Aug. 24, 1937. R. H. MONEY 2,091,079

REFRIGERATOR CABINET AND METHOD OF ASSEMBLY

Filed April 2, 1935 2 Sheets-Sheet 1

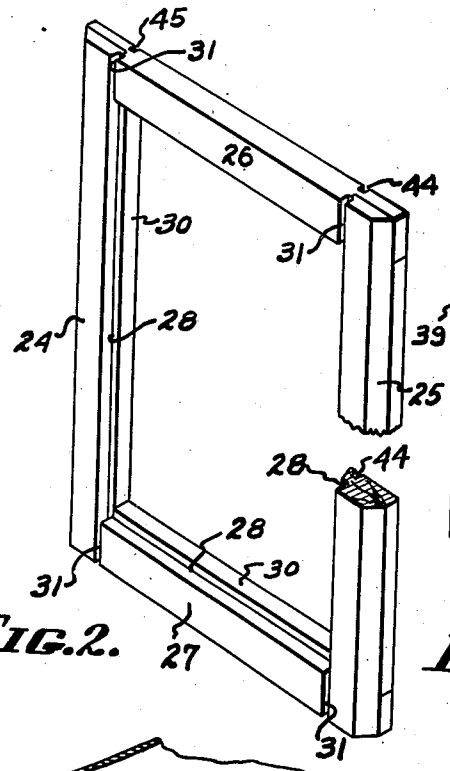


FIG. 2.

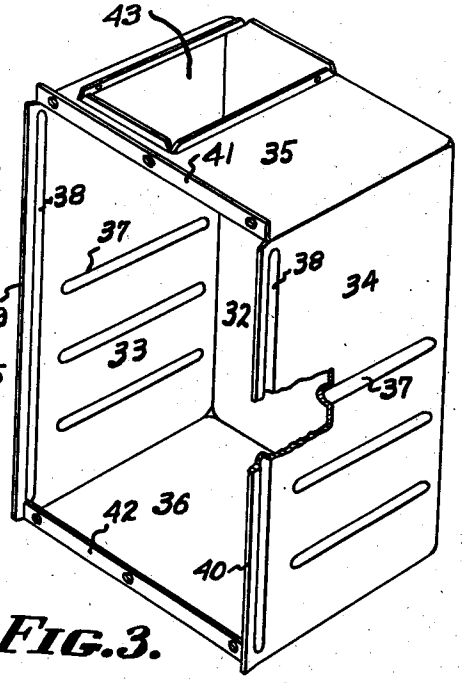


FIG. 3.

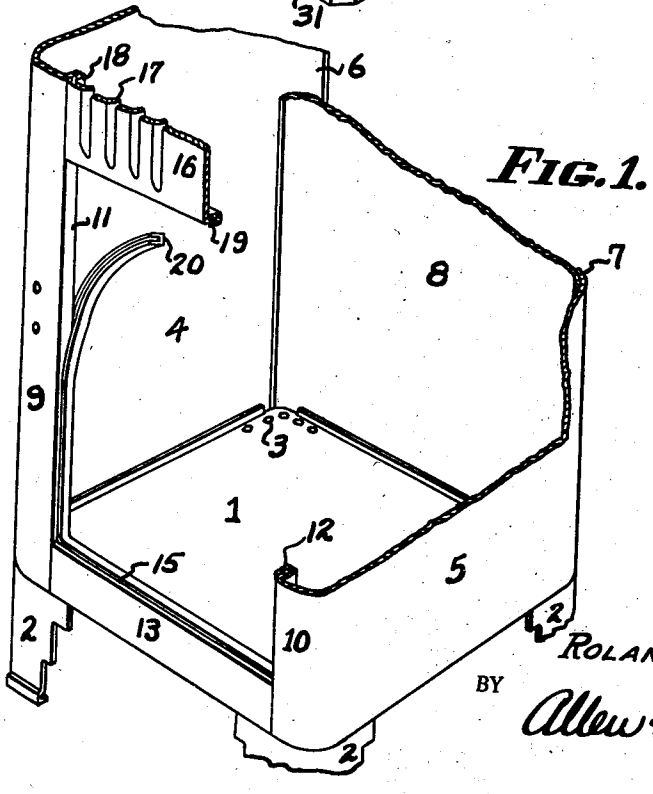


FIG. 1.

