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2,429,294

REFRIGERATOR MADE UP OF SEPARABLE REFRIGERATING CABINETS

Filed May 27, 1944

2 Sheets-Sheet 1

FIG. 1.

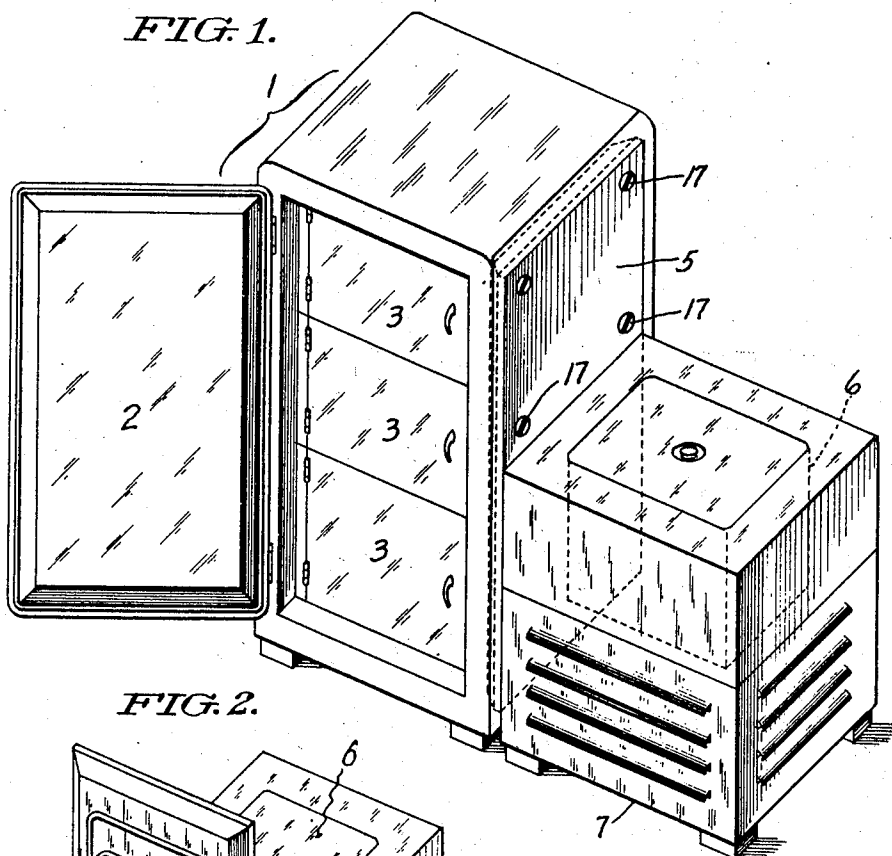
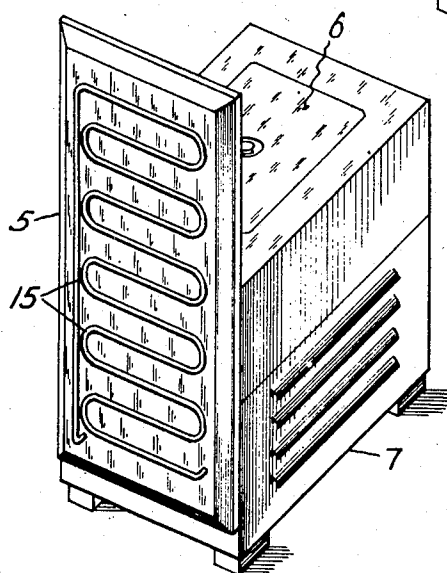


FIG. 2.



