May 19, 1953 R. J. MENZIES 2,638,641

DRAFT SEAL

Filed June 3, 1952

Fig. 1

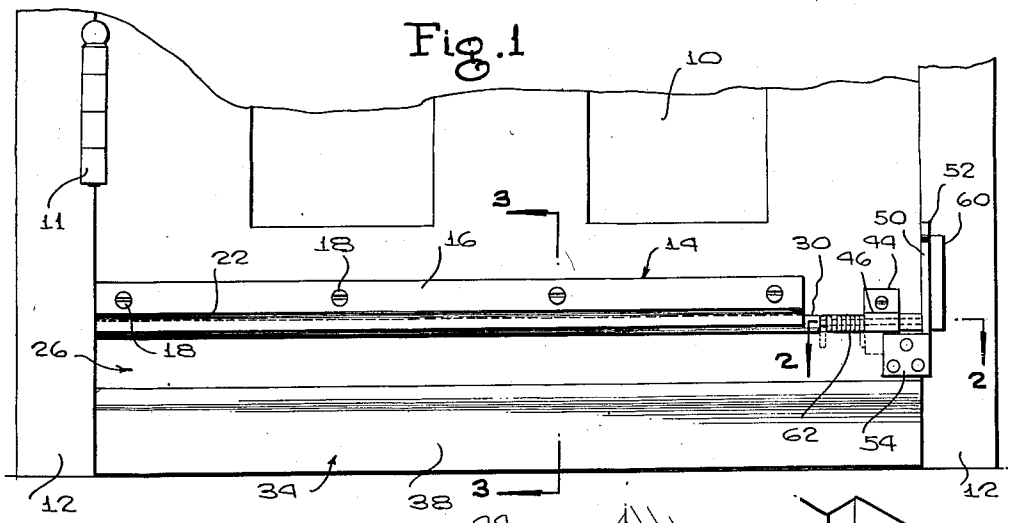


Fig. 2

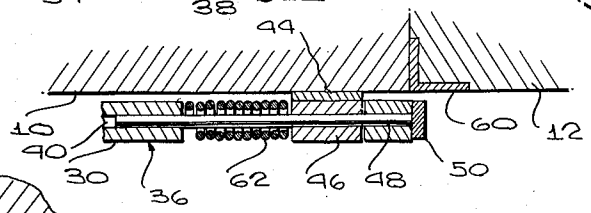


Fig. 3

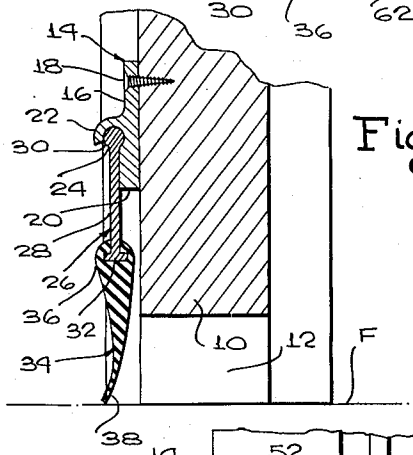


Fig. 4

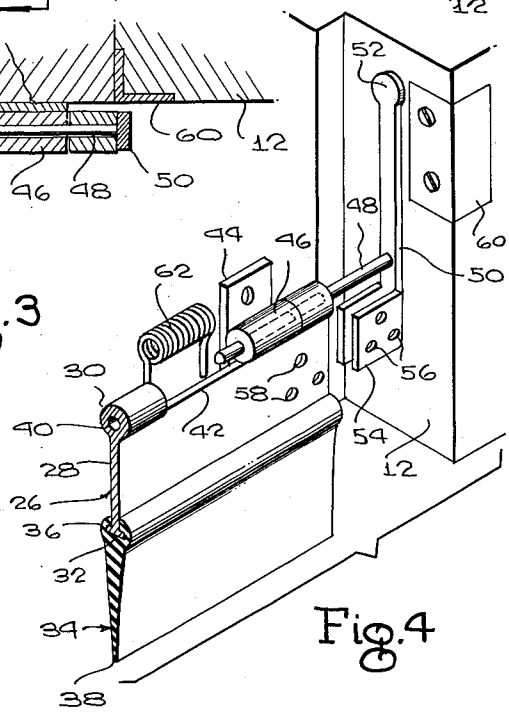
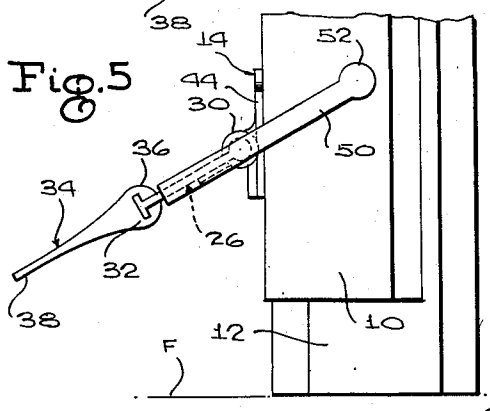


Fig. 5



INVENTOR.
ROBERT J. MENZIES

BY

McMorrow, Berman & Davidson
ATTORNEYS

Patented May 19, 1953 2,638,641

UNITED STATES PATENT OFFICE

2,638,641

DRAFT SEAL

Robert J. Menzies, Detroit, Mich.

Application June 3, 1952, Serial No. 291,457

2 Claims. (Cl. 20—67)

1

This invention relates to a draft seal for doors.

The invention is a door seal of the type wherein a sealing strip is normally maintained in an inoperative position in which the strip is swung outwardly from the bottom edge of a door on which it is pivotally mounted, when the door is open, with the strip swinging inwardly to an operative, sealing position when the door is closed, by reason of the engagement of a swinging arm carried by the strip, against the door jamb.

Door seals of this type are not new per se. However, those of which I am aware are so designed as to require the separate manufacture of seals for right and left hand doors, respectively. Further, it is necessary that the seals be made in different sizes, to permit them to be mounted on doors of different end widths.

This characteristic of door seals of the type referred to tends to increase the cost of manufacture thereof. Therefore, the main objects of the present invention are first to provide a draft seal for doors which, though of the swinging, jamb-engaging type, will be usable on either right or left hand opening doors; and second, to provide a seal which, though made in one size only, can be readily adapted, by the consumer, to fit doors of different widths.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view, a door on which the device is mounted, and its associated jambs, being shown fragmentarily;

