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(54) Refrigeration cabinet with internal food storage liner

(57) Refrigeration cabinet, in particular of the fan-assisted cooling type, whose structure defines a stationary inner liner (11) to accommodate the foodstuffs to be stored there for preservation.
In order to prevent the odours released by the various food products stored there from mixing up, there is provided the insertion of a supplementary and removable storage liner (30), which is supported by the guiding ribs (20) provided on the walls of the main storage liner (11).

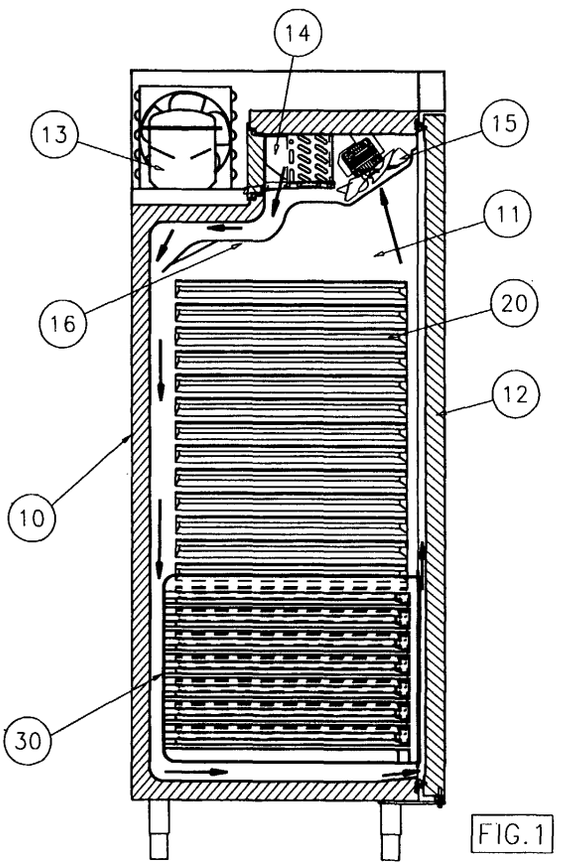

FIG.1

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Description

[0001] The present invention refers to a refrigeration cabinet, in particular of the fan-assisted cooling type, whose structure defines a stationary inner liner forming a compartment to accommodate the foodstuffs to be stored there for preservation.

[0002] The inner storage compartment, ie. the liner, of a refrigeration cabinet is usually formed by walls having properly shaped inner surfaces. Such a shaping of at least the side walls of said liner is made in such a manner as to provide them with a contour featuring horizontal guiding ribs, on which there can be arranged, at different heights, the shelves or grids for supporting the food products to be stored in said liner or inner storage compartment.

[0003] In the case of refrigeration cabinets of the fan-assisted cooling type, the air inside the storage compartment shall by all means be ensured as great a freedom as possible to circulate therewithin. Therefore, vertical channels are generally created, which extend all along the walls of said liner to enable the forced flow of air generated by a fan to move through the spaces between the various shelves arranged there above each other. In this manner, a relative evenness in the moisture and temperature distribution in the interior of the refrigeration cabinet is obtained.

[0004] However, in prior-art refrigeration cabinets a problem is generally faced in that there is the need for the odours released by the different food products from mixing up, thereby altering the organoleptic properties of the food products themselves. Furthermore, it does not always proves possible for all of the food products that generally happen to be stored in a refrigeration cabinet to be advantageously preserved under the same and similar conditions of temperature and moisture. The solution that has been adopted hitherto in this connection, however, is scarcely satisfactory, since it involves a complication of the structure of the inner liner, makes the subdivision of the space inside the same inner liner quite inflexible, and reduces the effectiveness of the ventilation.

[0005] It therefore is a purpose of the present invention to provide a refrigeration cabinet, in particular of the fan-assisted cooling type, that provides a solution to the above cited drawbacks which proves simple and rational from a construction and manufacturing point of view, as well as convenient in practical use.

[0006] According to the present invention, this aim is reached in a refrigeration cabinet of the fan-assisted cooling type, in which at least a supplementary inner liner is adapted to be accommodated in a removable manner, and in a selectively variable position, on the guiding ribs of the stationary inner liner, as this is recited in the appended claims.