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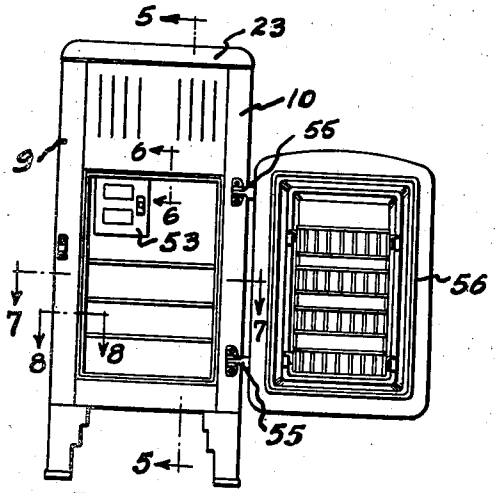


FIG. 4.

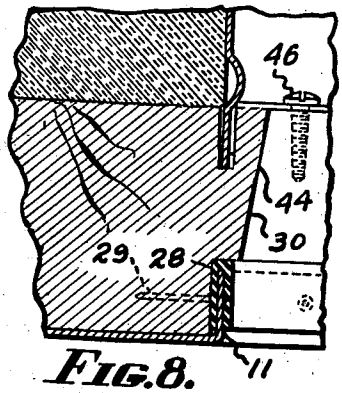


FIG. 8.

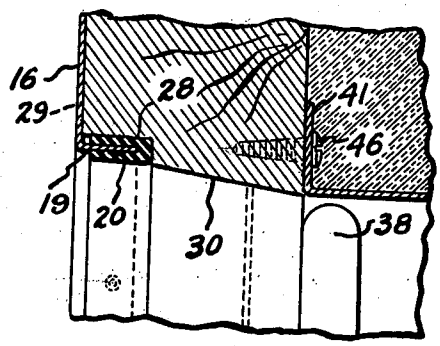


FIG. 6.

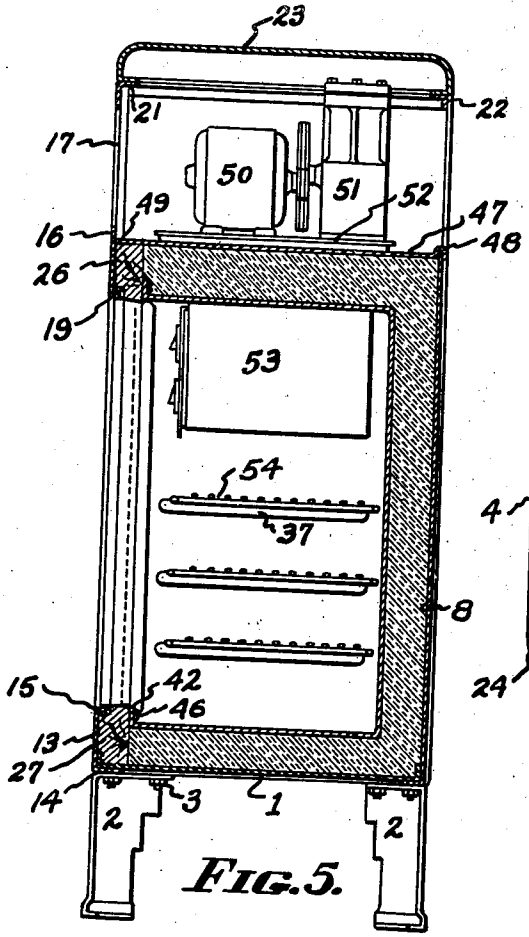


FIG. 5.

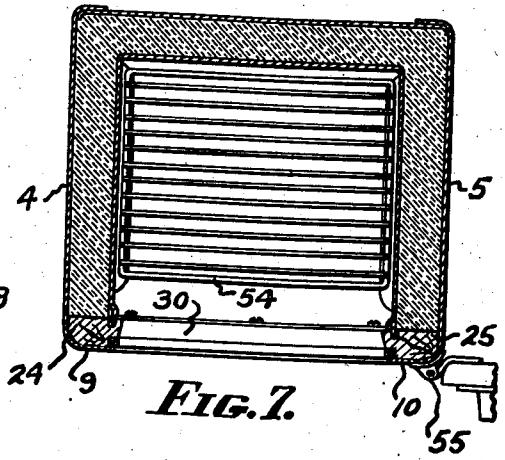


FIG. 7.

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Patented Aug. 24, 1937

2,091,079

UNITED STATES PATENT OFFICE

2,091,079

REFRIGERATOR CABINET AND METHOD OF ASSEMBLY

Roland H. Money, Cincinnati, Ohio, assignor to The Crosley Radio Corporation, Cincinnati, Ohio, a corporation of Ohio

Application April 2, 1935, Serial No. 14,279

10 Claims. (Cl. 220—9)

The fundamental objects of my invention are the provision of a method of assembly and of a cabinet construction which is rugged, simple and inexpensive both to construct and to put together, and which, after assembly, provides a neater and better appearance, and a tighter and more perfect construction than it is possible to achieve otherwise, excepting through the use of many more parts and a much more laborious method. The ancillary objects of my invention will be clear to one skilled in the art upon reading the ensuing specifications, wherein I shall describe an exemplary embodiment of my invention. Reference is made to the drawings, wherein:—

Figure 1 is partial perspective view of the outer parts of an exemplary cabinet.

