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COMBINED WEATHER STRIP AND DOOR CHECK.

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984,306.

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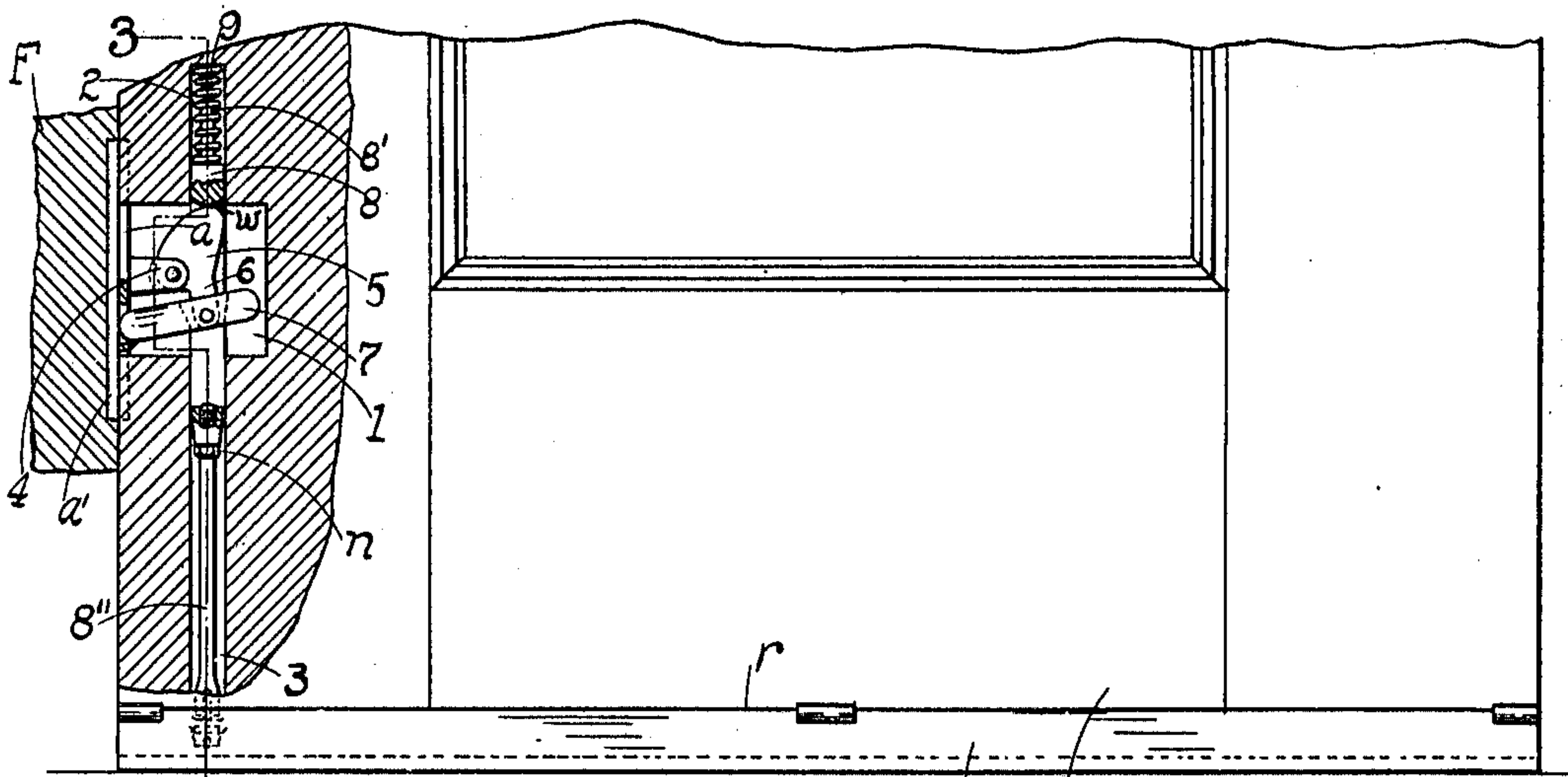


FIG. 1.

