UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENNETH M. PONDER
and STEFFAN THOMAS, JR.

Appeal 2009-012229[1]
Application 10/937,736
Technology Center 1700

Decided: April 29, 2010

Before MICHAEL P. COLAIANNI, LINDA M. GAUDETTE, and JEFFREY B. ROBERTSON, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 1-10, 21-25, 27, 29-31, 33-35, and 37-40. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

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[1] Oral arguments were heard in the appeal on April 14, 2010.

We AFFIRM.

Appellants disclose a refrigerant replacement for refrigerant R-22 (chlorodifluoromethane) composed of a blend of refrigerant that is less damaging to the ozone layer and a method and apparatus for refrigeration (Spec. 1: 10-22).

Claim 21 is illustrative:

21. A refrigerant composition comprising a combination of refrigerant gases and non-refrigerant gas components,

(a) the refrigerant gases consisting of:

about 40% to about 45% by weight tetrafluoroethane; and

about 55% to about 60% by weight pentafluoroethane; and

(b) the non-refrigerant gas components including about 0.5% up to about 20% by weight of the refrigerant gases of a lubricating oil, wherein the lubricating oil is selected from the group consisting of napthenic based lubricants, paraffinic based lubricants, and mixtures thereof, mineral oil, polyol ester, synthetic alkyl aromatic lubricants, synthetic alkyl aromatic lubricants mixed with mineral oil, and synthetic alkyl aromatic lubricants mixed with polyol ester.

Appellants appeal the following rejection:

Claims 1-10, 21-25, 27, 29-31, 33-35, and 37-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takigawa (U.S. Patent 6,207,071 B1, March 27, 2001).

Appellants argue the claims as a group (App. Br. 5). Appellants' mere statement of the subject matter of dependent claims 4, 9, and 25 (App. Br. 10) do not amount to a separate argument of those claims. 37 C.F.R.

§ 41.37(c)(1)(vii). Therefore, we select claim 21, the broadest independent claim on appeal, as representative of the group. *Id.*

ISSUE

Did the Examiner err in concluding that Takigawa would have suggested the subject matter of claim 21? We decide this issue in the negative.

PRINCIPLES OF LAW

Applicants' reason for making the modification does not control the obviousness analysis; rather, "any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007).

A compound and all of its properties are inseparable. *In re Papesch*, 315 F.2d 381, 391 (CCPA 1963).

A declarant's or affiant's opinion evidence as to an ultimate legal conclusion is afforded no weight, though the underlying reasons for the opinion may be considered. *In re Lindell*, 385 F.2d 453, 456 (CCPA 1967).

FACTUAL FINDINGS (FF)

We adopt the Examiner's findings in the Answer and Final Office Action as our own, except as to those findings that we expressly overturn or set aside in the Analysis that follows. We add the following factual findings:

1. Takigawa discloses a refrigerant oil and a fluid composition for a refrigerator containing the oil and an HFC (hydrofluorocarbon)

refrigerant blend containing 1,1,1,2-tetrafluoroethane (HFC-134a) and/or pentafluoroethane (HFC-125) (col. 1, ll. 13-19).

2. Takigawa discloses that the HFC refrigerant contains HFC-134a and/or HFC-125 (col. 2, ll. 15-17; 23-24; 40-41).
3. Takigawa discloses that the HFC-134a and/or HFC-125 blend may include additional HFC refrigerants such as alkane fluorides having 1 to 3 carbon atoms (col. 8, ll. 20-28). Takigawa places "no restriction" on the kind of HFC to be mixed with HFC- 134a and/or HFC-125 and exemplifies various suitable HFC combinations (col. 8, ll. 29-55).
4. Takigawa claims that the HFC refrigerant used in the fluid composition contains "at least one of HFC-134a and/or HFC-125" (claim 1).
5. Takigawa discloses that HFC-134a is present in the refrigerant composition in an amount of 40 weight percent or greater and that HFC-125 is present in a most preferable amount of 40 weight percent or greater (col. 8, ll. 20-28).

Additional findings of fact may appear in the Analysis that follows.

ANALYSIS

Appellants argue that Takigawa fails to teach or suggest a refrigerant composition "consisting of" about 40% to about 45% HFC-134a (i.e., tetrafluoroethane) and about 55% to about 60% HFC-125 (i.e., pentafluoroethane) (App. Br. 8). Appellants contend that the claim phrase "consisting of" excludes additional HFC refrigerants from the blend, which

Takigawa teaches to mix with the HFC-134a and HFC-125 blend (App. Br. 9). Appellants argue that the Examiner has not provided a reason to select the claimed narrower range (i.e., 40-45% HFC-134a and 55-60% HFC-125) from Takigawa's broader ranges (i.e., 40-100% HFC-134a and 20-100% HFC-125) (App. Br. 9). Appellants contend that the Examiner's stated case lacks articulated reasoning for modifying Takigawa's teachings to arrive at the claimed invention (App. Br. 6-7).

