Sept. 17, 1929. R. E. STANTON 1,728,453

WEATHER STRIP

Filed Dec. 7, 1925

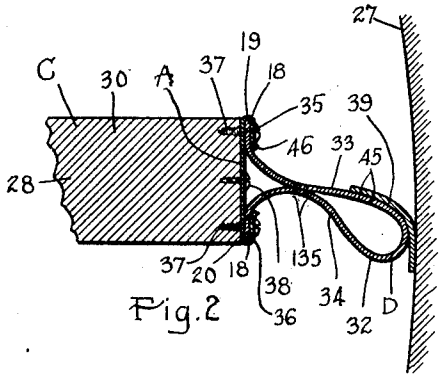


Fig. 2

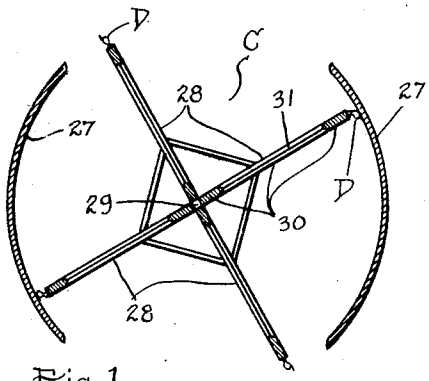


Fig. 1

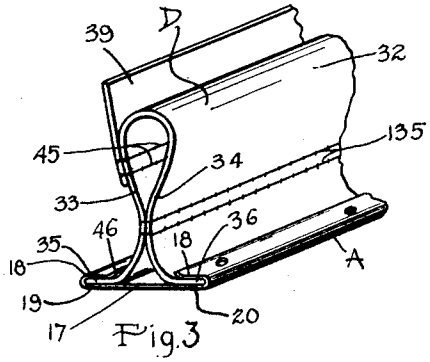


Fig. 3

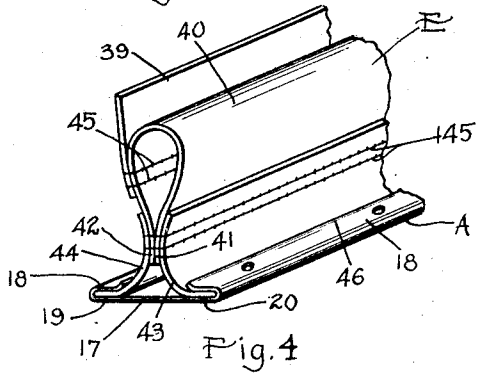


Fig. 4

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UNITED STATES PATENT OFFICE

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WEATHER STRIP

Application filed December 7, 1925. Serial No. 73,561.

My invention relates to weather strips and particularly to such strips adapted to be applied to the edges of movable closures where the closures are frequently operated.

An object of the invention resides in providing a weather strip which may be attached to existing closures without alteration or defacement thereof.

Another object of the invention resides in providing a holder having facing grooves in which is positioned a flexible member having the marginal portions thereof lodged in said grooves, said member being bowed and so held in its application to said holder.

A still further object resides in providing a sealing strip adapted to be attached to such bowed member and bent over the bowed portion thereof so as to increase its life and prevent the same from receding from the surface against which the seal is to be effected.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawing illustrating embodiments of my invention:

Fig. 1 is a transverse sectional view of a revolving door illustrating the application of a form of my invention.

Fig. 2 is an enlarged sectional view of a portion of the structure shown in Fig. 1.

Fig. 3 is a perspective view of the form of weather strip illustrated in Fig. 2.

Fig. 4 is a perspective view of a modified form of weather strip similar to that shown in Fig. 3.

In many of the weather strips now in use employing a resilient member, considerable difficulty is encountered in that the resilient member soon fails to seal the opening for which the closure is desired, particularly where the opening and closing is frequent. In addition, where a sealing strip is used the same frequently breaks off or becomes permanently bent adjacent its point of attachment so that no seal is effected thereby rendering the device ineffective for the purpose desired. This is particularly disadvantageous in connection with revolving doors where the seal is used as a check, since as soon as the same fails to engage the enclosure, the door is permitted freely to spin which frequently results in accidents. My invention overcomes these disadvantages as will presently become apparent.

