

(No Model.)

J. R. SMITH.
WEATHER STRIP.

No. 567,363.

Patented Sept. 8, 1896.

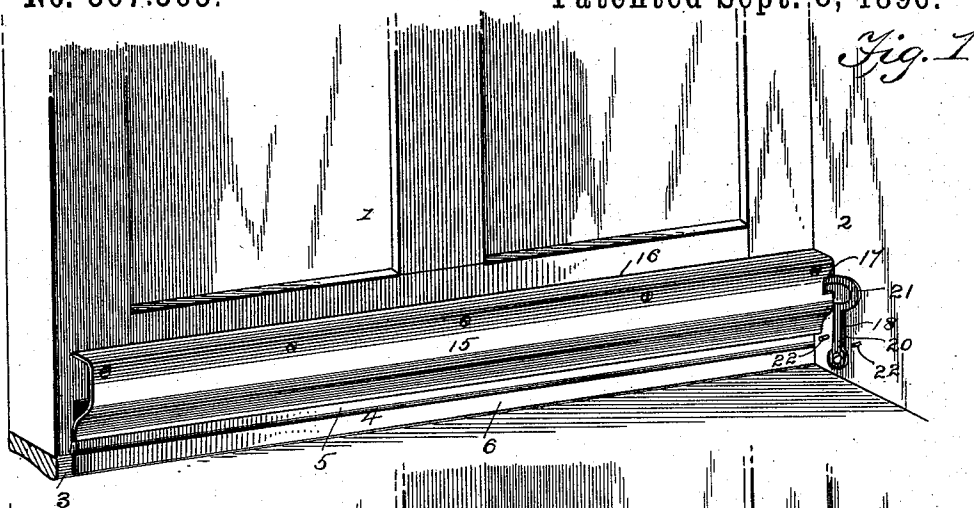


Fig. 1

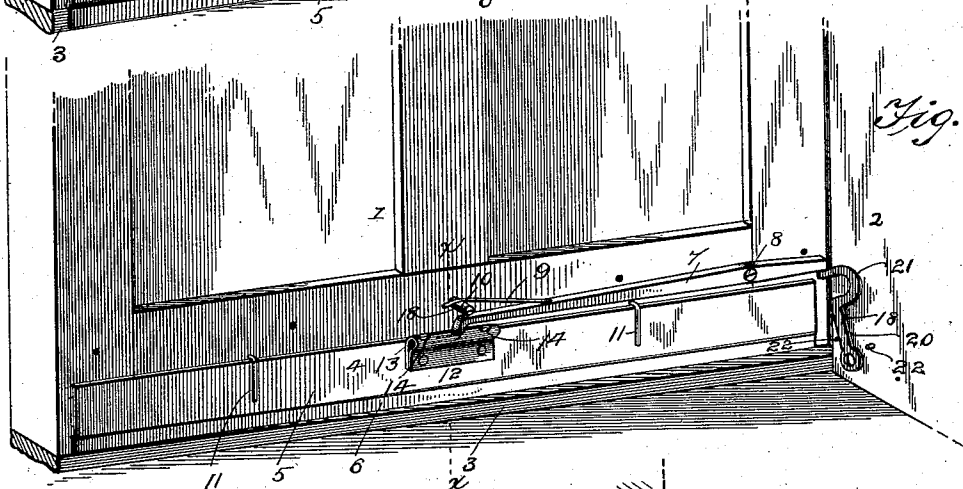


Fig. 2



Fig. 4.

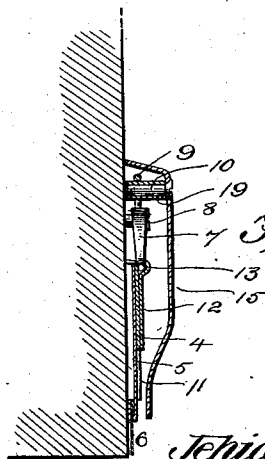


Fig. 5.

Witnesses

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By *his* Attorneys.

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UNITED STATES PATENT OFFICE.

JEHIAL R. SMITH, OF KIRWIN, KANSAS.

WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 567,363, dated September 8, 1896.

Application filed May 28, 1895. Serial No. 550,994. (No model.)

