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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAY ARJOMAND

Appeal 2012-008435
Application 11/474,530
Technology Center 3700

Before NEAL E. ABRAMS, MICHAEL L. HOELTER,
and LEE L. STEPINA, *Administrative Patent Judges*.

STEPINA, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Ray Arjomand (Appellant) seeks our review under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 53–61. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART

THE CLAIMED SUBJECT MATTER

The claimed invention is directed to a refrigeration system. Claims 53 and 59 are illustrative of the claims on appeal and are reproduced below:

> 53. A combination of an opening between indoors and outdoors in a building having an inside and an outside and a refrigerator device, in which the refrigerator device has a cooling compartment, a door, an evaporator coil, an outdoor temperature-sensitive device, and a condenser coil wherein the condenser coil is outdoors and there is a gated conduit between the cooling compartment and the outdoors such that when the gate is closed the conduit is insulated and the air on one side of the gate is prevented from exchanging with the air on the other side of the gate and wherein the outdoor temperature-sensitive device opens the gate whenever the temperature inside the refrigerator cooling compartment gets above outdoor ambient temperature and above a predetermined temperature and the outdoor temperature-sensitive device closes the gate whenever the outdoor temperature gets warmer than the inside of the refrigerator cooling compartment.
>
> 59. A combination of an opening between indoors and outdoors in a building having an inside and an outside and a refrigerator having a cooling compartment, a door, an evaporator coil, a time-sensitive device, and a condenser coil wherein the condenser coil is outdoors, wherein the evaporator coil is adjacent to a reservoir and contains heat-conductive phase-change material inside the reservoir, and wherein the time-sensitive device controls the operation of the evaporator coil so that the evaporator coil produces a solidified phase change in the phase-changing material in the reservoir at night when ambient temperature outdoors is colder than during day and the solidified phase-change material will later be used to cool the cooling compartment during day when ambient outdoor temperature is warmer than during night.

REFERENCES RELIED ON BY THE EXAMINER

Wertheimer	US 2,984,086	May 16, 1961
Metcalfe	US 3,030,873	April 24, 1962
Shavit	US 3,979,922	Sept. 14, 1976
Kuwaki	US 4,448,346	May 15, 1984
Kanda	US 5,036,904	Aug. 6, 1991
Seon	US 5,577,822	Nov. 26, 1996
Maekawa	JP 03263576	Nov. 25, 1991

THE REJECTIONS ON APPEAL

Claims 53–55 are rejected under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, and Shavit.

Claim 56 is rejected under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Metcalfe.

Claim 57 is rejected under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Seon.

Claim 58 is rejected under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Kanda.

Claims 59–61 are rejected under 35 U.S.C. § 103(a) as obvious over Wertheimer, Kanda, and Kuwaki.

ANALYSIS

The rejection of claims 53–55 as obvious over Wertheimer, Maekawa, and Shavit.

(I)

Claim 53 recites, in part:

> a gated conduit between the cooling compartment and the outdoors such that when the gate is closed the conduit is insulated and the air on one side of the gate is prevented from exchanging with the air on the other side of the gate.

(II)

The Examiner rejects claim 53 as obvious over Wertheimer, Maekawa, and Shavit, and cites Maekawa for the gated conduit. Office Action dated July 15, 2011, (herein "Office Action") 3–4.

> Maekawa teaches a refrigerator that includes a discharge duct (19) and a damper (21), wherein when a temperature of the discharge air detected by a temperature sensor (23) is reduced to below a set temperature, the damper is modulated [see constitution]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device of Werteimer to include the duct and damper as taught by Maekawa in order to cool food items disposed inside the device using air exterior of the refrigerator without consuming electricity. Also, one of ordinary skill in the art would have been motivated to utilize **outdoor** air to cool the interior of the device since, depending on the climate, the outdoor air would normally be cooler than air **inside** of a building.

Office Action 4 (emphasis added).