[0007] Anyway, features and advantages of the present invention may be more readily understood from the description that is given below by way of non-limiting example with reference to the accompanying drawings, in which:

- Figure 1 is a schematical cross-sectional side view of a refrigeration cabinet of the fan-assisted cooling type according to the present invention; and

- Figure 2 is a schematical front view of the refrigeration cabinet illustrated in Figure 1, with an enlarged and particularly emphasized detail thereof.

[0008] The refrigeration cabinet of the fan-assisted cooling type illustrated in the Figures is essentially constituted by a cabinet 10 which defines an inner compartment or liner 11 adapted to accommodate the food products to be stored there for preservation. Said inner liner 11 is closed by a door 12. On top of the cabinet 10, outside the inner liner 11, there is usually installed a refrigeration compressor 13 that supplies the energy needed by the refrigerating circuit to operate. On the top wall or ceiling of said inner liner 11 there are attached an evaporator 14 and a fan 15, which are a part of the refrigerating circuit. The evaporator 14 and the fan 15 are separated from the inner compartment of the liner 11 by means of a properly shaped wall 16 that forms a channel for the circulation of the air.

[0009] The inner walls of the liner 11 are appropriately shaped, too. In fact, at least the side walls are so shaped as to feature a profile with horizontal guiding ribs 20, which are arranged at different heights to support partition shelves or grids 21, on which the food products to be stored in said liner for preservation are then arranged.

[0010] According to the present invention, at least a supplementary removable liner 30 is capable of being housed in the interior of said stationary inner storage compartment or liner 11. The side walls of this supplementary liner 30 are shaped externally with the same profile as the inner walls of the stationary liner 11, in such a manner as to enable the supplementary liner 30 to be supported by the guiding ribs 20 of the stationary liner (see the enlarged and specially emphasized detail in Figure 2).

[0011] The supplementary liner 30 is provided with a front closing member of its own, such as a normal door or a roll-up shutter or the like (not shown). However, such a closing member may turn out to be superfluous in the case that it is formed directly by the inner surface of the door 12 and the circulation of the air is provided in such an appropriate manner as to let it flow over the outer surface of the walls of the supplementary liner 30, without giving rise to any turbulence inside the latter.

[0012] The peculiarity represented by the fact that the walls of the supplementary liner 30 are shaped to the same profile as the one of the stationary liner 11 enables the supplementary liner 30 to be inserted in different positions in the main liner 11, according to the actual needs. Quite obvious is furthermore the possibility for

more than just a single supplementary cell 30 to be inserted on the guides 20 of the stationary liner 11.

[0013] A further feature of the present invention lies in the fact that also the inner walls of the supplementary liner 30 are shaped to a profile that is similar to the one of the walls of the stationary liner 11. Such a feature practically enables the same shelves 21, or anyway similarly sized shelves, to be used in the interior of the supplementary liner 30. As a result, the inner space of the supplementary liner 30 can be fitted out and organized in exactly the same manner as the one of the stationary liner 11 in view of accommodating the food products to be stored and preserved there.

[0014] In conclusion, a refrigeration cabinet according to the present invention is capable of solving in a simple and convenient manner the problem of creating, inside the storage liner, one or more separate compartments in order to prevent the odours released by the food products stored there from mixing up. Furthermore, these separate compartments form as many spaces in which to store and preserve food products under different temperature and moisture conditions.

Claims

1. Refrigeration cabinet, in particular of the fan-assisted cooling type, whose structure defines a stationary inner liner (11) provided with shaped inner walls, in which at least the side walls thereof have a profile with guiding ribs (20) arranged at different heights to support the partition grids or shelves (21) intended to accommodate the foodstuffs to be stored there for preservation, **characterized in that** at least a supplementary liner (30) is capable of being accommodated in a removable and selectively variable manner on said guiding ribs (20).

2. Refrigeration cabinet according to claim 1, **characterized in that** the walls of the removable liner (30) are shaped externally with a mating profile with respect to the one of the inner walls of the stationary liner (11).

3. Refrigeration cabinet according to claim 1 or 2, **characterized in that** the walls of the removable liner (30) are shaped also internally with a profile that is similar to the one of the inner walls of the stationary liner (11), in such a manner as to be provided with guiding ribs (20) for the support of further partition shelves (21).