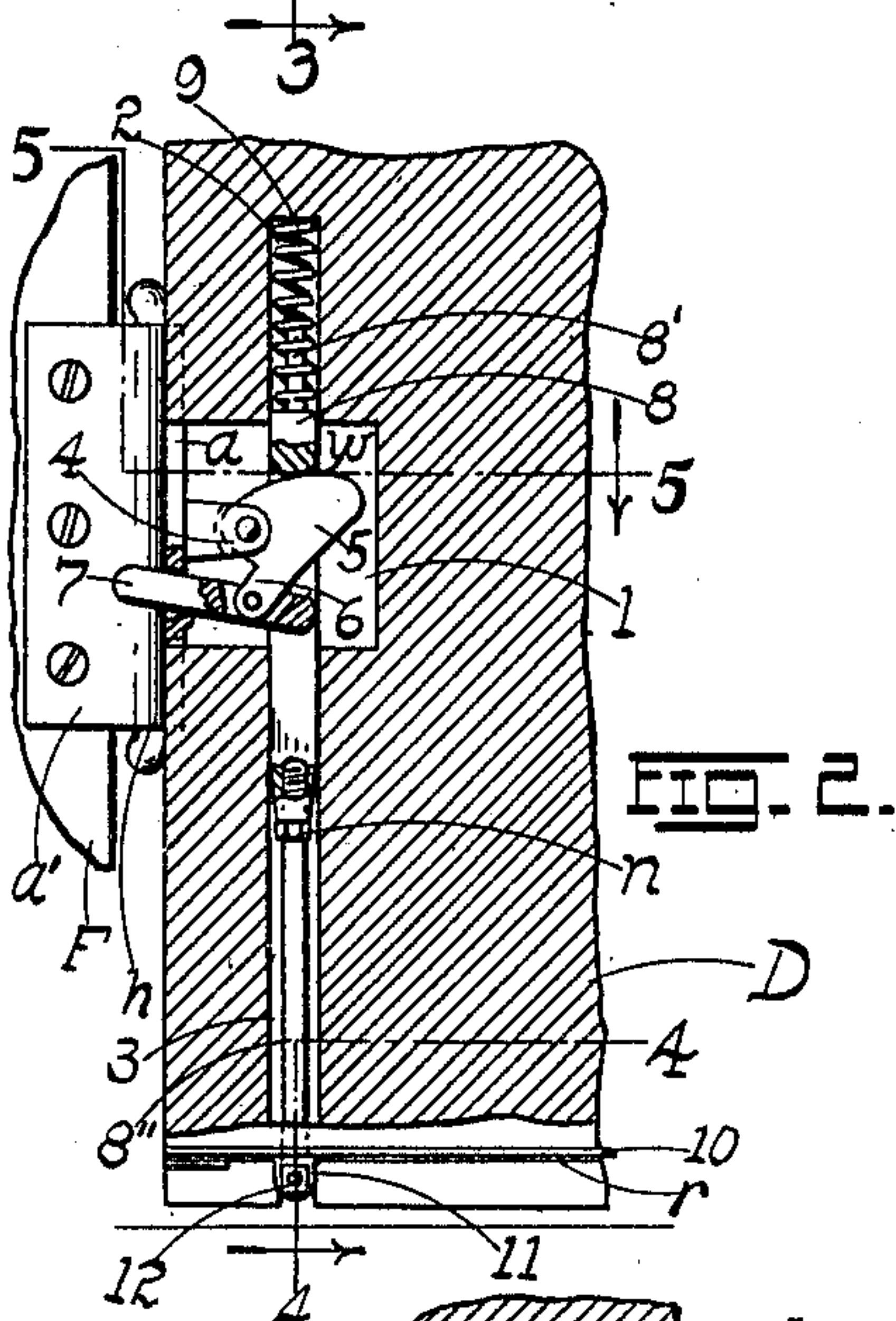


FIG. 2.

