Aug. 8, 1950 L. C. LUNEKE 2,518,344

REFRIGERATING APPARATUS

Filed July 6, 1948 2 Sheets-Sheet 1

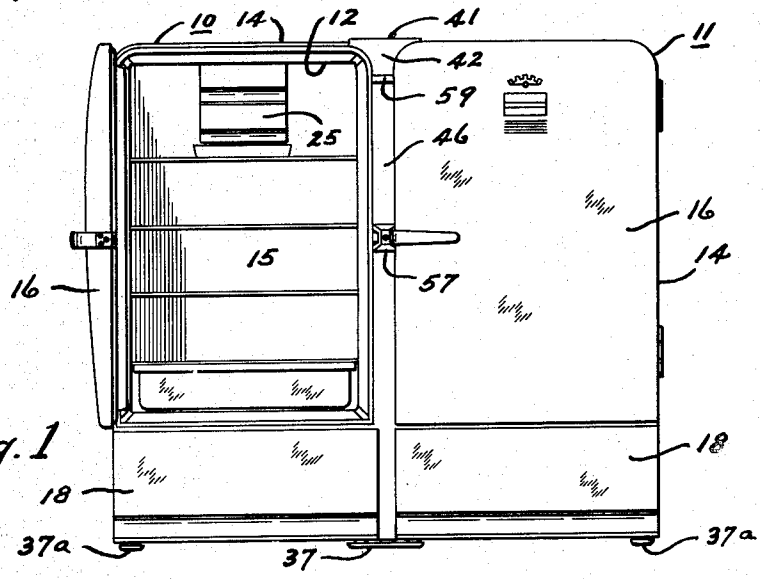


Fig. 1

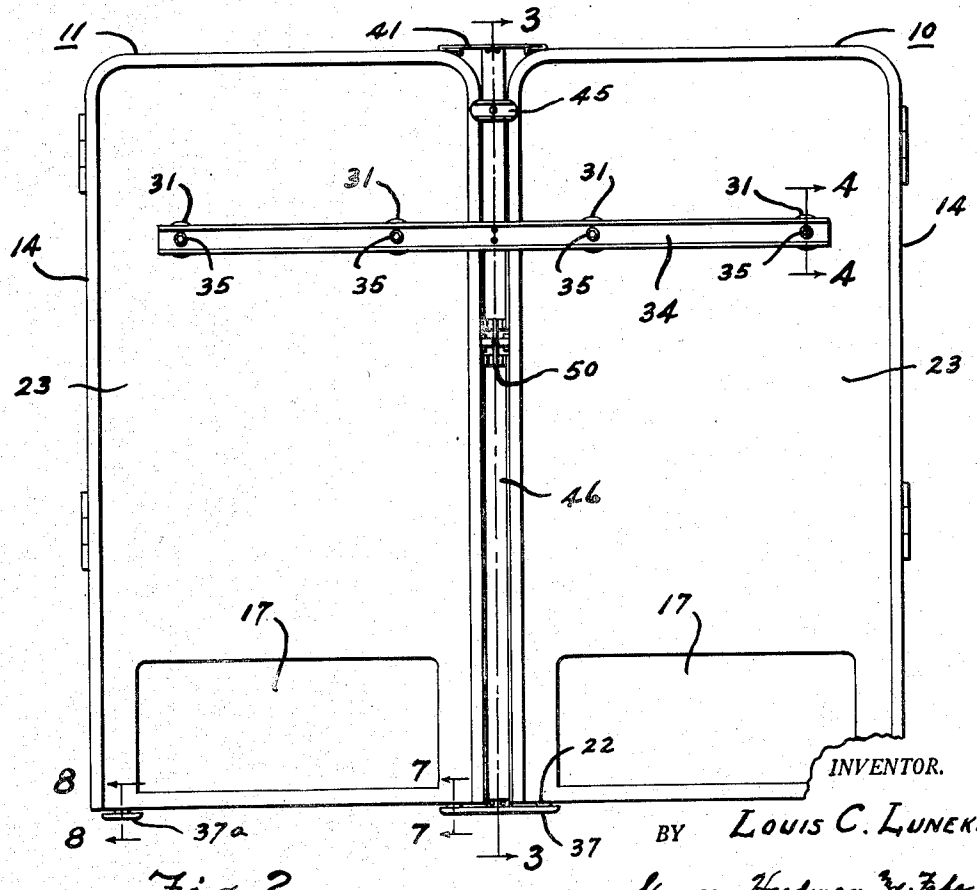


Fig. 2

INVENTOR.
BY LOUIS C. LUNEKE.
Spencer, Hardman & Fehr.
HIS ATTORNEYS.

