

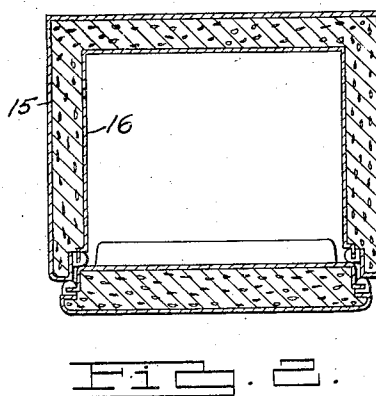
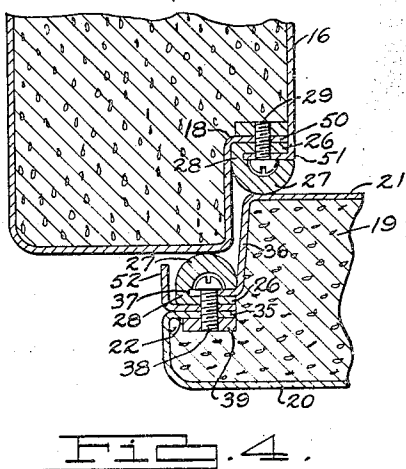
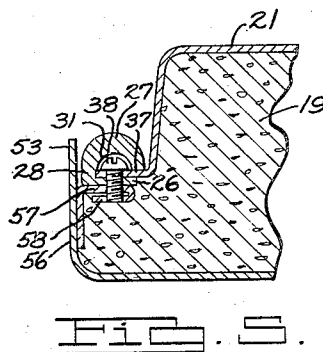
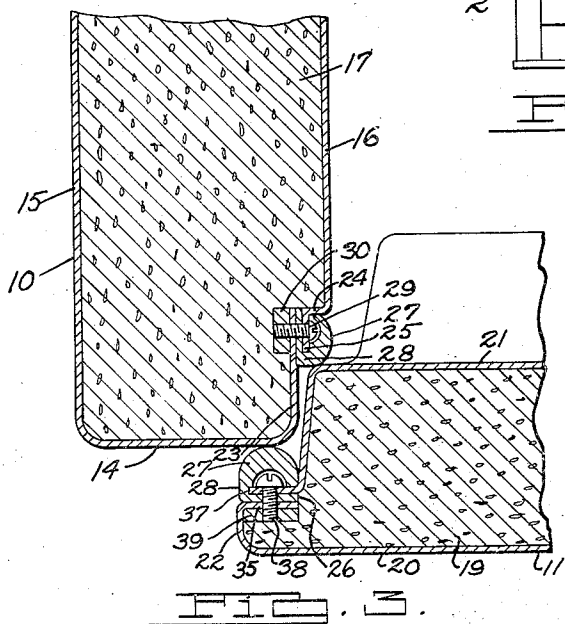
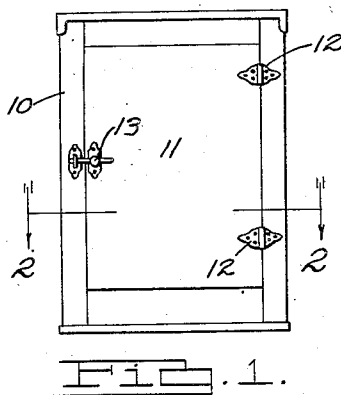
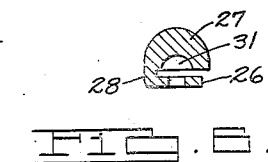
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REFRIGERATOR CABINET

Original Filed July 20, 1929



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REFRIGERATOR CABINET

Original application filed July 20, 1929, Serial No. 379,655. Divided and this application filed May 19, 1930. Serial No. 453,435.

This invention relates to an improved gasket for sheet metal construction and particularly for all-metal refrigerator cabinets, the principal object being the provision of a device of this type which will form a heat insulating seal between assembled parts of a structure and between a door and the frame of a door opening in which it is received.

Another object is to provide a gasket for doors and the like formed of a resilient material and deformable to provide for the insertion of securing means therein which are normally concealed thereby.

