July 22, 1952 G. S. HILL 2,603,843

MAGNETIC GASKET FOR CABINETS

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Fig. 1.

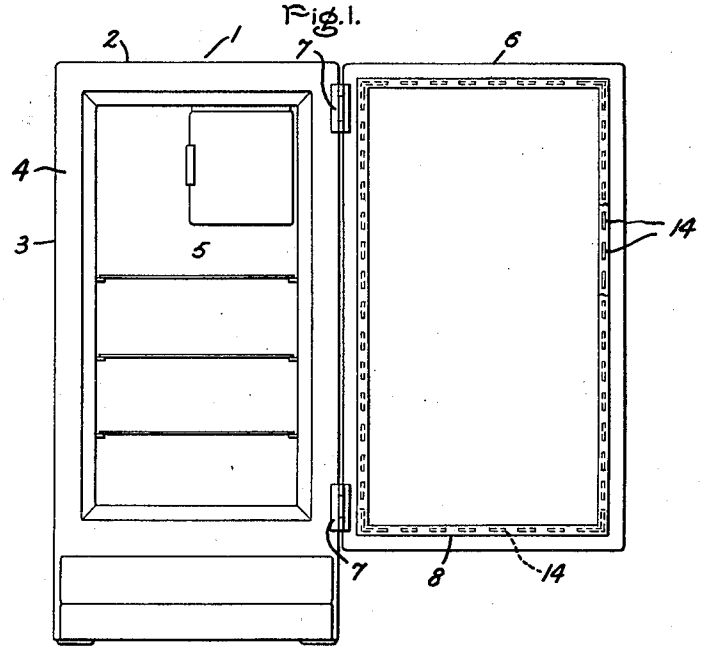


Fig. 2.

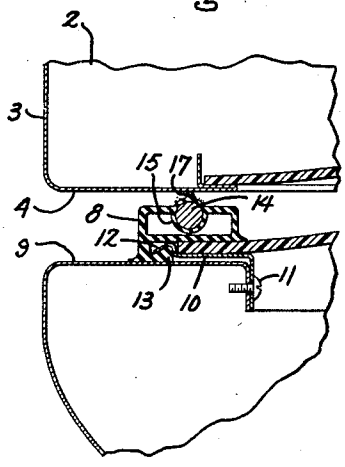
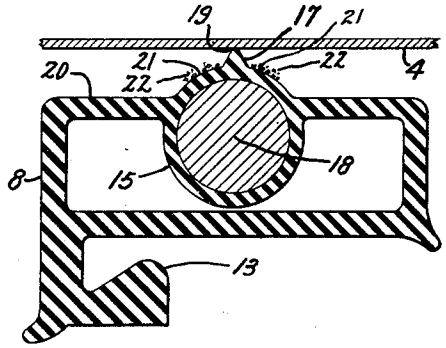


Fig. 3.



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MAGNETIC GASKET FOR CABINETS

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4 Claims. (Cl. 20—69)

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My invention relates to gaskets for sealing cabinets and more particularly to gaskets including magnetic elements.

In cabinets such as refrigerators wherein a temperature is maintained differing substantially from ambient temperature, it is customary to provide a gasket adapted to encircle the access opening of the cabinet for sealing the area around the access opening against leakage. In the copending application of Alfred G. Janos, Serial No. 122,961, filed October 22, 1949, and assigned to the same assignee as the present invention, a sealing arrangement is set forth in which magnets are provided within the gasket and these magnets are attracted to the portion of the outer wall which frames the access openings of the cabinet, thereby pressing the gasket into sealing engagement with this outer wall. Because of the presence of magnets within the gasket there is a possibility that magnetic particles, such as iron filings, may collect on the exterior surface of the gasket, being picked up thereon, for example, under conditions of manufacture in a factory. Since the gasket is arranged to be pressed into sealing engagement with the painted steel surface of the outer wall which frames the access opening of the refrigerator, even a small amount of magnetic particles of an abrasive nature may, over a period of time, through repeated opening and closing of the door, cause a scratching and ultimate rusting of this surface of the cabinet. By my arrangement any such magnetic particles are attracted to a portion of the gasket surface where they will inherently be spaced from the outer wall of the cabinet and hence the presence of the small amount of the magnetic particles likely to be encountered causes no marring of the gasket-engaged surface of the cabinet.