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REFRIGERATING APPARATUS

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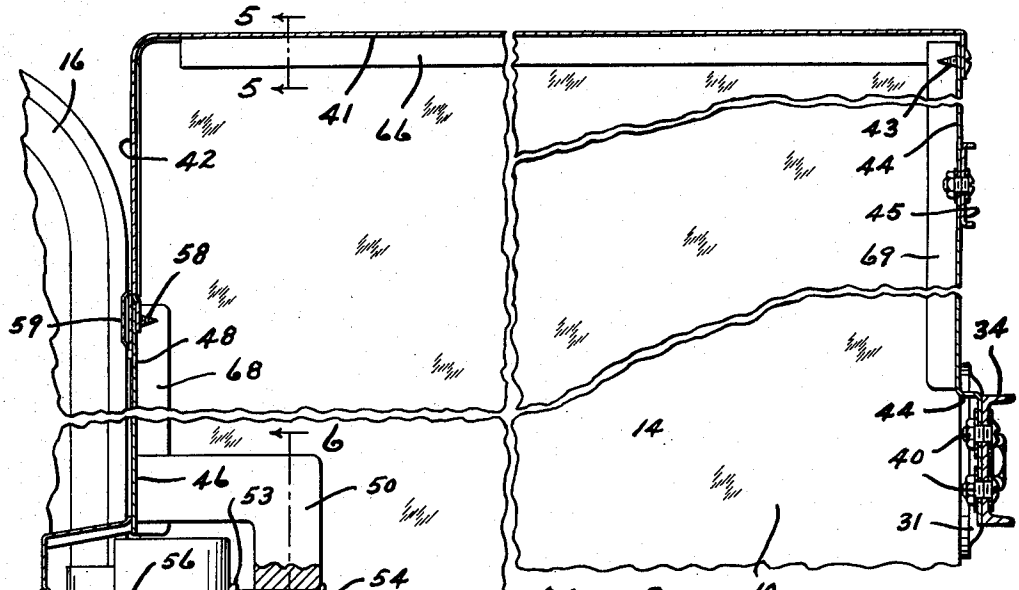


Fig. 3

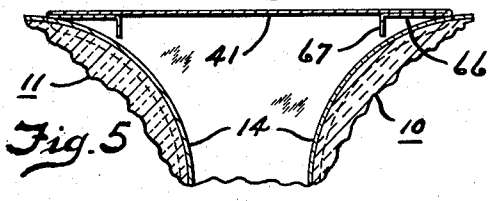


Fig. 5

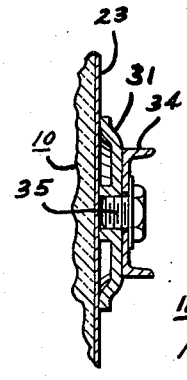


Fig. 4

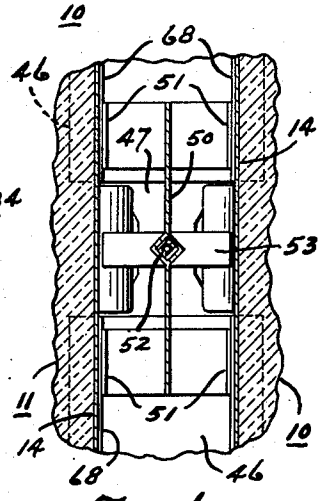


Fig. 6

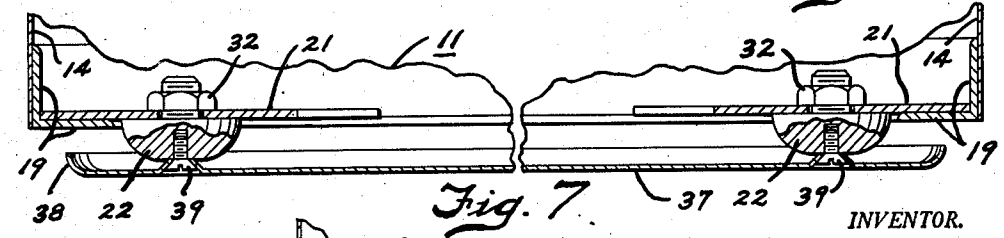


Fig. 7

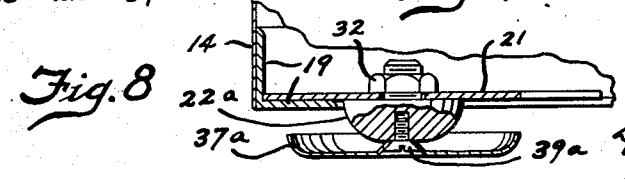


Fig. 8

INVENTOR.
LOUIS C. LUNEKE.
BY
Spencer, Hardman & Fehr
HIS ATTORNEYS

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2,518,344

REFRIGERATING APPARATUS

Louis C. Luneke, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware

Application July 6, 1948, Serial No. 37,251

4 Claims. (Cl. 62—89)

1

This invention relates to refrigerating apparatus and more particularly to household refrigerators.

