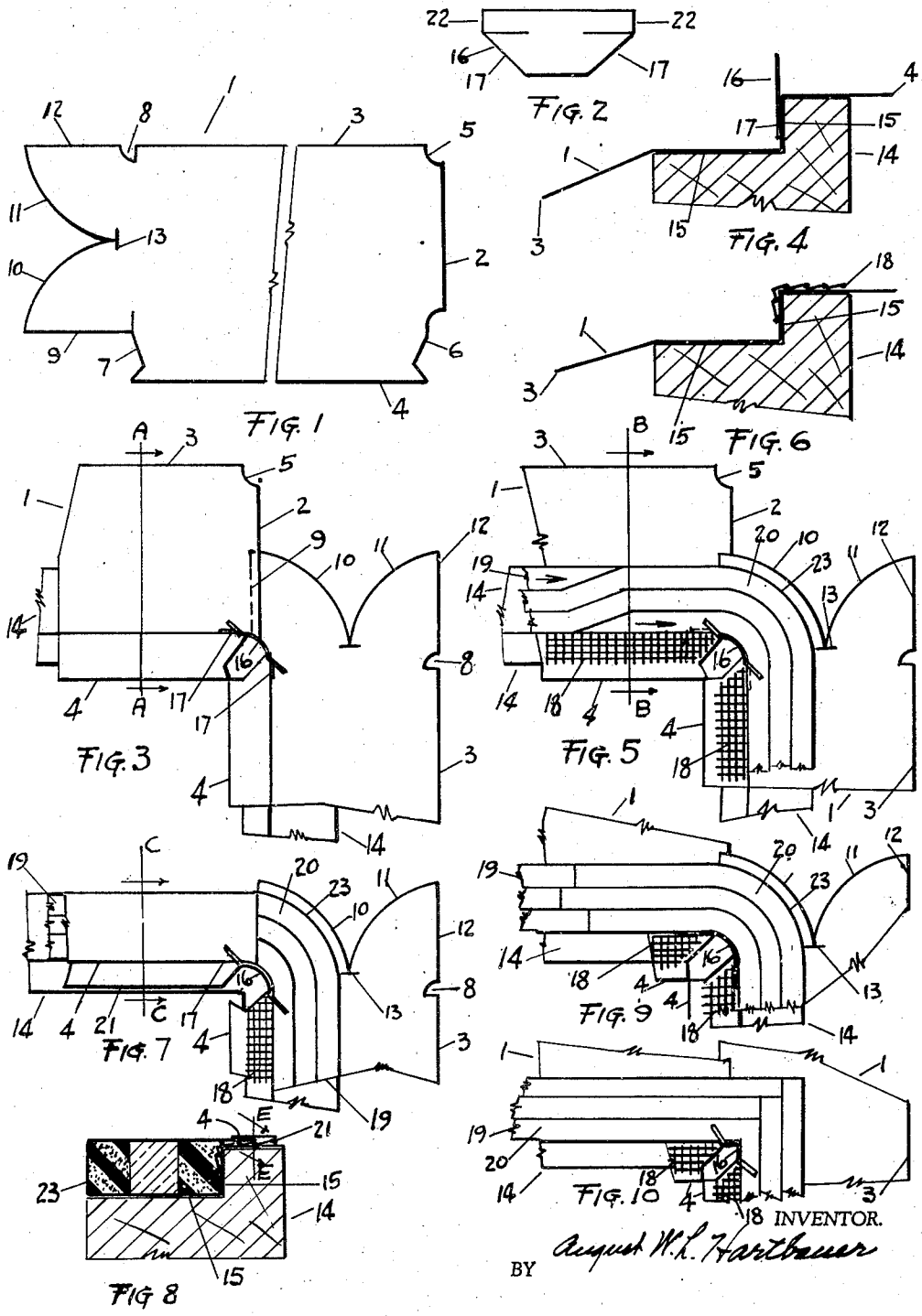
March 25, 1947. A. W. L. HARTBAUER 2,418,072