Figure 2 is an enlarged sectional view on line 2—2 of Figure 1;

Figure 3 is an enlarged sectional view on line 3—3 of Figure 1;

Figure 4 is a fragmentary, exploded perspective view on an enlarged scale showing the sealing strip actuating means; and

Figure 5 is an enlarged end elevational view, taken from the right of Figure 1.

Referring to the drawings in detail, a door 10 is hung by hinges 11 upon one of a pair of jambs 12. The invention is mounted upon the door along the bottom edge thereof, to prevent a stream of air from passing under the door when the door is closed.

The device includes a stationary support member 14. This can be extruded from plastic or aluminum, and is of elongated formation, extending in parallelism with and in close-spaced relation to the bottom edge of the door. The support

2

member is so formed as to include a relatively thin, upper longitudinal edge portion 16, having a longitudinal series of openings through which screws 18 or other fastening elements can be extruded, for the purpose of securing the support member fixedly to the door.

Integral with the portion 16, and also constituting part of the support member, is a lower longitudinal edge portion 20, coterminous with the upper portion, and formed to a thickness somewhat greater than that of the upper portion. This is best shown in Figure 2.

Also provided as an integral part of the support member is an elongated, transversely curved flange, that extends the full length of the support member and projects laterally and outwardly therefrom. The flange 22, as will be noted from Figure 2, is curved through a little more than ninety degrees of a circle, for a purpose to be made presently apparent herein.