It has been the practice in the past for owners of large estates or homes, having a family of considerable size, to purchase a single refrigerator of great food storage capacity to take care of the refrigeration requirements of food products to be consumed by members of the family. Such practice has not been entirely satisfactory because of the initial expense of such a large refrigerator, because the owner does not favor chancing the storage of his entire supply of food products in a refrigerator cabinet wherein the cooling of the interior thereof is affected by a single closed refrigerating system and because the demand for such large refrigerators is low causing resale thereof to be difficult and therefore the refrigerator is highly depreciable.

One of the objects of my invention is to provide an improved and relatively inexpensive refrigerator installation of great food storage capacity for the plurality of members of families residing in large homes or estates.

Another object of my invention is to provide a refrigerator installation for large homes of different food storage arrangements and varied temperatures of food storage.

A further object of my invention is to provide a large unitary refrigerator installation for homes wherein the food storage chambers or compartments thereof are segregated from one another and cooled by separate and independent closed refrigerating systems.

In carrying out the foregoing objects it is a still further and more specific object of my invention to detachably lock two or more complete, substantially twin, separate and independent refrigerators together at two or more points along similar portions of the refrigerators to prevent relative movement between the refrigerators so as to form a unitary refrigerator construction of great food storage capacity and to utilize the weight of each refrigerator to aid in preventing such relative movement.

Further advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form is clearly shown.

In the drawings:

Fig. 1 is a front view of my improved unitary refrigerating apparatus showing the food storage compartment access door of one or two locked together cabinets in open position;

Fig. 2 is an enlarged rear view of my improved unitary refrigerating apparatus showing means for locking the back walls of the refrigerator cabinets together;

Fig. 3 is an enlarged fragmentary sectional view taken on the line 3—3 of Fig. 2, showing the locking brace for the cabinets and trim pieces for covering the space therebetween;

Fig. 4 is an enlarged fragmentary sectional view taken on the line 4—4 of Fig. 2, showing the manner in which a brace member is secured to the back wall of each cabinet;

Fig. 5 is an enlarged fragmentary sectional view taken on the line 5—5 of Fig. 3, showing a trim panel spanning the space between the two refrigerator cabinets;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 3, showing means for securing a cap over the catch portions of a latching mechanism on the cabinets;

Fig. 7 is an enlarged fragmentary sectional view taken on the line 7—7 of Fig. 2, showing a brace member secured at two or more points to the bottom of a cabinet; and

Fig. 8 is an enlarged sectional view taken on the line 8—8 of Fig. 2, showing a spacer secured to corners of the cabinets opposed to the corners thereof which are secured together as disclosed in Fig. 7.

Referring to the drawings, for illustrating the present invention, I have shown in Fig. 1 a unitary refrigerating apparatus comprising dual refrigerator cabinets 10 and 11 detachably but rigidly locked together in side by side relationship in a manner and for purposes to be hereinafter more specifically described. Each refrigerator cabinet is complete in itself in that it includes inner and outer metal walls 12 and 14 respectively having a suitable insulating material therebetween and forming a food storage compartment or compartments 15 therein. The front wall of each cabinet 10 and 11 is provided with an access opening normally closed by a hinged door 16. The cabinets 10 and 11 are twins with respect to outer dimensions thereof and one cabinet is provided with a left hand opening door while the other is provided with a right hand opening door, as shown. Below the food storage compartment 15 of each cabinet 10 and 11 there is provided a machine compartment 17 (see Fig. 2) open at the back and bottom and closed at the front of the cabinets by a closure member 18 (see Fig. 1). An angle iron frame 19 is welded or otherwise suitably secured to the bottom edges of the outer upright cabinet side walls 14 (see Figs. 7 and 8). Corner gusset plates 21 welded

to the frame 19 receives gliders or the like 22 for supporting the cabinets. Each cabinet 10 and 11 has a closed refrigerating system associated therewith including a cooling element or an evaporator for cooling the interior of the food storage compartment such for example, as the evaporator 25 located in the compartment 15 of cabinet 10 and connected with a refrigerant translating device which may comprise a motor-compressor unit and a condenser (not shown), but normally mounted in the machine compartment 17 as is common practice in the art. The refrigerant translating device circulates liquid refrigerant, under the control of a suitable or conventional valve or restrictor, to the evaporator 25 wherein the refrigerant is vaporized, to remove heat from the food storage compartment, and the vaporized or evaporated refrigerant is withdrawn from the evaporator by the device for reliquefaction.