GASKET AND METHOD OF CONSTRUCTION

Filed Aug. 31, 1942 2 Sheets-Sheet 1



March 25, 1947. A. W. L. HARTBAUER 2,418,072

GASKET AND METHOD OF CONSTRUCTION

Filed Aug. 31, 1942 2 Sheets-Sheet 2

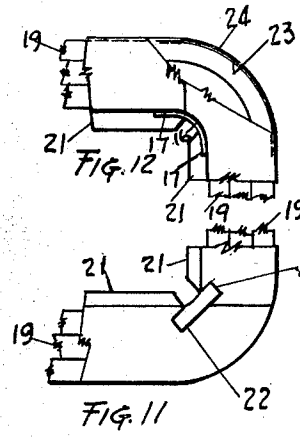


FIG. 12

FIG. 11

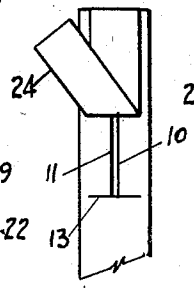


FIG. 13

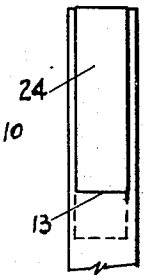


FIG. 14

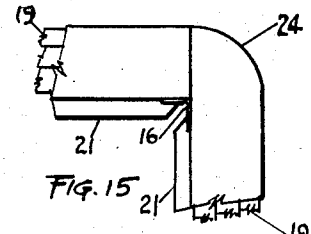


FIG. 15

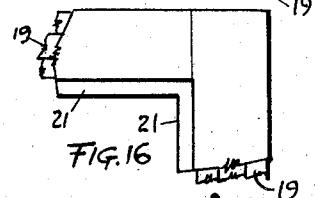


FIG. 16

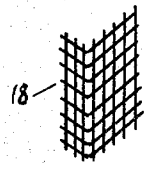


FIG. 17

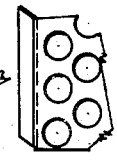


FIG. 18

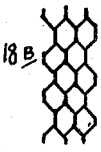


FIG. 19

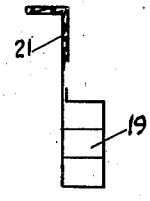


FIG. 20

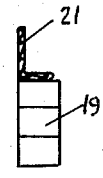


FIG. 21

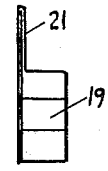


FIG. 22

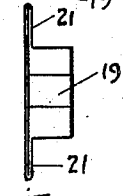


FIG. 23

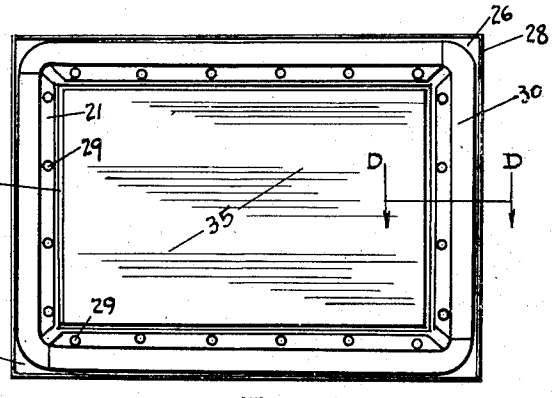


FIG. 24

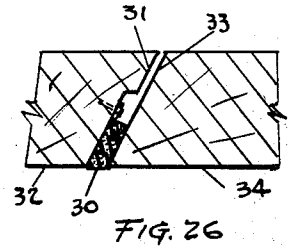


FIG. 26

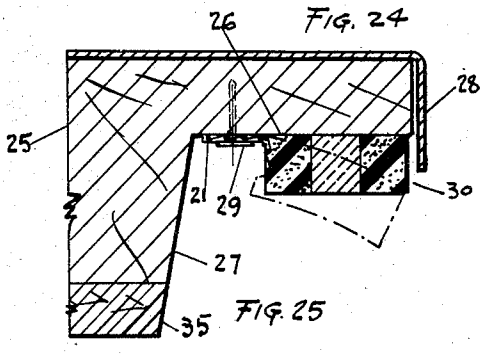


FIG. 25

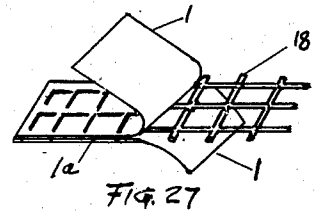


FIG. 27

INVENTOR.

