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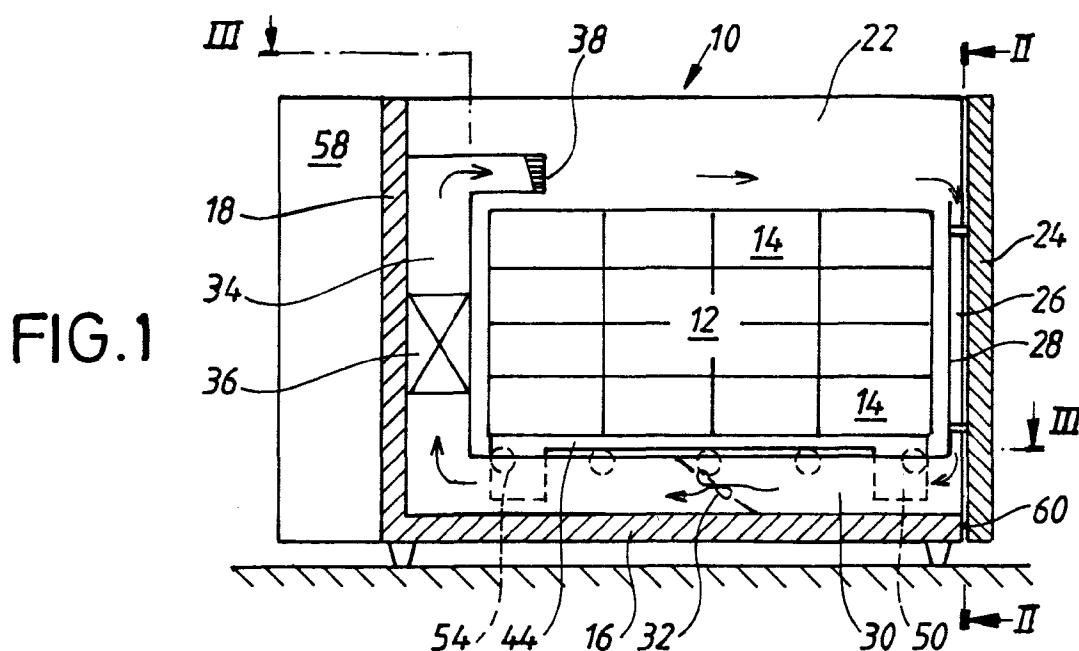
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(54) Freezer display cabinet with goods loaded on a pallet

(57) A freezer display cabinet (10) has a box-shaped space (12) for goods (14), which space is formed by heat insulating walls comprising a bottom (16), a rear wall (18), two side walls (22) and a front wall (24), which is openable for uncovering an opening, through which the goods (14) can be pushed into the space (12) on a pallet (44) with feet (50). The goods are

refrigerated by air, which is circulated around the pallet with the goods through a duct (30) located under the pallet (44) between the feet (50) and above the lower limiting surfaces (52) of the feet (50). Means, e.g. rollers (54), are arranged in the cabinet (10) for facilitating the pushing of the pallet (44) into and pulling it out from the cabinet.



Description

The invention refers to a freezer display cabinet with a box-shaped space for goods, which space is formed by heat insulating walls comprising a bottom, a rear wall, two side walls and a front wall, which is openable for uncovering an opening, through which the goods can be pushed into the space, the goods being refrigerated by air circulated around the goods, which air flows through a duct located between the goods and the bottom.

Such a cabinet is known through US patent nr 4 161 868. At this known cabinet the goods are pushed directly from a cart into the cabinet through the opening instead of being lifted over a wall of the cabinet. By this the work to fill the cabinet with goods is made easier. If at the known cabinet the goods were placed on a pallet with feet, a fork lift cart could be used for transporting the pallet with the goods to the cabinet and pushing them into the cabinet. If such a pallet is placed on the bottom of the known cabinet, which bottom is plane, an unused space, however, arises under the pallet.

The object of the invention is to improve the known freezer display cabinet, so that it can receive goods loaded on a pallet simultaneously as the space under the pallet is used for circulating the air which refrigerates the goods.

This object is reached by the freezer display cabinet according to the invention thereby that the cabinet is arranged to be able to receive a pallet with feet, on which pallet the goods are pushed in through the opening, the duct, which is confined by walls forming a closed cross section, being located under the pallet between the feet and extending above the lower limiting surfaces of the feet, and that means are arranged in the cabinet for facilitating the pushing of the pallet into and pulling it out from the cabinet.

