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(11) **EP 0 866 289 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
23.09.1998 Bulletin 1998/39

(51) Int. Cl.⁶: **F25B 39/00, F25B 25/00**

(21) Application number: **97203453.2**

(22) Date of filing: **07.11.1997**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **18.03.1997 IT MI970619**

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(54) **A heat-exchanger such as a condenser and/or evaporator for refrigerating apparatus**

(57) A heat-exchanger (1) such as an evaporator and/or a condenser for refrigerating apparatus which achieves a good performance of the cycle and, at the same time, is of simple construction comprises a coil (2) for a refrigerant fluid and a heat accumulator arranged for exchanging heat (3) with the coil (2).

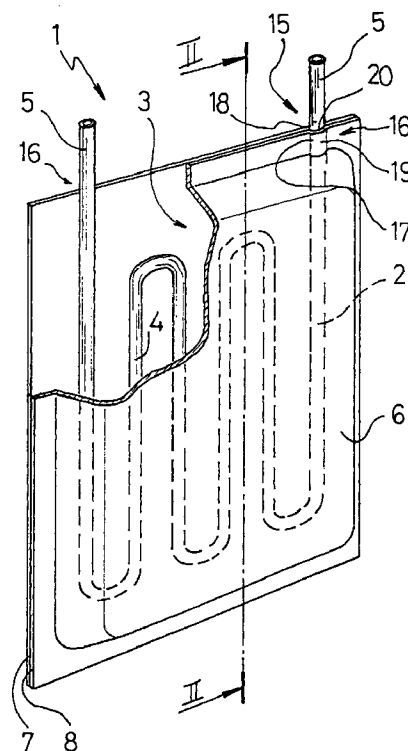


FIG.1

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Description

The present invention relates to a heat-exchanger such as an evaporator and/or a condenser for refrigerating apparatus, of the type comprising a coil for a refrigerant fluid.

The present invention addresses the problem of providing an exchanger which improves the performance of the cycle and, at the same time, is structurally simple.

This problem is solved by a heat exchanger of the type specified which is characterized in that it comprises a heat accumulator arranged for exchanging heat with the coil.

Further characteristics and the advantages of the heat-exchanger according to the present invention will become clear from the following description of an embodiment thereof, given by way of non-limiting example with reference to the appended drawings, in which:

Figure 1 is partially-sectioned, perspective view of a heat exchanger according to the invention, and

Figure 2 is a section taken on the line II-II through the heat-exchanger of Figure 1.

With reference to the appended drawings, a heat exchanger which, in the embodiment shown, is an evaporator for refrigerating apparatus, such as a refrigerator, a freezer, a combination of the two, or the like, is generally indicated 1.

The heat exchanger 1 comprises a coil 2 through which a refrigerant fluid is intended to flow, and a heat accumulator 3 having a high heat capacity, arranged for exchanging heat with the coil 2.

The coil 2 is formed by a metal pipe 4 with end portions both indicated 5.

The heat accumulator 3 comprises a tank 6 formed by two metal sheets and, more precisely, by a flat sheet 7 and a substantially tray-shaped sheet 8 formed by drawing. The sheets 7 and 8 are welded together along respective peripheral edges 9 and 10, so as to define a chamber 13 between respective facing inner faces 11 and 12. The heat accumulator 3 also comprises a substance 14 having a high heat capacity, disposed in the chamber 13. In the embodiment described, the substance 14 is a mixture of water and alcohol.

The coil 2 is placed inside the tank 6 and is fixed thereto by fixing means 15. In particular, the coil 2 is in contact with the inner face 11 of the flat sheet 7.

The fixing means 15 are advantageously constituted by two wall ducts, both indicated 16, which are formed in the tank 6 and through each of which a respective end portion 5 of the coil 2 extends.

