

April 10, 1951

S. M. FUNK

2,548,716

WEATHER SEALING MECHANISM

Filed Nov. 7, 1947

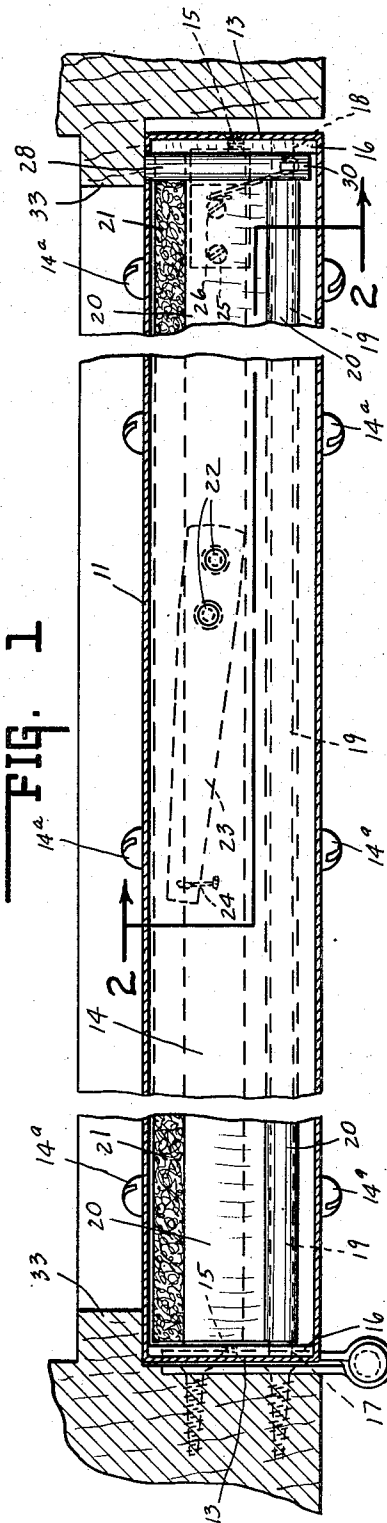


FIG. 1

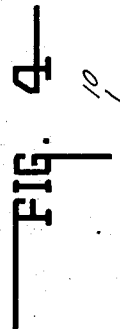


FIG. 2

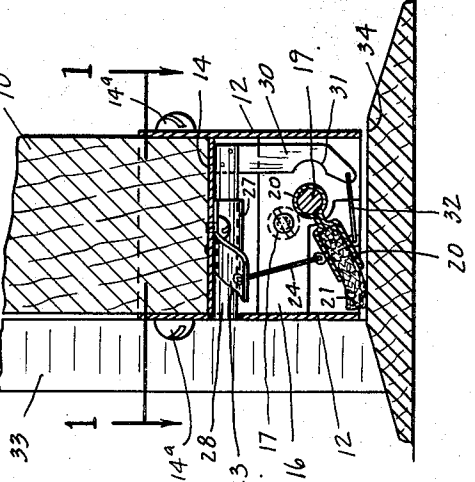
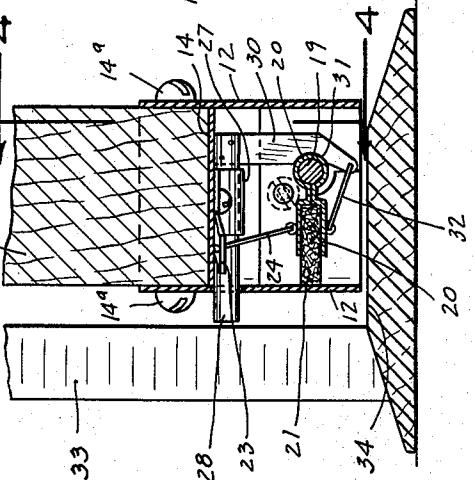
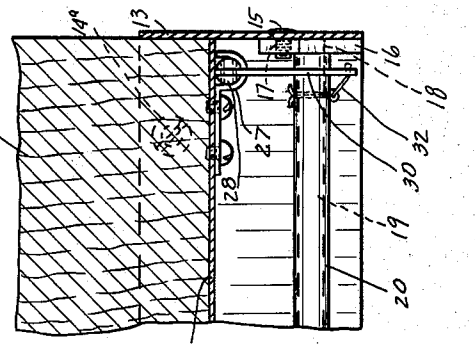


FIG. 3

FIG. 4

INVENTOR.
SAMUEL M. FUNK.

BY
Lockwood, Coldsmith & Calt,
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,548,716

WEATHER SEALING MECHANISM

Samuel M. Funk, Muncie, Ind.

Application November 7, 1947, Serial No. 784,664

1 Claim. (Cl. 20-67)

1

This invention relates to a weather sealing mechanism for use particularly with doors.

It is the primary object of this invention to provide a mechanism for weather sealing doors which will be efficient, effective, and of simple construction.

Various weather sealing structures have heretofore been in common use. A great majority of these comprise merely a door bottom strip wherein the rubber shod felt sealer remains in a fixed, stationary position flush with the threshold. There are several disadvantages connected with such strips. For example, it is common in most homes to have a carpet or throw rug on the floor immediately inside the threshold. By reason of the fact that the standard strips remains in a fixed position as aforesaid, it follows that upon opening the door, the strip pushes back any throw rug lying there. In the event the floor is carpeted, it is difficult to open the door by reason of the friction of the strip against carpet.

