

No. 767,771.

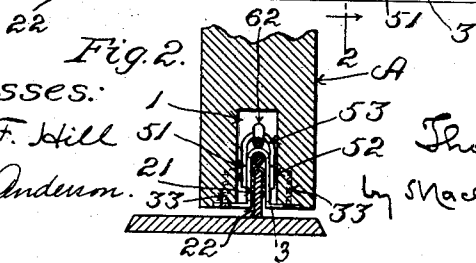
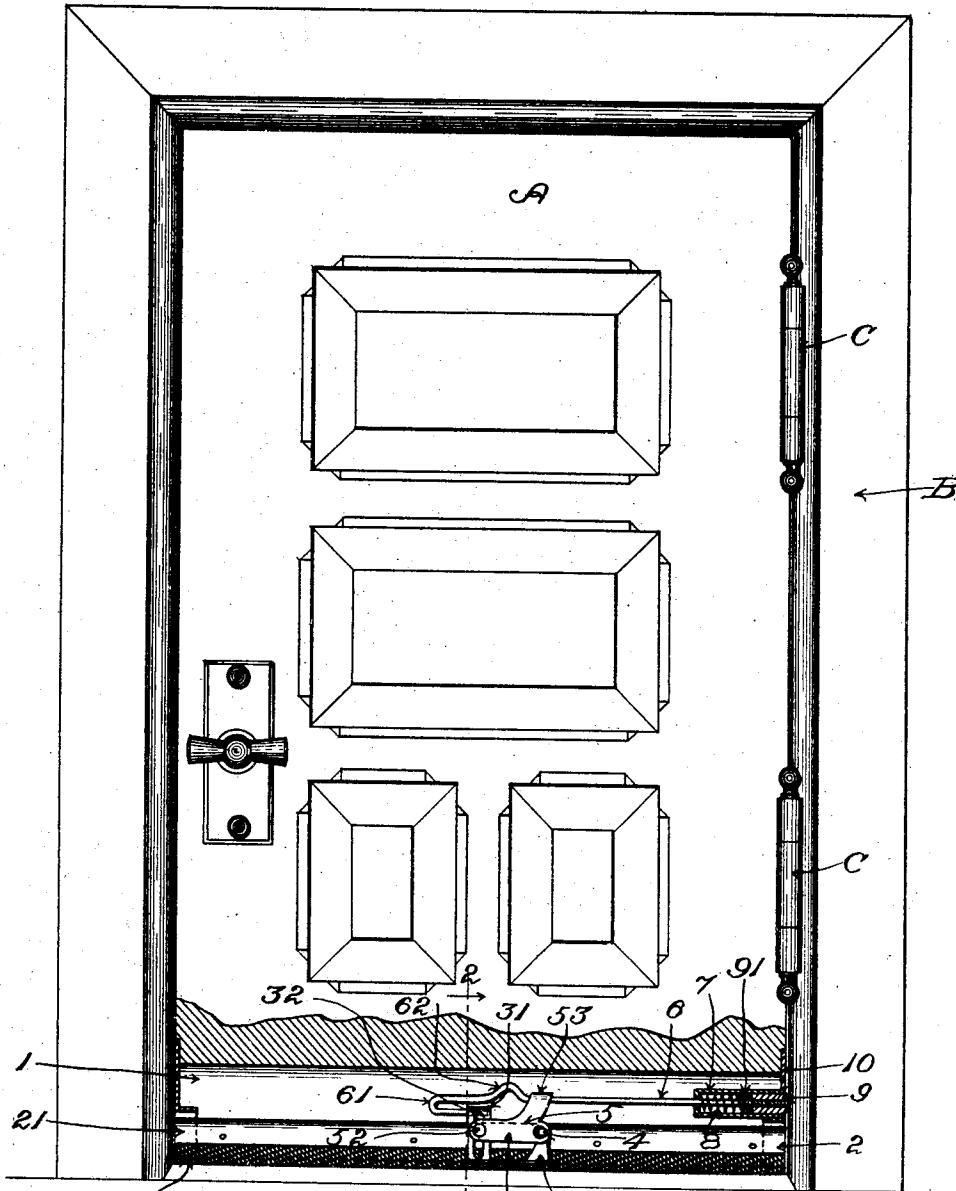
PATENTED AUG. 16, 1904.

