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D. F. NEWMAN

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SEALING GASKET AND SECURING DEVICE THEREFOR

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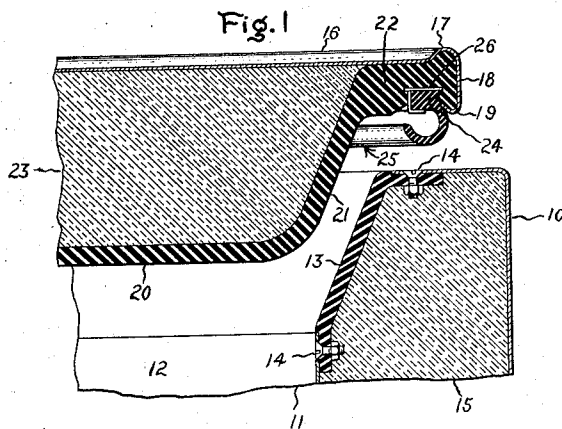
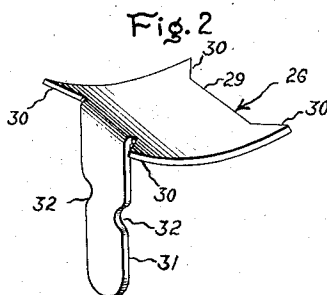
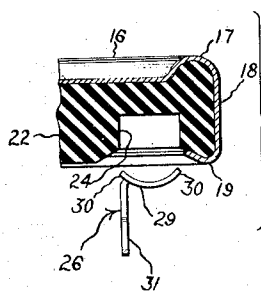


Fig.3.

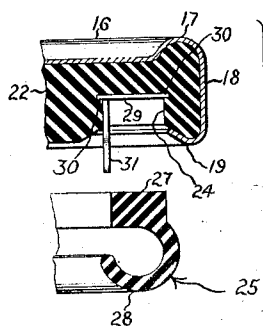


Fig. 4.

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SEALING GASKET AND SECURING DEVICE
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6 Claims. (Cl. 20-69)

My invention relates to sealing gaskets for refrigerator cabinets or the like, and more particularly to an improved and simplified arrangement for mounting a resilient sealing gasket on the door of a refrigerator cabinet, or other structure.

It is an object of my invention to provide an improved arrangement for mounting resilient sealing gaskets on refrigerator doors or the like which requires the minimum number of parts which may be economically manufactured and which simplifies the operations required in assembling the same.

Further objects and advantages of my invention will become apparent as the following description proceeds and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of my invention reference may be had to the accompanying drawing in which Fig. 1 is a sectional side elevation of a portion of a household type refrigerator cabinet provided with a sealing gasket and mounting arrangement therefor embodying my invention; Fig. 2 is an enlarged perspective view of one of the clips used in mounting the sealing gasket shown in Fig. 1; Fig. 3 is an exploded sectional view of a portion of the refrigerator door shown in Fig. 1 and one of the mounting clips prior to its assembly on the door; and Fig. 4 is an exploded sectional view of a portion of the refrigerator cabinet door shown in Figs. 1 and 3 with one of the mounting clips in place thereon and the sealing gasket prior to its assembly on the door.

Referring to the drawing I have shown in Fig. 1 a portion of the refrigerator cabinet of the household type the outer walls of the cabinet being formed by a rectangular sheet metal shell 10 having a rectangular door opening in the top thereof. The rectangular sheet metal inner liner 11, which is arranged in spaced relation within the shell 10, forms the walls of an open top cooling compartment 12 within the refrigerator cabinet. The inner liner 11 is provided with a rectangular opening in the top thereof registering with the somewhat larger opening formed in the outer shell 10. A strip of non-hygroscopic thermal insulating material 13 extends entirely about the door opening formed in the top of the cabinet and is secured to the adjacent edges of the shell 10 and inner liner 11 by bolts 14. The outer shell 10 and inner liner 11 are separated by heat insulation 15.

The door opening formed in the top of the cab-

inet is closed by a heat insulated door which is hinged for movement about a horizontal axis and which is provided with a sealing gasket and mounting therefor embodying my invention. The outer wall of the door is formed by a rectangular sheet of metal 16 provided with a peripheral bead 17 and a vertical peripheral flange 18. The lower edge of the flange 18 is provided with a peripheral bead 19. The rectangular inner wall 20 of the door is made of a deformable insulating material such as semi-hard rubber. The inner wall 20 is provided with an upwardly extending marginal portion 21 extending entirely about the same. An integral peripheral flange 22 extends entirely about the marginal portion 21 of the inner wall 20. Heat insulation 23 is arranged between the outer wall 16 and the inner wall 20 of the door. The outer portion of the peripheral flange 22 is somewhat enlarged and is firmly gripped by the flange 18 of the outer wall 16 and the beaded edges thereof. A gasket mounting groove 24 substantially rectangular in cross section is formed in the lower side of the peripheral flange 22.

A resilient sealing gasket 25 is mounted in the groove 24 by series of deformable sheet metal clips 26 suitably spaced apart throughout the length of the gasket. The sealing gasket 25 is provided with a base portion 27 which is substantially rectangular in cross section and fits within the groove 24. The gasket 25 is also provided with a striking portion 28 which extends from one edge of the base portion 27 and is substantially C-shaped in cross section as shown in Figs. 1 and 4.

The clips 26 are formed from deformable sheet metal such as spring brass. When made from brass they are preferably cadmium plated in order to prevent corrosion thereof. As shown in Fig. 2, the sheet metal clip 26 is provided with a rectangular body portion 29 having a concave configuration when unstressed. Triangular lateral projections 30 are formed at each corner of the rectangular body portion 29. The clip 26 also includes an angularly disposed deformable retaining portion or tongue 31 which as best shown in Fig. 4 extends substantially at right angles to the body portion 29 when the latter is deformed to a flat configuration. Notches 32 are formed on opposite sides of the tongue 31 in order to provide a portion of reduced cross section which facilitates the bending of the tongue 31 about the base portion of the gasket 25 as herein-after described.

