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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID MARTIN WINTEMUTE

Appeal 2014-009059
Application 12/870,545
Technology Center 3700

Before LYNNE H. BROWNE, LISA M. GUIJT, and
JEFFREY A. STEPHENS, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

David Martin Wintemute (Appellant) appeals under 35 U.S.C. § 134 from the Final Rejection of claims 1–3, 5–9, 11, 12, 22, 26, 27, 29, 30, 32, 35, 36, 38, 40, 45–54, and 68–70. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

CLAIMED SUBJECT MATTER

Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A heat pump system for conditioning air supplied to a space, the system comprising:
>
> a pre-processing module that receives and removes at least one of heat or moisture from the air when the system is operating in a summer mode, the pre-processing module receiving and adding at least one of heat or moisture to the air when the system is operating in a winter mode;
>
> a supply air heat exchanger in flow communication with the pre-processing module, the supply air heat exchanger receives the air from the pre-processing module and removes at least one of heat or moisture from the air in the summer mode, the supply air heat exchanger heating the air from the pre-processing module in the winter mode; and
>
> a processing module in flow communication with the supply air heat exchanger, the processing module receives and at least one of dehumidifies or conditions the air from the supply air heat exchanger in the summer mode, the processing module receiving and at least one of humidifying or conditioning the air from the supply air heat exchanger in the winter mode.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Harband	US 4,474,021	Oct. 2, 1984
Fischer	US 6,199,388 B1	Mar. 13, 2001
Meckler	US 2010/0242507 A1	Sept. 30, 2010
Teige	US 2010/0307175 A1	Dec. 9, 2010

REJECTIONS

I. Claim 1 stands rejected under 35 U.S.C. § 102(e) as being anticipated Teige.

II. Claims 2, 3, 5–9, 11, 12, and 70 stand rejected 35 U.S.C. § 103(a) as unpatentable over Teige and Meckler.

III. Claims 22 and 26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Teige, Meckler, and Fischer.

IV. Claim 27 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Teige and Harband.

V. Claims 29, 30, 32, 35, 36, 38, 40, 45–54, 68, and 69 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Meckler and Teige.

DISCUSSION

Rejection I

The Examiner finds that Teige discloses each and every limitation of claim 1. Final Act. 2–3. In particular, the Examiner finds that Teige discloses

> a supply air heat exchanger (20) (i.e. evaporator coil) in flow communication with the pre-processing module (13), the supply air heat exchanger receives air from the preprocessing module and removes at least one of heat or moisture from the air in the summer mode [0018], the supply air heat exchanger heating the air from the preprocessing module in the winter mode [0019].

Id.

Appellant contends that "Teige fails to expressly or inherently describe or teach a supply air heat exchanger that heats air from a pre-processing module in a winter mode." Appeal Br. 9. The Examiner

identifies Teige's energy recovery wheel (incorrectly identified as section 13)[1] as corresponding to the claimed pre-processing module. Final Act. 2.

Teige describes its energy recovery device 16 stating, "[a]s seen in FIG. 7, fresh, outdoor, ambient supply air **12** is first passed through a section **13** of an energy recovery device **16**. The air is cooled and dehumidified as it passes through the energy recovery device **16**." Teige ¶ 42. Teige further states that "[t]he cooled and dehumidified supply air stream is then passed through the cooling or evaporator coil **20** of a conventional DX refrigerant unit **22**." *Id.* ¶ 43. Thus, energy recovery device 16, including section 13, cools and dehumidifies the air stream before it reaches the evaporator coil 20. Accordingly, Teige's energy recovery device 16 meets the claim limitation requiring a pre-processing module. Further, as Teige's evaporator coil 20 is in flow communication with Teige's energy recovery device 16, Teige also meets the limitation requiring "a supply air heat exchanger in flow communication with the pre-processing module." Appeal Br. 23.

Appellant further argues that "[t]here is nothing in Teige that expressly or inherently describes a supply heat exchanger that removes heat or moisture from air in a summer mode and the same supply heat exchanger heating air from a preprocessing module in a winter mode" and that "Teige does not expressly or inherently describe a single supply heat exchanger being switched from summer to winter mode in such a manner." Appeal Br. 9 (emphasis omitted).

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[1] As reference numeral 13 refers to a section of Teige's energy recovery device 16, which can be embodied as an enthalpy wheel, we hold that the Examiner's identification of reference numeral 13, instead of reference numeral 16, is harmless error.

Responding to these arguments, the Examiner notes "that claim 1 is an apparatus claim (A heat pump system) [in] which, 'the supply air heat exchanger heating the air from the preprocessing module in the winter mode' is a process step which does not result in any positively recited structure." Ans. 3 (emphasis omitted). The Examiner also finds that "[i]t is also well-known in the art of air conditioning for an evaporator to heat the supply air in a winter mode and the same evaporator cools air in a summer mode." *Id.* at 2. Based on this finding, the Examiner determines that "since the system of Teige is capable of performing each functional limitation or intended use, it meets the limitations of the claim." *Id.* at 3.

