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Datasheet for the decision of 5 September 2013

Case Number: T 2428/10 - 3.2.03

Application Number: 07729994.9

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IPC: F25D 23/02, F25D 23/12

Language of the proceedings: EN

Title of invention:
A cooling device

Applicant:
Arçelik Anonim Sirketi

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 123(2)

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 2428/10 - 3.2.03

D E C I S I O N
of the Technical Board of Appeal 3.2.03
of 5 September 2013

Appellant: (Applicant)	Arçelik Anonim Sirketi E5 Ankara Asfalti Uzeri Tuzla TR-34950 Istanbul (TR)
Representative:	Louis Pöhlau Lohrentz Patentanwälte Postfach 30 55 D-90014 Nürnberg (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted 22 June 2010 refusing European patent application No. 07729994.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: U. Krause
Members: C. Donnelly
K. Garnett

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division, posted on 22 June 2010, refusing the European Patent application No 07 729 994.9.

II. In its decision 22 June 2010 refusing the application the examining division held that the subject-matter of claim 1 as published did not involve an inventive step taking US-A-5484538 (D1) as the nearest prior art in combination with the skilled person's general knowledge in the art as supported by the disclosures in WO-A-97/10883 (D2), US-A-5259203 (D3), or WO-A-97/20180 (D4).

III. The applicant (hereinafter "the appellant") filed a notice of appeal on 9 August 2010 and paid the fee the same day. The grounds of appeal were received on 29 October 2010.

IV. In a communication dated 16 July 2013, pursuant to Article 15(1) RPBA annexed to the summons to oral proceedings, the Board informed the appellant of its provisional opinion. In particular, the Board indicated that claim 1 of the main request did not appear to be new with respect to D1 but indicated that the subject-matter of the first auxiliary request did seem to be both new and involve an inventive step.

V. By letter of 3 September 2013, the appellant filed a new main request comprising claims 1 to 4 together with an adapted description to replace all other requests hitherto on file.

VI. Oral proceedings were held on 5 September 2013. After discussion of the main request the appellant made minor amendments and filed a complete new request. In conclusion, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 4 as filed during the oral proceedings.

VII. Claim 1 according to the appellant's sole request reads:

"A cooling device comprising
- a cooling cabin (2) wherein items to be cooled are stored,
one or more doors (3), preventing heat transfer between the cooling cabin (2) and the exterior environment when closed, providing access for the user to the cooling cabin (2) when opened,
- a compressor (7) providing the refrigerant to be sucked and pumped,
- a condenser (8) condensing the refrigerant leaving the compressor as superheated vapour to first liquid-vapor phase then to entirely liquid phase,
- one or more evaporators providing the circulating refrigerant within to absorb heat cooling the environment therein and
- a water reservoir (5) disposed on or in the door (3) or the cabin (2) wherein water is stored, and
- a water dispenser (4) providing the water in the water reservoir (5) to be delivered outside of the cooling device (1) when desired and further comprising a refrigerant conduit (6) that is
- situated between the compressor (7) and condenser (8),

- disposed inside or outside of the water reservoir (5),
- transferring the heat of the refrigerant in superheated vapor phase leaving the compressor (7) to the water reservoir (5) and/or the water in the water reservoir (5) providing to be heated thereof,
characterized in that
said refrigerant conduit (6) is with one end connected to the compressor (7) and the other end to the condenser (8) providing to convey the refrigerant from the compressor (7) to the condenser (8) and a portion of said refrigerant conduit (6) wrapping the water reservoir (5) or emplaced into the water reservoir (5)"

Reasons for the Decision

1. The appeal is admissible

2. *Basis for the amendments, Article 123(2)*

2.1 Claim 1 is based on claim 1 as originally filed. The amendment concerning the position of the water reservoir which is now specified as being "on or in the door or the cabin" as opposed to "on the door or the cabin" is supported by the passage in the published description at paragraph [0038] which states that the water reservoir is "disposed in the cabin or the door". Thus, all the locations of the water reservoir now claimed were originally disclosed.

2.2 The feature further detailing the arrangement of the refrigerant conduit:

"with one end connected to the compressor (7) and the other end to the condenser (8) providing to convey the refrigerant from the compressor (7) to the condenser (8) and the portion thereof wrapping the water reservoir or emplaced into the water reservoir (5)"

is based on the description, paragraph [0037].

2.3 Thus, the requirements of Article 123(2) EPC are met.

3. *Novelty/Inventive step*

3.1 In the opinion of the Board, D4 discloses the most relevant art since this is the only document showing a way of using the heat from the hot gas exiting the compressor to heat water eventually destined to enter a water reservoir placed in a refrigerator and connected to dispensing taps.

3.2 D4 describes:

a cooling device comprising

- a cooling cabin (14,16, see figure 1) wherein items to be cooled are stored,
  one or more doors (17,18), preventing heat transfer between the cooling cabin (14,16) and the exterior environment when closed, providing access for the user to the cooling cabin (14,16) when opened,
- a compressor (30) providing the refrigerant to be sucked and pumped,
- a condenser (22) condensing the refrigerant leaving the compressor as superheated vapour to first liquid-vapor phase then to entirely liquid phase,

– one or more evaporators (see page 4, line 27) providing the circulating refrigerant within to absorb heat cooling the environment therein and
– a water reservoir (34) disposed in the cabin (14,16) wherein water is stored, and
– a water dispenser (12) providing the water in the water reservoir (34) to be delivered outside of the cooling device (11) when desired (see page 5, lines 23 to 25) and wherein
a refrigerant conduit that is
– situated between the compressor (30) and condenser (22),
– disposed outside of the water reservoir (34),
– transferring the heat of the refrigerant in superheated vapor phase leaving the compressor (30) to the water in the water reservoir (34) providing to be heated thereof (see page 5, lines 3 to 7 and figure 3).

The subject-matter of claim 1 differs therefrom in that

"the refrigerant conduit is with one end connected to the compressor and the other end to the condenser providing to convey the refrigerant from the compressor to the condenser and a portion thereof wrapping the water reservoir or emplaced into the water reservoir.

3.3 The apparatus of D4 uses the heat from the hot gases exiting the compressor to pre-heat the water before it is boiled in a boiler in order to remove impurities by distillation before the condensate is fed to the reservoir where it is stored as chilled purified water ready to be dispensed as drinking water or used to make ice (see D4, page 3, lines 19 to 21). It is an

essential feature of the apparatus that purification of the water takes place by distillation. There is no intention that the apparatus should provide hot water.

3.4 Faced with the problem of modifying the device of D4 simply to provide hot water, it would not be obvious for the skilled person to move the water reservoir or extend the conduit of the compressor to allow the hot gases to heat the water once it is in the reservoir since it would be easier to maintain the preheat function of the compressor gases and use the boiler as a hot water reservoir/heater in a similar manner to the device of D1.

3.5 Also, taking D1 as the nearest prior art, the skilled person faced with the problem of improving energy efficiency of the apparatus would not see it is as obvious to replace the electrical heating system by extending that part of the piping leaving the compressor or moving the reservoir since such modifications would require considerable changes to the structure. A combination of D1 and D4 would most likely lead to the pre-heat function of D4 being combined with the electrical heater of D1 in order to save energy.

3.6 Thus, the subject-matter of claim 1 is new and involves an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division with the order to grant a patent on the basis of:

   (a) Claims 1 to 4 as filed during the oral proceedings;
   (b) Amended description, pages numbered 1,1a,2 to 5, as filed during the oral proceedings; and
   (c) Figures 1 to 4 as originally filed.

The Registrar: The Chairman:

C. Spira U. Krause