In addition to these disadvantages, there is a considerable amount of wear upon the sealing strip through its contact with the rugs or carpet. As the strip becomes worn it naturally becomes less effective as a seal. This fact is well recognized, since most of the standard sealing strips are themselves provided with slotted screw holes for use in compensating for the wear. By reason, however, of the nuisance value attending any such adjustment, and the difficulties in actually making the adjustment, the standard sealing strips have encountered considerable sales resistance.

It is an object of this invention to provide a weather sealing mechanism wherein the sealing strip or apron rises automatically when the door is opened and thereby clears the threshold and any rugs or carpet which may be lying just inside thereof.

It is a still further object of this invention to provide such a mechanism wherein the operating parts lie within a housing secured to the bottom of the door. The advantage of such a location stems primarily from the fact that the mechanism does not detract in any way from the appearance and attractiveness of the door. In addition, by placing the operating mechanism within the housing it is protected from the elements and consequently has a much longer operating life.

The chief feature of the invention resides in the pin or plunger which is connected to the apron or sealing strip. When the pin comes

2

into engagement with the jamb or casing, upon the door being closed, the apron is caused to swing downwardly thereby bringing the sealing means in sealing contact with the threshold.

Another feature of the invention resides in the use of a spring metal strip which is connected to the upper portion of said apron. While the engagement of the pin with the jamb as aforesaid, causes the apron to swing downwardly against the tension of the spring metal strip, when and as the door is opened the spring causes the apron to swing upwardly immediately to its normal substantially horizontal position. As a consequence, the door can swing open without the apron obstructing its movement and can clear any rugs or carpet which may be lying just inside the threshold.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:

Fig. 1 is a horizontal section view taken on line 1-1 of Fig. 2.

Fig. 2 is a vertical section view of the invention showing the position of its parts when the door to which it is secured is in a closed position.

Fig. 3 is a vertical section view showing the invention when the door is open.

Fig. 4 is a section view taken on line 4-4 of Fig. 3.

In the drawings 10 shows the lower part of an ordinary house door which has been shortened to enable the invention to be secured to it. The invention is mounted within a housing 11 which has vertically disposed side walls 12 and end walls 13, but is open at the bottom. Extending longitudinally of the housing adjacent the upper end thereof is a partition 14 formed preferably of a metallic substance. The upper portion of the housing is affixed to the lowermost portion of the door 10 by screws 14^a, the bottom of the door resting upon the upper surface of the partition 14.

Secured by screws 15 to the oppositely disposed end walls 13 of the housing 11, and adjacent the bottom thereof, are the bearing plates 16 each of which has an opening 17 and 18, respectively, formed therein. Journalled within the openings of said bearings is the shaft 19. Encircled about the shaft 19 and extending outwardly therefrom is a substantially U-shaped casing 20 which is adapted to receive and retain therein the apron or sealing strip 21.

Secured to the lower surface of said partition

55

3

14 by screws 22 is a spring metal strip 23 which is connected to the casing 20 by a link 24.

Similarly secured by screws 25 and 26 to the under surface of the partition 14 adjacent one of the end walls 13 is a guideway 27. Within this guideway is slidably mounted the pin 28. This pin comprise a horizontally disposed member 29 which is herein shown as being circular in cross section, and the vertically disposed member 30 which has a groove or detent 31 formed adjacent its lower end, thereby adapting it to receive the casing 20 therewithin in nested relation when the door is open (see Fig. 3).

The lower end of the pin member 30 extends slightly inwardly and is connected by link 32 to the lower portion of the U-shaped part of the casing 20.

When the door is open, the tension of the spring strip 23 pulls the casing 20 and the apron or sealing strip 21 secured therewith in a friction grip, upwardly in a substantially horizontal position (see Fig. 3). However, when the door 10 is closed the pin member 29 comes into engagement with the door jamb, casing, or frame 33 and is thereby forced rearwardly. The pin member 30 is thereby also forced rearwardly causing the casing 20 to be pulled downwardly by means of the link 32. The sealing strip 21 is then in effective sealing engagement with the threshold 34 of the doorway. As aforementioned, when the door is opened, the tension of the spring strip 23 pulls the sealing strip casing 20 upwardly and the pin members 30 and 29 are thereby pulled forwardly so that the member 29 is again in cocked position.

In order to provide effective insulation against the elements, rock wool or other insulating material may be placed within the housing 11.

While the invention has been illustrated and described in great detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character.

It is to be understood that while the drawings and description herein have shown and described the invention in connection with a door, that

4

it can just as readily be applied to and used with a window or other similar closure.

The invention claimed is:

A weather sealing mechanism for a door and frame therefor comprising a housing removably secured to the lower edge of said door and having side and end walls, one of said side walls having an aperture formed therethrough in confronting relation to a portion of the door frame, a rock shaft journaled in the end walls of said housing, flexible sealing means associated with said shaft and rockable therewith into and out of sealing engagement with a threshold, a leaf spring connected adjacent one of its ends to the lower edge of said door and intermediate the ends thereof, an element connecting the free end of said spring with the upper face of said sealing means, said spring normally constraining said sealing means out of engagement with said threshold when the door is in open position, a transversely disposed guideway connected to said lower edge adjacent one end thereof, a member slidably mounted in said guideway and normally extending through said aperture beyond the side wall of said housing, said member having a vertically disposed depending portion formed at its rear extremity, a second element connecting the lower extremity of said depending portion to the lower face of said sealing means, whereby upon door closure said slidable element is forced rearwardly by said door frame, thereby moving said sealing means into sealing engagement with said threshold.

SAMUEL M. FUNK.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,994,645	Hazzard	Mar. 19, 1935
2,033,241	Hawk	Mar. 10, 1936
2,053,793	Johnson	Sept. 8, 1936
2,206,183	Goodfellow	July 2, 1940