The provision of the flange defines a longitudinal recess 24 on the front or exposed face of the support member, said recess extending through the full length of the member and receiving the upper edge portion of a swingable body 26. The body 26 is of integral formation, and like the member 14, can be formed by the extrusion process from plastic material such as that produced commercially under the trade-mark "Tenite," from aluminum, or from any other substance found suitable.

In any event, the body 26 comprises an elongated, relatively thin plate 28 having at its upper edge a longitudinal bead formation 30 of circular cross-sectional configuration. The bead formation is complementary to and is received within the longitudinal recess 24, thus to connect the body 26 along its upper edge to the midwidth portion of the member 14 for swinging movement toward and away from the door 10.

In assembling the device, one need only extend the bead formation 30 into the recess at one end of the recess, thereafter sliding the body 26 longitudinally of the member 14 until one end of the member 14 is flush with one end of said body. Since the flange 22 extends below the axis of rotation of the bead formation, the body 26 will be securely retained within the recess and will be incapable of dropping accidentally therefrom, the arrangement being not unlike that of a conventional ball and socket joint.

Along its lower edge, the body 26 is formed with a flat flange that straddles and is related perpendicularly to the plane of the plate 28, thus to im-

part to the body, at said lower edge thereof, an inverted T-shaped cross-sectional appearance.

The purpose of the bottom flange 32 of the body 26 is to provide means for connecting to the body a sealing strip 34 of flexible material such as soft rubber. This, as seen to advantage in Figure 1, is quite thin along its bottom or floor-engaging edge, the opposite faces of the strip diverging upwardly to form, at the upper edge of the strip, a relatively thick top edge portion 36 having formed therein a longitudinal recess complementing, and receiving, the bottom edge portion of the body 26. In this way, I connect the sealing strip to the body in a manner effective to cause the strip to swing outwardly and inwardly with the body relative to the door 10, thus to shift the thin bottom edge portion 38 of the sealing strip into and out of engagement with a floor surface F.

Reference to Figure 1 is appropriate at this time, this figure of the drawing showing that the body 26, and its associated sealing strip 34, project a substantial distance beyond one end of the support member 14. The body and strip, in this connection, extend fully from side edge to side edge of a door 10 on which the device is mounted, while the support member 14 is terminated, at one end, at a location falling short of the adjacent side edge of the door.

That end portion of the bead 30 that is disposed beyond the body 14 is formed with an axial bore 40. Further, said end portion of the bead 30 is cut away as at 42 for part of its length, intermediate the opposite ends of said bore. A hinge plate 44, having screw-receiving openings whereby it may be fixedly secured to the door, is formed with a hinge sleeve 46 medially between its upper and lower ends, and the sleeve is positioned in one end of the recess 42, in coaxial alignment with the bead formation 30.

An elongated pin 48 is then extended into the bore 40 and passes through the sleeve 46, this arrangement being shown to its best advantage in Figure 3. Rigid with the outer end of the pin is the intermediate portion of an elongated striker arm 50, disposed beyond the adjacent end of the body 26.

The striker arm has a head 52 at its upper end, and adjacent its lower end, is formed with a pair of closely spaced ears 54 having apertures 56. The ears 54, in the assembled position of the parts, overlie the opposite faces of the plate 28 of the body 26, with the apertures 56 registering with apertures 58 provided in the plate. Rivets or equivalent fastening elements are then employed to rigidly connect the ears of the striker arm to the body, so that swinging movement of the striker arm will be effective to cause the body, and the sealing strip, to swing jointly therewith.

To complete the mounting of the sealing device upon the door assembly, the jamb adjacent the striker arm is mortised to receive an angular striker plate 60, the plate 60 being screwed or otherwise rigidly attached to the jamb.

Before the pin is extended fully into the bore 40, a spring 62 is placed in the recess 42, and its ends operatively engaged with the body 26 in a manner effective to normally urge the body outwardly from the door. The pin is then extended through the spring, thus to complete the assembly of the parts of the device.

