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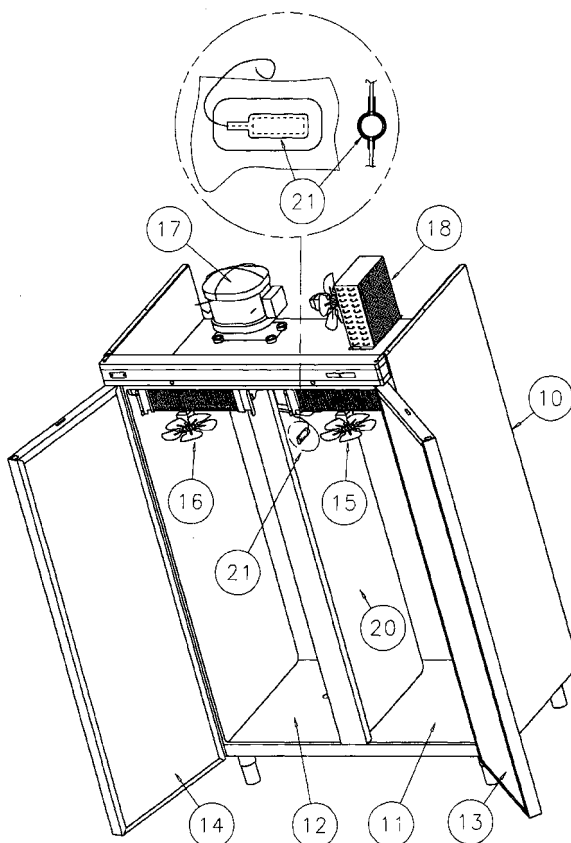
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(54) **Refrigerator cabinet with separate food storage rooms**

(57) Refrigerator cabinet for storing foodstuffs that must be kept at substantially a same temperature, but separately in view of preserving their respective peculiar organoleptic qualities.

The refrigerator cabinet is subdivided into separate

storage rooms (11, 12) that are separated from each other by means of a partition wall (20), in which a thermostatic probe (21) controlling the operation of the refrigerating circuit is inserted. The solution is very simple and reliable.



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Description

DESCRIPTION

[0001] The present invention refers to a refrigerator cabinet, in particular a refrigerator cabinet of a type intended for application in professional kitchens and catering operations, which is provided with at least two separate storage rooms adapted to accommodate foodstuffs of different kind

[0002] Refrigerator cabinets whose inner room is subdivided into two or more compartments in which different temperatures are generated as appropriate for the storage and preservation of respective particular types and kinds of foodstuffs, are largely known in the art. Generally, these refrigerator cabinets are provided with separate refrigerating circuits that are so sized and designed as to ensure the preservation, in the respective storage room or compartment, of the particular temperature required for the foodstuffs stored therein.

[0003] Equally well-known in the art are refrigerator cabinets which, although featuring more than one storage room, are provided with a single refrigerating circuit that is controlled through distinct thermostat probes arranged in each such storage room. In this case, the circulation of the refrigerant medium is appropriately conveyed, diverted and/or choked, by means of appropriate valve means, so as to ensure the correct refrigeration effect in the various storage rooms in accordance with the respective temperature conditions required therein.

[0004] Such prior-art refrigerator cabinets, however, are not able to solve the problem that is faced whenever the need arises to store and preserve, substantially at a same temperature, foodstuffs that differ from each other as far as their peculiar organoleptic characteristics are concerned. In particular, this problem is encountered when such foodstuffs must be stored as meat, cheese, vegetables and the like, each one of them is generally known to release a peculiar smell that is likely to mix up with the one released by the other foodstuffs, if stored in a single and same compartment or room, with the result of altering the taste and flavour of the foodstuffs themselves to often a quite unacceptable extent.

[0005] The solution calling for the utilization of refrigerator cabinets provided with a multiplicity of separate storage rooms, in which each one of them is cooled by means of an own refrigerating circuit, is practically not to be proposed owing to both economic reasons and the technical complexity that this would unavoidably entail, while duly keeping into account the fact that it is practically the same temperature that must be kept in the various compartments.