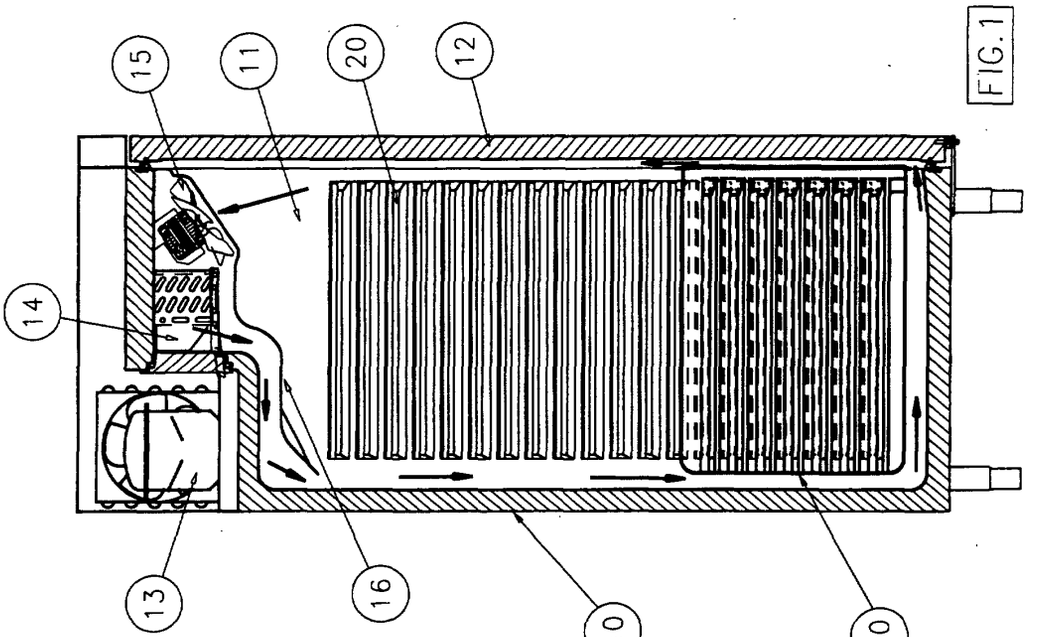

FIG.1

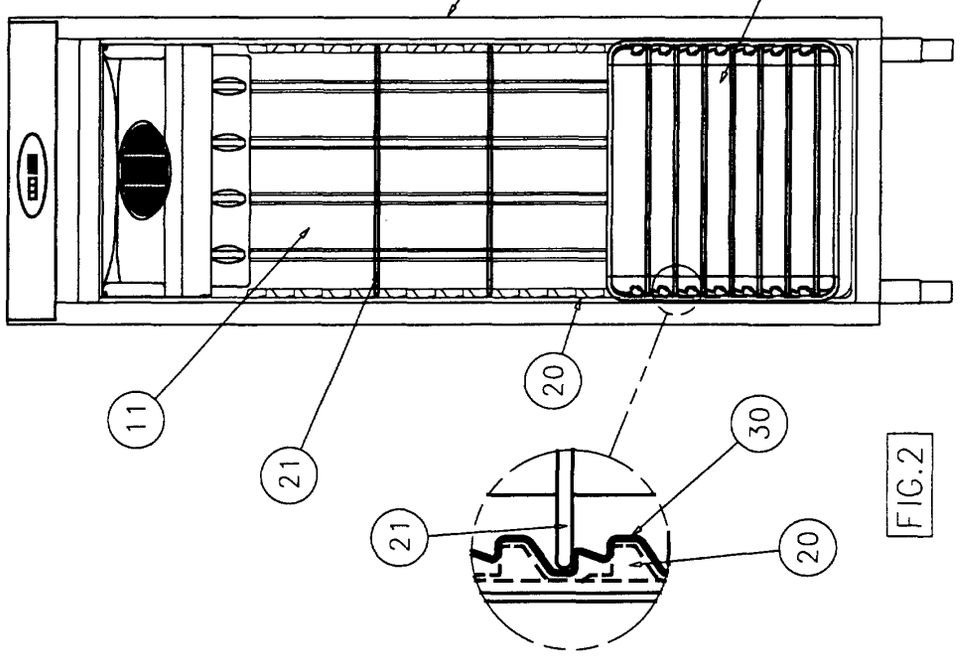

FIG.2

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 8962

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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A	WO 95 19255 A (OCEANEERING INT INC ;OWENS CORNING FIBERGLASS CORP (US)) 20 July 1995 (1995-07-20) * page 18, line 7 - page 19, line 1 * * figures 2-5 *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) F25D A47F
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15 November 2001	CORREIA DOS REIS, I

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 11 8962

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82