The Examiner is correct. The limitation "the supply air heat exchanger receives the air from the pre-processing module and removes at least one of heat or moisture from the air in the summer mode, the supply air heat exchanger heating the air from the pre-processing module in the winter mode" of claim 1 is a statement of the intended use of the supply air heat exchanger. Appeal Br. 23. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *See, e.g.*, *In re Schreiber*, 128 F.3d 1473, 1477–78 (Fed. Cir. 1997). Appellant does not contest the Examiner's finding or explain why Teige's evaporator coil 20 is not capable of performing the functions claimed (i.e., of being used in the manner claimed). In addition, the Examiner's finding that one of ordinary skill in the art would understand Teige's system to be used in a summer and winter mode is supported by paragraphs 18–20 of Teige. *See* Ans. 2. Accordingly, Appellant does not apprise us of error.

Appellant further argues that "there is nothing in [0019] or any other portion of Teige that expressly or inherently describes or teaches that the 'evaporator coil 20,' the 'desiccant wheel 24' or the 'optional cooling coil

28' are used to heat outdoor or supply air." Appeal Br. 10–11; *see also* Reply Br. 2.

As discussed *supra*, the Examiner correctly identifies the limitation at issue as an intended use limitation and reasonably finds that Teige's evaporator coil 20 would be capable of performing the claimed function, because it is "well-known in the art of air conditioning for an evaporator to heat the supply air in a winter mode and the same evaporator cools air in a summer mode." Ans. 2. Appellant has not provided sufficient evidence or arguments to establish that this finding is in error.

For these reasons, we sustain the Examiner's decision rejecting claim 1.

Rejection II

Claims 2, 3, 5, 6, 8, 9, 12, and 70

Appellant does not present separate arguments for the patentability of claims 2, 3, 5, 6, 8, 9, 12, and 70. *See* Appeal Br. 13. Instead, Appellant "respectfully traverses these rejections for at least the reasons set forth above with respect to Teige." *Id.* As Appellant's arguments with respect to Teige are unconvincing for the reasons discussed *supra*, we sustain the Examiner's decision rejecting claims 2, 3, 5, 6, 8, 9, 12, and 70.

Claim 7

The Examiner finds that "Teige discloses the pre-processing module conditions the air and the supply air heat exchanger lowers a relative humidity of the air received from the preprocessing module when the system is operating in the winter mode [0018]." Final Act. 4.

Noting that "Teige specifically discloses that the evaporator coil, during a 'cooling' mode (not a winter mode), 'reduces [air] temperature and humidity.' See Teige at [0043]," Appellant argues that "Teige does not

describe, teach, or suggest that *the evaporator coil* 20 lowers a relative humidity of air during a winter mode of operation." Appeal Br. 14 (emphasis omitted and added).

Responding to this argument, the Examiner directs our attention to Teige's paragraphs 16 and 18. *See* Ans. 6. Paragraph 16 states:

> It is an object of the present invention to treat outdoor or fresh, ambient supply air and dehumidify and cool that air from the outdoor ambient condition to the desired space air condition. ASHRAE has defined the comfort conditions for a building to be between 73° F. and 78° F. temperature and about 50% relative humidity or 55 gr/lb of air to 71 gr/lb of air. In particular the present invention is particularly suited to treat hot and humid air in the southeastern United States and other hot and humid climates around the world with ambient air conditions ranging from 60° F. to 105° F. or more and a moisture content of 70 to 180 gr/lb and deliver the treated air to the space temperature, and at or below the space humidity, generally in the range of about 70° F. to 85° F. and a moisture level of about 45 to about 71 gr/lb. Ranges somewhat lower and higher than those proposed by ASHRAE can also be achieved by this invention when design space conditions vary from stated ASHRAE conditions.

Teige ¶ 16. Paragraph 18 states, "[y]et another object of the present invention is to provide a system that can provide varying capacity of dehumidification and cooling to react to and overcome varying cooling and dehumidification loads of the fresh or outdoor supply air and/or the building itself." *Id.* ¶ 18. Neither of these paragraphs describe operation of the evaporator coil. Teige describes a system that cools and dehumidifies or heats and humidifies. *See* Teige ¶¶ 18 and 19. Because the Examiner relies on Teige's express teachings of dehumidifying during cooling, rather than on any inherent teaching of decreasing the relative humidity by raising temperature, Appellant's argument is persuasive.

We do not sustain the Examiner's decision rejecting claim 7.

Claim 11

Claim 11 requires that the "supply air heat exchanger operates as an evaporator coil in the summer mode and as a condenser coil in a winter mode." Appeal Br. 24. The Examiner finds that "Meckler teaches the supply air heat exchanger operates as an evaporator coil in the summer mode and as a condenser coil in a winter mode [0017]." Final Act. 5.

Noting that Meckler describes "reversing valves for converting the system from a cooling mode to a heating mode in which humidification is provided by operation of the desiccant wheel to transfer moisture," Appellant argues that "the Office Action has not pointed to anything in Teige or Meckler that expressly or necessarily describes, teaches, or suggests that the 'evaporator coil 20' of Teige 'operates as an evaporator coil in the summer mode and a condenser coil in a winter mode.'" Appeal Br. 15.