The lateral projections 30 formed on the base portion 29 of the clip 26 are so proportioned

that the width of the clip between opposite projections is slightly less than the width of the mounting groove 24 formed in the inner wall 20 of the door. In mounting the resilient sealing gasket 25 on the door the clips 26 are first positioned in the mounting groove 24. The clips 26 may be readily slipped into the mounting groove 24 since the width thereof when the base portion retains its unstressed concave configuration is slightly less than the width of the mounting groove. Pressure is then applied to the center of the body portions 29 of the clips 26 and the lateral projections 30 are thus forced into the walls of the mounting groove 24 firmly engaging the same. Flange 22 in which the mounting groove 24 is formed is made of a deformable material such as semi-hard rubber and the sharp projections 30 formed on the clips 26 readily enter the adjacent walls of the groove 24, as best shown in Fig. 4. The clips 26 are thus firmly retained in position within the mounting groove 24. A base portion 27 of the sealing gasket 25 is then inserted into the mounting groove 24 and the lower portion of the tongues 31 of the clips 26 are bent over the edge of the base portion 27 of the sealing gasket opposite the edge on which the striking portion 28 is formed, thus firmly embracing two sides of the base portion 27 of the sealing gasket. The clips 26 thus retain the sealing gasket 25 in position in its mounting groove 24.

When the cabinet door is closed the striking portion 28 of the sealing gasket 25 is placed against the flat upper surface of the outer shell 10 of the cabinet and prevents the entrance of warm air into the cooling compartment 12 through the door opening.

It will thus be seen that I have provided an improved arrangement for mounting the sealing gasket on a refrigerator cabinet door or the like which requires a minimum number of parts and which may be readily assembled. The clips 26 are inexpensive to manufacture since they may be punched or otherwise formed from sheet metal in a suitable punch press or the like.

Although I have shown a particular embodiment of my invention in connection with a refrigerator cabinet designed for household use, I do not desire my invention to be limited to the particular construction shown and described and I intend in the appended claims to cover all modifications within the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A sheet metal clip for removably retaining a flexible sealing gasket in position in a mounting groove formed in a structure adapted to receive the base of the gasket, said clip comprising a deformable concave body portion having laterally extending projections formed thereon, the width of said concave body portion between the outer ends of said projections being greater than the width of the bottom of the mounting groove in the structure when said concave body portion is deformed to a flat configuration, said projections being arranged substantially in alignment with said body portion of said clip, and an integral angularly disposed deformable retaining portion adapted to be bent about a portion of said flexible sealing gasket.

2. A sheet metal clip for removably retaining a flexible sealing gasket in position in a mounting groove formed in a structure adapted to receive the base of the gasket, said clip comprising

a deformable rectangular body portion having lateral extending projections formed thereon adjacent the corners thereof, said body portion of said clip having a concave configuration when unstressed and the width of said body portion between the outer ends of said projections being greater than the width of the bottom of the mounting groove in the structure when said body portion is deformed to a flat configuration, said projections being arranged substantially in alignment with said body portion of said clip, and an integral angularly disposed deformable retaining portion adapted to project from the mounting groove and to be bent about a portion of said flexible sealing gasket.

3. A sheet metal clip for removably retaining a flexible sealing gasket in position in a mounting groove formed in a structure adapted to receive the base of the gasket, said clip comprising a deformable rectangular body portion having lateral extending projections formed thereon adjacent the corners thereof, said body portion of said clip having a concave configuration when unstressed and the width of said body portion between the outer ends of said projections being greater than the width of the bottom of the mounting groove in the structure when said body portion is deformed to a flat configuration, and an integral angularly disposed deformable retaining tongue adapted to be bent about a portion of said flexible sealing gasket, said retaining tongue having notches formed in the sides thereof to provide a reduced section to facilitate the bending thereof.

4. A cabinet member of deformable material having a groove formed therein adapted to receive a sealing gasket, a resilient sealing gasket provided with a base portion and a striking portion, and means including a deformable sheet metal clip for retaining said base portion of said gasket in position in said groove, said clip being provided with a body portion having a concave configuration when unstressed and having lateral projections formed thereon engageable with the walls of said groove upon the deformation of said body portion of said clip to a flat configuration, said clip having a deformable tongue projecting therefrom and embracing a portion of said base portion of said gasket.

5. A cabinet member of deformable material having a groove formed therein adapted to receive a sealing gasket, a resilient sealing gasket provided with a base portion substantially rectangular in cross section and a striking portion projecting from said base portion, and means including a deformable sheet metal clip for retaining said base portion of said gasket in position in said groove, said clip being provided with a body portion having a concave configuration when unstressed and having lateral projections formed thereon engageable with the walls of said groove upon the deformation of said body portion of said clip to a flat configuration, said clip having a deformable tongue projecting therefrom and embracing a portion of said base portion of said gasket.

6. A cabinet member of deformable material having a groove formed therein adapted to receive a sealing gasket, a resilient sealing gasket provided with a base portion having a substantially rectangular cross section and a striking portion projecting from one edge of said base portion, said striking portion having a C-shaped cross section, and means including a deformable sheet metal clip for retaining said base portion

of said gasket in position in said groove, said clip being provided with a body portion having a concave configuration when unstressed and having lateral projections formed thereon engage-
5 able with grooves of said walls upon the deformation of said body portion of said clip to a flat con-

figuration, said clip having a deformable tongue projecting therefrom and extending about the edge of said base portion of said sealing gasket opposite said striking portion of said sealing gasket.

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