[0006] It therefore is a main purpose of the present invention to provide a refrigerator cabinet provided with at least two separate storage rooms, in each one of which there is arranged an evaporator that is part of a single and same refrigerating circuit adapted to generate and keep substantially the same temperature in all

of said storage rooms. The innovatory feature of the present invention lies essentially in the fact that a wall of a material having a high heat-transfer coefficient is used as a partition wall separating said storage rooms, and that in such a wall there is inserted a thermostatic probe controlling the operation of the refrigerating circuit.

These and further features of the present invention are defined in the appended claims.

[0007] Anyway, features and advantages of the present invention will be more readily understood from the description that is given below by way of non-limiting example with reference to the accompanying drawing which is a schematical perspective view of a refrigerator cabinet according to the present invention, with its doors open apart, wherein an enlarged detail thereof is evidenced separately.

[0008] The refrigerator cabinet according to the present invention is generally constituted by an outer casing 10 provided with two inner storage compartments or rooms 11, 12 that are fully separated from each other and are closable by means of respective doors 13, 14. Inside said storage rooms there can be inserted, in a per se known manner not illustrated in the Figure, shelves or racks intended to support the various foodstuffs loaded therein, which, although differing from each other as far as their nature is concerned, require anyway to be kept stored at substantially similar temperatures.

[0009] In each such storage room 11, 12 there is arranged a fan-assisted evaporator battery 15, 16, in which said evaporator batteries are normally connected in series in a refrigerating circuit that comprises a compressor 17 and a condenser 18. In an advantageous manner, so as this is illustrated in the Figure, the component parts of the refrigerating circuit are housed in the upper portion of the cabinet.

[0010] According to the present invention, the storage rooms 11, 12 are separated from each other by a partition wall 20 provided inside the outer casing 10, wherein this partition wall is made so as to enable a maximum extent of heat exchange between the two storage rooms, but no mixing together of the cooled air flows circulating in the storage rooms themselves. In other words, the partition wall 20 constitutes an air-tight closure between said two storage rooms.

[0011] The partition wall 20 is preferably made in the form of a very thin metal sheet or foil and, therefore, of a material with a high thermal conductivity. A desired balance of the temperatures in the separate storage rooms is in this way reached very quickly, also when it is only one of them that is cooled owing to operating needs, for instance when a new load of foodstuffs to be cooled down is introduced therein.

[0012] Again according to the present invention, a single thermostat probe 21 is provided to control the operation of the refrigerating circuit. This probe 21 must be able to sense the temperature in both storage rooms 11,

12 and, therefore, it is installed in the partition wall 20. For reasons of greater construction and manufacturing simplicity, the probe 21 (as this is illustrated schematically in the enlarged and evidenced portion of the Figure both as a side view and a cross-sectional view) is arranged in an aperture provided in the wall 20 and is tightly sealed between two shells attached on to the opposite surfaces of the same wall. These shells may be attached in any of the various known manners, so as for instance by adhesive bonding or welding. In this way, the probe 21 normally detects a temperature which is the average of the temperatures prevailing in the storage rooms 11, 12. Furthermore, it immediately detects any possible abrupt variation in the temperature in any of the two storage rooms 11, 12, thereby being able to activate, ie. start the operation of the refrigerating circuit accordingly.

[0013] The probe 21 is of course connected to the compressor 17 of the refrigerating circuit via an electronic circuit of a generally known type, which therefore is not described here any further, and which enables the temperature to be held in the storage rooms of the refrigerator cabinet to be appropriately set and controlled.