BY August W. L. Hartbauer

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UNITED STATES PATENT OFFICE

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GASKET AND METHOD OF CONSTRUCTION

August William Louis Hartbauer, Chicago, Ill.

Application August 31, 1942, Serial No. 456,836

7 Claims. (Cl. 20—69)

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This invention relates to a gasket and the method of producing the gasket with integral corner core construction.

The hatch closure and door arrangements in general use in railway cars employ the plug design. In those forms of closures it is absolutely necessary to provide some form of perimeter edging that will yield, to compensate for variances in construction, and to insure the seating of the plug or closure in ultimate closed position in both arrangements. The yielding edges of the hatch plug are usually formed by upholstering the edges over a foundation of curled hair or the like. The yielding edges of the door parts are usually formed with a wood slab spring actuated foundation and covered with a felt form of padding and then upholstered to complete the application. The door arrangement yielding edging is not continuous, being applied in sections to either the car door parts or the car body parts. It is necessary that as the door arrangement units are moved to closed position the yielding or sealing elements of the door and body register to insure an uninterrupted and continuous contact.

These methods of producing the hatch and door arrangement yielding edges result in a device that does not have the yielding range necessary to compensate for the structural variance or the working tolerances permitted, therefore constant servicing and re-packing is required to maintain the degree of efficiency of those yielding edges to insure proper hatch and door sealing.

An object of this invention is to produce a form of gasket construction that will permit the change of the design of the refrigerator car hatch and door closures and provide ample clearance at all points of the closure arrangement and also be interchangeable in kind and fully meeting all service requirements, and not affected by changes in the car structures resulting from accepted working tolerances or climatic changes.

Another object of this invention is to establish the thickness and the height of the core material and by winding apply this material to produce the width of the gasket core.

Still another object of this invention is to provide uniform strength of the gasket core by eliminating corner joining.

A further object of this invention is to utilize an assembly fixture adapted to fix and maintain the relative positions of all component parts of the gasket, while revolving this fixture on its vertical axis to facilitate the application of the core material by winding.

Another object of this invention is to utilize an

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angular formed metal attachment flange reinforcing, one leg reinforcing the attachment flange and the other contacting the inner edge of the core material, thereby providing full width gasket sealing surfaces on both sides, the apex of the angular reinforcing forming the pivot point. The retaining flange being rigid and in contact with one edge of the core material provides the means of preventing sag and also freedom of movement of the outer edge of the gasket core and makes possible the flexing of the gasket best shown in dot and dash lines in Fig. 25; and is the means whereby to release the gasket without damage to the structure or loosening of the gasket attachment flange fastening, when for any reason momentary sticking of the gasket occurs as the hatch cover is opened. The resultant shock is absorbed by the yielding of the gasket edge at the point of contact with the retainer flange of the angular shaped metal reinforcing of the attachment flange.

It is another object of this invention to materially reduce the use of rubber by substituting fibrous materials and applying these in combination by winding.

Another object of the invention is to utilize an insulating material to form the gasket core.

Further objects and advantages of the invention will be more readily apparent and more fully described in connection with the following description taken with the accompanying drawings showing the preferred embodiment of the invention, but it will be understood that changes may be made in the parts and details of construction without departing from the principles of the invention and I therefore do not limit myself to the exact construction shown and illustrated, but in the claims hereinafter set forth I intend to cover all modifications and variations of the invention.