To all whom it may concern:

Be it known that I, JEHIAL R. SMITH, a citizen of the United States, residing at Kirwin, in the county of Phillips and State of Kansas, have invented a new and useful Weather-Strip, of which the following is a specification.

The present invention relates to improvements in weather-strips of that class designed to close the space between the threshold and the lower edge of the door, and in which the weather-strip is lowered upon the threshold by the act of closing the door.

The primary object of the present invention is the construction of a weather-strip which can be applied to any door without requiring grooving or rabbeting the lower portion thereof for the fitting thereto of the device, and which is adapted to be secured by screws or similar fastenings to the side of the door.

A further purpose of the invention is to devise a weather-strip that can be applied to either side of a door, and which can be reduced in length to adapt it to the width of the door to which it is required to apply the invention.

A still further purpose of the invention is the provision of a weather-strip which can be placed in position by any one unskilled in the handling of tools, and which when not required for use can be detached from the door without marring the latter, as is the case with weather-strips of similar prior construction, and to provide a device of the character afore-said that will be simple in its structure and comprise a minimum number of parts, and which will be durable, efficient, and give satisfactory results.

With these and other objects in view the improvement consists of the novel features which hereinafter will be more fully set forth and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the lower portion of a door having the invention applied thereto, the door being closed. Fig. 2 is a view similar to Fig. 1, having the casing removed and showing the relative disposition of the parts when the lever and trigger are in engagement and prior to completely closing the door. Fig. 3 is a cross-section on the

line X X of Fig. 2. Fig. 4 is a cross-section of the weather-strip proper.

The numeral 1 indicates a door of any construction, 2 its casement, and 3 the threshold. The weather-strip 4 comprises a plate 5, of sheet metal, and a flexible strip 6, of rubber, felt, or other suitable material, which is secured to the lower edge of the metal plate 5, preferably by having the lower portion of the plate 5 folded and clenched upon the upper edge portion of the flexible strip 6, as shown most clearly in Fig. 4, said folded edge portion being bent upward and recurved, and having a space between the upwardly-bent portion and the recurved part for the reception of the edge portion of the flexible strip 6, as clearly indicated in said Fig. 4.

A lever 7 is horizontally disposed and fulcrumed near one end to the proximate edge portion of the door 1 and has its inner end positively connected with the weather-strip 4 near a middle point, whereby the said weather-strip is nearly balanced upon its point of suspension. This lever 7 has pivotal connection with the side of the door by means of a screw or like fastening 8, whereby the said lever can be readily detached when it is required to remove the invention from the door for any reason. A spring 9, which may be either a round or flat wire, is made fast at one end to the lever 7 in any convenient manner, and its opposite end extends over a fastening 10, and this spring serves to hold the inner or longer arm of the lever 7 elevated, and consequently raises the weather-strip 4 above the lower edge of the door 1 or to such a position as not to interfere with the threshold 3 when opening and closing the door.

In order to retain the weather-strip 4 close against the side of the door 1, guards 11 are provided, and consist of short wires having their upper ends bent laterally and driven into the side of the door above the top edge of the weather-strip 4, and these guards 11 also serve to guide the weather-strip 4 in its vertical movements.

While any suitable provisions may be had for securing the inner end of the lever 7 to the weather-strip 4, it is preferred to attach the same to the weather-strip by means of a plate 12, of sheet metal, which is folded be-

tween its edges and secured to the weather-strip 4 by means of rivets or in any desired manner, the folded portion of said plate being expanded or opened, as shown at 13, and provided with a series of openings 14 to receive the enlarged end of the lever 7, which is passed through one of the said openings 14 and engaged thereby, as will be readily understood. The weather-strip 4 will be provided in suitable lengths to suit the widest door, and when required to be applied to a narrower door is cut to the proper length in any desired manner, as will be readily understood. Hence by providing the plate 12 with a series of openings 14 the point of attachment between the lever 7 and the weather-strip 4 can be had at a point about midway of the length of the said weather-strip, thereby nearly balancing the latter upon its point of suspension, which is of great advantage in the efficient working of the invention. The plate 12 is adapted to be placed on either side of the weather-strip, according as the latter is designed for one side or the other of the door.

