No. 728,686. PATENTED MAY 19, 1903.

E. DOUDEN & A. B. ROBB.

WEATHER STRIP.

APPLICATION FILED MAR. 10. 1903.

NO MODEL.

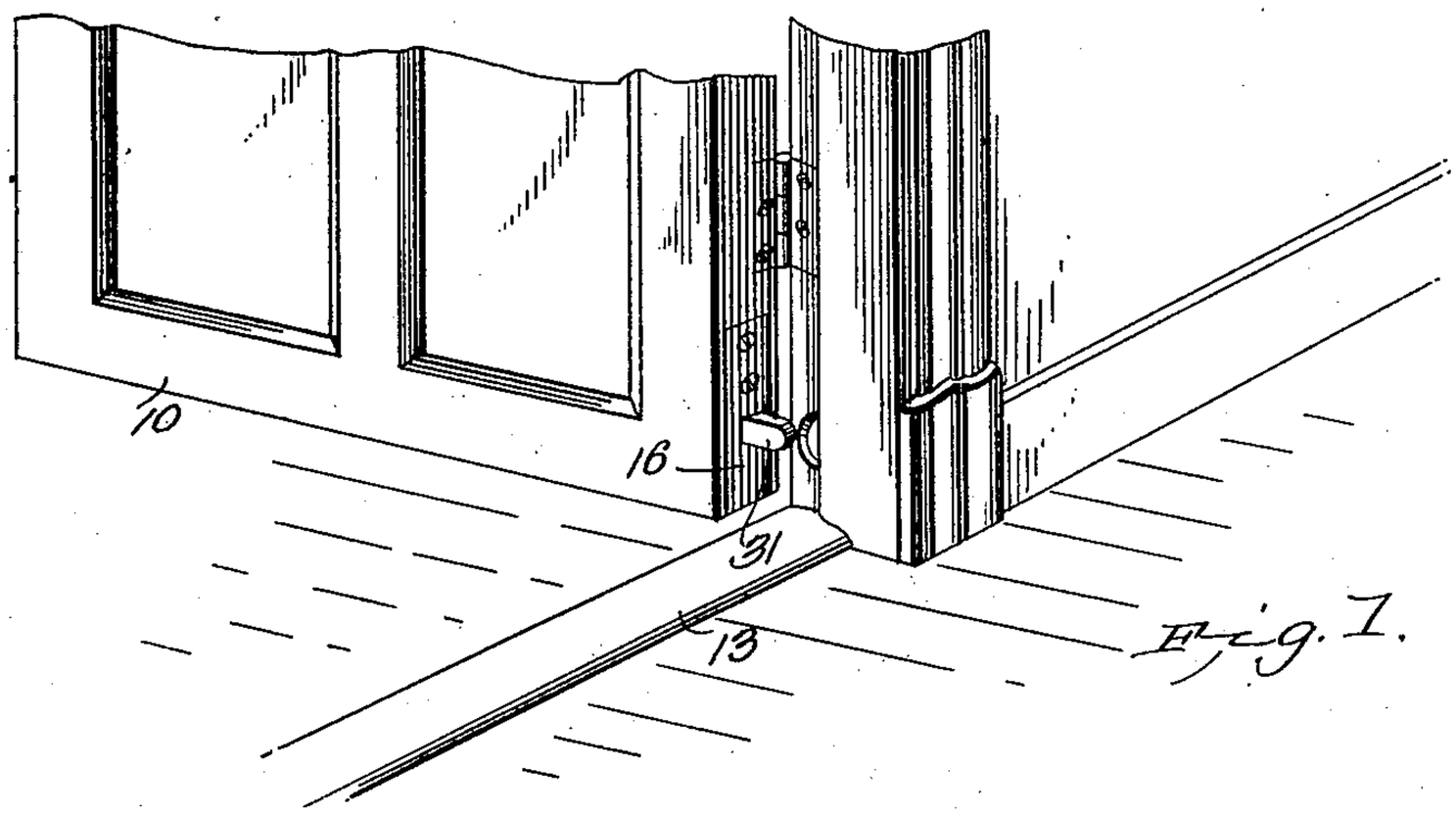

Fig. 1.

Fig. 2.