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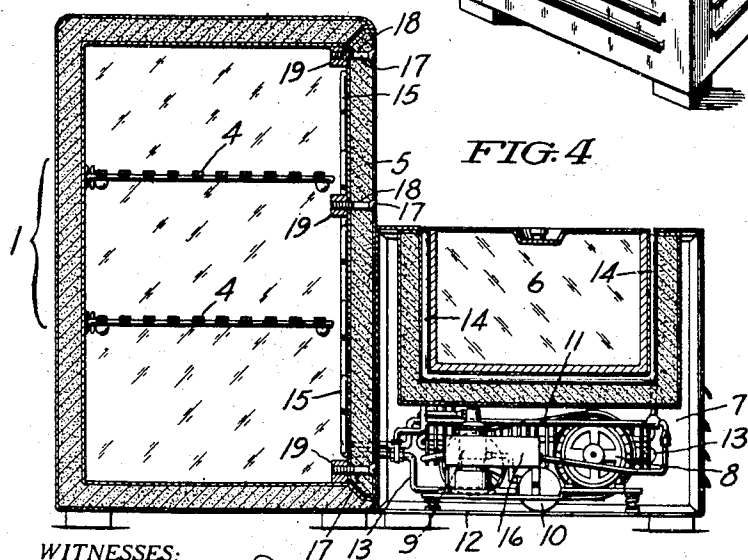
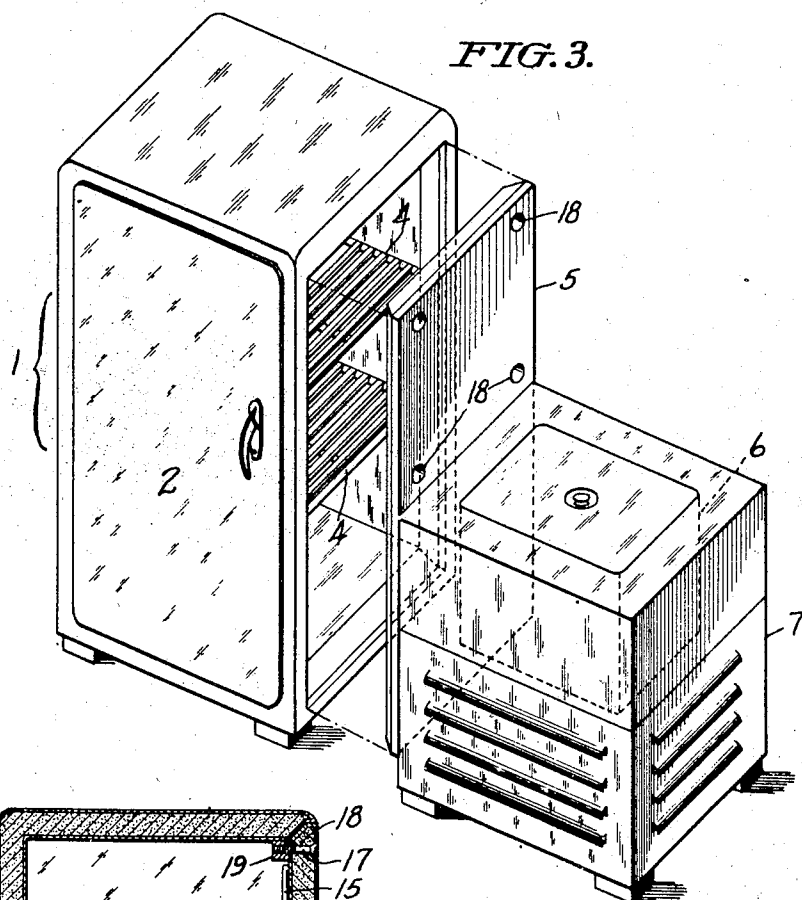
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2 Sheets-Sheet 2



WITNESSES:

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UNITED STATES PATENT OFFICE

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REFRIGERATOR MADE UP OF SEPARABLE
REFRIGERATING CABINETS

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Application May 27, 1944, Serial No. 537,751

2 Claims. (Cl. 62—116)

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My invention relates to refrigeration apparatus in which there is used a low temperature storage chamber, an intensive freeze chamber requiring a still lower temperature, and an operating unit by which desired temperatures are maintained in both the storage chamber and the intensive freeze chamber. Such apparatus when built as a single piece or structure is bulky and difficult to transport. It is therefore desirable to build the apparatus, especially when it is intended for household use, as two separately transportable parts which may be readily united or assembled after separate transportation. In order to do this and to render more easy the ultimate assembly of the parts which must often be done at a place of delivery where no facilities are present for adjustment or regulation of the operating unit, it is desirable to have all the valves and connections preadjusted before delivery so that no change in the operating unit need be made later by the purchaser, and this my invention accomplishes.

To this end I construct the storage chamber as a separate part but without its cooling element and form the cooling element for the storage chamber as part of the other portion of the apparatus in which are combined the intensive freeze chamber and the operating unit including the refrigerating means by which the intensive freeze is obtained and by which also proper cooling of the storage chamber is effected. As a convenient way of doing this I make one wall of the storage chamber removable, attach this wall to the intensive freeze chamber and build the cooling element for the storage chamber as part of this removable wall.

In the accompanying drawings:

Fig. 1 is a perspective view of a refrigeration unit embodying the present invention with the door of the low temperature chamber in open position.

Fig. 2 is a perspective view of the intensive freeze section detached from the refrigeration unit.

Fig. 3 is a perspective view illustrating how the low temperature chamber and the intensive freeze section are placed for movement into position for attachment together; and,

Fig. 4 is a vertical section through the complete unit.