(III)

Appellant traverses the Examiner's obviousness rejection, stating that the Examiner has not set forth the level of a person of ordinary skill in the art and therefore, "the third Graham factual inquiry has not been resolved and the APA has not been complied with." Appeal Br. 13–14. Appellant states "[w]ithout knowing the skill level of one of ordinary skill in the art, it is impossible to determine whether a given change would have been obvious to one of ordinary skill in the art." *Id.* at 14 (referring to the "Graham factors" enumerated in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966)).

Appellant further asserts "[t]he examiner relied upon his own inventiveness to use outside air instead of room air." Appeal Br. 14.

Appellant explains "[t]o prepare a permanent refrigerator/freezer/air conditioner wherein the refrigerator/freezer portion contained a third compartment for cooling hot food, one would not and could not permanently use outdoor air to cool the food on the basis of the outdoor air being cooler than the indoor air." *Id.* at 14–15. Appellant states "[a]lso, the air intake for the examiner's 'cool' air borders on the outdoor portion of the air conditioner and would be warmed by the exiting air." *Id.* at 15.

Appellant also points out discrepancies in the headings in the Examiner's Answer and asserts "[a]pparently, not one of [A]ppellant's arguments directed to independent claim 53 is alleged to have been addressed by the [E]xaminer." Reply Br. 8. Appellant further asserts that the Examiner has failed to address each material issue presented in Appellant's brief as required by 5 U.S.C. § 557(c). *Id*.

(IV)

Regarding whether the Examiner did not properly set forth the level of a person of ordinary skill in the art, although the Examiner did not articulate a specific finding regarding the level of skill in the art, Appellant has not made any specific proposal regarding what the level of ordinary skill in the art is or argued that the proposed modification was beyond the level of skill in the art. We consider the applied prior art to be reflective of the level of skill in the art. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) ("The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art." (*citing Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). *See also Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("[T]he absence of specific findings on the level of skill in the art does not give rise to

reversible error where the prior art itself reflects an appropriate level and a need for testimony is not shown." Emphasis omitted. Against this background, the Examiner determined the obviousness of claim 53. Accordingly, we see no error in the Examiner's application of the factual inquires set forth in *Graham* in the rejection of claim 53. Although Appellant repeats this argument regarding an absence of a determination of the level of skill in the art for other claims on appeal, we are not persuaded of Examiner error on this issue with respect to any of the remaining claims, for the same reasons.

Regarding Appellant's assertion that the Examiner relied on his own inventiveness in rejecting claim 53, we are not persuaded the Examiner did so. As noted above, the Examiner states that a person of ordinary skill in the art would have been motivated to use outdoor air rather than indoor air because "depending on the climate, outdoor air would normally be cooler than air inside of a building" and it would save electricity. Office Action 4 (*See also* Ans. 6). It may be true that, as Appellant asserts, "one would not and could not permanently use outdoor air to cool the food on the basis of the outdoor air being cooler than the indoor air." Appeal Br. 15. However, claim 53 does not require that one **permanently** use outdoor air for cooling. The Examiner's rationale for using outdoor air to cool (that outdoor air may be cooler than indoor air) is reasonable. Accordingly, we agree with the Examiner on this issue.

Regarding Appellant's assertion that, in the Examiner's proposed combination of references, the location of the air intake relative to the outdoor (heated) portion of the air conditioner would heat incoming air, we are not persuaded of Examiner error on this point. "The test for obviousness

is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (citation omitted). *See also In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (citation omitted) ("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."); and *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) ("Combining the *teachings* of references does not involve an ability to combine their specific structures."). Rather, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (citation omitted). In the present case, Appellant has not shown that the Examiner's proposed combination is constrained to place the cold air intake near the warm part of an air conditioner, nor that if these components were in close proximity, the air entering the intake would be too warm to use. Accordingly, we are not persuaded of Examiner error on this point.

