June 17, 1930. P. T. SEALEY 1,764,857

REFRIGERATOR GASKET MOLD

Filed June 17, 1927

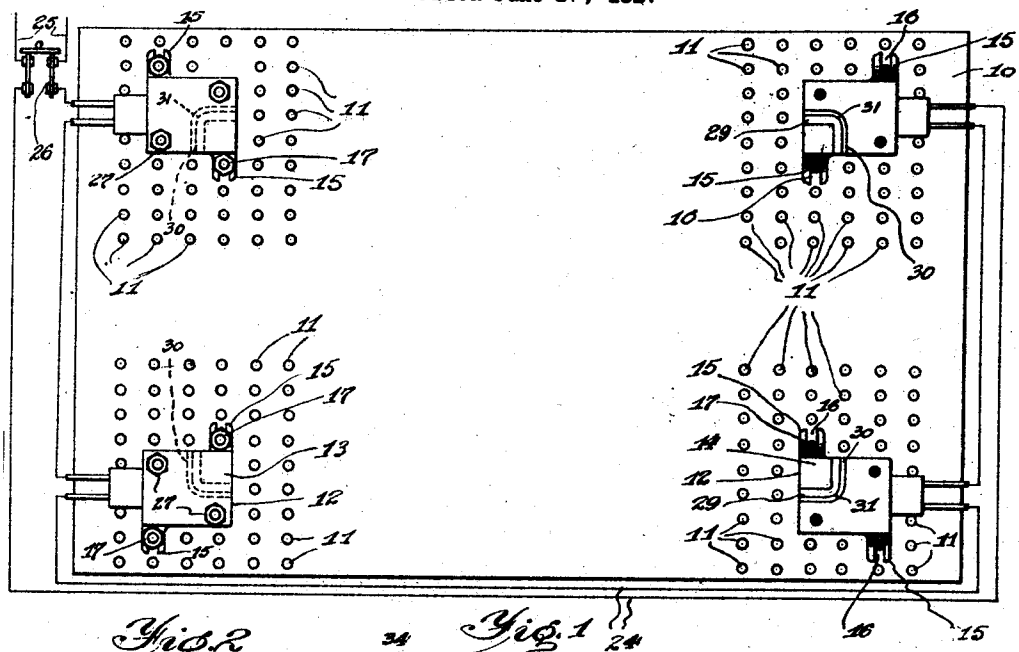


Fig. 1

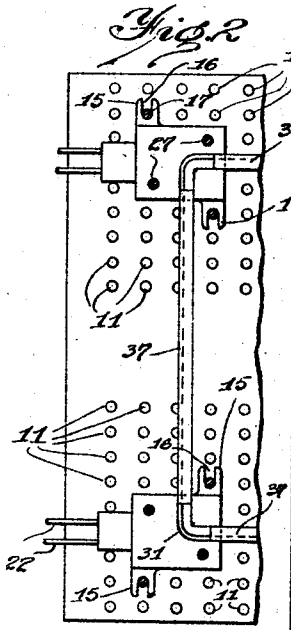


Fig. 2

Fig. 6

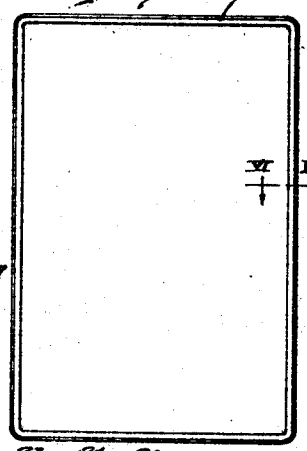


Fig. 5

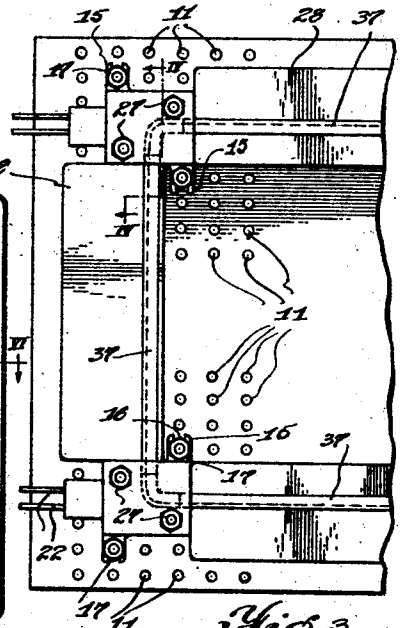


Fig. 3

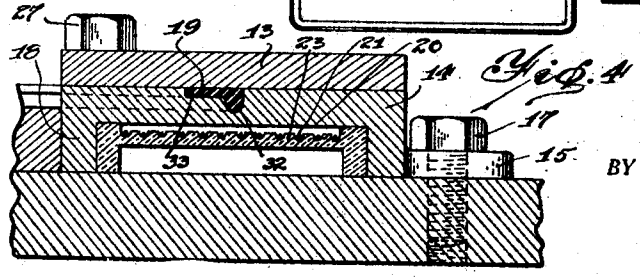


Fig. 4

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UNITED STATES PATENT OFFICE

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REFRIGERATOR-GASKET MOLD

Application filed June 17, 1927. Serial No. 199,517.

My invention relates to gaskets for refrigerator doors and it has particular relation to a novel type of gasket of the character indicated, and to a novel method of, and molds for, making such gaskets.

Heretofore, various types of sealing gaskets have been employed on refrigerator doors and door casings to prevent the admission of warm air to and escape of cold air from the refrigerators when the door is closed. Among others, a rubber gasket has been employed, it being mounted upon the edge of the door in such position that it engages the door frame when the door is closed. Gaskets of all types, including the rubber gasket, have consisted of a single straight strip of material which is tacked or stapled along one side of the door, which is usually rectangular in contour, bent around the corner of the door, stapled or tacked along the next adjacent side of the door, bent around the next corner, etc., until the gasket extends completely around the door. Although this type of gasket is reasonably efficient, it is objectionable because the bent or doubled portion of the gasket occurring at each corner of the door is thicker than the straight side portions, causing the cooperating door and door frame to closely engage the four corners of the gasket but to only lightly engage the relatively thinner straight side portions of the gasket. As the straight side portions constitute about ninety-five percent of the total contacting area, such type of sealing contact is, of course, objectionable.

By my invention I have eliminated this objection and have provided a gasket which will be engaged by the door and door frame equally throughout its entire length.

One object of my invention is to provide a refrigerator door gasket of rectangular contour and of uniform thickness throughout its entire length.