Another object is to provide, in combination with a sheet metal refrigerator cabinet having a pair of faces adapted for securement together, a gasket member having a portion thereof received between said faces and another portion thereof overlapping one of said faces.

Another object is to provide a refrigerator cabinet or other construction including a pair of sheet metal faces adapted to be secured relative to each other by means of bolts or the like extending through the faces, said faces being maintained in spaced relationship by means of a resilient gasket secured in place by the fastening means and extending outwardly and back over the exposed portions of the fastening means, whereby to conceal them.

A further object is to provide means for sealing a refrigerator cabinet including a pair of resilient gaskets, one of which is carried by the body of the cabinet and the other of which is carried by the door of the cabinet and adapted to cooperate with the door and cabinet body respectively.

The above being among the objects of the present invention, the same consists in certain novel features of construction and combinations of parts to be hereinafter described with reference to the accompanying drawing, and then claimed, having the above and other objects in view.

This application is a division of application 379,655, filed July 20, 1929.

In the accompanying drawing which shows a suitable embodiment of the present invention, and in which like numerals refer to like

parts throughout the several different views: Fig. 1 is a front elevation of a refrigerator cabinet.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary sectional view taken on the same line as Fig. 2 and showing the construction of the door and the cabinet adjacent the door opening of the cabinet.

Fig. 4 is a view similar to Fig. 3 but showing a slightly modified form of construction.

Fig. 5 is a fragmentary sectional view taken through the edge of a door as on the line 2—2 of Fig. 1 showing a modified form of construction therefor.

Fig. 6 is a cross sectional view taken through the gasket shown in connection with the previous figures.

In the constructions heretofore proposed for all-metal refrigerator cabinets no means have been provided, to my knowledge, for insulating the inner shell against heat transfer to the outer shell by direct transfer through the shells themselves along the areas where they are adapted to be secured directly to each other.

In accordance with the present invention I provide means for securing the sections together whereby they are insulated against direct metallic contact with each other, thereby preventing a transfer of heat through the areas of securement between them. I further take advantage of this insulating means between the sections to provide a support for a gasket employed for sealing a cabinet against the circulation of air through the door opening when the door is closed. Specifically, this means comprises a gasket which, while primarily developed for use in connection with refrigerator cabinets, is not limited in its use to refrigerator cabinets only. The gasket lends itself to certain advantages and economies in the construction of the cabinet itself, whether of all-steel or composite construction, particularly when the cabinet is constructed to take advantage of these economies as indicated in the drawing, which constructions are to be understood as consti-

tuting a further part of the present invention.

It is, of course, well understood that resilient gasket members have heretofore been employed at the door openings of refrigerator cabinets for sealing the door openings against the circulation of air between the inside and the outside of the cabinet. The gaskets as heretofore provided, however, have been secured in place by securing means exposed to view when the gasket is in place by the employment provided. In accordance with the present invention the means for securing the gasket in place are entirely concealed by the gasket itself.

Referring to the drawing I show in Fig. 1 a refrigerator cabinet 10 having a door 11 pivotally secured thereto by hinges 12, a latch device 13 being provided for holding the door in closed position.

As illustrated in Fig. 2, the cabinet itself comprises an outer sheet metal shell 15 and an inner sheet metal shell 16. The shells 15 and 16 are each of pan-like construction and each formed as an integral member. The margins at the open side of the outer shell 15 are bent inwardly as at 14 in the plane of the open side and then inwardly as at 23 towards the back of the cabinet, the portion 23 extending completely around the open side of the shell 15 and defines the door opening for the cabinet. The inner shell 16 adjacent its open end is outwardly offset as at 24 whereby to form an outwardly offset flange 25 parallel to the corresponding sides, top and bottom of the shell 16 and extending completely around the open side of the same. This flange 25 is adapted to be secured to the inwardly extending portion 23 of the outer shell when the inner shell is received therein in generally spaced relation thereto as shown. Between the portions 23 and 25 is received the base 26 of a gasket constructed in accordance with the present invention. As illustrated in Fig. 6, this gasket comprises the base portion 26 and the outwardly spaced bead portion 27 secured thereto along one edge only as at 28. This gasket is inserted between the portions 23 and 25 of the outer and inner shells with the portion 28 positioned outwardly of the cabinet and with the bead 27 overlying the exposed face of the portion 25. Screws such as 29 extend through the portions 23, the base 26 of the gasket, and the inner portion 23 on the inner side of which they are provided with nuts 30, which thus serve to not only secure the portions 23 and 25 together, but also serve to secure the gasket in place.