Regarding Appellant's statement on page 8 of the Reply Brief, "[a]pparently, not one of appellant's arguments directed to independent claim 53 is alleged to have been addressed by the examiner," the Examiner has made a prima facie case of obviousness against claim 53, and Appellant has not demonstrated Examiner error in this regard. The fact that the Examiner has not specifically identified claim 53 (which appears to have been caused merely by an error in headings) in the Response to Arguments

section does not negate the rejections of independent claim 53 and dependent claim 55 on the merits.[1] Additionally, the context of the discussion in the Response to Arguments section makes clear that the Examiner addressed Appellant's arguments for claim 53.

We have considered all of Appellant's arguments for claims 53 and 55, but we do not agree with Appellant's position that the decision of the Examiner is in error. Accordingly, we affirm the Examiner's rejection of claims 53 and 55.

Claim 54

With respect to claim 54, Appellant reiterates that the Examiner has failed to address all the Graham factors. For the reasons discussed above in the rejection of claim 53, we do not agree with Appellant on this issue.

Appellant also asserts that, rather than include an outdoor temperature-sensitive device as required by claim 54, the Examiner's proposed combination of Wertheimer and Maekawa would include a temperature-sensitive device that senses only indoor temperature. Appeal Br. 15. Appellant further argues that the Examiner's reliance on Shavit to remedy this deficiency is improper because, before beginning examination on the merits, the Examiner issued an Election of Species Requirement dividing the Application into three species, and one of the non-elected species relates to air conditioners, as does Shavit.[2] Appellant states:

> By maintaining the requirement the examiner confirmed that window refrigerators are considered to be patentable over window refrigerators associated with freezers and air conditioners. This being the case, it is quite clear that window

[1] A similar clerical error occurred for claim 54.

[2] The Election of Species Requirement issued on January 26, 2009, listed three separate species represented by figures 1, 4, and 9.

> refrigerators are patentable over central air conditioners. It is appellant's position that the use of a reference drawn to a central air conditioning system is improper and contrary to the examiner's position that window refrigerators are patentable over window refrigerators associated with freezers and air conditioners.

Appeal Br. 17.

We do not agree with Appellant's position on this point. The Election of Species Requirement was issued based on the content of the Application, and any preclusive effect of the Election of Species Requirement with respect to rejections of the elected claims extends only to divisional applications directed to the non-elected species, not to other references. *See* 35 U.S.C. § 121.

Appellant further argues that "none of the cited references shows . . . a gated conduit between the freezer compartment and the outdoors such that when the gate is closed the conduit is insulated and the air on one side of the gate is prevented from exchanging with the air on the other side of the gate." Appeal Br. 17–18. Appellant argues there is nothing in Maekawa to suggest modifying a freezer compartment, and "[i]t is not seen how a feature in a central air conditioning system [as shown in Shavit] which transfers heat from a room to the outdoors can serve as a valid teaching of a freezer system which transfers heat from a freezer to the outdoors." *Id*. at 18.

The Examiner's response is that Maekawa is cited "for the teaching of a refrigerator that includes a suction duct 18 that is disposed between a refrigerator chamber 13 and an exterior of the refrigerator, wherein air outside of the refrigerator is used to cool food items in chamber 13 via operation of a fan 22 and a damper 20 based on a detected temperature from temperature sensor 23." Ans. 13. The Examiner further states, "Shavit was

further introduced for the teaching of closing a damper to prevent flow of outdoor air through a duct into an enclosed space when the outdoor air temperature exceeds a preset temperature as disclosed in column 3, lines 23[–]26." *Id*.

We are not persuaded of Examiner error in the rejection of claim 54. The Examiner cited references for all the features of claim 54, and Appellant has not shown that the Examiner's rationale for combining these features, found in the discussion of claim 53, is improper. The Examiner does not rely on Maekawa for a freezer compartment per se, but rather modifies a freezer compartment from Wertheimer in light of a technique used in Maekawa to reduce electricity consumption in refrigerators (or as said by the Examiner, "to cool food items…without consuming electricity"). Ans. 6. As discussed above with respect to claim 53, the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art, and Appellant has not shown the Examiner's reliance on the cited references or the Examiner's rationale in combining the features of Wertheimer and Maekawa is incorrect. With respect to further modifying the asserted combination of Wertheimer and Maekawa with the damper and outdoor air duct connection from Shavit, we agree with the Examiner's rationale, set forth in the rejection of claim 53.