T. D. SNOW.
WEATHER STRIP FOR DOORS.

APPLICATION FILED JAN. 16, 1904.

NO MODEL.

Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

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WEATHER-STRIP FOR DOORS.

SPECIFICATION forming part of Letters Patent No. 767,771, dated August 16, 1904.

Application filed January 16, 1904. Serial No. 189,236. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. SNOW, a citizen of the United States, residing at Devereau, Marblehead, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Weather-Strips for Doors, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in an improved weather-strip arrangement for the lower edges of doors, which I will proceed to describe with the aid of the drawings, in which latter is illustrated an embodiment of the invention.

In the drawings, Figure 1 shows in elevation, partly broken out to show the features of the invention, a door and door-frame with the invention applied in connection therewith. Fig. 2 is a detail view, in vertical cross-section, on the plane indicated by the dotted line 2 2 of Fig. 1.

Having reference to the drawings, a door is represented at A, and at B is shown the door-frame in connection with the said door. C C are hinges connecting the said door with the said door-frame.

In carrying the invention into effect a groove or slot 1 is formed in the lower portion of the door, such groove or slot extending from the lower edge of the door vertically upward within the thickness of the door and also extending from one vertical edge of the door to the opposite vertical edge thereof. Within the said groove or slot 1 the weather-strip 2 is placed, the latter being of any suitable or preferred character. Herein the weather-strip consists of a backing 21, of suitable material, and an acting portion 22, of elastic or yielding material, such as rubber, felt, or cloth. The weather-strip is fitted to rise and fall vertically within the groove or slot 1. For the support and actuation of the weather-strip 2 the latter is connected at mid-length thereof, by means of a pin or pivot 52, with the horizontal or substantially horizontal arm 51 of a bell-crank or lever 5. The said bell-crank or lever is formed double—that is, of parallel side portions which are united with each other at the upper end of the upwardly-extending

arm 53 of the bell-crank or lever. The weather-strip fits between the two side portions of the bell-crank or lever, and the pin or pivot at 52 is engaged with both of the said side portions. The bell-crank or lever 5 is hung at 4 upon a stand 3, which is set in the lower edge of the door, as shown best in Fig. 2, and secured in place by means of screws 33 33, passing upward through holes in outwardly-extending flanges of the opposite side portions of the stand into the material of the door. The stand 3, like the bell-crank or lever 5, is formed double, it having two parallel side portions, between which the weather-strip fits, the said side portions being united with each other at the upper end of the upright portion 31 of the stand. The opposite sides of the said upright portion are slotted, as indicated at 32, Fig. 1, and through the slots 32 the opposite ends of the pin or pivot 52 project. As the weather-strip rises and descends the said ends work up and down within the slots 32. The opposite side portions of bell-crank or lever 5 work outside of the corresponding side portions of the upright slotted portion 31 of stand 3, and thereby are guided in their vertical movements. In consequence of fitting between the opposite side portions of the stand 3 and bell-crank or lever 5 the weather-strip is held in a vertical plane and for the same reason, as well as because of being engaged at its opposite sides with the corresponding side portions of the bell-crank or lever 5, the weather-strip is prevented from tilting sidewise and from cramping or binding within the groove or slot 1. Each side portion of the bell-crank or lever 5 is separately pivoted to the corresponding side portion of the stand 3.