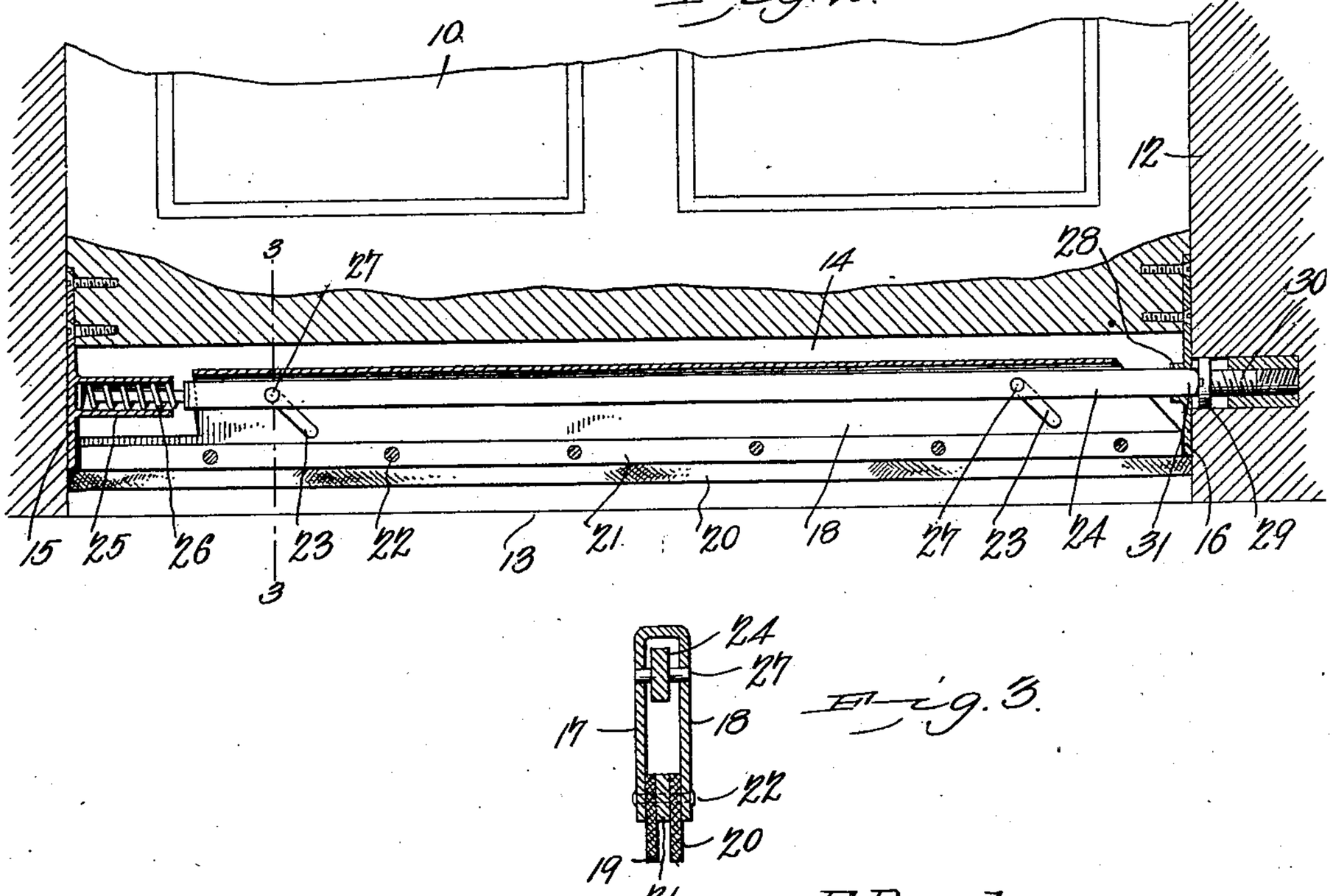

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN DOUDEN AND AARON B. ROBB, OF BROOKLYN, NEW YORK.

WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 728,686, dated May 19, 1903.

Application filed March 10, 1903. Serial No. 147,131. (No model.)

To all whom it may concern:

Be it known that we, EDWIN DOUDEN and AARON B. ROBB, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Weather-Strip, of which the following is a specification.

This invention relates to weather-strips employed between doors and their jambs to exclude air and moisture and operative automatically by the closing of the door, and has for its object to simplify and improve devices of this character and to produce a device which will completely close the gap between the door and its sill or carpet-strips; and the invention consists in certain novel features of construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, in which corresponding parts are denoted by like designating characters, Figure 1 is a perspective view of a portion of a door and its jamb and casing with the improvement applied. Fig. 2 is a sectional side elevation. Fig. 3 is a transverse section, enlarged, on the line 3 3 of Fig. 2.