The rejection of claim 56 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Metcalfe.

Appellant does not make specific arguments on the merits for any recited feature of this claim and instead states, "Appellant relies on the doctrine set forth in Section 2143.03 of the M.P.E.P., and the decision of *In re Fine*, *supra* to establish the patentability of claim 56." Appeal Br. 18.

MPEP § 2143.03 cites *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988) and states "[i]f an independent claim is non-obvious under 25 U.S.C. 103, then any claim depending therefrom is nonobvious." Accordingly, we understand Appellant's argument for claim 56 to be that claim 56 stands or falls together with claim 53, from which claim 56 depends via intervening claim 55.[3]

Appellant asserts, in the Reply Brief, that the Examiner's Answer does not address Appellant's arguments for claim 56 and therefore the Examiner has not complied with Section 557 of the Administrative Procedures Act. Reply Br. 8. However, the Examiner has addressed claim 53, and as noted above, claim 56 stands or falls with claim 53. Thus, the Examiner addressed any argument made for claim 56 when the Examiner addressed the arguments for claim 53.

The rejection of claim 57 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Seon.

Claim 57 recites:

> The combination of claim 53, wherein the cooling compartment has a removable insulating barrier which divides the compartment into a portion which is cooled and a portion which is not cooled, thereby **decreasing the volume which is cooled** during warmer summer season and saving electricity.

Claims Appendix 26–27 (emphasis added).

The Examiner cites intermediate partition wall (30) of Seon for the removable shelf. Office Action 6.

Appellant asserts that Seon fails to remedy the deficiencies in Wertheimer, Maekawa, and Shavit because a change in position of the intermediate partition wall in Seon does not change the volume which is

[3] Appellant argues claim 53 and 55 together, beginning on page 11 of the Appeal Brief.

cooled, in contrast to the requirement in claim 57. Figures 3 and 6 of Seon are reproduced below.

FIG. 3

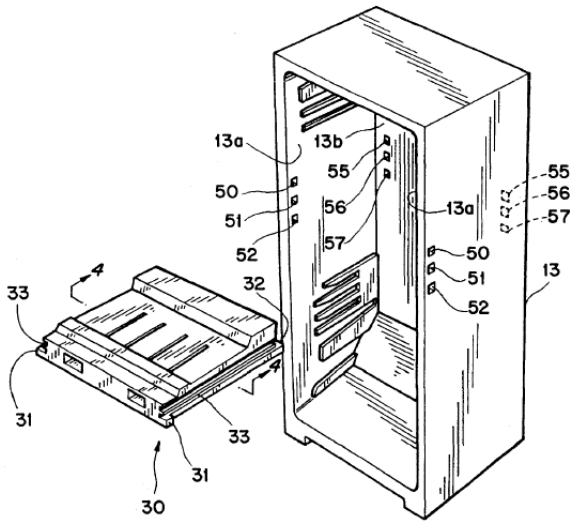

FIG. 6

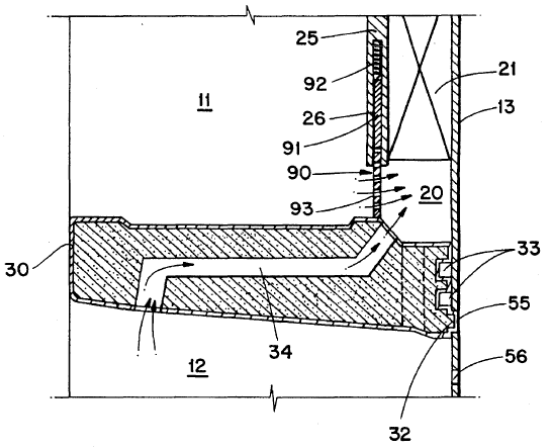

Figure 3 of Seon is a perspective view of a refrigerator showing the intermediate partition wall 30 in an uninstalled state. Figure 6 is a cross-section showing the intermediate partition wall 30 installed in a refrigerator.