Embodiments of freezer display cabinets according to the invention are described below in connexion with the enclosed drawings, in which Fig. 1 shows a sectional view of a first embodiment, where a pallet with goods rests on rollers journaled in the cabinet, Fig. 2 is a view according to the marking II-II in Fig. 1 and showing a front opening of the cabinet, through which opening the pallet with the goods is pushed into the cabinet, Fig. 3 shows a sectional view according to the marking III-III in Fig. 1, Fig. 4 shows in the same view as Fig. 2 a second embodiment, where the pallet with the goods rests on extensible rails of the cabinet, and Fig. 5 shows a sectional view according to the marking V-V in Fig. 4, the extended position of the rails being shown by dashed lines.

By 10 is designated a freezer display cabinet with a box-shaped space 12 for furnishing frozen goods 14, e.g. provisions of a temperature of about -18°C in a store, which space 12 is formed by heat insulating walls comprising a bottom 16, a rear wall 18, two side walls 20 and 22, respectively, and a front wall 24, which is

openable for uncovering an opening, through which the goods can be pushed into the space 12. The goods are refrigerated by air, which flows around the goods in the space 12 through a first, vertical duct 26, which is formed between the wall 24 and a plate 28 fastened to the wall 24, after which the air flows through a second, horizontal duct 30 arranged on top of the bottom 16, from where the air driven by a fan 32 in the duct 30 flows through a third, vertical duct 34, where the air is refrigerated by a cooling element 36. From the duct 34 the air flows through an opening 38 out over the goods 14 and is then sucked into the duct 26 at its upper end.

The front wall 24 with the plate 28 can be removed or moved in another way, so that an opening 40 confined by the front edges 42 of the side walls and the bottom is formed. The opening 40 and the space 12 have such measures, that a pallet 44 with the goods 14 can be pushed into the space 12 through the opening 40. The duct 30, which is confined by a plane roof 46, plane side walls 48 and the bottom 16, has such a width and height, see Fig. 2, that it, by the roof 46 being located above lower limiting surfaces 52 of feet 50 of the pallet 44, will fill up the space under the pallet 44 between the feet 50. Rollers 54 are journaled on the walls 48 for carrying the pallet 44 and facilitate its movement into and out of the cabinet.

When the cabinet shall be loaded with goods, the wall 24 is moved so that the opening 40 is uncovered. A fork lift cart is brought up to the opening, after which a pallet with possibly remaining goods is pushed from the cabinet on the rollers 54 over to the fork lift cart. A pallet with new goods is fetched by the cart and pushed into the cabinet, after which the opening 40 is closed by the wall 24. In order to facilitate the movement of the pallet into and out of the cabinet, instead of the rollers 54 rails 56, see Fig. 4 and 5, can be arranged in the space in the cabinet at the side of the feet 50. The rails 56 are arranged to be extensible through the opening 40. The pallet 44 is intended to be put with its feet 50 on the rails 56, when they are pulled out from the cabinet. Then the rails 56 with the pallet and the goods are pushed into the cabinet through the opening 40.

The cooling element 36 is constituted by an evaporator included in a refrigerant circuit, further components of which such as kompressor and condenser being arranged in a compartment 58 located outside the wall 18. The openable wall 24 seals against the edge surfaces of the opening 40 by means of a magnetic sealing strip 60 of conventional kind.

The cabinet can be made wider than the one shown in the drawings, so that it can house two or more pallets arranged beside each other. At this vertical heat insulating walls are arranged between the pallets and an openable front wall is arranged in front of each pallet.

Claims

1. Freezer display cabinet (10) with a box-shaped space (12) for goods (14), which space is formed by heat insulating walls comprising a bottom (16), a rear wall (18), two side walls (20 and 22, respectively) and a front wall (24), which is openable for uncovering an opening (40), through which the goods (14) can be pushed into the space (12), the goods being refrigerated by air circulated around the goods, which air flows through a duct (30) located between the goods (14) and the bottom (16), **characterized** in that the cabinet (10) is arranged to be able to receive a pallet (44) with feet (50), on which pallet (44) the goods are pushed in through the opening (40), the duct (30), which is confined by walls (16, 48, 46) forming a closed cross section, being located under the pallet (44) between the feet (50) and extending above the lower limiting surfaces (52) of the feet (50), and that means are arranged in the cabinet (10) for facilitating the pushing of the pallet (44) into and pulling it out from the cabinet.

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2. Freezer display cabinet according to claim 1, **characterized** in that the means consist of rollers (54) journaled on the walls (48) of the duct, on which rollers the pallet (44) is pushed into and rests in the cabinet.

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3. Freezer display cabinet according to claim 1, **characterized** in that the means consist of rails (56) arranged in the space in the cabinet at the side of the feet (50), which rails are extensible through the opening (40) and on which rails the feet (50) of the pallet (44) are intended to be put and then with the pallet and the goods be pushed into the cabinet through the opening.

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4. Freezer display cabinet according to any of claims 1-3, **characterized** in that a fan (32) for circulating the air around the goods (14) is arranged in the duct (30).