Appellants' argument that "consisting of" excludes additional HFC refrigerants fails to address the Examiner's position that Takigawa's unrestricted disclosure of HFCs that may be mixed with the refrigerant means that no additional HFC need be added to the HFC-134a and HFC-125 blend (Ans. 3, 5). In other words, Takigawa's alkane fluoride that is to be mixed with the HFC-134a and HFC-125 blend may be an additional amount of HFC-134a or HFC-125, rather than a different HFC. Though Takigawa exemplifies different HFCs being mixed with the HFC-134a and HFC-125 blend, Takigawa's claim 1 recites that that the refrigerant includes "at least one of HFC-134a and HFC-125", which underscores that the simplest refrigerant composition mixture claimed by Takigawa includes the binary mixture of HFC-134a and HFC-125.

Similarly, Appellants' argument regarding the claimed percentages of the refrigerant gases is not persuasive because it fails to address the Examiner's finding that Takigawa's simplest binary refrigerant composition is HFC-134a and HFC-125. As the simplest binary mixture, the Examiner correctly determines, based on Takigawa's disclosure (FF 5), that HFC-134a would have been present in an amount of 40 to 60% by weight and HFC-125 correspondingly would be present in a range of 60 to 40% by weight (Ans.

3, 5). Therefore, Takigawa's disclosure would have suggested that at least two of the end points of Appellants' claimed ranges (i.e., 40% HFC-134a and 60% HFC-125) and thus further narrowed Takigawa's range. Accordingly, we agree with the Examiner that given the guidance provided by Takigawa, determining acceptable refrigerant gas concentration ranges would have been a matter of routine experimentation.

We are unpersuaded by Appellants' argument that there is no rationale provided that Takigawa would have led one of ordinary skill the art to the claimed refrigerant composition. In light of the reasons noted above, the Examiner correctly determined that Takigawa would have suggested Appellants' claimed refrigerant composition.

Appellants further argue that Takigawa is directed to solving a different problem (i.e., finding a suitable lubricant) than Appellants' claimed invention such that there would be no reasonable expectation of successfully solving Appellants' problems (i.e., high temperature application refrigerant for replacing R-22 refrigerant) (App. Br. 11).

However, this argument is unpersuasive because the Examiner's reason for modifying the prior art to arrive at the claimed invention need not be the same as Appellants' reason for making the claimed invention. *KSR*, 550 U.S. at 420. Instead, any need or problem in the field of endeavor may provide the reason for modifying the prior art. *Id.* Accordingly, Takigawa's disclosure of solving a different problem than Appellants' problem is not determinative.

As noted by the Examiner (Ans. 3, 5-6), Takigawa would have suggested the claimed refrigerant composition, such that there is a reasonable expectation of successfully achieving the claimed refrigerant

composition, which would necessarily have the same properties as Appellants' claimed composition. *Papesch*, 315 F.2d at 391.

Appellants contend that the claimed composition possesses a superior high temperature property not possessed or taught by Takigawa (App. Br. 12-14).[2] Appellants rely on the Ponder and Gbur Declarations as evidence that refrigerant gas compositions with different gas proportions have different properties (App. Br. 12-14). Declarants Gbur and Ponder opine that the claimed invention would not have been obvious from Takigawa (App. Br. 13; Reply Br. 11).

Appellants' evidence of unexpected results is not persuasive because it fails to compare the claimed invention to the closest prior art (i.e., Takigawa) as noted by the Examiner (Ans. 7). Instead, the Ponder and Gbur Declarations compare the claimed invention to the refrigerant R421B (85% pentafluoroethane and 15% tetrafluoroethane), a refrigerant composition not disclosed by Takigawa. Though the declarations may establish that different combinations of refrigerant gases produce refrigerant compositions with different properties, the comparison of R421A to R421B fails to account for Takigawa's disclosure of a binary refrigerant composition having 40% or greater tetrafluoroethane content (i.e., HFC-134a) and preferably 40% or greater pentafluoroethane content (i.e., HFC-125).

While Declarants Ponder's and Gbur's views that the claimed invention would not have been obvious over Takigawa are not afforded any

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[2] Appellants argue long-felt need for the first time on pages 10-11 of the Reply Brief. Because this argument is being raised for the first time in the Reply Brief and there is no reason provided why this argument was not raised in the Appeal Brief, we shall not consider the argument. *Ex parte Nakashima*, 2010 WL 191183 *3-*5 (BPAI 2010).

consideration as they are directed to the ultimate legal conclusion, the underlying analyses that led to their conclusions in the declarations have been considered. *Lindell*, 385 F.2d at 456. Specifically, the Ponder Declaration merely states that the declarant found no teaching or suggestion in Takigawa to make a refrigerant composition consisting of tetrafluoroethane and pentafluoroethane as claimed (Ponder Dec. 8). The Gbur Declaration filed October 30, 2007 does not address Takigawa but rather discusses errors and analysis of Appellants' Specification data. The Gbur Declaration filed May 16, 2008, like the Ponder Declaration, rests its conclusion of non-obviousness on Takigawa's failure to exemplify a blend of only HFC-134a and HFC-125 (Gbur Dec. 2).

However, the Ponder and Gbur Declarations analyses are not persuasive in view of Takigawa's disclosures and our analysis of these disclosures *supra* which determine that Takigawa would have suggested the claimed refrigerant composition.

For the above reasons, we affirm the Examiner's § 103 rejection of claims 1-10, 21-25, 27, 29-31, 33-35, and 37-40 over Takigawa.

DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED

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