The improved device may be attached to any size of door, but will generally be employed upon outside doors, and for the purpose of illustration it is shown thus applied, 10 representing a portion of a door, 11 12 the jambs, and 13 the sill, of the ordinary construction. Formed in the bottom edge of the door is a channel 14, opening downwardly and also toward the jambs, as shown, and provided with plates 15 16, forming closures to its ends, leaving the lower side open. Supported vertically movable within the channel 14 is a housing or frame formed with spaced sides 17 18 and with the ends in close proximity to the inner surfaces of the plates 15 16, as shown in Fig. 2. Between the lower edges of the sides 17 18 is secured a flexible packing-strip, preferably in two parts 19 20, divided by a parting-strip 21, the whole secured by transverse rivets 22, the free edges of the packing-strips extending below the lower edges of the sides of the housing, as shown. The sides 17 18 are provided with spaced inclined transverse apertures 23, the apertures in one plate registering with those in the other. The plate 16 is provided with a transverse aperture through which one end of a bar 24 protrudes, the bar passing through the housing 17 18 and terminating at the opposite end in a guide 25, extending inwardly from the plate 15 and surrounded at that end by a coiled spring 26, exerting its force to maintain the end 31 of the bar yieldably protruding through the plate 16. The bar 24 is provided with transverse pins 27, engaging the inclined apertures 23, as shown. The spring 26 is supported within the guide 25, which thus serves not only as a guide for the bar, but likewise as a stop for the spring to prevent undue lateral movement, and the plate 16 is likewise provided with an inwardly-extending ferrule 28 to support the bar and increase the bearing-surface. It will be obvious by this arrangement of parts that when the door 10 is open the force of the spring 25 will maintain the bar 24 with one end protruded through aperture in the plate 16 and also maintain the housing and its connected flexible packing-strip withdrawn into the channel 14. Then when the door is closed the end 31 of the bar 24 will engage the adjacent jamb 12 and be thereby forcibly moved longitudinally in the channel, causing the pins 27, operating in the inclined slots 23, to move the housing downward and forcibly compressing the flexible packing-strips 19 20 against the sill 13, and thereby effectually cutting off all air or moisture between the door and sill while the door is closed. When the door is again opened and the bar 24 released, the reaction of the spring 26 will again withdraw the housing and its packing-strip into the channel free from any injury from objects over which the door may swing, and likewise preventing unnecessary friction between the parts.

It will be noted that the housing and its attached packing-strip move in vertical lines relative to the door 10 and plates 15 16. Hence no gaps occur between the parts at any part of the movements, especially when the packing-strip is in its outward or operative position. This is an important advantage and adds materially to the value of the device, as it completely fills the gap between the door and sill and effectually prevents the passage of air or moisture therethrough.

The jamb 12 will be provided with a con-

tact-plate 29, against which the protruding end 31 of the bar 24 operates when the door is closed, and this plate is adjustable, as by screw-stud 30, so that the degree of movement imparted to the bar may be controlled as required. By this simple means the gaps which occur between doors and their sills may be automatically "bridged" while the door is closed and without exposing any part of the device to view and without disfiguring the door-sill or other parts of the structure or surrounding parts.

The whole device is very simple, easily attached either to new or old doors, and may be readily detached for renewal or repairs.

The parts may be of any required proportions or material and may be modified in minor particulars to adapt them to the various conditions under which they are to be employed.

The manner of forming the packing-strip in two portions and divided by the parting-strip 21 is also an important feature of the invention, as by this means the flexibility is increased without detracting from its efficiency, but, on the contrary, materially increasing the efficiency, as the two strips supplement each other and coact to adapt the strips more readily to irregularities of the surface of the sill or other parts with which they are engaged.

Having thus described our invention, what we claim is—

1. The combination with a door having a channel in its lower edge, of a housing formed with spaced parallel sides provided with inclined transverse apertures and mounted for vertical movement in said channel, a flexible packing connected between and protruding below said sides, a bar mounted for horizontal movement in said channel and provided with transverse pins engaging said apertures, and means whereby the closing of the door will operate said bar, substantially as described.

2. The combination with a door having a channel in its lower edge, of a housing formed with spaced parallel sides provided with inclined transverse apertures and mounted for vertical movement in said channel, a flexible packing connected between and protruding below said sides, a bar mounted for horizontal movement in said channel and provided with transverse pins engaging said apertures, and a spring operating to yieldably maintain one end of said bar protruding from said channel in position to be engaged by the door-jamb, when the door is closed, whereby said housing and attached packing-strip will be withdrawn into the channel when the door is open and projected into engagement with the sill when the door is closed, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

EDWIN DOUDEN.
AARON B. ROBB.

Witnesses:
JOHN F. HYLAN,
FRANCIS J. HERBERT.