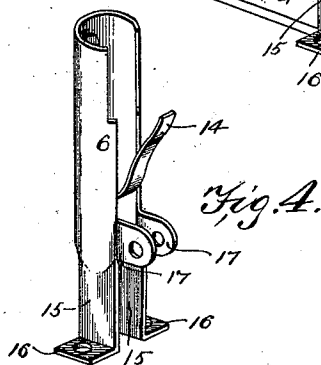
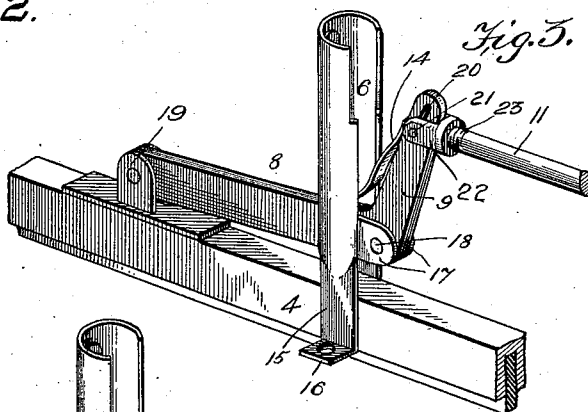
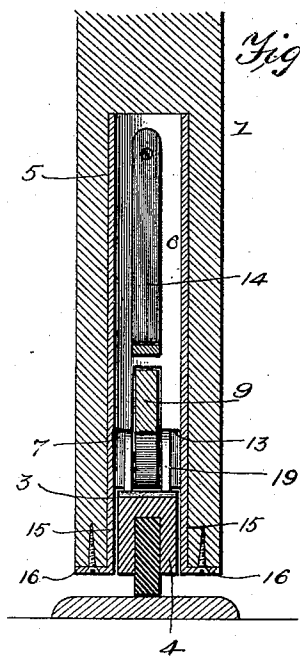
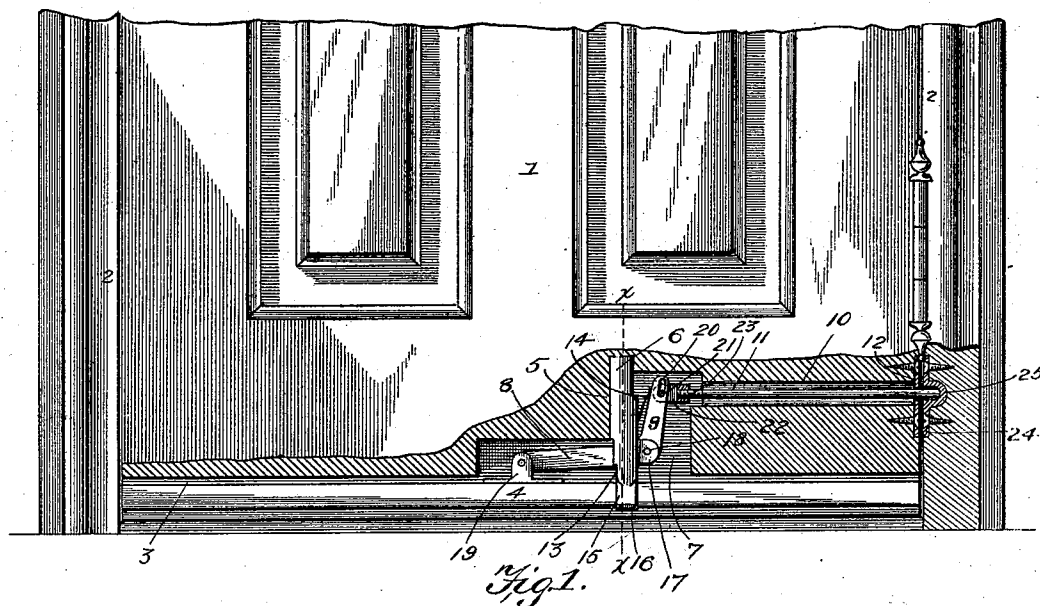


(No Model.)

A. THORN.
WEATHER STRIP.

No. 557,319.

Patented Mar. 31, 1896.



Witnesses

E. A. Monroe.
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By his Attorneys.

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UNITED STATES PATENT OFFICE.

ASHLEY THORN, OF CLEARFIELD, PENNSYLVANIA.

WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 557,319, dated March 31, 1896.

Application filed March 14, 1895. Serial No. 541,792. (No model.)

To all whom it may concern:

Be it known that I, ASHLEY THORN, a citizen of the United States, residing at Clearfield, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Weather-Strip, of which the following is a specification.

This invention relates to weather-strips for closing the space between the threshold and the lower edge of the door, so as to exclude wind, wet, and dust, and which are operated by means of a rod engaging with the door-jamb or side of the casement on closing the door.

The improvement consists in the novel construction, arrangement, and combination of the several parts, which hereinafter will be more fully described and specifically claimed.

The object of the invention is to provide a weather-strip which will obtain a uniform bearing upon the threshold throughout its length, thereby attaining a complete closure, and which will be capable of ready attachment to any door without necessitating the application of strips to the sides thereof, which results in giving to the door a clumsy appearance, and which will combine simplicity, compactness, and a minimum number of parts.

Referring to the accompanying drawings for a more complete explanation of the invention, Figure 1 is a side elevation of the lower portion of a door having a part near its lower end broken away to disclose the relative location and disposition of the component parts of the invention. Fig. 2 is a detail section on the line X X of Fig. 1. Fig. 3 is a detail perspective view of the operating parts detached from the door. Fig. 4 is a detail perspective view of the tubular casing.