Responding to this argument, the Examiner states that:

> Meckler's reference was brought just to support Teige's reference that this feature is well-known in the art of air conditioning for an evaporator functions as a condenser in winter mode and a condenser functions as an evaporator in a summer mode (Meckler [0114] and [0120]). Teige's Heat exchanger 16 would provide dehumidification, and there is no need to provide additional dehumidification unit from the secondary reference Meckler.

Ans. 7.

Appellant does not explain why Teige is not capable of operating as an evaporator coil in a summer mode and as a condenser coil in a winter mode. Thus, for the reasons discussed at length *supra*, Appellant does not apprise us of error.

We sustain the Examiner's decision rejecting claim 11.

Rejection III

Appellant does not present separate arguments for the patentability of claims 22 and 26. *See* Appeal Br. 16. Instead, Appellant "respectfully requests reconsideration of this rejection for at least the reasons set forth above with respect to claim 1." *Id.* As Appellant's arguments with respect to claim 1 are unconvincing for the reasons discussed *supra*, we sustain the Examiner's decision rejecting claims 22 and 26.

Rejection IV

The Examiner finds that Teige discloses all of the limitations of claim 27 except for

> at least one damper configured to change the flow of return air from the space between the summer mode and the winter mode, wherein the at least one damper is one of opened or closed during the summer mode so that return air passes through the processing module after passing through a return air heat exchanger, and wherein the at least one damper is the other of opened or closed during the winter mode so that the return air passes through the processing module before passing through the return air heat exchanger.

Final Act. 7–8. The Examiner further finds that:

> Harband teaches at least one damper (17, 18, 19, 20) configured to change the flow of air via inlet dampers 17 and 20 and outlet dampers 18 and 19 a selectably controlled circulation, wherein the at least one damper (18, 20) is one of opened or closed so that air passes through the processing module (6) after passing through a heat exchanger (3), and wherein the at least one damper (17, 19) is the other of opened or closed so that the air passes through the processing module before passing through the heat exchanger (3).

Id. at 8. Based on these findings, the Examiner determines that it would have been obvious "to incorporate the dampers of Harband to change the flow of return air from the space between the summer mode and the winter

mode in the space provided by Teige in order to control the flow of air heating or cooling system and to improve efficiency." *Id.*

Appellant repeats the argument that "there is nothing in [0019] or any other portion of Teige that expressly or necessarily describes, teaches, or suggests that the 'evaporator coil 20' operates as a condenser coil in a winter mode." Appeal Br. 17. Appellant's argument is unconvincing for the reasons discussed *supra*.

Noting that "in Harband, the dampers 17-20 determine the direction of outside air past the desiccant 6 and the coil 3, but not return air," Appellant argues that "Harband does not describe, teach, or suggest, however, 'at least one damper configured to change the flow of return air. . . . '" Appeal Br. 19–20 (emphases omitted).

Responding to this argument, that Examiner explains that "it is the Examiner's position that the dampers taught by Harband is capable of performing the intended use functions as recited in the claim." Ans. 9 (emphasis omitted). The Examiner reiterates that:

> a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Ans. 10. Appellant does not explain why Harband's damper is not capable of performing the functions claimed. In addition, the Examiner articulates reasons why one of ordinary skill in the art would have used Harband's dampers in the manner claimed (Final Act. 8), and Appellant does not persuasively challenge these findings. Thus, Appellant does not apprise us of error.

We sustain the Examiner's decision rejecting claim 27.

Rejection V

Claims 29, 30, 32, 35, 36, 38, 40, 46–54, 68, and 69

Appellant does not provide separate arguments for the patentability of claims 29, 30, 32, 35, 36, 38, 40, 46–54, 68, and 69. *See* Appeal Br. 20–21. Rather, Appellant argues that "[t]he Office Action has not established (indeed, does not attempt to establish) that claim 27, from which claims 28, 30, 32, 35, 36, 38, 40, 45-54, 68, and 69, is rendered unpatentable by Meckler or Teige, alone or in combination with one another." *Id.* at 20. As we find no error in the rejection of claim 27, as discussed *supra*, Appellant's argument is unconvincing.

We sustain the Examiner's decision rejecting claims 29, 30, 32, 35, 36, 38, 40, 46–54, 68, and 69.

Claim 45

Claim 45 is similar to claim 7 in that it requires a "supply air heat exchanger discharges air having a lowered relative humidity to the processing module in the winter mode." Appeal Br. 26. As discussed *supra*, the Examiner's finding that Teige meets this limitation is in error.

We do not sustain the Examiner's decision rejection claim 45.

DECISION

The Examiner's rejections of claims 1–3, 5, 6, 8, 9, 11, 12, 22, 26, 27, 29, 30, 32, 35, 36, 38, 40, 46–54, and 68–70 are AFFIRMED.

The Examiner's rejections of claims 7 and 45 are 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART