Nov. 19, 1940. K. F. SCHMIDT 2,222,543

REFRIGERATOR

Filed June 6, 1938

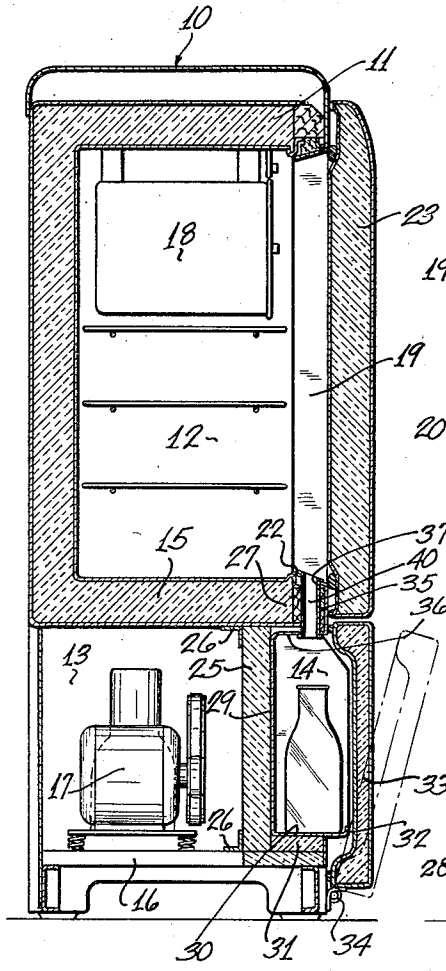


FIG. 2.

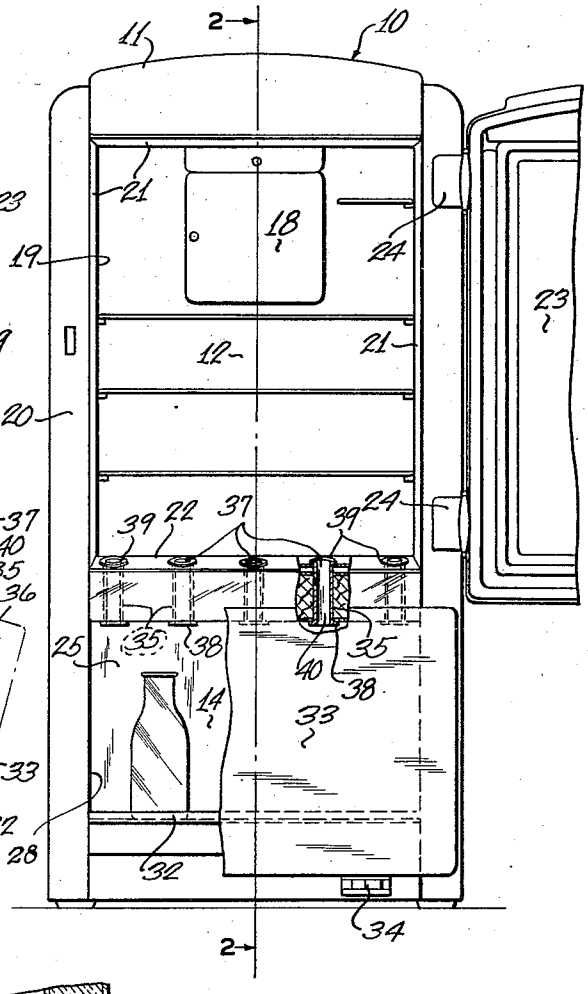


FIG. 1.

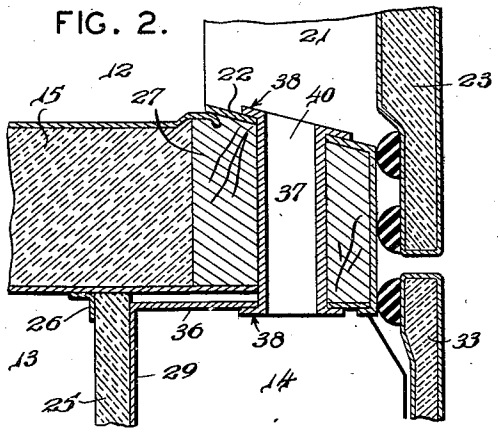


FIG. 3.

INVENTOR

KARL F. SCHMIDT

BY Paul L. Kroker

ATTORNEY

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REFRIGERATOR

Karl F. Schmidt, Indianapolis, Ind., assignor, by mesne assignments, to Philco Refrigerator Company, Philadelphia, Pa., a corporation of Delaware

Application June 6, 1938, Serial No. 212,082

4 Claims. (Cl. 62—89)

This invention relates to refrigerators and more particularly to refrigerators adapted for domestic use.

The principal object of the invention is to provide an improved refrigerator of domestic type, having a main storage compartment and an auxiliary storage compartment separate therefrom but in cooling air circulation communication with the main compartment, the arrangement of the air circulation connection between the main and auxiliary compartments being such as to attain efficient cooling of the auxiliary compartment without reducing or otherwise affecting the storage space of the main compartment.

Another object is to provide an improved refrigerator which provides an increased storage space for foodstuffs and the like, and which facilitates manufacture thereof at a materially lessened cost.

Other objects and advantages will readily appear from the following description when read in connection with the drawing, in which:

Fig. 1 is a front elevation of a preferred embodiment of the improved refrigerator, the view showing certain portions in section in order to illustrate more clearly features of the invention, and Fig. 2 is a sectional elevation of the refrigerator as taken along line 2—2 in Fig. 1; and

Fig. 3 is an enlarged detail sectional view showing the communicating connection between the compartments.