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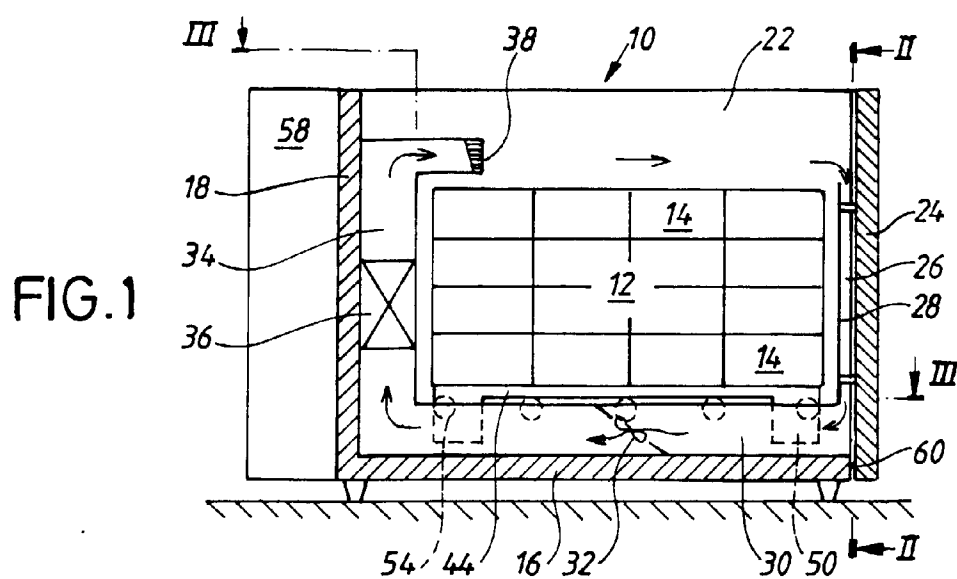


