

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALEXANDER LIFSON and MICHAEL F. TARAS

Appeal 2007-1444
Application 10/732,497
Technology Center 3700

Decided: May 15, 2007

Before WILLIAM F. PATE, III, LINDA E. HORNER, and DAVID B. WALKER,
Administrative Patent Judges.

WALKER, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Alexander Lifson et al. (“Appellants”) seek our review under 35 U.S.C. § 134 of the Examiner’s final rejection of claims 20 and 21. We have jurisdiction under 35 U.S.C. § 6(b). We reverse and remand.

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THE INVENTION

Appellants claim a system for diagnosing a loss of refrigerant charge that provides information regarding an amount of refrigerant charge within a refrigerant system based upon equalized system pressure at equilibrium conditions (Specification 2:[0007]). Claims 20 and 21, reproduced below, are the only claims on appeal.

20. A method of monitoring a refrigerant charge loss in a refrigerant system, comprising:

determining an equilibrium pressure while the system is inactive:

determining an ambient temperature;

determining if a difference between an expected pressure corresponding to the determined ambient temperature and the determined equilibrium pressure exceeds a selected threshold; and

determining an amount of refrigerant charge loss from the system based upon the difference between the expected pressure and the determined equilibrium pressure.

21. The method of claim 20, comprising determining a percentage of refrigerant charge loss.

THE REJECTIONS

The Examiner relies upon the following as evidence of lack of novelty:

Scoccia US 5,481,884 Jan. 9, 1996

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Claims 20 and 21 are rejected under 35 U.S.C. § 102(b) as anticipated by Scoccia.

ISSUE

Appellants contend that Scoccia does not disclose determining an amount of refrigerant loss nor does it teach determining a percentage of refrigerant charge loss (Corrected Br. 4-5). The Examiner contends that Scoccia determines the amount of refrigerant loss “that will require a warning of low refrigerant, whether it is expressed as a percentage of total or just an amount that requires system serving.” (Answer 3). Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004). The issue before us is whether Appellants have shown that the Examiner erred in rejecting claims 20 and 21 under 35 U.S.C. § 102(b) as anticipated by Scoccia.

FINDINGS OF FACT

The following enumerated findings are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427, 7 USPQ2d 1152, 1156 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Scoccia discloses a system and method for low refrigerant charge detection before and during compressor operation. Before compressor operation, the system indicates whether or not the refrigerant charge level is acceptable for compressor operation to begin. During compressor

- operation, the system provides two levels of indication of the degree of a low charge condition. (Scoccia, col. 2, ll. 15-20).
2. Scoccia teaches measuring refrigerant pressure when the compressor is not currently on and determining if that pressure is above PCAL(AMB) (Scoccia, col. 4, ll. 61-67). Scoccia defines PCAL(AMB) as a predetermined value that represents the lowest acceptable refrigerant charge for the existing (measured) ambient temperature (AMB). PCAL(AMB) values are based on the refrigerant saturation pressure for the refrigerant at the given ambient temperature. Those values are established such that a system with sufficient refrigerant charge will have a pressure higher than the PCAL(AMB). (Scoccia, col. 4, l. 67 – col. 5, l. 8).
 3. Scoccia recognizes that the refrigerant pressure becomes equalized only when compressor non-operation occurs for at least a predetermined period of time. The disclosed system senses and indicates a low charge condition only if the compressor has been in the non-operating condition for a sufficient time for the system to be equalized, or stable, with compressor non-operation and the refrigerant pressure is still very low. (Scoccia, col. 2, ll. 36-47).
 4. Scoccia does not teach determining an amount of refrigerant charge loss from the system based upon the difference between the expected pressure and the determined equilibrium pressure. The disclosure of Scoccia is limited to determining that the level is low based on comparison of

measured equilibrium pressure with a minimum acceptable pressure for the measured ambient temperature. For example, the “VERY LOW REFRIGERANT CHARGE NOT DETECTED” condition of Scoccia provides an indication that actual pressure is at or above minimum allowable pressure (Scoccia, col. 2, ll. 13-34), but does not show by how much or determine a corresponding amount of refrigerant charge loss on an absolute or percentage basis.

PRINCIPLES OF LAW

“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, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications “not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) (en banc) (*quoting In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004)). The properly interpreted claim must then be compared with the prior art.

“To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (internal quotation marks omitted).

ANALYSIS

Based on the above findings of fact, Scoccia discloses the first three limitations of claim 20. The correctness of the rejection of claim 20 therefore turns on whether Scoccia teaches “determining an amount of refrigerant charge loss from the system based upon the difference between the expected pressure and the determined equilibrium pressure.” The Examiner asserts that “the amount of refrigerant loss detected is the amount that will require a warning of low refrigerant whether it is expressed as a percentage of total or just an amount that requires system serving.” (Answer 3). The Examiner inappropriately relies on Appellants’ disclosure for support of the assertion that there is a one-to-one relationship between the determined pressure and amount of refrigerant loss in the system for a given ambient temperature (Answer 3-4) (referring to Figure 2 of Appellants’ disclosure and accompanying text). Examiner argues that based on the one-to-one relationship, “it is inherent to the determination of the amount of refrigerant loss

that requires the compressor to be stopped when the pressure is determined for a given ambient temperature.” (Answer 4).

Scoccia describes determining a low refrigerant level based on comparing measured pressure with a minimum allowable pressure, which is a function of measured ambient temperature. Scoccia provides an indication of whether actual pressure is above or below minimum allowable pressure, but does not show by how much or determine a corresponding amount of refrigerant charge loss on an absolute or percentage basis. Thus, Scoccia fails to anticipate claim 20, because it does not teach determining an amount of refrigerant charge loss from the system based upon the difference between the expected pressure and the determined equilibrium pressure (Finding of Fact 4).

With respect to claim 21, Examiner argues that: “It is inherent in the determination of the amount of refrigerant loss that requires the compressor to be stopped that the loss will be a percentage of the total amount of refrigerant in a fully charged system.” (Answer 3). Because Scoccia does not in fact disclose determination of the amount of refrigerant loss (Finding of Fact 4), the Examiner cannot rely on that determination as the basis for the inherency of determining a percentage of refrigerant charge loss, which is nowhere disclosed in Scoccia. Scoccia thus fails to anticipate claim 21, because it does not disclose determining a percentage of refrigerant charge loss. The rejection of claims 20 and 21 as anticipated by Scoccia therefore is improper, because Scoccia does not disclose each and every limitation as set forth in claims 20 and 21, either expressly or inherently.

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CONCLUSIONS

Based on the findings of facts and analysis above, we conclude that Appellants have shown that the Examiner erred in rejecting claims 20 and 21 under 35 U.S.C. § 102(b) as anticipated by Scoccia.

REMAND

With regard to claims 20 and 21, we note that Scoccia discloses (1) determining an equilibrium pressure while the system is inactive; (2) determining an ambient temperature; and (3) determining if a difference between an expected pressure corresponding to the determined ambient temperature and the determined equilibrium pressure exceeds a selected threshold. (Findings of Fact 1-3)

This application is remanded, pursuant to 37 C.F.R. § 41.50(a)(1), for the Examiner to consider whether claims 20 and 21 should be rejected under 35 U.S.C. § 103(a) as being unpatentable over Scoccia alone or in combination with other references. If the Examiner elects to enter such a rejection under 35 U.S.C. § 103(a), the Examiner shall consider the recent decision of the U.S. Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007) (setting forth revised analytical framework for obviousness determinations).

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DECISION

The decision of the Examiner to reject claims 20 and 21 is reversed and the application is remanded for the reason provided *supra*.

REVERSED and REMANDED

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