In the drawings:

Fig. 1 is a plan view showing the contour of the cloth which covers the core and forms the outer surface of the gasket, and showing the bifurcated end of the cloth and the slits employed for joining the cloth at the corners.

Fig. 2 shows the contour and the slits in the corner gusset which is used to reinforce the flexing corner assembly.

Fig. 3 is a plan view and shows the assembled cloth mounted on the assembly fixture shown in Fig. 4.

Fig. 4 is a cross sectional view on line A—A of Fig. 3 and shows the contour with the cloth and the corner gusset of Fig. 2 in position.

Fig. 5 shows the attachment flange reinforcing

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wire in position and the core material applied by spiral winding in one piece.

Fig. 6 shows the flange reinforcing applied with the retainer portion placed downward.

Fig. 7 shows the method of encasing each portion of the core with respective cloth covering and also the lap seam of the edges of the cloth covering.

Fig. 8 is a cross sectional view on line C—C Fig. 7 and shows the gasket section assembly completed.

Figs. 9 and 10 show alternate methods of core construction which may be used in the invention.

Fig. 11 is a segmental bottom view of the gasket corner assembly shown in Fig. 7 with the tabs of the corner gusset of Fig. 2 shown in applied position.

Fig. 12 is a segmental top view of the gasket corner assembly shown in Fig. 7 with the strap portion of the corner reinforcing gusset of Fig. 2 secured to the inner vertical edge of the gasket.

Figs. 13 and 14 show the corner edge closing strap and the method of application.

Fig. 15 is a segmental top view showing a square corner assembly embodying the flexible corner section.

Fig. 16 is a segmental top view showing a square corner assembly made rigid by connecting the attachment flanges.

Fig. 17 shows the preferred form of gasket flange reinforcing and the integral gasket retainer flange.

Figs. 18 and 19 show alternate forms of attachment flange reinforcing.

Figs. 20, 21, 22 and 23 show alternate forms of attachment flange construction which may be used in the invention.

Fig. 24 shows the completed gasket applied to the hatch cover arrangement.

Fig. 25 is an enlarged cross sectional view on line D—D Fig. 24 and shows the flexing of the outer edge of the gasket in dot and dash lines.

Fig. 26 is a cross sectional view of a refrigerator door with a section of the gasket applied.

Fig. 27 is an isometric cross sectional view of the cloth covering cemented together with the metal reinforcing therebetween, on line E—E Fig. 8.

In the assembly of the gasket of this invention the cloth covering 1 is suitably treated and waterproofed on one side only with cementitious or other material and then cut to width and contoured as shown in Fig. 1. The cloth covering 1 is provided with a square or butt end 2. The parallel edges or marginal portions 3 and 4 are relatively long, and gauged as to their width and length by the dimensions of the notches 5, 6, 7 and 8. The opposite end of the cloth covering 1 is bifurcated and slit to form the tabs defined by the margins 9, 10, 11 and 12, the sections 9 and 12 also constituting relatively short marginal portions of the cloth covering. The short marginal portions 9 and 12 are parallel with the long marginal portions 3 and 4. The marginal portions 2, 3, 4, 9 and 12 of the cloth 1 are coated with cementitious material 1a to a width equal to the depth of the slits 5, 6, 7, and 8. The marginal portions 10 and 11 are coated to a width equal to the length of the slit 13. The cloth 1 is then placed on the assembly fixture 14 and shaped to suit the contour 15 of the assembly fixture 14. The cloth sections are joined by the gusset 16 as the tabs 17 are cemented to the vertical cloth portions as shown in Figs. 3 and 4. The attachment flange reinforcing 18 shown in Fig. 17 is then placed on the marginal edge 4 of the cloth 1 as shown in Figs. 5 and 6.

