



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/936,449 10/05/2010 Michael F. Taras PA-7566-USAA;60246674PUS1 3131

26096 7590 08/30/2018
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER

ARANT, HARRY E

ART UNIT PAPER NUMBER

3744

NOTIFICATION DATE DELIVERY MODE

08/30/2018

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptodocket@cgolaw.com
cgolaw@yahoo.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL F. TARAS and ERIC B. FRASER

Appeal 2017-005426
Application 12/936,449¹
Technology Center 3700

Before JOSEPH A. FISCHETTI, MICHAEL C. ASTORINO, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

ASTORINO, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), the Appellants appeal from the Examiner's decision rejecting claims 1, 12, 16, 17, 18, and 19. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to the Appellants, the real party in interest is Carrier Corporation, ultimately owned by United Technologies Corporation. Appeal Br. 1.

STATEMENT OF THE CASE

Claimed Subject Matter

Claims 1 and 12 are the independent claims on appeal. Claim 12, reproduced below, is illustrative of the subject matter on appeal.

12. A method of operating a refrigerant system comprising the steps of:

a) delivering a compressed refrigerant to a condenser, refrigerant from said condenser passing through an expansion device, and from said expansion device through an evaporator, and from said evaporator being returned to a compressor;

b) said condenser being a microchannel heat exchanger said microchannel heat exchanger including a plurality of heat exchange tubes each having a plurality of parallel refrigerant channels, wherein said microchannel heat exchanger parallel refrigerant channels having a hydraulic diameter less than or equal to 5mm;

c) selectively routing at least a portion of refrigerant through a reheat heat exchanger from a location between said compressor and said expansion device, and passing at least a portion of air over said reheat heat exchanger after the air has passed over said evaporator;

d) selectively actuating a refrigerant flow control device to route said at least portion of refrigerant through said reheat heat exchanger at system start-up;

(e) comprising the step of selectively allowing refrigerant flow through the reheat heat exchanger for at least a predetermined period of time after refrigerant system start-up; and

(f) said control also selectively actuating said refrigerant control device to route at least a portion of refrigerant through said reheat heat exchanger when dehumidification in an environment to be climate controlled is desired, such that said evaporator cools air to a temperature below that desired in the environment to be conditioned, allowing removal of an additional amount of moisture from the air, and the air then passing over said reheat heat exchanger to be reheated toward a target temperature.

Rejections

Claims 1, 12, 18, and 19 are rejected under (pre-AIA) 35 U.S.C. § 103(a) as unpatentable over Daikin (JPH05264109 A, pub. Oct. 12, 1993)² and Daddis et al. (US 7,281,387 B2, iss. Oct. 16, 2007) (hereinafter “Daddis”).

Claims 16 and 17 are rejected under (pre-AIA) 35 U.S.C. § 103(a) as unpatentable over Daikin, Daddis, and Taras et al. (US 2005/0166619 A1, pub. Aug. 4, 2005) (hereinafter “Taras”).

ANALYSIS

Independent claims 1 and 12

The Appellants argue that “Daikin does not disclose routing refrigerant to its reheat heat exchanger ‘**AT**’ start-up.” Appeal Br. 4. According to the Appellants, “the bypass as disclosed and the control the Examiner relies upon only occurs ‘while discharge pipe temperature is lower than a condensing pressure equivalent saturation temperature,’” as set forth in [Daikin’s] claim 2. *Id.* Daikin’s “claim 2[] requires sensing pressure before the control would occur,” which “would necessarily result in a lag time after start-up before the control would occur.” *Id.* The Appellants’ argument is not persuasive.

The Appellants’ argument is based on the premise that the Examiner relied on disclosure particular to Daikin’s claim 2 as support for the

² “Daikin” was submitted in an Information Disclosure Statement (filed May 9, 2014) with a translation of the Abstract. A full translation of Daikin (hereinafter “Daikin Translation”) accompanied the Final Office Action (mailed Oct. 3, 2014).

rejection. This is not the case. The Examiner relies on the disclosure particular to Daikin's claim 1 as support for the rejection. *See* Ans. 10. Daikin's claim 1 — and the disclosed first working example (i.e., first control scheme) that corresponds to claim 1 — teaches a control system that routes the refrigerant at start-up. *See id.* Here, Daikin uses an opening-and-closing-control means 34 to control opening operation of an opening and closing means SV1 to a bypass passage 16 in order to eliminate the liquid coolant in the high pressure pipe of a discharge side at the time of start-up. *See* Daikin Translation ¶¶ 5–6, 10, 27, 31, 32, 40; Daikin Figs. 1, 3. The predetermined time of this control scheme occurs at the time of start-up of the compressor. *See* Daikin Translation ¶¶ 10, 27, 40.