Each cabinet 10 and 11 has two or more horizontally spaced apart threaded disks 31 welded or otherwise suitably secured to the back wall 23 thereof (see Figs. 2 and 4). A one-piece channel-shaped brace member 34 extends continuously across at least a portion of the back walls 23 of each cabinet 10 and 11 and is provided with holes through which a bolt 35 extends and is threaded into the threaded portion of the disks 31 on the cabinet back walls. The bolts 35 tightly clamp the brace member 34 at two or more points, to each of the cabinets 10 and 11. A base plate or brace member 37, spaced from and extending in a lateral direction substantially at right angles to the brace member 34, is secured at two or more points (see Fig. 7) to the bottom of each cabinet 10 and 11 (see Fig. 2). This base plate member 37 has turned up edge portions 38 and is secured by screws 39 to two of the supporting gliders 22 on each cabinet as shown in Fig. 7 of the drawings. The supporting gliders 22 are bolted, as by nuts 32 to the cabinet gusset plates 21. It is thus apparent that the cabinets 10 and 11 have their bottom walls at adjacent corners thereof securely locked together by the base member 37. By securing the two brace members 34 and 37 to cabinets 10 and 11 at two or more points along similar walls thereof these individual spaced apart cabinets are rigidly locked together against relative movement therebetween to provide a unitary refrigerator structure. The corners of the cabinets 10 and 11, remote from the corners thereof which are supported upon and locked together by the common base 37, are also raised to a level corresponding to that established by using the base 37 by a small plate 37*a* secured to the gliders 22*a* by screws 39*a* (see Fig. 8).

In order to cover the space between the cabinets 10 and 11, to enhance the appearance of the structure, and to emphasize that the structure is intended to be a unitary construction, movable as a unit, I provide trim panels which engage adjacent portions of the top and front walls of the two cabinets and bridge the space therebetween. The top closure panel 41 has a down-turned front portion 42, which extends to a point slightly below the top of cabinets 10 and 11 (see Figs. 1 and 3), and has its down-turned back end secured by screws 43 to the upper end of a rear supporting member 44. The rear supporting member 44 has its lower end secured to the channel-shaped brace 34 by bolts 40 (see Fig. 3). A cross or centering metal piece 45 is secured to the rear supporting member 44 near the top of the cabinets and its ends engage a portion of the back of each cabinet 10 and 11 (see Figs. 2 and 3) to prevent movement of the top trim panel 41 forwardly of the cabinets. A front closure panel 46 is provided with an open space 47 intermediate its top and bottom ends 48 and 49 respectively which receives a projecting catch portion of a latching mechanism mounted on each cabinet 10 and 11. The opening 47 in front trim panel 46 permits the panel to be fitted upon the structure without interference by the catch portions of the latching mechanisms on the cabinets. A rearwardly extending web member 50, having legs 51 welded to the back side of front panel 46, is provided with a squared open socket portion for the reception of a squared stud 52 having a threaded hole extending therethrough. A metal piece 53 adjacent the stud 52 spans the space between cabinet 10 and cabinet 11 and has its ends abutting against the inner ends of the catch portions of the latching mechanisms on the cabinets. A short screw 54 is threaded into the threaded stud 52 and has its head engaging a back side of web member 50 to prevent movement of the stud 52 outwardly of its mounting socket toward the front of the cabinets. A long screw 56 passes through a hole in metal piece 53 and is threaded into the other end of stud 52 to secure a cap 57 to the front panel 46. Cap 57 has side openings permitting entrance thereinto of a part of the latch mechanism on each cabinet door 16 so that this part of the mechanism will engage the catch portions on the cabinets to maintain the doors 16 in closed position. The upper end 48 of front panel 46 overlaps and is secured to the end of the down-turned portion 42 of top panel 41 by screws 58 (see Fig. 3). These screws 58 are concealed beneath a narrow horizontally disposed trim strip 59 which may be snapped or otherwise suitably secured in place upon the panels. The base plate brace member 37 has an L-shaped piece 61 welded thereto (see Fig. 3) and the lower end 49 of front panel 46 is bent inwardly and secured to the piece 61 by screws 62.