In use, the swinging of the door to its open position will cause the body 26 and the sealing strip to be swung outwardly to the position thereof illustrated in Figure 5, under the pressure of the spring 62. Subsequently, when the door is closed, the head 52 will come into engagement with the striker plate 60 as the door nears its closed position, and as a result, the striker arm will be swung to a vertical position, thus to shift the bottom edge portion 38 of the sealing strip into engagement with the floor surface F.

Important characteristics of the invention should now be noted. The construction is specifically designed to permit the device to be made in a single size, rather than in many sizes as is true of comparable draft seals now in use. In other words, since all the actuating and control devices are disposed at one end of the assembly, shown as the right end in Figure 1, the other end of the assembly can be cut down by the purchaser to fit any door on which he may desire to mount the draft seal. Accordingly, in a commercial embodiment, I would ordinarily manufacture the device in a length designed to permit its being mounted on doors greatest in width among those in general use. To attach the device to a door that is of a smaller width, one need only cut off the body, sealing strip, and support to the selected length.

The second important characteristic of the invention resides in its adaptability for mounting upon either right or left hand opening doors. Here again, draft seals of the pivoted type having means for swinging the sealing strip inwardly and outwardly responsive to opening and closing of the doors are not, to my knowledge, capable of universal use in this manner.

The adaptability of the device for mounting upon right and left hand opening doors derives from the reversibility of the body 26 within the longitudinal recess of the support member. When the body is so reversed, the striker arm will be properly positioned for engagement with the jamb, and it is necessary only that the hinge plate 44 be pivoted 180 degrees about the pivot pin 48 for connection to the door.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A draft seal for doors comprising: an elongated support member extendable longitudinally of and adapted for fixed connection to the bottom edge of a door, said member having a longitudinal recess extending the full length of the support member and formed open at its opposite ends; a body having a longitudinal bead formation rotatably engaged in said recess and extendable into either end of the recess for reversal of the bead formation end for end within the recess; a sealing strip secured to said body, said recess and bead formation providing means effective to mount the sealing strip for pivotal movement toward and away from a door to which the support member is connected, into and out of engagement with a floor surface above which the door is hinged, the body having one end por-

tion projecting beyond one end of the support member and provided with an axial bore and with a recess communicating with an intermediate portion of said bore; a pin extending into said bore and through the last-named recess; a striker arm secured to one end of the pin beyond said end portion of the body to be reversed therewith relative to the support member and to swing with the body upon the support member, said arm being adapted for engagement thereof by a door jamb on movement of the door to a closed position, thus to provide means effective for swinging the sealing strip in the direction of said door; and a spring circumposed about the pin and positioned within the last-named recess, said spring being engaged with the body and being tensioned to yieldably urge the same away from the door on which the support member is mounted.

2. A draft seal for doors comprising: an elongated support member extendable longitudinally of and adapted for fixed connection to the bottom edge of a door, said member including a longitudinal flange extending the full length of the member and curved transversely through more than ninety degrees to define a longitudinal recess in the support member, said recess being open at its opposite ends; a body having a longitudinal bead formation of circular cross section rotatably engaged within said recess and extendable into either end of the recess for reversal of the bead formation end for end within the recess; a sealing strip secured to said body, said recess and bead formation providing means effective to mount the sealing strip for pivotal movement toward and away from a door to which the support member is connected, into and out of engagement with a floor surface above which the door is hinged, the body having one end portion projecting beyond one end of the support member and provided with an axial bore and with a recess communicating with an intermediate portion of said bore; a pin extending into said bore and through the last-named recess; a striker arm secured to one end of the pin beyond said end portion of the body to be reversed therewith relative to the support member and to swing with the body upon the support member, said arm being adapted for engagement thereof by a door jamb on movement of the door to a closed position, thus to provide means effective for swinging the sealing strip in the direction of said door; and a spring-circumposed about the pin and positioned with the last-named recess, said spring being engaged with the body and being tensioned to yieldably urge the same away from the door on which the support member is mounted.

ROBERT J. MENZIES.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
578,616	White	Mar. 9, 1897
587,393	Ward	Aug. 10, 1897
1,488,652	Scrabic	Apr. 1, 1924