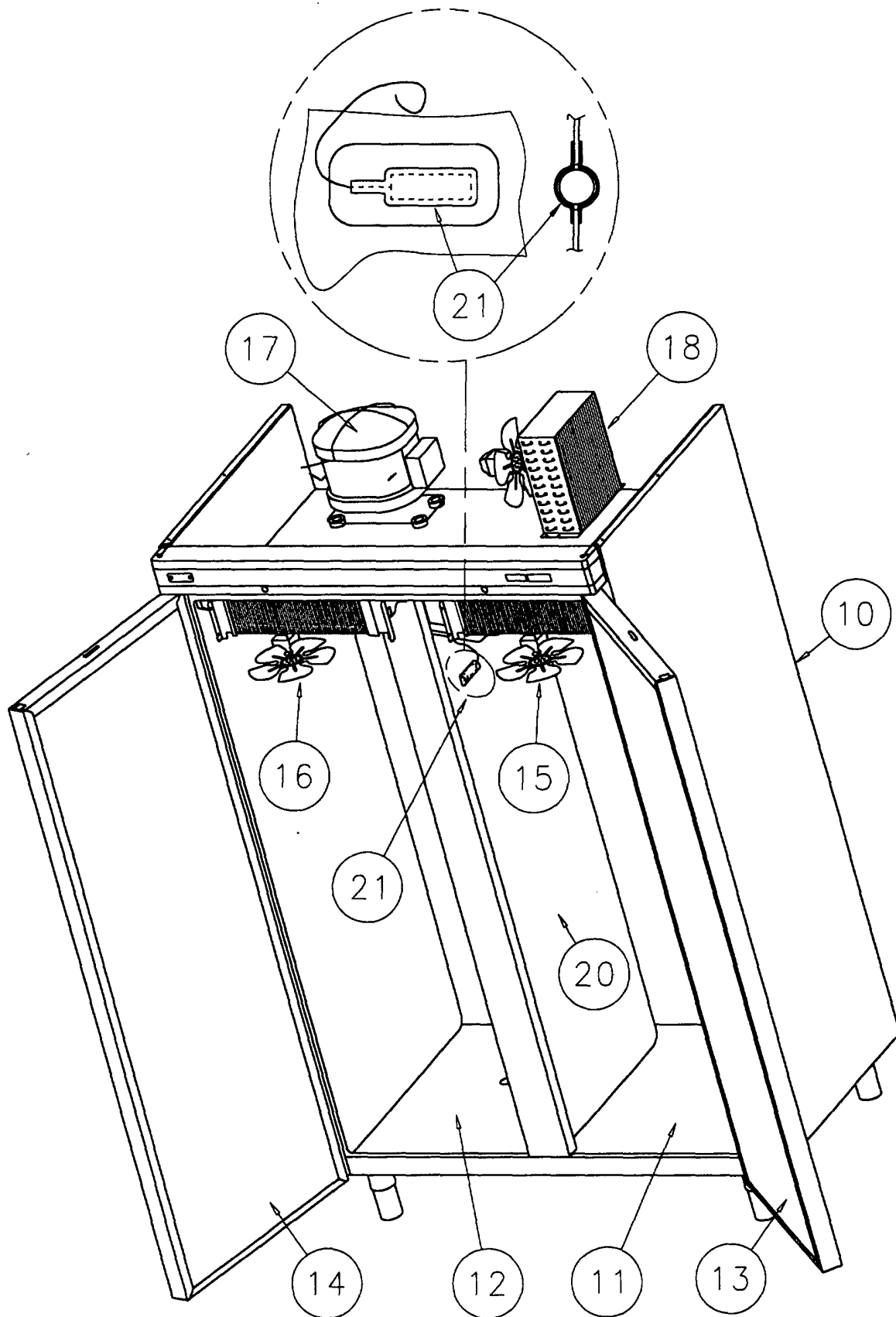
[0014] It can therefore be readily appreciated that the proposed solution according to the present invention is particularly simple and convenient. It in fact enables a refrigerator cabinet to be provided with a single refrigerating circuit and at least two separate storage rooms, in which foodstuffs can be stored which, although requiring substantially similar storage temperatures, cannot be held together in a same room or compartment for reasons of an organoleptic nature.

[0015] It will be appreciated that the above described refrigerator cabinet may be the subject of a number of modifications and variants without departing from the scope of the innovative concept according to the present invention.

Claims

1. Refrigerator cabinet, in particular for application in professional kitchens and catering establishments, provided with at least two separate storage rooms in each one of which there is arranged an evaporator that is part of a single and same refrigerating circuit adapted to provide substantially the same temperature in the storage rooms, **characterized in that** a partition wall (20) of a material having a high heat-transfer coefficient is used to separate the storage rooms (11, 12) from each other, and that a single and same thermostat probe (21) adapted to control the operation of the refrigerating circuit is inserted in said partition wall.
2. Refrigerator cabinet according to claim 1, **characterized in that** the partition wall (20) is made of a thin metal sheet, and that the thermostat probe (21) is inserted in an aperture provided in the wall (20)

and is tightly sealed between two shells attached on to the opposite surfaces of the same wall.





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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.CI.7)
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Place of search		Date of completion of the search	Examiner
THE HAGUE		7 September 2001	Jessen, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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