The casing 15 is adapted to inclose the upper portion of the weather-strip and its operating parts, and is formed of sheet metal, having its upper end portion 16 flanged and bearing against the side of the door, whereby a close joint is obtained for the exclusion of water, and having its lower edge portion curving inwardly, so as to bring the lower edge thereof in proximate relation to the weather-strip, whereby a close joint and neat finish are attained, as shown most clearly in Fig. 3. The edge of the casing is notched opposite the short arm of the lever 7, as shown at 17, to admit of the end of the trigger 18 reaching through the casing and engaging with the short arm of the said lever, so as to actuate the latter and throw the weather-strip into operative relation when closing the door. The casing 15 is attached to the side of the door by means of a series of fastenings 10, which latter pass through the upper edge portion of the casing immediately below its flange 16. To prevent pressing the lower edge of the casing too tightly against the weather-strip 4, short spacing-tubes 19 are mounted upon the fastenings 10 and are adapted to come between the side of the door and the casing, as most clearly illustrated in Fig. 3.

The trigger 18 comprises an arm 20, pivoted at its lower end to the inner side of the door-jamb and having its upper end curved, as shown at 21, and this trigger is adapted to move within certain limits, the amplitude of its movements being governed by stops 22, disposed upon opposite sides of the arm 20.

The parts being assembled substantially as herein specified, the operation of the invention is as follows: When the door is open, the spring 9 serves to hold the weather-strip elevated and out of the way, and on closing the door the short arm of the lever 7 engages

with the curved end 21 of the trigger, this position being indicated in Fig. 2, and on completely closing the door the trigger moves inward therewith and presses upward on the short arm of the said lever 7, thereby depressing the inner or longer arm of the said lever and lowering the weather-strip upon the threshold, as shown in Fig. 1.

It will be observed that the lever 7 does not ride upon the curved end of the trigger, but that the trigger and lever move together after being engaged. When the door is open, the trigger inclines from the perpendicular and occupies such a relative position that the short arm of the lever 7 will engage with the curved end 21 of the trigger an instant before completely closing the door, and after the parts have been engaged and the trigger moves inward with the door the tendency of the said trigger to assume or approach the perpendicular will result in an upward pressure on the short arm of the lever 7, whereby the desired results are attained.

From the foregoing it is obvious that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

The casing 15 will be provided in lengths corresponding to the different widths of doors in general use, and to adapt the casing for either a right or a left hand opening door it will be made about a half-inch longer than is necessary for a proper fit, and each end will be provided with a notch for the insertion of the end of the trigger 18. When fitting the weather-strip to the required size of door, one of the notched ends is to be cut off, as shown in Fig. 1, thereby avoiding the unsightly appearance which would result if the notched end of the casing not required for use were left intact. The only purpose of notching both ends of the casing is to enable the proper fitting of the weather-strip to doors opening either to the right or the left.

Having thus described the invention, what is claimed as new is—

1. The combination of a weather-strip fitted to the lower portion of a door and normally held in suspension, a horizontally-disposed lever having its inner end operatively connected with the weather-strip, and a trigger having a limited movement and pivoted to the door-jamb adjacent to the projecting end of the said lever and inclining to the vertical, and adapted to engage at its free end with the projecting end of the aforesaid lever and move therewith, upon closing the door, to a vertical position to elevate the outer end of the lever and depress its inner end and the weather-strip, substantially as described.

2. In combination, a weather-strip, a plate secured thereto and having a folded portion extending horizontally and open and provided with a series of openings, an operating-lever having one end constructed to be ad-

justably engaged with the said plate by passing through one of the said openings, and a spring operatively connected with the said lever to return it and the weather-strip to a normal position on opening the door, substantially as set forth.

3. The herein shown and described weather-strip, comprising a weather-strip proper having a plate secured thereto provided with a folded portion formed with a series of openings, a horizontally-disposed lever having its inner end enlarged and engaged with one of the said openings to form a point of suspension for the weather-strip proper, a spring secured to the lever and adapted to return it and the weather-strip to a normal or elevated position when opening the door, guards attached to the door and engaging with the outer side of the weather-strip and serving

to hold the latter close against the side of the door, a casing inclosing the upper portion of the weather-strip and its operating parts and having its upper edge portion flanged and its lower portion curved inwardly, and a trigger pivoted to the door-jamb and normally inclining to the vertical and adapted to engage with the said lever and move with the door to effect a closing of the weather-strip upon the threshold, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JEHIAL R. SMITH.

Witnesses:

H. R. HULL,
H. J. CAMERON.