Fig. 2 shows a wooden frame member which I employ.

Fig. 3 shows an inner or food compartment construction.

Fig. 4 shows a completed cabinet assembly.

Fig. 5 is a vertical sectional view thereof, taken along the lines 5—5 of Fig. 4.

Fig. 6 is a detail section of a portion of the cabinet at the upper part of the door opening, taken along the lines 6—6 of Fig. 4.

Fig. 7 is a horizontal sectional view of the cabinet taken along the lines 7—7 of Fig. 4.

Fig. 8 is a detail section of a portion of the cabinet at the side of the door opening, taken along the lines 8—8 in Fig. 4.

Briefly, in the practice of my invention I build up an outer structure comprising bottom, side and back members of the cabinet and appurtenances thereto. I fasten a wooden frame to this, which is designed not only to receive an inner structure constituting the refrigerated or food compartment, but also to finish off the edges of the opening for the door and to serve in lieu of the parting strips heretofore used. The outer structure may next be lined with insulation, and the food compartment inserted therein. A special inter-fitting of the wooden frame with the inner and outer structures will be described whereby an attractive finish is secured without the use of additional parts. The cabinet is finished as will hereinafter be set forth. I shall describe my invention in connection with an exemplary cabinet of the type in which a compartment for the motor, compressor and condenser is provided above the refrigerated compartment which contains the evaporator; but it will be understood that my invention is not limited thereto.

In Figure 1, I have shown an outer assembly for a refrigerator cabinet comprising a flanged bottom member 1, to which the desired feet or other supports 2 may be attached, as by bolts 3, or otherwise. I provide outer side pieces for the cabinet indicated at 4 and 5. These side pieces have rounded edges where this is desired for appearance' sake, and may have flanges to the rear as indicated at 6 and 7 for co-operating with a back wall member 8, which may have co-operating flanges as shown. The front edges of the side wall members are turned over as at 9 and 10 to form side portions of the front of the cabinet. The width of this turned over portion will normally be at least the thickness of the insulation which is used, as will hereinafter be explained. The extreme edges of the turned over portions 9 and 10 will be bent inwardly to form flanges 11 and 12.

A bottom piece 13 may be fastened in place, and this piece may be flanged underneath, as at 14 in Fig. 5, to facilitate its connection to the bottom plate 1. Its upper edge will likewise be turned over as at 15 to form a flange which is continuous with the flanges 11 and 12. A top front piece 16 may also be put into place. This front piece may be narrow or wide, as desired. In a type of cabinet where a motor and compressor compartment is located above the refrigerated compartment, the top front member 16 will preferably cover the front of the said motor compartment and may, if desired, be provided with louvres 17 for ventilation. The top front piece 16 has side flanges 18 for juncture respectively to the flanges 11 and 12 of the outer side members of the cabinet. It likewise has a bottom flange 19 turned inwardly and arranged so as to be continuous with the flanges 11 and 12 of the side members, and the flange 15 of the bottom front member. All of these flanges therefore define a door opening in the cabinet, and it will be possible to line these flanges about the said door opening with U-shaped strips of rubber 20, as most clearly shown in Figs. 1 and 6.

The upper ends of the outer side members 4 and 5 and the front top member 16 are of even height, and may have bent over flanged portions 21 and/or may be reinforced with an angular framework 22 (Fig. 5) so as to form a seat for the top member 23 of the refrigerator. The back member 8 in that type of refrigerator which has a motor compartment above the refrigerated compartment, usually terminates short of the top of the device, as clearly shown in Fig. 5, so that the back of the motor compartment is open to the air.