Referring to the drawing by suitable reference characters, the numeral 10 designates generally a preferred form of domestic refrigerator embodying the features constituting the subject of this invention. The refrigerator comprises a suitably heat-insulated cabinet structure 11 including walls cooperating in providing a main storage chamber or compartment 12, a compressor chamber 13 and an auxiliary storage chamber or compartment 14, the latter two being by preference, located below the main compartment and separated therefrom by a wall 15. Located within chamber 13 and resiliently mounted on a base 16 forming the bottom of the cabinet structure, is a refrigeration compressor unit 17 of any suitable type, while arranged preferably in the upper portion of the main chamber 12, is a suitable evaporator or cooling unit 18 which is supplied with refrigerant from the compressor unit through suitable connections (not shown).

Access to the main compartment 12 is provided for by an opening 19 at the front 20 of the cabinet. The cabinet wall portions defining the opening 19 are lined with breaker strips as 21 at the top and sides of the opening and 22 at the bottom thereof, these breaker strips being formed of any suitable material and secured in assembly to the cabinet in any desired manner (not shown). The opening 19 is controlled by an insulated door 23 suitably hinged to the cabinet, as at 24, the door being of a so-called "flat" type in which no part thereof projects inwardly of the cabinet or across the breaker strips.

The auxiliary storage compartment 14 is arranged below the main compartment and adjacent the front of the cabinet, this compartment being separated from the compressor chamber 13 by an insulating partition or wall 25 suitably secured in place, as by angle irons or brackets 26. The auxiliary chamber is separated also from the main chamber by the portion 27 of the cabinet wall 15 which defines the lower extremity or bottom of the latter chamber. It is to be noted that the forward end of such wall portion supports the breaker strip 22 heretofore mentioned. The auxiliary chamber which is open at the cabinet front, as at 28, is by preference lined by a suitable liner 29 of sheet metal or other sheet material, the bottom 30 of the liner resting on an insulating strip 31 supported on the base 16. The forward edge 32 of the liner bottom 31 is preferably turned up to provide a retaining flange serving to retain in place within the chamber, articles such as milk bottles and the like. The upturned edge or flange 32 serves an additional purpose, in that it cooperates with the liner bottom and sides to form a pan for the collection of moisture forming in the chamber and on the articles stored therein.

Access to the auxiliary chamber through opening 28, is controlled by an insulated door 33 suitably hinged to the cabinet structure preferably at its lower or bottom horizontal edge, as at 34. Each of the doors 23 and 33 is operable independently of the other, so that independent access may be had to either of the chambers 12 and 14.

Cooling of the articles stored in the auxiliary compartment is effected by a circulation therethrough of cold air derived from the main compartment 12, this being attained by improved means permitting a so-called "thermo-syphon" circulation of air between the compartments. Accordingly a plurality of apertures 35 are provided, extending vertically through the breaker strip 22, the wall portion 27 and the upper wall 36 of the liner 29 in the auxiliary chamber. Seated in each aperture is a suitable tubular element 37 having a flange 38 at one end engaging

adjacent exposed portions of the liner wall 36 and a similar flange 38 at the opposite end and engaging adjacent exposed portions of the breaker strip 22. The flanges serve to retain each element in assembly, while the elements provide a plurality of passages 40 interconnecting the main and auxiliary chambers. Thus provision is made for circulation of cooled air between the chambers at all times, it being noted that the doors 23 and 33, when in closed position (Fig. 2), do not interfere with or obstruct the passages in any manner. A distinct feature of this arrangement resides in the extension of the passages 40 through the breaker strip 22, which does not in any way interfere with or reduce the storage area at the bottom of the main chamber.

It is to be noted that a suitable stop or other means (not shown) may be associated with the auxiliary compartment door 33 to limit the opening extent thereof. Also, the compartment liner 29 may be adapted for ready removal to facilitate cleaning thereof or for other purposes, as repair or replacement.

Although only a preferred embodiment of the invention has been illustrated and described herein, it is to be understood that alterations or modifications of the structure and arrangement may be made within the scope of the claims hereunto appended.

I claim:

1. A refrigerator cabinet structure comprising a plurality of walls defining a main refrigerating compartment and an auxiliary refrigerating compartment, said cabinet provided with an opening giving access to said main compartment, an insulating lining defining said opening, a flat-faced door controlling said opening, and a passage between said main and auxiliary compartments, said passage extending through said insulating lining.

2. A refrigerator cabinet structure comprising a plurality of walls cooperating in defining a main refrigerating compartment and an auxiliary refrigerating compartment separate therefrom, said cabinet provided with an opening giving access to said main compartment, an insulating breaker strip defining said opening, a flat-faced door controlling said opening, an opening giving access to the auxiliary compartment, a door controlling said opening and passage-forming means providing communication between said main and auxiliary compartments, said means opening to said main compartment through said breaker strip.

3. A refrigerator cabinet structure comprising walls cooperating in forming separate main and auxiliary refrigerating compartments, passage-forming means providing passages interconnecting said compartments for the circulation of cooling air therebetween, and a liner for said auxiliary compartment including a bottom wall having an upturned flange along its forward marginal edge, said flange cooperating with the walls of said liner in forming a pan for the collection and retention of moisture forming in said compartment.

4. A refrigerator cabinet structure comprising insulating walls cooperating in defining separate main and auxiliary refrigerating storage compartments, a refrigerating unit in said main compartment, said cabinet having openings in a common wall thereof giving access to said main and auxiliary compartments, a flat-faced door controlling the main compartment opening, a door controlling the auxiliary compartment opening, a breaker strip defining the outer edge portions of the opening to said main compartment and having a portion thereof forming at least part of the division wall between said compartments, and passage forming elements extending through said portion of said breaker strip, said passage-forming elements providing communication between the main and auxiliary compartments for the circulation of cooling air therebetween.

KARL F. SCHMIDT.