

May 7, 1935.

H. GEORGE

2,000,590

REFRIGERATING APPARATUS

Filed April 30, 1929

3 Sheets-Sheet 1

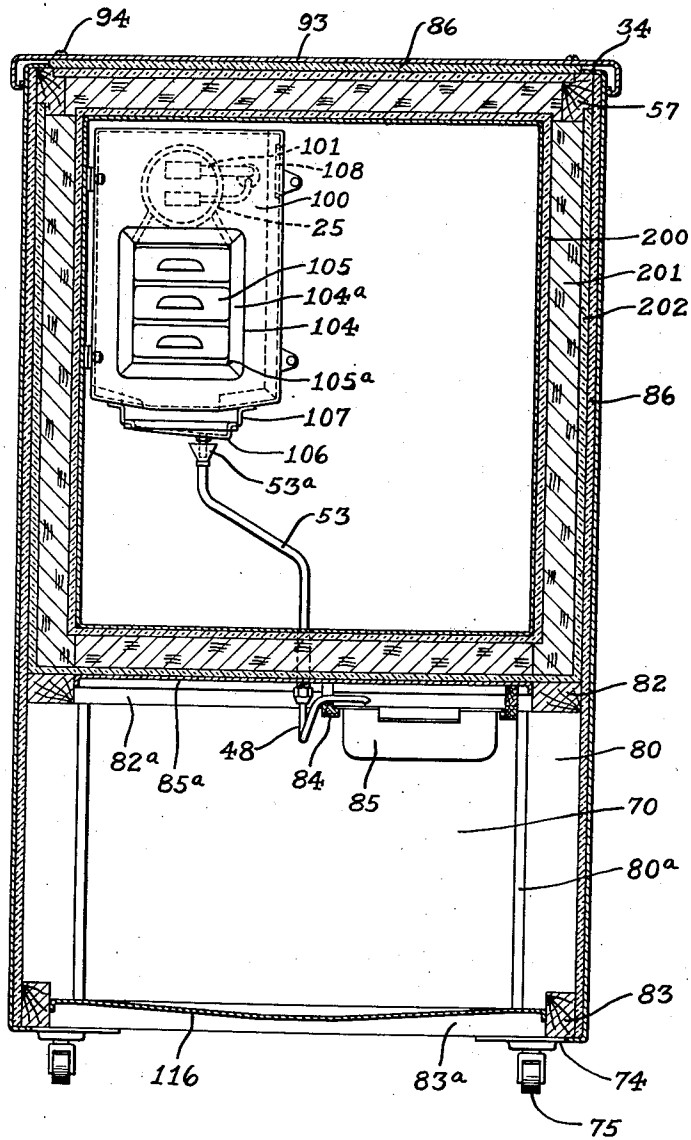


Fig. 1

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3 Sheets-Sheet 2

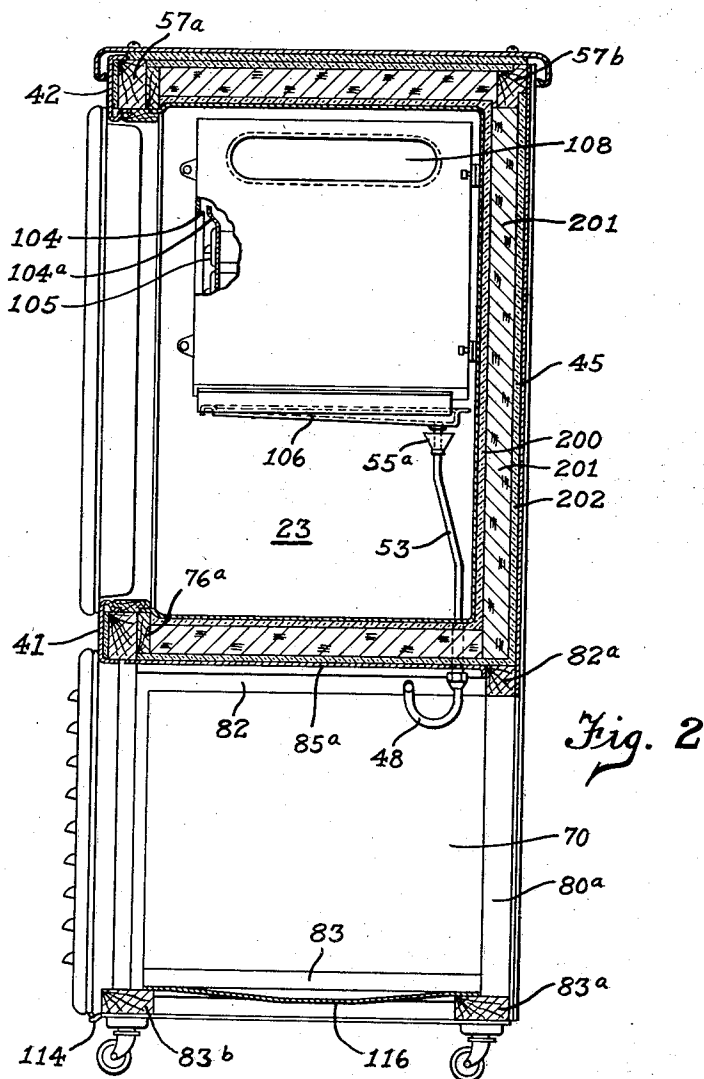


Fig. 2

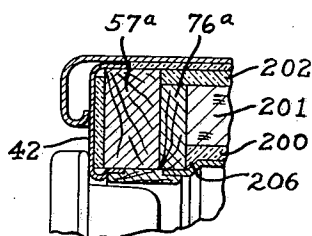


Fig. 3

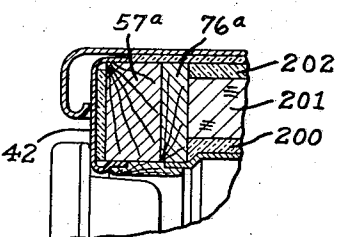


Fig. 7

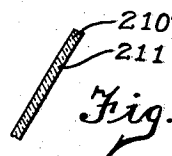


Fig. 8

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3 Sheets-Sheet 3

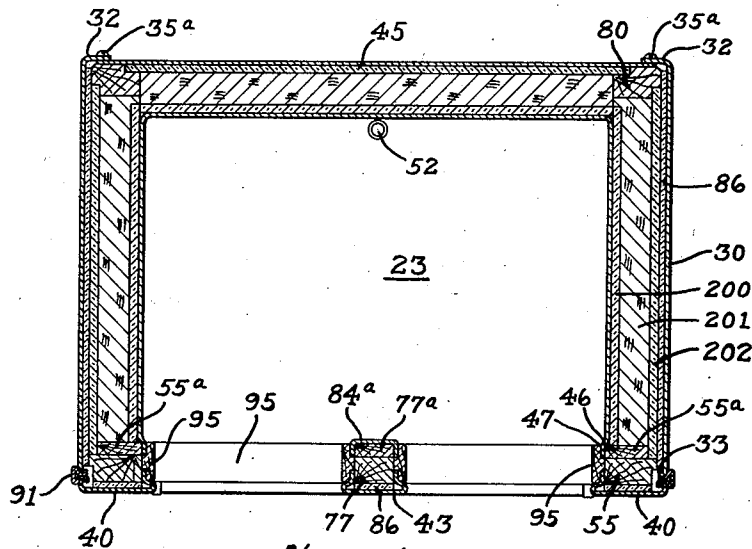


Fig. 4

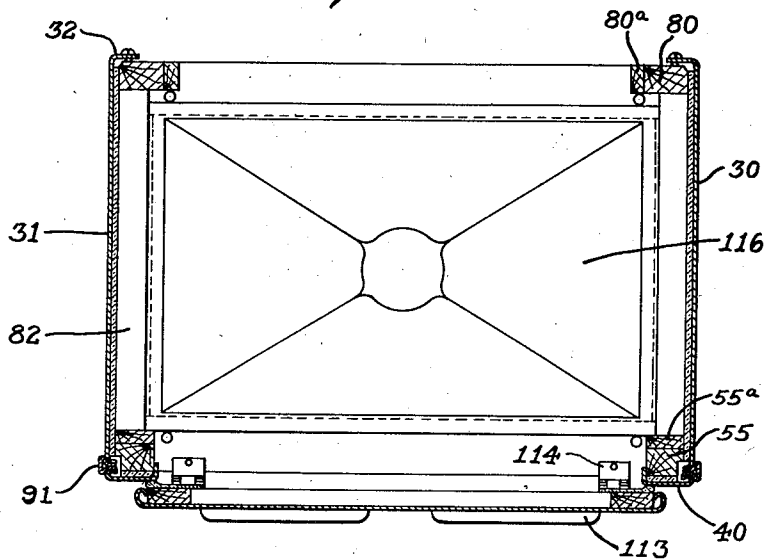


Fig. 5

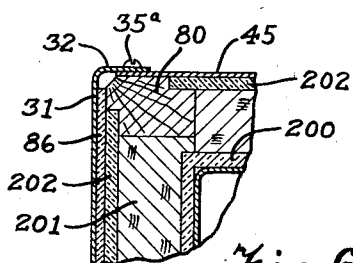


Fig. 6

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UNITED STATES PATENT OFFICE

2,000,590

REFRIGERATING APPARATUS

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Application April 30, 1929, Serial No. 359,400

2 Claims. (Cl. 220—9)

This invention relates to refrigerating apparatus and more particularly to the manufacture of a domestic or retail ice cream refrigerator cabinet adapted to be used with a mechanical refrigerating system.

An object of this invention is to provide a refrigerator cabinet which is not liable to rot because of condensation within its parts.

Another object is to provide a method of manufacture of refrigerator cabinets which is efficient and provides a cabinet which is not liable to rot because of condensation within its parts.

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

In the drawings:

Fig. 1 is a vertical cross-sectional view of a cabinet embodying features of this invention;

Fig. 2 is a vertical cross-sectional view, taken at right angles to Fig. 1;

Fig. 3 is an enlarged view of the upper left hand corner of Fig. 2;

Fig. 4 is a horizontal cross-sectional view taken through the upper compartment of Fig. 1;