The door 1 and its jamb or casement 2 are of ordinary construction. The lower edge of the door is provided with a longitudinal groove 3, in which the weather-strip 4, of usual construction, is located and operates, the same consisting of a bar having a flexible strip inserted in its lower edge. A vertical bore 5 is provided in the lower edge of the door a little to one side of its middle point and is designed to receive a tubular casing 6, to which the operating parts are attached. A mortise 7 is provided in the lower edge portion of the door and extends upon each side of the bore

5 in the direction of the width of the door to make provision for the free operation of the short bell-crank lever 8. One end portion of the mortise extends higher into the door than the other end portion to admit of the free workings of the vertical member 9 of the bell-crank lever 8. A bore 10 extends from the upper end of the mortise 7 through to the rear edge of the door, and is designed to receive the operating-rod 11. This bore 10 extends approximately parallel with the groove 3 and is protected at its outer end by an apertured plate 12, which is let into the rear edge of the door and compensates for wear on the outer end of the rod 11 in the operation of the latter.

The tubular casing 6 is formed from a short length of pipe or tubing and is slotted in one side, as shown at 13, to admit of the working of an approximately V-shaped spring 14, which is provided to return the weather-strip to a normal position in the groove 3 on the opening of the door. The lower end of the casing is cut away opposite the open side 13 to provide the extensions 15, which lie one upon each side of the weather-strip and have their lower ends 16 bent outward and apertured to receive screws or other fastenings, by means of which the said casing is held in place within the bore 5. Lugs 17 extend outward from the separated edges of the open side of the casing and have openings in coincident relation to receive a pivot 18, by means of which the bell-crank lever 8 is pivotally connected at the bend to the said casing. The horizontal portion of the bell-crank lever 8 projects through the inner or rear side of the casing and is pivotally connected to a bracket 19, firmly attached to the weather-strip at or about a middle point in its length. The vertical member 9 is provided with a slot 20 in its upper end to receive a pin 21, by means of which a coupling 22 is loosely connected with the said bell-crank lever. This coupling 22 is provided with a threaded opening to receive the inner threaded end 23 of the operating-rod 11, whereby provision is had for regulating the distance to which the projecting end of the rod 11 may extend from the rear edge of the door, so as to properly adjust the throw of the weather-strip to suit the distance of the space between the threshold and the lower edge of the door.

A plate 24 is let into the casement at a point opposite the projecting end of the rod 11, and at a point directly opposite the said rod 11 a socket 25 is provided, into which the projecting rod enters before the door is completely closed and forms a point of resistance for the said rod 11 to obtain a purchase against to operate the lever 8 on closing the door, so as to press the weather-strip 4 downward and upon the threshold.

The bore 10 must be of sufficient size to admit of the rod 11 working freely, and in order to obviate binding between the said rod and the bell-crank lever 8 the slot 20 is provided. This slot also admits of a limited movement of the coupling 22 in a vertical direction to allow for variations in the depth of the groove 3 and the relative position of the bore 10.

From the foregoing it will be seen that the device is simple in construction and can be readily attached to any door. All that is necessary to properly position the invention is to provide the groove 3, bore 5, mortise 7, and bore 10, all of which can be readily provided in doors at a slight cost and with very little trouble.

The device is placed in position by driving the casing 6 into the bore 5 and is held in place by screws or other fastenings passing through the bent ends 16 and entering the portions of the door on each side of the groove 3. The rod 11 is passed through the bore 10 and is screwed into the coupling 22 the required distance.

The operation of the invention is as follows: When the door is open, the free end of the spring 14, bearing against the vertical member 9 of the bell-crank lever, presses said member outward and causes a corresponding upward movement of the horizontal member, whereby the attached weather-strip is withdrawn within the groove 3. On closing the door the projecting end of the rod 11 engages with the plate 24, and the said rod 11 is moved inward and moves the vertical member 9 inward against the tension of the spring 14, which results in a downward movement of the horizontal portion of the said lever 8 and a corresponding outward movement of the weather-strip, so as to close the space between the threshold and the lower edge of the door.

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

1. The combination with a weather-strip, of a tubular casing having its lower portion cut away at diametrically-opposite points and formed with outwardly-extending lugs, a bell-crank lever having pivotal connection with the said lugs and having its horizontal portion operating between the separated parts of the casing and connected with the weather-strip, and having its vertical member longitudinally slotted, a spring secured to the casing and exerting an outward pressure against the vertical member of the lever, a coupling, a pin operating in the longitudinal slot of the said lever and connecting the coupling therewith, and an operating-rod adjustably connected with the said coupling, substantially as and for the purpose set forth.

2. The combination with a door having a longitudinal groove in its lower edge, a bore and mortise extending vertically from the said groove and having a horizontal bore leading from the said mortise through the rear edge of the door, of a tubular casing adapted to be secured in the vertical bore and having outwardly-extending lugs, a weather-strip located and operating in the said longitudinal groove, a bell-crank lever having pivotal connection with the lugs and operating across the bore of the tubular casing and having its horizontal portion connected with the weather-strip, and having its vertical member longitudinally slotted, a spring seated in the tubular casing and exerting an outward pressure against the vertical member of the bell-crank lever, a self-adjusting coupling connected with the vertical member of the bell-crank lever by a pin passing through the slot thereof, and an operating-rod located in the aforesaid horizontal bore and adjustably connected with the self-adjusting coupling, substantially as and for the purpose specified.

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

ASHLEY THORN.

Witnesses:

HARRY E. ROWLES,
J. M. BLOOM.