The top surface of the joined cloth sections 1 shown in Fig. 3 are coated with cementitious material and the core material 19 is then applied by winding as shown in Figs. 5 and 7, or as separate units and joined in sections as shown in Figs. 9 and 10. The top surfaces 20 of the core material 19, Figs. 5 and 7, are coated with cementitious material and enclosed by the cloth portion, and the marginal edge 4 folded to lap the edge 3 as best shown in Fig. 8 and amalgamated to form the attachment flange 21. The corner assembly is completed by securing the tabs 22 of the gusset 16 to the surface of the gasket and applying the strap 24 to enclose the edges 23 of the core material 19, as shown in Figs. 12 and 13, and inserting the end of the strap 24 through the slit 13 to be joined to the inner surface of the cloth covering 1 completing the assembly of the preferred form of gasket.

Alternate design shown in Fig. 15 is the same as Fig. 12 except the inner corner is formed square. Alternate design shown in Fig. 16 is a square corner assembly with the ends of the attachment flanges 21 rigidly connected.

Figs. 24 and 25 show the hatch closure in which which frame sections 25 are joined together at the corners in a substantial manner. To form the frame of the closure, sections 25 are shaped to form the attachment surface 26 and the limiting edge 27. The frame sections 25 are secured to the cover plate 28 with bolts or screws, and the lining 35 is nailed to the frame members 25. The assembled gasket 30 is attached to the surface 26 with nails 29 through the attachment flange 21. The outer edge surface of the gasket 30 is free and may flex as shown in Fig. 25 to suit service conditions.

Fig. 26 shows the gasket section attached to a door combination of a refrigerator car arrangement in which the gasket section is secured to the peripheral edge 31 with the edge of the gasket even with the inner surface of the door 32 and contacting the surface 33 of door section 34.

What I claim and desire to secure by Letters Patent is:

1. A gasket structure comprising an elongated core member of gasket material, said core member comprising a spirally wound, strip forming a plurality of laterally abutting core segments forming a composite core member having opposed surfaces, an elongated metal strip, said metal strip being angularly shaped in cross-section, and means for attaching the metal strip to the side wall of one of said core segments so that one flange of the strip lies against and is secured to said segment, and the other flange of the metal strip extends angularly from said segment, said latter flange being adapted to receive attachment means for securing the gasket to a support surface.

2. A gasket structure comprising a polygonally shaped structure having relatively straight portions connected by corner portions, said structure comprising a core member of gasket material, an elongated metal strip, and means for attaching the metal strip to the core member, said metal strip having an extending flange portion adapted to receive attachment means for securing the gasket to a support surface, said core member comprising a spirally wound strip extending peripherally of the gasket structure in a plurality of laterally abutting convolutions, and said metal

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strip being disconnected at the corner gasket portions for independent attachment to said support surface.

3. A gasket structure comprising a polygonally shaped structure having relatively straight portions connected by corner portions, said structure comprising a core member of gasket material, an elongated metal strip, and means for attaching the metal strip to the core member, said metal strip having an extending flange portion adapted to receive attachment means for securing the gasket to a support surface, said core member comprising a spirally wound strip of gasket material extending continuously around the periphery of the gasket structure in a plurality of laterally abutting convolutions.

4. A gasket structure comprising a polygonally shaped structure having relatively straight portions connected by corner portions, said structure comprising a core member of gasket material, an elongated metal strip, and sheet fabric material collectively embracing the metal strip and the core member for attaching the metal strip to the core member, said metal strip having an extending flange portion adapted to receive attachment means for securing the gasket to a support surface, and said core member comprising a spirally wound strip extending peripherally of the gasket structure in a plurality of laterally abutting

convolutions, said metal strip being disconnected at the corner portions of the gasket for independent attachment to a support surface.

5. A gasket structure as defined in claim 1, wherein the means for attaching the securing strip to the side wall of one of said core segments comprise a sheet of fabric.

6. A gasket structure as defined in claim 1, wherein the flange of the securing strip lying against the side wall of said core segment is of less height than the height of the wall.

7. A gasket structure as defined in claim 1, wherein the means for attaching the securing strip to the side wall of one of said core segments comprises a sheet of fabric, and wherein the flange of the securing strip lying against said core segment wall is of less height than the height of the wall.

AUGUST W. L. HARTBAUER.

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