As is clear from figure 6 above, a passage 34 connects the cooling chamber 12 to the freezing chamber 11 via the cooling apparatus compartment 20. Accordingly, both compartments 11 and 12 are cooled, regardless of the position of the intermediate partition wall 30. An alternative embodiment disclosed in Seon provides the same result. The Examiner has not identified an embodiment in Seon that decreases the volume to be cooled as recited in claim 57. Rather, the entire interior of the refrigerator is cooled at all times.

The Examiner asserts that although both compartments in Seon are cooled, they are cooled at different temperatures, and a person of ordinary skill in the art would "have arrived at the claimed invention of dividing a

refrigerator compartment into a portion that is cooled and a portion that is not cooled." Ans. 15. However, the Examiner has not provided any rationale for this conclusion. Accordingly, for the reasons expressed above, we agree with Appellant that Seon fails to remedy the deficiencies present in the combined teachings of Wertheimer, Maekawa, and Shavit with respect to claim 57. Therefore, we reverse the Examiner's rejection of claim 57.

The rejection of claim 58 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Kanda.

Claim 58 recites:

> The combination of claim 53 wherein the evaporator coil is adjacent to a reservoir and there is a heat-conductive phase-change material inside the reservoir, whereby the evaporator coil produces a solidified phase change in the phase-changing material in the reservoir at night when an ambient temperature outdoors is colder than during day and the solidified phase-change material will later be used to cool the cooling compartment during day when an ambient outdoor temperature is warmer than during night.

Claims Appendix 27.

The Examiner asserts:

> it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the unit of Werteimer as modified by Maekawa and Shavit to include the latent heat storage system as taught by Kanda in order to utilize inexpensive night time cooling, thus reducing energy costs.

Ans. 9.

Appellant asserts "[t]here is no indication in the reference that the latent heat system is actually inside a refrigerator." Appeal Br. 21. Appellant further asserts "Kanda uses a container having antifreeze. Appellant does not." *Id*.

The Examiner asserts that claim 58 does not recite that the latent heat system itself is inside a refrigerator." We agree with the Examiner on this issue. Regarding the Appellant's assertion that Kanda uses a container having antifreeze, and Appellant does not, this argument is not commensurate in scope with the claimed subject matter. Accordingly, we sustain the rejection of claim 58.

The rejection of claims 59–61 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Kanda, and Kuwaki.

Claim 59

Claim 59 recites:

> A combination of an opening between indoors and outdoors in a building having an inside and an outside and a refrigerator having a cooling compartment, a door, an evaporator coil, a time-sensitive device, and a condenser coil wherein the condenser coil is outdoors, wherein the evaporator coil is adjacent to a reservoir and contains heat-conductive phase-change material inside the reservoir, and wherein the time-sensitive device controls the operation of the evaporator coil so that the evaporator coil produces a solidified phase change in the phase-changing material in the reservoir at night when ambient temperature outdoors is colder than during day and the solidified phase-change material will later be used to cool the cooling compartment during day when ambient outdoor temperature is warmer than during night.

The Examiner cites Kanda for the reservoir and cites Kuwaki for the time-sensitive device. Office Action 8.

Appellant notes a discrepancy in the citation of references applied to claim 59 by the Examiner inasmuch as the Office Action includes one reference to "Lukas," (Office Action 8) and this reference was not listed in the heading for the rejection of claim 59. Appeal Br. 24. However, Appellant has not asserted this discrepancy renders the rejection of claim 59

too vague for a response, and we address the substantive arguments for claim 59 below.

> Appellant asserts:
>
> Note that the reservoir of the claim is **inside** the refrigerator. The reservoir of the prior art is outside the refrigerator. The phase-change material in the claim is cooled by ambient air. The phase-change material of the prior art is cooled by the refrigerator. Thus, the prior art does not teach the subject matter of the claim.