With the weather-strip and connected bell-crank or lever 5 I combine means for automatically operating the same to cause the weather-strip to be lowered and raised as the door is swung from an open position into a closed one, and vice versa. The said means includes a plunger-rod 6. The said plunger-rod is of a length to extend from stand 3 to the hinged edge of the door and project slightly at such edge. The inner end of plun-

ger-rod 6 is bent and returned upon itself, as at 61, the connecting portion at the top of stand 3 being received between the two portions of the plunger-rod, as shown. Thereby the said end is supported and is guided in the longitudinal movements of the plunger-rod. The plunger-rod passes between the side portions of bell-crank or lever 5 and is formed with an upward bend 62, the latter forming a projection or cam to act against the closed upper end or connecting portion of the upwardly-extending arm 53 of the said bell-crank or lever. The outer portion of the plunger-rod 6 passes lengthwise through a tube 7, which extends within the groove or slot 1 from a plate 10, which is secured to the hinged edge of the door. To the extreme outer end of the plunger-rod is applied a head 9, which in practice engages with the adjacent jamb or portion of the door-frame as the door is swung into its closed position or with a plate attached to the said jamb or portion of the door-frame. Within the tube 7 is contained a spiral spring which encircles the plunger-rod between the inner end of the tube and the head 9, or a collar 91, employed upon the plunger-rod adjacent the said head 9. The spring acts with a tendency to move the plunger-rod endwise in a direction to cause the projection or cam 62 thereof to act against the bell-crank or lever 5, so as to turn the latter and raise the weather-strip. Movement of the plunger-rod in this direction will cause the head 9 upon its outer end to project from the edge of the door. When the door is swung from a closed to an open condition, the spring is permitted thus to act, the result of which is to cause the projection or cam portion 62 of the plunger-rod to engage with bell-crank or lever 5 and turn the latter so as to raise the weather-strip, and thus draw it by an upward movement into the groove or slot 1. When the door is swung from the open condition to the closed condition, the engagement of the head 9 against the adjacent jamb, or the plate applied to the latter, will result in compression of spring 8 and in release of bell-crank or lever 5 from projection or cam 62, which will permit such bell-crank to turn upon its pivots and the weather-strip to descend until its lower edge makes contact with the threshold, sill, or floor beneath the door. Head 9 and collar 91 are in screw-threaded engagement with the outer end of the plunger-rod 6. This enables them to be adjusted upon the said end by turning them thereon, so as to screw them more or less upon the same. By adjusting collar 91 in this manner or the head 9 in case the collar is dispensed with, as contemplated by me in some cases, the tension of the spring 8 may

be regulated, if necessary, in order to secure the required working of the parts.

The construction of the stand 3 and bell-crank 5 may be varied without departure from the broad spirit of the invention, and it is not necessary in the broader embodiments of the invention that such parts should be of the double construction described herein.

In consequence of being pivoted at the middle of its length to the bell-crank or lever 5 the weather-strip is free to accommodate itself to any inclination of the surface with which it makes contact, even though such inclination be considerable.

My invention is adapted to be employed in cases in which a raised threshold or sill is dispensed with, the weather-strip in such cases resting against the flooring in the doorway in the closed condition of the door.

For a finish to the ends of the groove or slot 1 I provide end plates 10 10, which are secured to the opposite vertical edges of the door. These end plates preferably are formed with guides, as shown, which receive the corresponding ends of the weather-strip and within which the said ends rise and fall.

I claim as my invention—

1. In combination, the door-frame, the door, the weather-strip, the bell-crank or lever pivotally mounted in connection with said door and engaging with the weather-strip at the middle of the length of the latter, the plunger-rod having the engaging portion 62 to actuate the said bell-crank or lever, and the spring coacting with said plunger-rod to move the latter.

2. In combination, the door-frame, the door, the weather-strip, the bell-crank or lever engaging with the weather-strip at the middle of the length of the latter, the stand having said bell-crank or lever pivoted thereto, the plunger or rod guided by said stand and having the engaging portion 62 to actuate the said bell-crank or lever, the tubular guide, and the spring encircling the plunger or rod within the said tubular guide.

3. In combination, the door-frame, the door, the weather-strip located in a groove or slot of the said door, the double bell-crank or lever, the double stand, the said weather-strip working between the opposite side portions of the said bell-crank or lever and stand, the plunger or rod, and the actuating-spring for the said plunger or rod.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS D. SNOW.

Witnesses:

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