The trim or cover panels 41 and 46 may be of any suitable shape or contour in cross-section to provide them with the desired structural strength. For example, the long side edges of the top panel 41 are folded back upon itself as at 66 (see Fig. 5) and then bent downwardly as at 67 at least along the top of the cabinets. The edges of front panel 46 may also be folded back and provided with inwardly directed flanges 68 to which the legs 51 of web member 50 are welded (see Figs. 3 and 6). The supporting member 44 at the rear of the cabinets may also be provided with inwardly directed flanges 69 to strengthen same. It is to be understood that the trim or cover panels may be painted or coated with a porcelain enamel corresponding to the finish provided on the cabinets 10 and 11. The structural strength afforded panels 41 and 46 by the bends 66 and flanges 67 and 68 are merely to prevent warping or bending thereof, since the locking of the cabinets 10 and 11 rigidly together is dependent upon fastening of the brace members 34 and 37 at two or more points along similar walls of each cabinet and by the weight of at least a portion of each cabinet supported on the common base 37.

While the cabinets are described as twins relative to their outer dimensions, they may be entirely different in interior food storage arrangement and temperature. For example, the cabinet

10 may be of the single compartment, uniform temperature type, whereas cabinet 11 may include a plurality of compartments each maintained at a different temperature relative to one another. Such a construction would afford a user varied food storage arrangements and a plurality of differently temperatured food compartments in a unitary structure. In other words the interior arrangement of the dual cabinet unitary structure disclosed may be predetermined so as to provide various combinations in accordance with the requirements of users of such an apparatus so long as the cabinets are of substantially the same exterior dimensions.

It will thus be apparent that I have provided a large improved unitary refrigerating apparatus comprising individual cabinets, each cooled by separate and independently closed refrigerating systems, so as to permit varied food storage arrangements, different temperatures within the individual compartments and detachment of the cabinets from one another in order to re-sell the same as smaller complete refrigerators at any time the apparatus may be desired to be replaced by new and more modern refrigeration equipment. In my improved apparatus the separate and individual refrigerators are locked together at two or more points along two similar walls thereof, and the weight of one refrigerator cabinet aids in holding the cabinets against relative movement therebetween to provide a unitary structure. The arrangement of my improved structure permits food products in one of the cabinets, or at least those products which are highly perishable, to be transferred to and temporarily stored in the other cabinet should one of the separate closed refrigerating systems fail to function properly. In this manner spoilage of the entire food supply within my improved refrigerating apparatus is prevented, whereas it might be lost in a large refrigerator wherein a single refrigerating system cools all of the interior thereof.

While the form of embodiment of the invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, as may come within the scope of the claims.

What is claimed is as follows:

1. A unitary refrigerating apparatus comprising, two refrigerator cabinets positioned in side by side relationship, each of said cabinets being provided with a food storage compartment and a machine compartment, each of said cabinets having a closed refrigerating system associated therewith including an evaporator for cooling said food compartment and a refrigerant translating device mounted in said machine compartment for circulating refrigerant to and for withdrawing refrigerant from said evaporator, a brace member extending continuously from one

cabinet to the other across a substantial portion of similar walls of each cabinet, a second brace member extending continuously from one cabinet to the other across a substantial portion of the bottom of each cabinet, said members each being attached to said cabinets at two or more points on each cabinet to securely lock the cabinets together, and said second brace member forming a common base supporting at least a portion of each cabinet whereby the weight of said cabinets on said base serves to augment said members in preventing relative movement between the cabinets.

2. An apparatus as defined in claim 1 wherein a trim panel has its ends secured to the brace members and abuts adjacent wall portions of the cabinet to close the space therebetween.

3. A unitary refrigerating apparatus comprising, two refrigerator cabinets positioned in side by side relationship, each of said cabinets being provided with a food storage compartment and a machine compartment, each of said cabinets having a closed refrigerating system associated therewith including an evaporator for cooling said food compartment and a refrigerant translating device mounted in said machine compartment for circulating refrigerant to and for withdrawing refrigerant from said evaporator, a brace member extending continuously from one cabinet to the other across a substantial portion of the back wall of each cabinet, a second brace member extending continuously from one cabinet to the other across a substantial portion of the bottom of each cabinet in a direction at right angle to the extension of said first named brace member, said members each being attached to said cabinets at two or more points on each cabinet to securely lock the cabinets together, and said second brace member forming a common base supporting at least a portion of each cabinet whereby the weight of one cabinet on said base serves to augment said members in preventing movement of the other cabinet relative to said one cabinet.

4. An apparatus as defined in claim 3 wherein a trim panel has its ends secured to the brace members and abuts adjacent wall portions of the cabinet to close the space therebetween.

LOUIS C. LUNEKE.

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