Appeal Br. 24 (emphasis added).

> Appellant further asserts, regarding claim interpretation,
>
> The claims require that the refrigerator has a cooling compartment and an evaporator coil. Figure 8 (discussed on page 14 of the specification) corresponds to the device of claims 58 and 59. Figure 8 shows an evaporator (56) **inside** the refrigerator cooling compartment. It is appellant's position that the claim language would be understood to mean that the refrigerator cooling compartment has the evaporator coil within it. Additionally, where a claim sets forth an element which is not it the usual location, the location is clearly set forth."

Reply Br. 4 (emphasis added).

Regarding Appellant's arguments as to the location of the reservoir inside the refrigerator and the phase-change material being cooled by ambient air, the Examiner replies:

> **First, claim 59 does not explicitly state that the reservoir nor the evaporator is disposed inside of the refrigerator**. The claim merely states that the refrigerator has an evaporator coil, a reservoir, etc. As stated in column 1, lines 6[–]15 of Kanda, the latent heat storage tank is cooled by the refrigerator. **Second, the claim does not state that the phase change material is cooled by the ambient air**. The claim states that the phase change material inside the reservoir is cooled by the evaporator at night.

Ans. 17–18 (emphasis added).

We agree with the Examiner's statement. Care must be taken not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (citation omitted) ("Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment."). We decline to import the limitations of figure 8 and page 14 of the Specification into claim 59 as is suggested by Appellant, and we agree with the Examiner that the subject matter recited in claim 59 would have been obvious over the cited references, at the time the claimed invention was made. Accordingly, we sustain the rejection of claim 59.

Claim 60

Claim 60 recites "[t]he combination of claim 59 in which the reservoir is adjacent to a heat-conducting grate for air passage."

The Examiner asserts:

> Regarding claim 60, Werteimer as modified by Kanda teach all of the limitations of the claimed invention, and Kanda further teaches that the containers would be disposed adjacent to a heat -conducting grate [for] air passage [see column 1, lines 7[–]14: there would be some type of passageway for cooling via the containers].

Ans. 10-11.

Appellant asserts "[c]ontrary to the examiner's positive statement, the prior art fails to teach a grate as is required by the claims and it is seen that

the examiner has failed to resolve the first and second Graham factual inquiries." Appeal Br. 25.

The section of Kanda cited by the Examiner states:

> The present invention relates to a latent heat storage tank of a latent heat system wherein a refrigerator is operated using inexpensive night time electric power whereby heat is stored as latent heat in the state of ice or icy liquid by refrigerating the water or liquid enclosed in latent heat containers surrounded with an antifreeze solution cooled by said refrigerator and then using the latent heat for air-conditioning during the day when said ice or icy liquid melts.

Kanda, col. 1, ll. 6–15.

We agree with Appellant on this issue, in that nothing in the cited section of Kanda correlates to a heat-conducting grate as recited in claim 60. Accordingly, we reverse the rejection of claim 60 and of claim 61 depending therefrom.

DECISION

Although we have carefully considered all of Appellant's arguments, including various assertions of non-compliance with the APA and failure to determine the Graham factors, etc., both in the Reply Brief and in the Appeal Brief, we are not persuaded that the positions taken by the Examiner with respect to the obviousness of claims 53–56, 58, and 59 are in error. This being the case:

The rejection of claims 53–55 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, and Shavit is affirmed;

The rejection of claim 56 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Metcalfe is affirmed;

The rejection of claim Claim 57 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Seon is reversed;

The rejection of claim Claim 58 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Maekawa, Shavit, and Kanda is affirmed;

The rejection of claim 59 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Kanda, and Kuwaki is affirmed; and

The rejection of claims 60 and 61 under 35 U.S.C. § 103(a) as obvious over Wertheimer, Kanda, and Kuwaki is reversed.

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

AFFIRMED-IN-PART

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