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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YUHUI KUANG, ROBERT HONG-LEUNG CHIANG,
MICHEL GRABON, and LIJIA JESSICA ZHAO

Appeal 2017-011777
Application 14/358,105
Technology Center 3700

Before NINA L. MEDLOCK, SCOTT C. MOORE, and AMEE A. SHAH,
Administrative Patent Judges.

SHAH, *Administrative Patent Judge.*

DECISION ON APPEAL¹

The Appellants² appeal under 35 U.S.C. § 134(a) from the Examiner’s final decision rejecting claims 1–14. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ Throughout this Decision, we refer to the Appellants’ Appeal Brief (“Br.,” filed Apr. 3, 2017) and Specification (“Spec.,” filed May 14, 2014), and to the Examiner’s Answer (“Ans.,” mailed July 27, 2017) and Final Office Action (“Final Act.,” mailed Nov. 4, 2016).

² According to the Appellants, the real party in interest is “CARRIER CORPORATION.” Br. 1.

STATEMENT OF THE CASE

The Appellants' invention "relates to the technical field of air conditioner, and in particular to an air conditioner terminal device, an air conditioning apparatus having the air conditioner terminal device and a data center having the air conditioning apparatus." Spec. ¶ 1.

Claim 1 (Br. 8 (Claims App.)) is the only independent claim on appeal, is representative of the subject matter on appeal, and is reproduced below:

1. An air conditioner terminal device comprising:
 - a heat exchanger,
 - a variable-speed fan,
 - an air passage communicating from an air suction port to an air discharge port,
 - and a refrigerant flowing through the heat exchanger,
 - wherein the heat exchanger and the fan are installed in the air passage,
 - the fan forces air within the air passage to flow towards the air discharge port from the air suction port,
 - the refrigerant comes into heat contact with air within the air passage via the heat exchanger,
 - the heat exchanger has an input joint and an output joint,
 - the refrigerant flows in via the input joint and flows out from the output joint,
 - and the refrigerant inside the input joint is liquid-phase fluid,
 - whereas the refrigerant inside the output joint is gas-liquid two-phase fluid or gas-phase fluid.

REJECTIONS

Claims 1–3, 5–7, 13, and 14 stand rejected under pre-AIA 35 U.S.C. § 102(b) as being anticipated by Tashiro (US 2010/0064714 A1, pub. Mar. 18, 2010).

Claim 4 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Tashiro in view of Sato et al. (US 2008/0232064 A1, pub. Sept. 25, 2008) (“Sato”).

Claims 8–12 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Tashiro in view of Marsala (US 2005/0005623 A1, pub. Jan. 13, 2005).

ANALYSIS

We agree with the Appellants’ contention that the Examiner’s rejection under 35 U.S.C. § 102 of the independent claim is in error because the Examiner has not adequately shown that Tashiro discloses the refrigerant as recited in claim 1. *See* Appeal Br. 3–5.

The Examiner finds, in relevant part, that Tashiro discloses a refrigerant of water or chlorofluorocarbon flowing through the heat exchanger. *See* Ans. 2–3; Final Act. 2–3. The Examiner further finds that “Tashiro is fully capable to have a refrigerant that changes the phase for cooling.” Final Act. 3. In particular, the Examiner “note[s] that the water as a refrigerant used in Tashiro naturally evaporates under exposure of heat, even if the temperature is below the boiling temperature of 100 degrees C.” Ans. 3. The Examiner also notes that “paragraphs 0064-0065 of Tashiro does not exclusively disclose the phase of the fluid, therefore any phase of

the fluid/coolant/refrigerant is capable to be flown through input 64, dry coil 55 and return pipe 65.” *Id.*

We do not agree with the Examiner’s position that “the ‘refrigerant’ as recited does not impose a structural limitation to the claimed the air conditioner device, since the refrigerant is a matter of choice to be used in the structure of the air conditioner device claimed.” Ans. 2–3. Rather, we construe the refrigerant to comprise a structural element of the device claimed and the phrases “the refrigeration inside the input joint is a liquid phase fluid” and “whereas the refrigerant inside the output joint is gas-liquid two-phase fluid or gas-phase fluid,” as recited in claim 1, to contain a functional limitation that the apparatus must be capable of performing.

Tashiro discloses a data center including an air-conditioned room 13 and an air conditioner 51. Tashiro ¶ 48. Air conditioner 51 comprises fan 54, dry coil 55, and heat capture coil 57. *See id.* ¶¶ 58, 62, Fig. 5. Room 13 comprises, in relevant part, coolant supply pipe 64 and coolant return pipe 65 connected to dry coil 55. *Id.* ¶ 63. “The coolant is, e.g., water.” *Id.*

As such, Tashiro discloses a refrigerant flowing through the heat exchanger, the refrigerant being liquid-phase inside the input joint. However, as the Examiner finds (*see* Ans. 3), Tashiro is silent as to the phase of the refrigerant at the output from return pipe 65. Although we appreciate that water “naturally evaporates under exposure of heat” (Ans. 3), the Examiner does not adequately show how Tashiro discloses that its coolant, which may be water or chlorofluorocarbon (*id.* (citing Tashiro ¶ 8)), is gas-liquid or gas at the output. In other words, it is not clear whether Tashiro’s coolant remains liquid at the output or is gas-liquid or gas.

And, it is not apparent, and the Examiner has not made sufficient evidentiary findings nor set forth adequate technical reasoning to explain, how the apparatus of Tashiro would be capable, without modification, of having the refrigerant at the output be gas-liquid or gas. Thus, the Examiner has not established a reasonable basis that Tashiro is capable of performing the claimed function of changing the phase of the refrigerant between the input joint and output joint. *See In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997) (holding that once the USPTO establishes a reasonable basis that the prior art is capable of performing the claimed function, the burden shifts to the applicant to show that the prior art structure is not capable of performing the claimed function).

Accordingly, based on the record before us – because an anticipation rejection requires a finding in a single reference of each and every limitation as set forth in the claims – we do not sustain the rejection of independent claim 1, and dependent claims 2, 3, 5–7, 13, and 14, under 35 U.S.C. § 102(b) as anticipated by Tashiro.

We also do not sustain the rejections under 35 U.S.C. § 103(a) of dependent claims 4 and 8–12, which rely on the same finding regarding Tashiro. *See* Final Act. 5–6.

DECISION

The Examiner's rejection of claims 1–3, 5–7, 13, and 14 under 35 U.S.C. § 102(b) is REVERSED.

Appeal 2017-011777
Application 14/358,105

The Examiner's rejections of claims 4 and 8–12 under 35 U.S.C.
§ 103 are REVERSED.

REVERSED