Another object of my invention consists in providing a novel type of endless rubber gasket which will be engaged by the door and door frame with equal pressure throughout its length.

An additional object of my invention is to provide a novel and efficient method of manufacturing rubber gaskets for rectangular refrigerator doors.

A further object of my invention consists in providing a novel type of mold for manufacturing rubber gaskets for rectangular refrigerator doors, and which is adapted to be employed in the manufacture of gaskets for doors of various sizes.

For a more comprehensive understanding of my invention reference may now be had to the accompanying drawings of which:

Fig. 1 is an elevational view of a gasket mold assembly constructed in accordance with my invention, the tops of the two molds on the right hand side of the figure being removed for the sake of clearness; and

Fig. 2 is an elevational view of a portion of the mold assembly illustrated in Fig. 1, the tops of the individual molds being removed, the straight side portions of the gasket being shown in position in the mold, and the intermediate side plates being omitted for the sake of clearness; and

Fig. 3 is an elevational view of a portion of the mold assembly with all of its parts and the gasket in position; and

Fig. 4 is a cross-sectional view of an individual mold, the section being taken along the line IV—IV of Fig. 3; and

Fig. 5 is an elevational view of a completed gasket constructed in accordance with my invention; and

Fig. 6 is a cross-sectional view of the gasket illustrated in Fig. 5, the section being taken along the line VI—VI thereof.

In the drawings I have shown a horizontally disposed rectangular base plate 10, composed preferably of metal, and provided at each corner with a plurality of holes 11 which are so arranged as to form rows parallel with

the sides of the base plate and other rows parallel to the ends thereof. At each corner of the base plate 10 is disposed a mold 12 which consists of an upper portion or top 13 and a lower or supporting portion 14. The lower portion 14 of each mold is provided with flanges 15 which are provided with slots 16 through which suitable bolts 17 extend into certain of the holes 11 to secure the portions 14 of the molds to the base plate 10. The bolts 17 extend into any suitable pair of the holes 11, thus permitting the member 14 to be secured to the plate 10 in any one of a number of positions, as may be desired.

