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R. A. RIEK

REFRIGERATOR DOOR CONSTRUCTION

Filed March 28, 1927

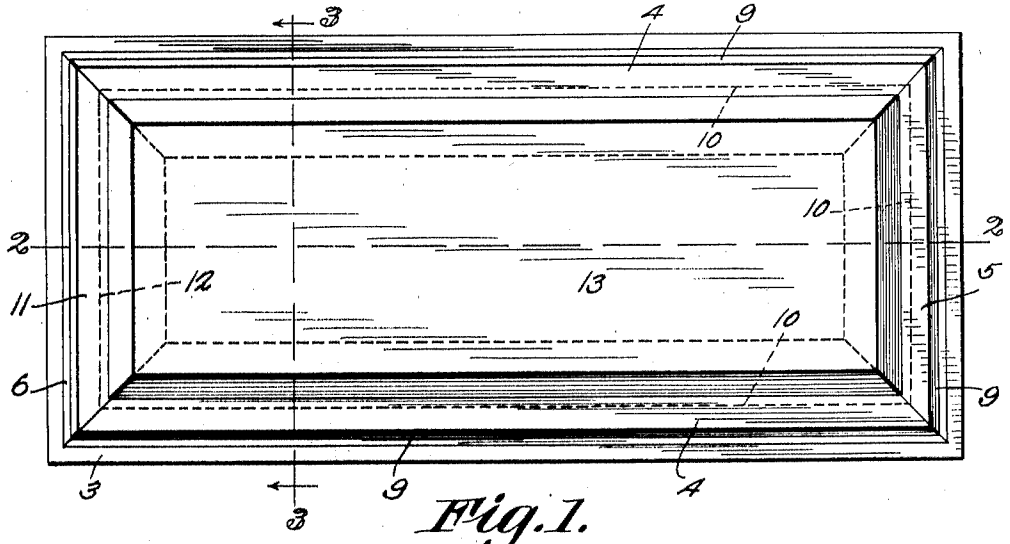


Fig. 1.

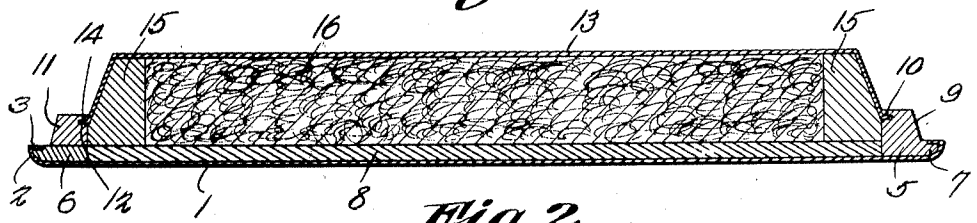


Fig. 2.

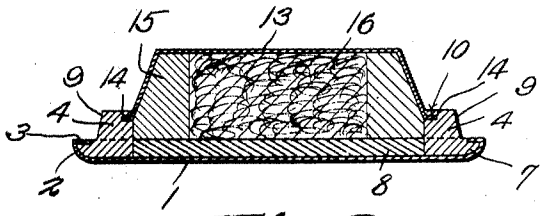


Fig. 3.

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UNITED STATES PATENT OFFICE.

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REFRIGERATOR-DOOR CONSTRUCTION.

Application filed March 28, 1927. Serial No. 179,049.

This invention relates to a door construction designed primarily for use in connection with refrigerators and the casings of refrigerating units.

One of the objects of the invention is to provide a structure wherein the outer and inner surfaces can be formed of sheet metal bent to proper shape utilizing novel means for holding the same assembled with the frame of the door.

Heretofore doors of this type have been made with one-piece porcelained metal linings but it has been necessary to utilize fastening means for the linings which have been exposed to view and consequently have detracted from the appearance of the door.

It is an object of this invention to provide lining retaining means which do not detract from the appearance but permit the formation of a door having a smooth inner surface free of objectionable projections such as screw heads and the like.

Another object is to provide a one-piece porcelained metal lining which can be easily assembled with the frame of the door, the means employed for holding it in position being so constructed as to take care of any buckling of the metal that might result from the intense heat to which it is subjected during the porcelaining operation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is an elevation of the inner surface of a door constructed in accordance with the present invention.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Referring to the figures by characters of reference 1 designates a sheet metal pan constituting the outer or front surface of the door, this pan being formed in one piece and provided along its edges with backwardly extended portions 2 from which a continuous unbroken flange 3 extends inwardly. Seated within the pan is a frame made up of side strips 4 and end strips 5 and 6. The ends of the strips are beveled so as to contact when the strips are assembled in the pan and the outer edges of all of the strips are formed of longitudinal beads 7 so shaped as to fit snugly against the backturned portions 2 and in lapped relation with the flanges 3. The several strips are adapted to be assembled by first tilting them so as to insert the beads 7 into engagement with the flanges 3 and thereafter flattening out the strips so as to rest snugly upon the inner surface of the pan 1 and with the ends of the strips in contact. Thereafter a backing 8 formed preferably of wood, fiber board or any other suitable material is inserted into the space surrounded by the strips 4, 5 and 6 so as to fit snugly against them and flush with the frame.

The strips 4 and 5 are provided with beveled shoulders 9 extending inwardly beyond the beads 7 and flanges 3 and the inner surfaces of these strips 4 and 5, that is to say, those surfaces forming the walls of the space defined by the strips, are formed with longitudinal grooves 10 which register at their ends so as to extend continuously along the sides and one end of said space.