Fig. 5 is a horizontal cross-sectional view taken through the lower compartment of Fig. 1;

Fig. 6 is an enlarged view of the upper left hand corner of Fig. 4;

Fig. 7 is a view similar to Fig. 3 of a modified form; and

Fig. 8 is an enlarged view, somewhat diagrammatic, of a rock wool fibre with asphaltic sizing thereon.

This invention relates to the manufacture of various types of refrigerator cabinets such as are ordinarily used for domestic purposes or for the storage of ice cream and which are ordinarily cooled by mechanical refrigerating systems. A cabinet of the type which may be manufactured according to this invention is disclosed in the application of Henry P. Braeutigam and William C. Holbrook, Serial No. 257,989, filed February 29, 1928 now Patent No. 1,832,089 dated November 17, 1931. A cabinet embodying features of this invention may also be manufactured with the aid of an apparatus such as disclosed in the application of Cecil A. Mann for Refrigerating apparatus filed concurrently herewith now Patent No. 1,902,654 dated March 21, 1933. Reference is made, if necessary, to these applications for further disclosure.

It is desirable in manufacturing cabinets of this type to prevent the rotting of the insula-

tion which is placed around the food compartment or brine tank. Ordinarily, rotting is caused by the condensation of atmospheric moisture in the insulation because of the low temperature of the lining and of the insulation surrounding it. This rotting is obviated by the use of substances which do not have hygroscopic tendencies and which are highly rot resisting. These substances may be applied to the cabinet by the method herein disclosed very expeditiously and in a manner adapted to large quantity production such as is necessary for modern industry.