Accordingly, it is an object of my invention to minimize wear and marring of a cabinet by magnetic particles clinging to the exterior of a magnetic gasket.

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 part of this specification.

In carrying out the objects of my invention elongated magnets are provided within a tubular portion of a gasket and the gasket is formed to include a continuous bead on the cabinet-engaging face of the gasket. This bead is specifically disposed along a line which extends parallel to the longitudinal axis of the magnets and in a

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plane extending through the longitudinal axis of the magnets perpendicular to the face of the door and the engaged face of the cabinet.

For a better understanding of my invention reference may be had to the accompanying drawing in which Fig. 1 illustrates a refrigerator embodying my invention; Fig. 2 is a sectional view illustrating details of the gasket construction; and Fig. 3 is a greatly enlarged view of a portion of Fig. 2.

Referring now to the drawing there is shown a refrigerator 1 including a cabinet 2. The cabinet 2 includes a metal outer wall 3 which is shaped to provide a portion or face 4 framing the access opening of the storage compartment 5 of the refrigerator.

A door 6 is provided for closing the access opening of the cabinet, the door being hinged to the cabinet by hinges 7. In order to seal the refrigerator in the region of the access opening a gasket 8 of flexible material is provided.

Details of the construction of the gasket and the arrangement for holding the gasket in sealing engagement with the framing portion or face 4 of the outer wall are illustrated in Fig. 2. The door 6 includes an outer wall having an inner face or flange 9 which is generally parallel to the framing portion or face 4 of the cabinet in the closed position of the door. The gasket 8 is mounted on this inner face 9 of the door by a retainer 10 which is secured to the door by screws or other suitable fastening devices, one of which is shown at 11, and which engages one section of the gasket. One end 12 of the retainer engages an upwardly extending ear 13 of the gasket to hold the gasket against the face 9 of the door.

In order to provide for holding the gasket in sealing engagement with the portion 4 of the outer wall of the cabinet a plurality of elongated cylindrical magnets 14 are assembled within a tubular portion 15 which is included in a second section of the gasket. Since the outer wall of the cabinet, including the portion 4 thereof, is made of a magnetic material, steel being normally employed, the magnets 14 are attracted toward the portion 4 and press the gasket into sealing engagement therewith. The broad idea of magnets disposed within a gasket and arranged to be attracted to the front face of a refrigerator cabinet for sealing the access opening of the food storage compartment is not my invention but is described and claimed in an application of Alfred G. Janos, Serial No. 122,961, filed October 22, 1949, and assigned to the same assignee as the present invention.

Because of the presence of the magnets 14

within the gasket any magnetic particles, such as iron filings, etc., coming within the vicinity of the gasket may be attracted toward the magnets and held on the cabinet-engaging surface of the gasket. After repeated door openings and closings such abrasive particles may mar the surface of the face of the cabinet, cutting through the paint coating and ultimately resulting in the rusting and unsightly appearance of the face 4 of the cabinet. By my arrangement the possibility of such damage is minimized. This minimization of damage is obtained by forming the gasket 8 to provide a sealing bead 17 parallel to the longitudinal axis 18 of the magnets 14 and in a plane extending through the longitudinal axis 18 and substantially perpendicular to the face 4 of the outer wall of the cabinet. Since the inner face 9 of the door 6 is generally parallel to the front face 4 of the cabinet when the door is in its closed position, as explained previously, the plane extending through the longitudinal axis 18 of the magnets and the tip 19 of the bead 17 is also substantially perpendicular to the inner face 9 of the door.