The strip 6 differs from the strips 4 and 5 in that it is of the same thickness as the backing 8 and has one face flush with the exposed face of the flange 3 lapping the bead on said strip. A retaining strip 11 is adapted to be fastened in any suitable manner on the strip 6 so as to extend longitudinally thereof, the two strips 6 and 11, when assembled, having the same appearance as any one of the strips 4 and 5. The inner side wall of the strip 11 has a longitudinal groove 12 corresponding with the groove 10 and adapted to register therewith at its ends when all of the parts are assembled.

The inner section of the door is formed of a pan 13 formed preferably of porcelained metal, the walls of this pan being beveled and provided, at their free edges, with outturned flanges 14. Fitted within this pan so as to bear snugly against the walls thereof

is a frame 15 formed preferably of strips of wood, there being one or more layers of suitable insulating material 16 filling this frame. The frame 15 projects out of the pan a distance equal to the distance between the plane of the flanges 3 and the plane of the grooves 10 and 12.

In assembling this door the strips 5 and 6 and the backing 8 are placed in the pan 1 as heretofore explained. The frame 15 is then seated snugly in the pan 13 and the insulation 16, which can be of cork or any other suitable material is placed in the space defined by the frame 15. With all of the parts thus assembled one end of the frame 5 is placed on the strip 6 while the side flanges 14 are inserted in the grooves 10 in the side strips 4. Pan 13 and the parts therein are then thrust longitudinally until one of the end flanges 14 becomes seated in the groove 10 in the end strip 5. Should the metal pan be minutely buckled as a result of the heat to which it has been subjected in the preparation thereof, the walls of the grooves in the sides and ends of the door structure would tend to straighten out the thin engaged flanges of the pan. After the pan has been fully seated in the manner described, with the frame 15 and the insulation 16 bearing on the backing 8, the strip 11 is positioned on the strip 6 with the adjacent flange 14 seated in the groove 12. Said strip 11 is then fastened by a suitable adhesive or by brads driven upwardly therethrough into the bottom of frame 15. Thus the assembly of the parts will be completed, the outturned flanges 14 being concealed and both the outer and inner surfaces of the door being left smooth and free of exposed fastening means or projecting portions. The strip 11 is located close to the bottom edge of the door and if brads are driven upwardly therethrough they will be invisible ordinarily when the door is hung for use.

Importance is attached to the fact that the grooved strips 4, 5 and 11 serve to straighten out the engaged flanges of the pan 13 and support it with its walls fitted snugly against the strips, so that there will be no crevices in which foreign matter might accumulate.

What is claimed is:

1. A door for refrigerators and the like including a metal pan having inturned marginal flanges, a frame seated in and having its sides and one end portion projecting from the pan, there being registering longitudinal grooves in the projecting portions of the frame, a porcelained metal pan having longitudinal flanges along the walls thereof seated within said grooves, an insulating structure including a frame seated in and projecting from the pan, and a retaining strip separate from and attached to the other end portion of the first mentioned frame, said strip having a groove for the reception of the adjacent flange of the porcelained metal pan.

2. A door for refrigerators and the like including a metal outer pan, a frame seated therein having its sides and one end projecting from the pan, the other end of the frame being flush with the pan, an inner pan movable longitudinally into and out of engagement with opposed portions of the frame, insulating material carried by the inner pan, and a retaining strip for engagement with one end of the inner pan and attached to that portion of the frame flush with the pan for holding said pans assembled.

3. A door for refrigerators and the like including an outer pan, a frame assembled therewith having one end flush with one surface of the pan and its other end and sides projecting from the pan, there being a continuous groove in the projecting portions, an inner porcelained metal pan having outturned flanges upon its walls seated in the grooves, and a retaining flange detachably secured to the flush portion of the frame and grooved to receive one of the flanges of the inner pan.

4. A refrigerator door or the like including an outer pan, a frame assembled therewith having its sides and one end portion projecting therefrom and formed with a continuous groove, the other end of the frame terminating short of the plane of the continuous groove, a porcelained metal inner pan having flanges slidable into the groove to hold said pan assembled with the frame, and a retaining strip having a groove for receiving a portion of the flange of the inner pan, said strip being separate from but attached to that end of the frame terminating short of the groove.

5. A door for refrigerators or the like including an outer pan having inturned marginal flanges, a frame seated in the pan and engaging the flanges, said frame having two sides and one end projecting from the pan, a retaining strip separate from and secured to the other end of the frame, a continuous groove within the retaining strip and the projecting sides and end of the frame, a porcelained metal inner pan, and outturned flanges on the walls of said inner pan seated in the grooves, said pan being slidable into and out of position within the frame when the retaining strip is removed.

6. A door for refrigerators or the like including an outer pan having inturned marginal flanges, a frame seated in the pan and engaging the flanges, said frame having its sides and one end projecting from the pan, a backing within the pan surrounded by the frame and flush with the exposed surface of the other end of the frame, a retaining strip attached to said end of the frame, there being a continuous groove within the retaining strip and the projecting end and sides

of the frame, an inner porcelained metal pan having outturned flanges on the walls thereof seated within the groove, and insulating material including a frame seated in the inner pan and bearing upon the backing, said inner pan and insulating material being slidable into and out of the frame in the outer pan when the retaining strip is removed.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

RUDOLPH A. RIEK.