The gasket itself is formed of rubber or some other flexible heat insulating material, and that surface of the bead 27 adjacent the base 26 is grooved out as at 31 to provide a pocket for the heads of the screws 29. In order to insert the screws 29, the bead por-

tion 27 is bent back away from the base 26 about the connecting portion 28, thus exposing the openings in the portion 25 of the inner shell for the insertion of the screws 29, and also for the engagement of the screws 29 with a screw driver or like driving means, it being understood that the bead 27 moves back into its normal position shown upon release of the pressure necessary to separate it from the base 26. This gasket is so positioned with respect to the door 11 that the inner edge of the door 11 abuts against the edge 28 of the gasket when the door is in closed position and preferably deforms it to a greater or less extent, as will be readily apparent. The material of the gasket is preferably soft enough so that it will yield to the pressure of the door sufficiently to compensate for any unevenness or reasonable warpage of the door in service without breaking the seal.

In making the gasket of heat insulating material the portions 23 and 25 are thus insulated against direct transfer of heat between them, the gasket serving to break such direct transfer of heat. This is a very important phase of the present invention for by its employment there is no opportunity for direct transfer of heat between the inner and outer shells over the entire area of such shells inasmuch as the shells are relatively widely spaced over their entire surfaces with the exception of the portions 23 and 25 which are insulated from each other by the gasket. The space between the shells other than the portions 23 and 25 may be filled with an insulating material 17 such as felt, asbestos or the like, or such material may be eliminated completely and the air alone be depended upon for heat insulation between the shells.

In accordance with the further object of the present invention I form the door 11 of the two pan-like sheet metal members 20 and 21 secured together in face-to-face relation, and I provide a gasket between the outer member 20 and the inner member 21 of the door so as to abut against the outer face of the cabinet in order to provide a double seal against circulation of air and heat between the door and the cabinet. The gasket shown is identical to that shown in detail in Fig. 6. The metal of the outer member 20 of the door is bent inwardly at the edge of the door as at 22 where it is then bent inwardly as at 35. The metal of the inner member 21 is bent outwardly as at 36 and then its margin is bent outwardly in a plane parallel to the door opening as at 37 and in spaced and parallel relation with respect to the portion 35. The base 26 of the gasket is then inserted between the portions 35 and 37 and is secured therein by the screws 38 and nuts 39, which also serve to secure the inner and outer members together. The bead 27 of this gasket bears against the outer face of the cabinet 10, thus effecting with the

first described gasket a double seal between the door and the cabinet.

It will be apparent that this gasket construction serves not only as a gasket between the door and the cabinet, but also as a gasket between the inner and outer members of the door and of the cabinet and thus tends to effect a complete seal between such members. It also serves to insulate the outer member 20 against direct transfer of heat to the inner member 21 in the same manner as described in connection with the shells 15 and 16 for the cabinet proper. It further serves to conceal the raw edge of the inner member 21 and the concealing means for not only the gasket itself but for the member. Its purpose is, therefore, manifold and results in an extremely efficient construction of finished appearance.

The manner of securing the gasket in place and its relative position with respect to the cabinet and the door may of course be varied in a number of different manners without affecting the invention involved. For instance, in Fig. 4 the inner margin of the portion 23 of the outer shell 15 is then bent inwardly with respect to the door opening as at 50 and the outer margin of the inner shell 16 is bent outwardly as at 51 into spaced and parallel relation with respect to the margin 50 of the outer shell, the base 26 of the gasket being secured between these two faces by the screws 29, which in this case are positioned perpendicularly with respect to the front face of the refrigerator. It will be noted that with this modified form of construction the inner shell 16 is still bodily insertible and removable in completed form from the outer shell 15 through the door opening in the latter. The form of the door is slightly modified in this construction by the insertion of an angular metal trim member 52 between the base 26 of the door gasket and the marginal flange 35 of the outer member 20 for the door and acts to conceal the gasket on the door from sight when the door is closed.