A cabinet embodying features of this invention may include a framework. The framework may comprise front vertical corner pieces 55 and rear vertical corner pieces 80. These corner pieces may be joined at the top by horizontal pieces 57 extending along the sides of the cabinet and pieces 57a and 57b extending along the front and rear respectively. The bottoms of the vertical frame members may be joined by side horizontal members 83, a rear horizontal member 83a and a front horizontal member 83b. If desired, intermediate horizontal members may also join the vertical frame members. Thus side horizontal frame members 82 may be placed intermediate the ends of the vertical frame members. Also a rear intermediate frame member 82a may be used and a front intermediate horizontal frame member 76a may also join the vertical frame members. Thus it is seen that the members 55, 76a and 57a form a door jamb which is adapted to support a sheet metal food compartment generally designated as 23. The compartment 23 may be box-like in character and its edge may be nailed to the door jamb, preferably by providing a bend 46 and an offset edge 47 to be nailed to the door jamb. After the food compartment has been secured in the framework the cabinet thus far manufactured may be placed consecutively with its various sides, top and bottom uppermost. Thus the back of the cabinet may be placed uppermost, and a layer 200 of bituminous cement may be applied to the outer surface of the back of the compartment 23. Preferably the cement is applied by means of the apparatus disclosed in the said application of Cecil A. Mann. While the bituminous cement is still at the proper temperature, a layer 201 of specially prepared rock wool is placed on the bituminous cement. If desired a layer 202 of bituminous cement may also be placed on the outside of the layer of rock wool. As indicated, this last layer may ex-

