Administrative Patent Judge	)

SKJERVEN MORRILL MACPHERSON LLP
25 METRO DRIVE
SUITE 700
SAN JOSE, CA 95110