The Appellants argue “[t]he only reason across Daikin for actuating the control is if the condition is sensed as set forth in [Daikin's] claim 2.” Reply Br. 1. The Appellants' argument is not persuasive.

First, as discussed above, and relied upon by the Examiner, the first control scheme routes the refrigerant at start-up. Second, the means provided by the control scheme concerning claim 2 — a separate working example — carries out the opening operation of the opening and closing means only while discharge pipe temperature is lower than a condensing pressure equivalent saturation temperature. *See* Daikin Translation ¶¶ 11, 16, 28, 52, 58. We understand from Daikin's disclosure that the two control schemes for the refrigerant systems represented by claim 1 and claim 2 may be separate from one another. As such, we agree with the Examiner that the control scheme recited in claim 2 of Daikin is separate to that of claim 1. *See* Ans. 10.

The Appellants contend that “the Examiner appears to be picking and choosing portions of the Daikin translation” because “the heat exchanger for reheating the fluid, which the Examiner must also rely upon, is only in claim 3.” Appeal Br. 4–5. The Appellants’ contention is not persuasive. Claim 3 is a multiple dependent claim, which depends from claim 1 *or* claim 2. This supports the position that the control schemes of claim 1 and claim 2 may be separate from one another.

Thus, we sustain the Examiner’s rejection of independent claims 1 and 12 as unpatentable over Daikin and Daddis.

Dependent claims 16 and 17

The Appellants assert that “[t]he Examiner argues that Taras would suggest a combination wherein refrigerant downstream of a reheat heat exchanger re-enters a refrigerant path at a location upstream of an expansion device relative to a compressor” and argues that “[i]t appears that Daikin actually discloses the opposite.” Appeal Br. 5. The Appellants’ argument is not persuasive. The Appellants do not particularly point out — and we fail to understand — how Daikin teaches the opposite of Taras.

The Appellants argue that “[t]here is no reason why one would change up the Daikin refrigerant flow” because “Daikin was surely aware of its expansion device, and intentionally included its capillary tube.” *Id.* The Appellants’ argument is not persuasive as the argument fails to cogently explain how the removal of the capillary tube would be detrimental to Daikin’s refrigerant flow or why a skilled artisan would not have removed the capillary tube to reduce manufacturing costs as the Examiner reasons. Final Act. 8, 9 (mailed Aug. 27, 2015, hereinafter “Final Act.”) (“[I]t would

have been obvious . . . to provide the refrigerant upstream the expansion device as taught by Taras [to Daikin's refrigerant system, as modified by Daddis,] to advantageously remove the need for the capillary tube (18, Daikin), thereby reducing the cost of the system.”).

Thus, we sustain the Examiner's rejection of claims 16 and 17 as unpatentable over Daikin, Daddis, and Taras.

Dependent claims 18 and 19

The Appellants argue claims 18 and 19 as a group. Appeal Br. 5. We select claim 19 as the representative claim for this group. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Appellants argue that there is no support for the Examiner's rejection of claim 19 because “Daikin illustrates a system which is not fully disclosed, and it is unclear what is being relied upon by the Examiner to reject these claims.” Appeal Br. 5. The Appellants' argument is not persuasive.

For the rejection of claim 19, the Examiner finds “Daikin further discloses wherein said control further comprises directing (via 16) at least a portion of the refrigerant to said reheat heat exchanger (17) from the location . . . between said condenser (5) and said compressor (1) during said predetermined period of time ([Daikin Translation] ¶ 0040).” Final Act. 7. We fail to understand how this finding is unclear. Additionally, the Appellants fail to explain how the disclosure of Daikin relied upon the Examiner is not fully disclosed.

Thus, we sustain the Examiner's rejection of claims 18 and 19 as unpatentable over Daikin and Daddis. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Appeal 2017-005426
Application 12/936,449

DECISION

We AFFIRM the Examiner's decision rejecting claims 1, 12, 16, 17, 18, and 19.

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