Each wall duct 16 comprises a collar 17 formed by opposed portions of the peripheral edges of the sheet and, more precisely, by a flat portion 18 of the peripheral edge 9 of the sheet 7 and by a U-shaped portion 19 of

the peripheral edge 10 of the sheet 8, deformed by drawing.

The portions 18 and 19 are clamped tightly onto the end portions 5 so as to hold them firmly and consequently to hold the coil firmly inside the tank.

Weld material 30 is preferably provided between the portions 18 and 19, for example, by braze welding to ensure that the wall duct is leaktight.

The main advantage of the heat-exchanger according to the present invention lies in the fact that it improves the performance of the cycle.

Moreover, there is a particularly enhanced exchange of heat between the heat accumulator and the coil by virtue of the fact that the coil is substantially entirely immersed in the substance having a high heat capacity, contained in the tank.

Moreover, it should be added that, at the same time, the heat exchanger according to the invention is of extremely simple construction, which is no small advantage for an item which has to be produced on a large or very large scale.

Naturally, in order to satisfy contingent and specific requirements, an expert in the art may apply to the above-described heat exchanger many modifications and variations all of which, however, are included within the scope of protection of the invention as defined by the following claims.

Claims

1. A heat exchanger (1) such as an evaporator and/or a condenser for refrigerating apparatus, of the type comprising a coil (2) for a refrigerant fluid, characterized in that it comprises a heat accumulator (3) arranged for exchanging heat with the coil (2).
2. A heat exchanger (1) according to Claim 1, characterized in that the heat accumulator (3) comprises a tank (6) formed by two metal sheets (7, 8) of which at least one (8) is deformed by drawing and which have respective peripheral edges (9, 10) welded together and defining a chamber (13), and a substance (14) having a high heat capacity and disposed in the chamber (13).
3. A heat exchanger (1) according to Claim 2, characterized in that the coil (2) is positioned inside the tank (6) and is fixed thereto by fixing means (15).
4. A heat exchanger (1) according to Claim 3, characterized in that the fixing means (15) are constituted by at least one wall duct (16) which is formed in the tank (6) and through which an end portion (5) of the coil (2) extends.
5. A heat exchanger (1) according to Claim 4, characterized in that the wall duct (16) comprises a collar (17) formed by opposed portions (18, 19) of the

peripheral edges (9, 10) of the sheets (7, 8).

6. A heat exchanger (1) according to Claim 5, characterized in that the portion (18) of the peripheral edge (9) of one sheet (7) is flat and that the portion (19) of the peripheral edge (10) of the other sheet (8) is U-shaped. 5
7. A heat exchanger (1) according to Claim 6, characterized in that it comprises weld material (20) disposed between the portions (18, 19). 10