Referring particularly to Fig. 3, it can be seen that as the door is moved to its closed position the tip 19 of the gasket first engages the face 4 of the cabinet, and substantially the total contact between the gasket and the face 4 occurs along the bead 17 at the tip portion thereof. Since the bead 17 projects a substantial distance above the major portion 20 of the exterior surface of the gasket the tip 19 of the bead is disposed a substantially greater distance away from the magnets 14 than the surface 21 of the gasket at the base of this bead 17. Since the force exerted by a magnet varies inversely with the square of the distance therefrom the attractive force at the surface 21 substantially exceeds that at the tip 19. Also, because of the shorter distance from the magnets, the attractive force at the surface 21 exceeds that exerted at any other area of the surface 20. Accordingly any magnetic particles in the vicinity will be attracted toward the surface 21 in preference to the tip 19 of the bead or the surface 20 and will collect on the surface 21, as indicated at 22 in Fig. 3. Accordingly, when the door is moved to its closed position the gasket engages the face 4 of the cabinet along the tip 19 of the bead and the magnetic particles 22, which collect on the surface 21 at the base of the bead, are spaced from the face 4 and are ineffective insofar as any marring or scratching of the surface of the portion 4 is concerned. Thus by the expedient of properly disposing the sealing bead 17 relative to the magnets 14 the danger of scratching or marring the portion 4 of the outer wall of the cabinet because of magnetic particles collecting on the bead is minimized.

While I have shown and described a specific embodiment of my invention as applied to a refrigerator cabinet other applications will readily occur to those skilled in the art and I intend, by 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 gasket for refrigerators and the like which includes a cabinet and a door hinged thereto, said gasket comprising a member of flexible material having a section for mounting on the door and a second section for engaging a face of the cabinet in sealing engagement therewith, and a plurality of elongated magnets arranged within said second section for attraction by the cabinet to hold said gasket in sealing engagement with the cabinet, said second section including a bead projecting from the body thereof for engaging said cabinet, said bead being arranged in a plane extending along the line of force of said magnets between said magnets and said cabinet, the distance from said magnets to the portion of said gasket at the base of said bead being substantially less than the distance from said magnets to the tip of said bead and to the remainder of said second section whereby magnetic particles are attracted to said gasket at said base of said bead and engagement of said particles with said cabinet is minimized.

2. A gasket for refrigerators and the like which includes a cabinet and a door hinged thereto, said gasket comprising a member of flexible material having a section for mounting on the door and a second section for engaging a face of the cabinet in sealing engagement therewith, and a plurality of elongated magnets arranged within said second section for attraction by the cabinet to hold said gasket in sealing engagement with the cabinet, said second section including a bead projecting from the body thereof for engaging said cabinet, said bead being arranged in a plane extending through the longitudinal axis of said magnets perpendicular to said face of the cabinet.

3. A gasket for refrigerators and the like which includes a cabinet and a door hinged thereto, said gasket comprising a member of flexible material having a section for mounting on the inner face of the door and a second section for engaging the cabinet in sealing engagement therewith, and a plurality of elongated magnets arranged within said second section for attraction by the cabinet to hold said gasket in sealing engagement with the cabinet, said second section including a bead projecting from the body thereof for engaging said cabinet, said bead being arranged in a plane extending through the longitudinal axis of said magnets and perpendicular to the inner face of the door.

4. A refrigerator or the like comprising a cabinet having an access opening therein, said cabinet including an outer wall framing said opening, a door for closing said opening, a gasket arranged on said door for engaging said outer wall adjacent said access opening to seal said opening, said gasket comprising a member of flexible material having a section for mounting on said door and a second section for engaging said outer wall in sealing engagement therewith, and a plurality of elongated magnets arranged in said second section for attraction by said outer wall of said cabinet to hold said gasket in sealing engagement with said outer wall, said second section including a longitudinal bead projecting from the body thereof for engaging said cabinet, said bead being arranged in a plane extending through the longitudinal axis of said magnets perpendicular to said outer wall.

GEORGE S. HILL.

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