My improved form of weather strip is most advantageously used in connection with revolving doors. To illustrate the application thereof I have shown in Fig. 1 an ordinary type of revolving door C consisting of the usual circular enclosure 27 with a number of wings 28 revoluble about a central vertical axis 29 situated co-axially with said enclosure. Each of the wings 28 is constructed with stiles and rails 30 which support the usual glass panels 31. The upright edges of the wings 28 move in proximity to the inner surface of the casing 27 and my improved weather strip is employed for the purpose of effecting a moving seal between said wings and casing.

The form of weather strip best adapted for use with revolving doors of the type above described is illustrated in detail in Fig. 3. This weather strip consists of a holder A formed of a strip of sheet metal and comprises a back 17 having the marginal portions 18 bent over toward each other and lying parallel with and spaced from the back 17 to provide two facing grooves 19 and 20. This holder is preferably of a width equal to the stile or rail of a door or wing on which the weather strip is mounted and is permanently secured to the edge thereof by means of screws 37 and 38 shown in dotted lines in Fig. 2. The screws 38 are spaced at suitable intervals and are placed in the center of the holder between the marginal portions 18 thereof and lie substantially flush with the surface of the back 17 so as not to form any obstruction to the attachment of the resilient member employed with my invention to the support while the screws 37 pass through the marginal portions 18.

The resilient member D which is used in conjunction with the holder A is cut from resilient sheet material, such as rubberized fabric or any other suitable substance to a width

considerably greater than the extreme width of the holder A and of the same length. The marginal portions 35 and 36 of this member are bent outwardly and inserted into the grooves 19 and 20 with the sides 33 of the arched portion 32 lying adjacent each other to form an outwardly extending loop, as indicated. These two sides are stitched together at 135 to hold the same in proper relation. To prevent the member D from chafing at the extreme edges 46 of the turned marginal portion 18 of member A, said portions are flared outwardly as shown. The weather strip is attached to the edges of the stiles 30 by means of screws 37 and 38 as previously mentioned of which the screws 38 serve to attach the holder B to the edge of the wing, while the screws 37 serve to hold the resilient member in place so as to permit of ready removal.

Upon the exterior of the side 33 of resilient member D is stitched at 45 a sealing strip 39 made of felt or other suitable material which extends outwardly beyond the same as shown in Fig. 8. This strip, when the door is rotated, is caused to engage the inner surface of enclosure 27 and is held in contact therewith through the resiliency of the member D. Said strip is made to bend over the curved or bowed portion 32 of member D so that no sharp break or fold occurs. In this manner said strip is prevented from receding from the surface of enclosure 27, whereby an effective seal between door and casing is afforded at all times, and the long life of the strip insured.

In the form of the invention shown in Fig. 4, which is quite similar to that shown in Fig. 3, a stiffer resilient member indicated at E is provided. This device consists of a looped or bowed portion 40, the margins 41 and 42 of which lie adjacent one another and are positioned between two strips 43 and 44. These parts are stitched together at 145 to form a unitary structure similar to the member D, except that the portions 43 and 44 thereof may be made of a substance having different resilient characteristics than the bowed portion 40. The sealing strip 39 is stitched at 145 to member 40 on one side thereof, the same as in the device illustrated in Fig. 8, it functioning in the same manner. In mounting member E the strips 43 and 44 are inserted into the grooves 19 and 20 of the holder A and held in place therein by means of screws 37, the same as in the other form of the invention. With this type of weather strip, greater pressure of the sealing strip against the inner surface of the enclosure may be had so as to effect a more positive seal.

The advantages of my invention are manifest. An extremely simple construction is provided of which the holder may be made of sheet metal bent over as desired, and of which the resilient member may be made of suitable strips of sheet material which, if desired, may be stitched together, thus providing a simple and expedient method of manufacturing the same. The resilient members may be readily replaced when they wear out. The action of the resilient members is such as to give the same a maximum life and at all times to permit the same to function properly and to effect a positive seal.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A weather strip comprising a holder, a member formed of resilient material attached to said holder, and having a curved portion, a sealing strip attached along one edge to said member and normally extending outwardly therefrom, said sealing strip being adapted to bend around said curved portion.

2. A weather strip comprising a holder, a member formed of rubberized sheet material attached to said holder having a curved portion, a felt sealing strip attached to said member and being adapted to bend around said curved portion.

3. A weather strip comprising a holder having a pair of facing grooves, a resilient member providing a looped portion having portions of its sides in contact and the extreme ends thereof diverged and lodged in said grooves, and a sealing strip attached to said member along a single edge thereof and extending outwardly from the contacting portion of said member.

In testimony whereof, I have signed my name to this specification.

RAYMOND E. STANTON.