In the preferred form for apparatus which I have thus shown, 1 is the storage chamber provided with insulated walls. It is a separate element having an outer door 2, inner doors 3, shelves 4 and all the usual accompaniments of such a cold storage chamber. One wall 5 of this

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storage chamber is a separate and removable piece, capable of easy insertion and securement in its proper place and also easy to be removed. This wall 5 is attached to the other part of the apparatus which comprises the intensive freeze chamber 6 and below this the housing 7 for the operating unit preferably immediately below said chamber.

The operating unit may be of any known and suitable type comprising a motor 8, compressor 9, storage tank for the expanded gas 10, and condenser 11; while said unit is appropriately on the bottom 12 of the housing 7, all as readily understood by those conversant with the art.

The compressor 9 of the operating unit and its coils 13 supply the required cooling pipes or coils 14, 15 to both the intensive freeze chamber 6 and the storage or cool chamber 1, respectively. The coils 14 for the intensive freeze chamber are arranged about the latter, as readily understood from Fig. 4.

The coil 15 for the storage chamber 1 is attached to that side of the removable wall 5 which, when inserted in its place, becomes the inner wall of said storage chamber; while the coil 15 is preferably of sinuous or zig-zag formation as shown in Fig. 2. When the wall 5 is separated from the storage chamber 1 the coil 15 preferably remains properly attached to that wall 5.

Maintenance of the desired temperatures may be obtained by a suitable thermostat 16, which is preferably mounted in proximity to the unit coils 13 and the desired differential temperature in the intensive freeze chamber 6 may then be obtained by proper proportionment of the coils 14 in that chamber to the cubic area of its contents.

It is to be understood that my invention is not limited to any particular temperature requirements nor to any particular plan for the maintenance and regulation of these temperatures but is concerned with the construction of the refrigeration unit so that the cooling element 15 for the storage chamber 1 is associated with the intensive freeze chamber 6 in such a way that all adjustments for the regulation or maintenance of the temperatures of both chambers 1 and 6 may be made in connection with the latter chamber and this notwithstanding the fact that the storage chamber 1 into which one wall 5 is yet to be fitted, is a separate part capable of separate transmission, and ready for combination with the rest of the apparatus.

A satisfactory method of fastening the separable wall 5 of the storage chamber 1 in its place, is

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illustrated in Figs. 1 and 4, as consisting of set screws 17 engaged through holes 18 in said wall and threaded into lugs 19 provided for that purpose in the chamber 1.

It will be understood that all of the valves, thermostats and other necessary adjustable members for the operating unit are associated with it in such a way that their complete adjustments may be made before the apparatus is delivered to the purchaser. These adjustments having been made so as to insure the desired temperatures in both the storage chamber 1 and the intensive freeze chamber 6 need not be changed. During transportation the two chambers 1 and 6 are separated, and form separate parts merely for ease in transportation and when delivered they are placed alongside of each other in such a way that the wall 5 which is attached to the part containing the intensive freeze chamber 6 enters directly into its place as part of the cool chamber 1 and when fastened therein becomes the missing wall thereof. This assembly and connection can readily be made by unskilled labor and as soon as made, both chambers 1 and 6 are in condition to be used with all adjustments properly made to operate as desired, it only being necessary to make an electrical connection for the motor.

As the wall 5 when thus adjusted and secured carries the necessary cooling coil 15 for the cool chamber 1 the temperature desired in this latter chamber is immediately obtainable upon the starting of the compressor 9 which forms part of the operating unit, and this is readily effected without the necessity of any couplings or adjustment of the valves.

I thus secure an equally serviceable but much more portable apparatus than has heretofore been provided and one which needs no skilled labor in setting it up for operation at the place of delivery.

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Having thus described my invention, I claim:

1. A transportable refrigerating apparatus comprising initially separate storage and intensive-freeze chambers; the storage chamber having one side open, and the intensive-freeze chamber having a wall component adapted to engage in and close the storage chamber open side; a refrigerating unit in the intensive-freeze chamber having circulatory connection with a cooling element on the wall component for closing-in the storage chamber; and means engageable through the wall component for securing the storage and intensive-freeze chambers in cooperative assembly at the location for use, and vice versa.

2. A two-part refrigerating apparatus in accordance with claim 1 wherein the wall component is in the form of a panel; wherein a cooling coil is secured on the face of said panel which becomes an inner wall surface for the storage chambers when both chambers are in assembly; and wherein suitable screws engage through holes in the wall component and thread into lug projection in the storage chamber to secure both chambers in co-active assembly.

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