As best shown in Fig. 4 the lower portion 14 of the mold 12 is provided, on its lower side, with a flange 18, which engages the base plate 11 to support the mold, and on its upper side with a molding cavity 19, to be hereinafter more fully described. Disposed within a centrally disposed opening 20 in the bottom of the member 14 and between the flanges 18 is an electrical heating element 21 provided with suitable electrical connections 22 and mounted in a suitable support 23 which is secured to the member 14. The electrical connections 22 of the four molds 12 are all connected to electrical conductors 24 which in turn are connected to a source of electrical energy 25 through a manually operated switch 26, whereby the heating coils 21 may all be energized simultaneously. The top portion 13 of the mold 12 is a flat rectangular plate which is secured to the base portion 14 by means of suitable bolts or other fastening means 27. Flat rectangular plates 28 are adapted to be disposed upon the plate 10 intermediate the molds 12, for a purpose to be hereinafter described.

The molding cavity 19 in the member 14 comprises two relatively short straight portions 29 and 30, disposed at right angles to each other, as best shown in Fig. 1, which are connected by an arcuate portion 31. The portions 29, 30 and 31 are similar in cross-section and consist of a main body portion 32 of considerable depth and a laterally extending relatively shallow portion 33. This type of cavity produces a gasket having the cross-section shown in Fig. 6, in which is illustrated a gasket having a flat face 34, adapted to engage a flat surface on the refrigerator door adjacent its edge, a main body portion 35 having an arcuate outer contacting surface and a laterally extending relatively thin flange 36 by means of which the gasket may be stapled or otherwise secured to the door of the refrigerator.

In manufacturing gaskets in accordance with my invention by means of the mold assembly and method herein described the four molds 12 are first secured upon the base plate 10 at points which are determined by the size of the refrigerator door on which the gasket to be manufactured is intended to be employed. The tops 13 of the individual molds are removed. Straight pieces of rubber gasket 37 of the proper cross-section, which have previously been made by the well-known extruding process, or any other suitable process, and subsequently cured or partially cured, are then laid on the mold assembly, the pieces being of such length that one end thereof projects into the straight portion 29 of the cavity 19 of one mold and the other end projects into the straight portion 30 of the next adjacent mold, as indicated in Figs. 2 and 3. The intermediate portion of the member 37 rests upon the flat plate 28 which is disposed intermediate the molds, as shown in Fig. 3. A quantity of raw or uncured rubber, suitably compounded, is then placed in the arcuate portion 31 of the mold cavities 19. The top 13 of the mold is then secured in position upon the portion 14 by means of the bolts 27. The quantity of raw rubber placed in the arcuate portion 31 of the mold should be such that when the top 13 is clamped upon the member 13 the raw rubber completely fills the molding cavity and is forced into intimate contact with the ends of the straight portions 37. After all of the members 37 and the molds 12 have been properly prepared, the switch 26 is operated to energize all of the heating coils 21 to simultaneously heat the molds 12. The combined action of the heat from the coils 21 and the pressure exerted by the plates 13 serves to vulcanize the raw rubber in the molds to the ends of the straight portions 37.

The vulcanization of the raw rubber in the molds 12 to the straight portions 37 serves to unite the various portions into a single endless gasket 38 of rectangular contour, as best shown in Fig. 5, as the corner portions are molded to the same size and contour as the straight side portions it will be obvious that it is unnecessary to bend any portion of the gasket in securing it to the door, so that the gasket, when applied to the door will be of equal thickness throughout its length. This insures a contact of the gasket with the door and door frame of the refrigerator which is uniform at all points.

Although I have illustrated but one form of my invention, and have described in detail but a single application thereof, it will be apparent to those skilled in the art that it is not so limited, but that various modifications and changes may be made therein without departing from the spirit of my invention or from the scope of the appended claims.

What I claim is:—

1. A mold for making refrigerator door gaskets comprising a main base plate, a plurality of cooperating molds adjustably secured thereto, and heating means secured to said molds.

2. A mold for making refrigerator door

gaskets comprising a main base plate, a plurality of relatively movable molds movably secured to said base plate, means for heating each of said molds, and means for simultaneously energizing all of said heating means.

3. A mold for making refrigerator door gaskets comprising a main base plate, a plurality of individually heated molds, means for securing said molds in any one of a plurality of longitudinally and laterally adjusted positions on said base plate, and means for heating said molds simultaneously.

In testimony whereof I hereunto affix my signature.

PERCY T. SEALEY.