FIG. 1

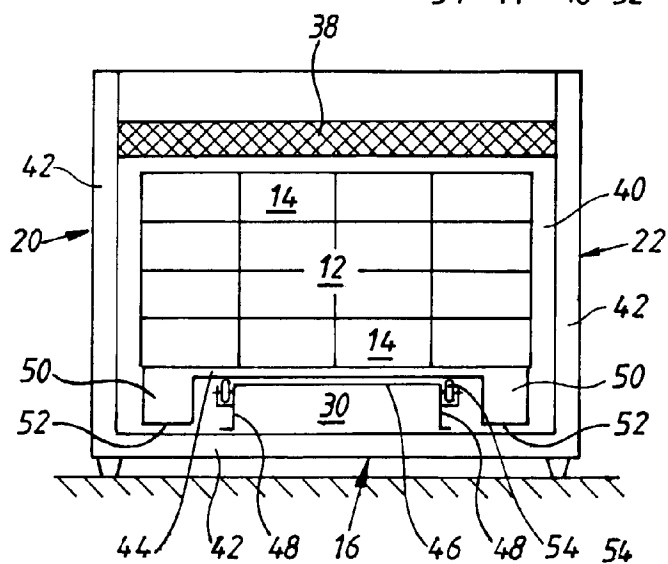


FIG. 2

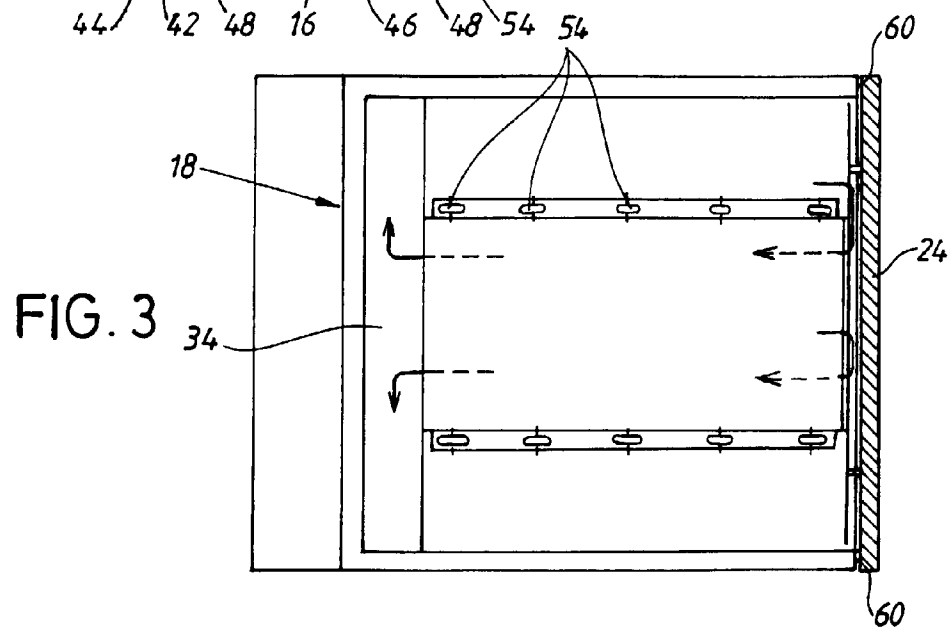


FIG. 3

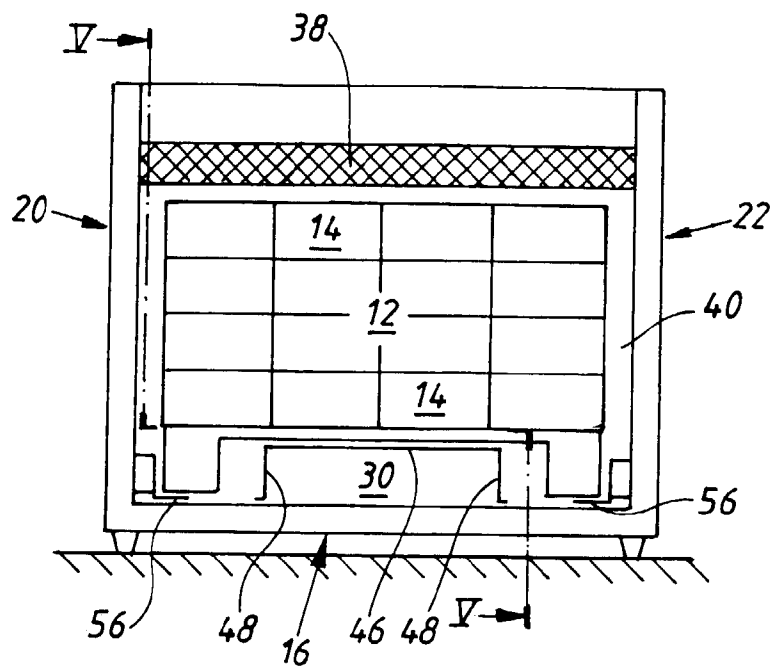


FIG. 4

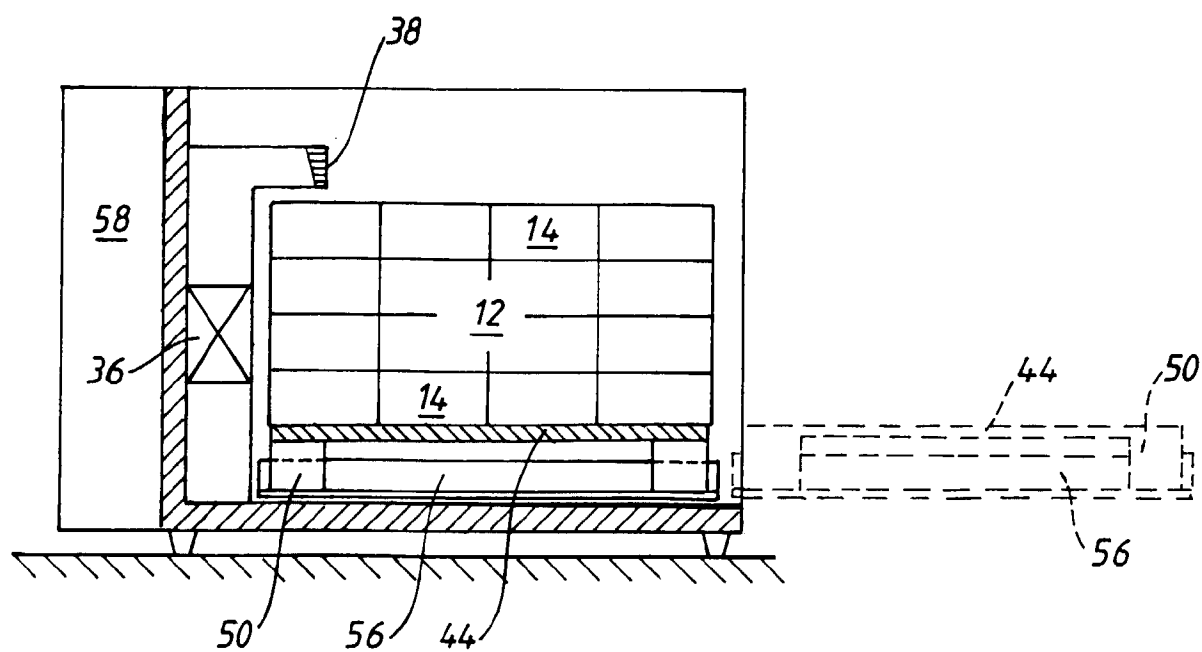


FIG. 5