Having thus constructed substantially completely an outer cabinet for the refrigerator, I

next put in place a wooden framework which is illustrated in Fig. 2. This wooden framework comprises side members 24 and 25, and top and bottom members 26 and 27. These members are mortiged, or otherwise fastened together, as desired, to form a rectangular framework, the central opening of which is substantially of the same size as the door opening hereinabove referred to. When the framework has been put into position the side members 24 and 25 lie behind the turned over portions 9 and 10 of the outer side members of the cabinet, as is most clearly shown in Fig. 7. The top and bottom members or rails 26 and 27 lie respectively behind the top and bottom front members 16 and 13. The frame of Fig. 2 is rabbeted, as at 28, so as to receive the rubber covered flanges 11, 12, 15 and 19 of the outer side and top and bottom front pieces of the cabinet. This relationship of parts is clearly shown in Figs. 6 and 8. When the wooden frame of Fig. 2 is placed in position, one leg of the U-shaped rubber lining pieces may be displaced so as to permit the nailing of the flanges 11, 12, 15 and 19 to the wooden frame by means of nails 29, as shown in Figs. 6 and 8. Other fastening devices may, of course, be used. Inwardly of the rabbets 28 the faces of the wooden frame may be beveled as at 30 in the several figures. This forms, as will hereinafter be made clear, integral parting strips for the refrigerator, and renders unnecessary the use of additional strips of material for this purpose. The exposed faces 30 of the wooden frame of Fig. 2 may be finished for decorative and/or preservative effect in any way desired.

The front face of the wooden frame member may be grooved as at 31 to accept the inwardly extending joined flanges of the front side members 9 and 10, and the end flanges of the top and bottom front members 16 and 13, respectively.

I have shown in Fig. 3 a food compartment for the refrigerator, which is a unit. It either may be an integrally formed structure, or it may be a structure built up of a number of pieces of sheet metal. In any event, it is a box-like structure comprising a back wall 32, side walls 33 and 34, and top and bottom members 35 and 36, respectively. The side members may be provided with inwardly depressed ridges 37 to act as supports for the shelves where desired, and along the open side edges of the compartment there may be strengthening ribs 38. The food compartment is provided at its sides with forwardly extending flanges 39 and 40, and at its top and bottom edges with flanges 41 and 42, both of which flanges are bent upwardly as shown, so as to lie at right angles respectively to the top and bottom walls of the structure. In that type of refrigerator in which the motor, compressor and condenser are located above a base, from which depends the evaporator structure, so that the whole mechanical assembly of the refrigerator can be removed as a unit, I provide in my food compartment member, as illustrated in Fig. 3, an opening 43 through which the evaporator may be inserted. This opening may be surrounded by peripheral flanges if desired. It will be observed that the flange members 41 and 42 are adapted to lie face-wise against the wooden frame member of Fig. 2 and from the rear. The wooden frame member is grooved, as at 44 and 45 to accept the flanges 39 and 40 of the food compartment. Preferably these grooves extend the entire length of the wooden frame member, and lie outwardly of the innermost edges of the rabbeted parts 28. This construction is clearly shown in Fig. 8.

In assembling my refrigerator cabinet, the next step will be to cover the bottom 1 of the outer shell with a suitable insulating material. The kind of insulating material is unimportant so far as this invention is concerned. Conveniently it may be in the form of a preformed block of insulating material of the proper size, which can be slipped into place. The food compartment of Fig. 3 can then be inserted into the structure, with the flanges 39 and 40 lying in the grooves 44 and 45 of the frame. The flanges 41 and 42 can then be attached to the upper and lower rails 26 and 27 of the frame member, as by nails or screws 46, whereby the food compartment may be tightly held to the wooden frame.

Next in the order of operations, I place insulation about the sides of the food compartment, i. e., between the food compartment proper and the side members 4 and 5, and the back member 8 of the outer shell of the refrigerator cabinet. Next I insulate the top of the food compartment. Where an opening 43 has been left for the insertion of the evaporator, this space will, of course, not be covered by insulation. Next I place in position a member 47, shown in Fig. 5, which forms the floor of the motor and compressor compartment. This member may have at its rear edge a turned over portion 48 to engage the upper edge of the outer back wall member 8. Its forward edge 49 may overlie the upper rail 26 of the wooden frame member, and may be attached thereto in any way desired. The motor 50 and the compressor 51, together with the evaporator (not shown), and such other associated apparatus as may be required, may be mounted upon a base 52, from which the evaporator 53 is suspended. The member 47 will, of course, have an opening therein registering with the opening 43 of the food compartment of Fig. 3 to receive the evaporator. The assembly of motor, compressor, evaporator and the like is not a limitation upon my invention, and has not been illustrated in detail. I have shown in several of the figures shelf members 54 lying on the shelve supports 37.

In finishing the refrigerator cabinet, it will be usual to hinge a door to the front side member 10 by means of hinges 55, and to provide the door 56 and the front side member 9 with cooperating parts of a latching mechanism. The other details of construction, such as the type of door, the anti-rattling stripping which is commonly used between the top 23 and the top edges of the refrigerator cabinet proper, and other details, are not limitations upon my invention, and have not been illustrated herein, nor specifically described.