tend beyond the edge of the insulating layer and form a hermetic joint with the frame members surrounding the insulation as shown at 202, although a hermetic joint may be obtained without notching the frame pieces, as shown in Fig. 7. The layers thus applied to the cabinet may be cooled or caused to be cooled and the cabinet may then be placed in a position to apply the insulation to another side (or top or bottom) of the compartment 23 by placing said side in its uppermost position. By this method of manufacture the bituminous cement may be readily applied since it flows naturally to an even layer because of the horizontal surface and does not tend to run while hardening.

In order to provide an insulating layer of material which is not liable to rot, the insulating material is made of rock wool and is preferably prepared in compact slabs with proper sizing with asphaltic material. Preferably a suitable rock such as an argillaceous limestone is melted and is then blown into fibers, for instance, by steam. The fibers 210 thus produced are individually covered with asphaltic material 211, as shown in Fig. 8, and are compressed into suitable blocks or slabs to be applied to the cabinet. The sizing may be applied by emulsifying the asphaltic material in water and applying it to the individual rock fibres, for instance by soaking a mass of fibres in the emulsified asphalt, after which the moisture may be evaporated, for instance in an oven. The fibres may be compressed either before or after the moisture is evaporated, it being essential only that the fibres may be compressed to the slab-like form so that it may be readily handled and applied to the cabinet in the same manner as if it were a board. The sizing of asphaltic material permits the rock fibres at the surface of the slab to adhere properly with the bituminous cement. This sizing permits the outer layer of fibres to adhere quickly and also permits the bituminous cement to be applied at a sufficiently low temperature to prevent the bituminous cement from penetrating very deeply into the body of the slab and at the same time forming a strong bond with the surface. The temperature of the bituminous cement when applied to the rock wool is preferably regulated so that penetration into the rock wool is reduced to a minimum while providing a strong bond between the parts. When the surfaces of the food compartment adjacent the door jamb are covered with the bituminous cement, the bend 47 provides a thick layer 206 of cement which forms a tight joint at this point.

After all of the outer surfaces of the food compartment lining 23 have been covered in the manner heretofore described, the outer cas-

ing of the refrigerator cabinet may be applied to the structure. Any suitable metallic outer casing may be used. As an example the type of outer casing disclosed in the said application of Henry P. Braeutigam and William C. Holbrook may be used. This may include side panels 30 and 31, a rear panel 45, front panels 40, 41, 42, 43 and top 93 to cover the structure.

Other details shown in the drawings may be used in the cabinet, if desired, and are more fully described in the said application Serial No. 257,989.

Preferably in the process of manufacture, the cabinet may be placed on a track as disclosed in the application of Cecil A. Mann and it may be placed in its various positions either on the track or it may be removed periodically from the track while various operations are being performed upon it, such as while the layers of cement and insulation are being applied.

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, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A refrigerator cabinet including a framework, a box-like sheet metal food compartment supported by said framework, the framework including frame pieces extending along and beyond the corners of the food compartment to form rectangular recesses on the outer surface of said compartment, a layer of bituminous cement on the outer surface of said food compartment in said recesses, a layer of compressed baked rock wool in each of said recesses with its fibres individually sized with asphaltic material, means for hermetically sealing said layers, and an outer metallic casing supported by said framework.

2. A refrigerator cabinet including a framework, a box-like sheet metal food compartment supported by said framework, the framework including frame pieces extending along and beyond the corners of the food compartment to form rectangular recesses on the outer surface of said compartment, a layer of bituminous cement on the outer surface of said food compartment in said recesses, a layer of compressed rock wool in each of said recesses with its fibres individually sized with asphaltic material, another layer of bituminous cement in each of said recesses outside said layer of rock wool and extending in a continuous sheet between and being hermetically sealed to the framework, and an outer metallic casing supported by said framework.

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