A modification of this construction of the door and door gasket is shown in Fig. 4 in which the outer member 20, instead of being bent inwardly as at 35 in Fig. 4, is extended rearwardly as at 53 to effect a trim and the inwardly turned margin 35 is replaced by an angle member 54 welded or otherwise secured to the inner side face of the member 20, and comprising a pair of angularly extending legs 56 and 57, the inner margin of the leg 57 being reversely bent as at 58 to provide additional stock for threaded engagement with the screws 38.

Formal changes may be made in the specific embodiment of the invention described without departing from the spirit and substance of the broad invention, the scope of which is commensurate with the appended claims.

I claim:—

1. A gasket comprising a base portion having an aperture therethrough for receiving a headed fastening member, a spaced bead portion overlying said base portion having a recess therein registering with said aperture for receiving the head of said fastening member, said base portion being connected to said bead portion at one edge only by a resilient connecting neck.

2. In combination with the margin of a sheet-like member, a gasket for said member formed from rubber and adapted to enclose the edge thereof, and means for securing said gasket in place comprising fastening means extending through said member and through one side only of said gasket, one end of said fastening means being concealed by the non-secured side of said gasket.

3. In combination, a pair of sheet-like members having overlapping margins, and a resilient gasket interposed between said margins and extending outwardly over and back upon the opposite face of one of said margins.

4. In combination, a pair of sheet-like members having overlapping margins, a gasket between said margins having a reversely extending portion overlapping the opposite face of one of said margins, and securing means extending through said margins for securing said margins together and clamping said gasket in place between them, said reversely extending portion concealing said securing means on one side of said members.

5. In combination, a pair of parallel flanges, a resilient gasket interposed between said flanges, screw means extending through said flanges for securing said flanges together and clamping said gasket in place, and a reversely extending portion on said gasket overlying the exposed face of one of said flanges and having a recess for receiving said screw means and covering the same.

6. In combination, a pair of sheet-like members having overlapped edge portions located in spaced relation, and a resilient gasket having a slot therein for receiving the edge portion of one member and including a base portion for filling the space between said overlapped edge portions, the remaining portion of said gasket forming a resilient sealing member on the outer surface of the edge portion upon which it is mounted.

7. In combination, a pair of sheet-metal members having overlapped margins, means acting upon respectively opposite sides of said overlapped margins directly securing said members together, and a gasket having a base portion located between the adjacent sides of said margins and an integral bead portion located on the outer side of one of said margins overlapping said base portions and margins.

8. In combination, a pair of sheet metal

members having overlapped marginal edge portions, means clamping said edge portions together, and a resilient gasket having a base portion located between the adjacent sides of said edge portions forming a heat insulating seal therebetween and an integral bead portion forming a sealing member on the outer side of one of said edge portions.

9. In combination, a pair of sheet metal members having overlapping edge portions provided with registering apertures, a compressible gasket having a slot therein for receiving one of said edge portions and including a base portion, said base portion being located between adjacent sides of said edge portions and having an aperture therein registering with the apertures in said edge portions, the remaining part of said gasket having a bead-like contour and having a recess registering with said apertures, and means having one extremity located in said recess and extending through said registering apertures for firmly clamping said edge portions together and compressing the base portion of said gasket so as to form a seal between said edge portions.

10. The method of attaching a pair of sheet metal members together so as to simultaneously form an insulating seal therebetween and provide a resilient external gasket at the joint thereof which consists in forming registering apertures in the edge portions of said members, arranging said edge portions in a spaced, overlapped relation with the apertures thereof in registration with each other, saddling a resilient member on one of said edge portions with a section of said resilient member between said overlapped edge portion, forming an aperture in said section and a recess in the remaining part of said resilient member in registration with the apertures of said edge portions, deflecting said recessed portion, inserting a screw through said registering apertures, providing a nut on said screw, and replacing said deflected recessed portion thereafter.

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