In the manufacture of cabinets in accordance with my invention, the food compartment may have been previously finished, as by enameling in any way desired. It goes without saying, that the outer exposed metal parts of my cabinet may be finished as by enameling prior to assembling; but where this is not desired, it will be found practicable to make the assembly hereinabove described, and then send the entire cabinet through spraying rooms, or the like, for the finishing at least of the outer parts of the cabinet with coatings of sprayed substances.

Modifications may, of course, be made in my invention without departing from the spirit thereof.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A refrigerator cabinet comprising an outer box-like body having a door opening at one side, an inner box-like body opening at one side, both of said bodies attached to a rectangular framework interposed therebetween, with the openings of the frame, the outer construction and the inner construction, in substantial registry, and said frame supporting said constructions and forming parting strips therebetween, said outer construction having flanges about said opening and a flexible resilient sealing strip engaging said flanges, said frame being grooved from end to end to receive said strip.

2. A refrigerator cabinet comprising an outer box-like construction having a door opening therein, said opening defined by inwardly turned flanges, a wooden frame and a box-like food compartment member having flanges, said frame being grooved from end to end to receive said flanges so as to hold said parts in separated relationship, and means for fastening said parts to said frame, whereby an interior portion of said frame becomes a parting strip between said parts.

3. A refrigerator cabinet comprising an outer box-like construction having a door opening therein, said opening defined by inwardly turned flanges, a wooden frame and a box-like food compartment member having flanges, said frame being grooved from end to end to receive said flanges so as to hold said parts in separated relationship, and means for fastening said parts to said frame, whereby an interior portion of said frame becomes a parting strip between said parts, said interior portions of said frame being beveled inwardly.

4. In combination, the outer box-like frame of a refrigerator and an inner box-like food compartment, said elements having openings, a frame for a corresponding opening to which both of said elements are mounted, said food compartment having sidewise flanges interspaced a distance greater than the width of the inner side of the opening of said frame and received in grooves in said frame, said grooves traversing said frame from end to end and means for fastening other flanges of said food compartment to said frame.

5. In combination, the outer box-like frame of a refrigerator and an inner box-like food compartment, said elements having openings, a frame for a corresponding opening to which both of said elements are mounted, said food compartment having sidewise flanges interspaced a distance greater than the width of the inner side of the opening of said frame and received in grooves in said frame, said grooves traversing said frame from end to end and means for fastening other flanges of said food compartment to said frame, said outer cabinet member having inturned flanges about said openings, said inturned flanges being attached to said frame and accepted in grooves therein about the opening in said frame.

6. In combination, the outer box-like frame of a refrigerator and an inner box-like food compartment, said elements having openings, a frame for a corresponding opening to which both of said elements are mounted, said food compartment having sidewise flanges interspaced a distance greater than the width of the inner side of the opening of said frame and received in grooves in said frame, said grooves traversing said frame from end to end, means for fastening other flanges of said food compartment to said frame, said outer cabinet member having inturned flanges about said openings, said inturned flanges being attached to said frame and accepted in grooves therein about the opening in said frame, and a U-shaped resilient covering strip disposed on said flanges and having a liftable leg covering the means for fastening said flanges to said frame.

7. In combination, an outer casing for a refrigerator having a door opening and inwardly turned flanges thereabout, a frame grooved from end to end to accept said flanges, a resilient U-shaped rubber strip covering flanges, one leg of said strip being liftable to expose said flanges, and means for fastening said flanges to said frame through the other leg of said strip.

8. In combination, an outer casing for a refrigerator having a bottom and back, side portions and partial front portions providing a door opening, part of said front portions being formed by turned over portions on said side members forming flanges, and a frame adapted to lie within said front portions and to fill the turned over portions of said side members, said frame being grooved from end to end to accept said flanges and said flanges being attached thereto.

9. In combination, an outer casing for a refrigerator having a bottom and back, side portions and partial front portions providing a door opening, part of said front portions being formed by turned over portions on said side members forming flanges, and a frame adapted to lie within said front portions and to fill the turned over portions of said side members, said frame being grooved from end to end to accept said flanges and said flanges being attached thereto, said frame being of a depth to extend considerably beyond said flanges and beveled to form parting strips.

10. In combination, an outer casing for a refrigerator having a bottom and back, side portions and partial front portions providing a door opening, part of said front portions being formed by turned over portions on said side members forming flanges, a frame adapted to lie within said front portions and to fill the turned over portions of said side members, said frame being grooved from end to end to accept said flanges and said flanges being attached thereto, said frame being of a depth to extend considerably beyond said flanges and beveled to form parting strips, and a food compartment having flanged portions for attachment to the rear face of said frame.

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