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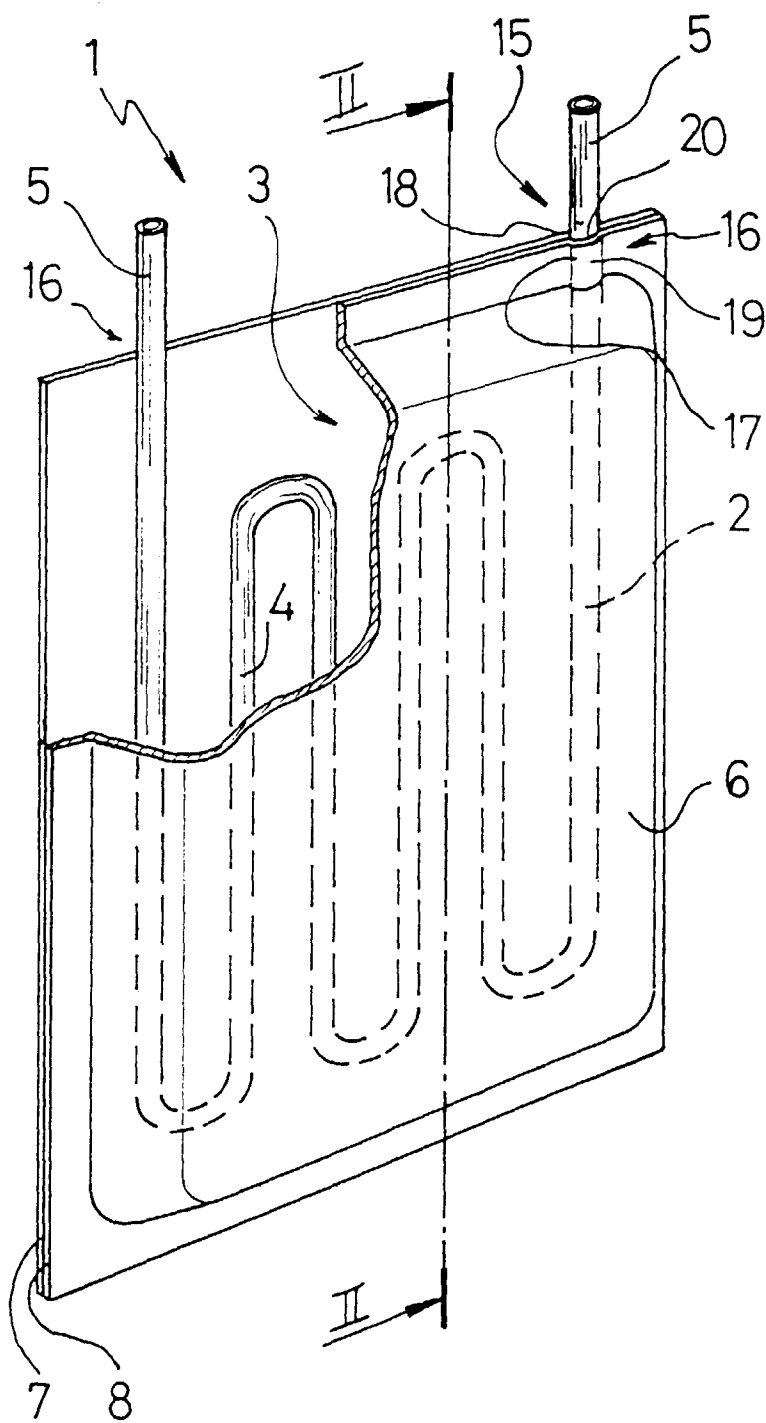


FIG.1

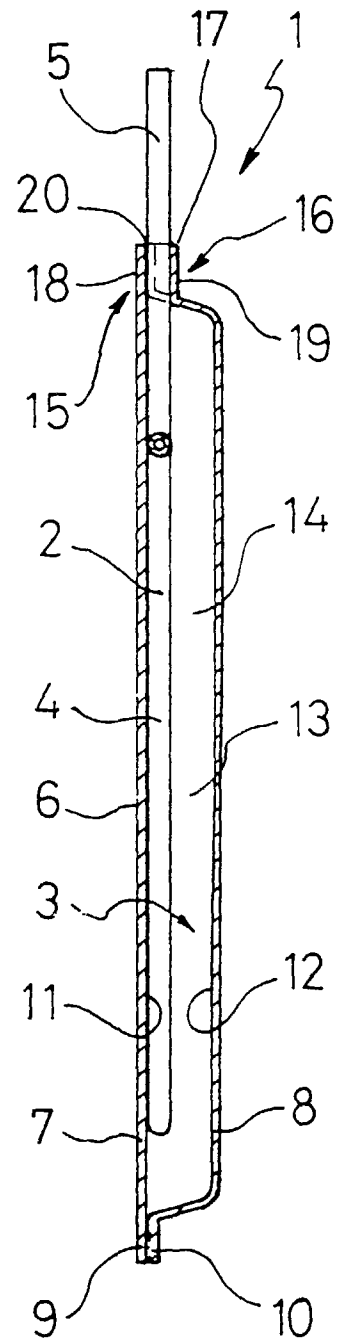


FIG.2