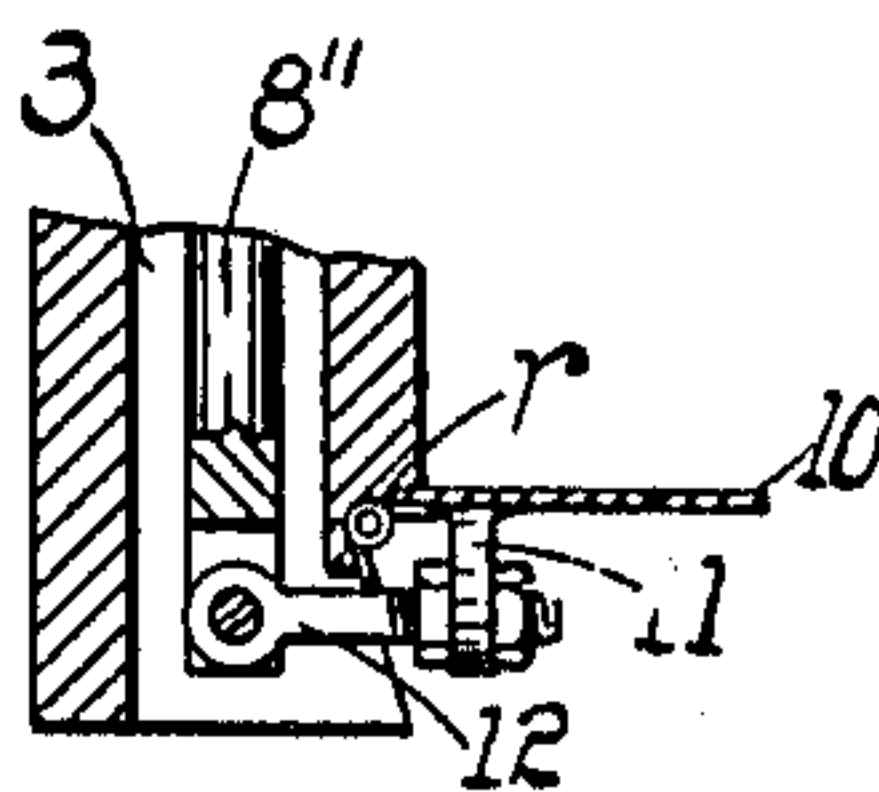


FIG. 4.

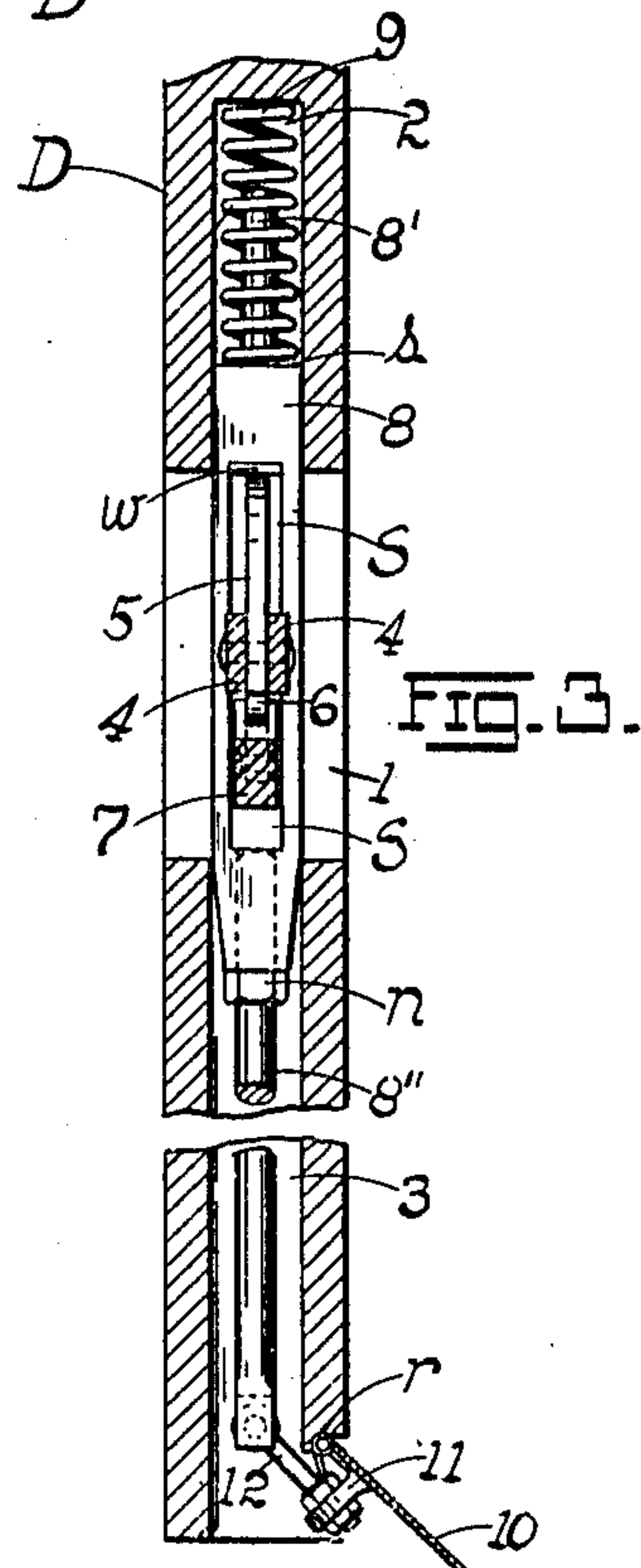


FIG. 3.

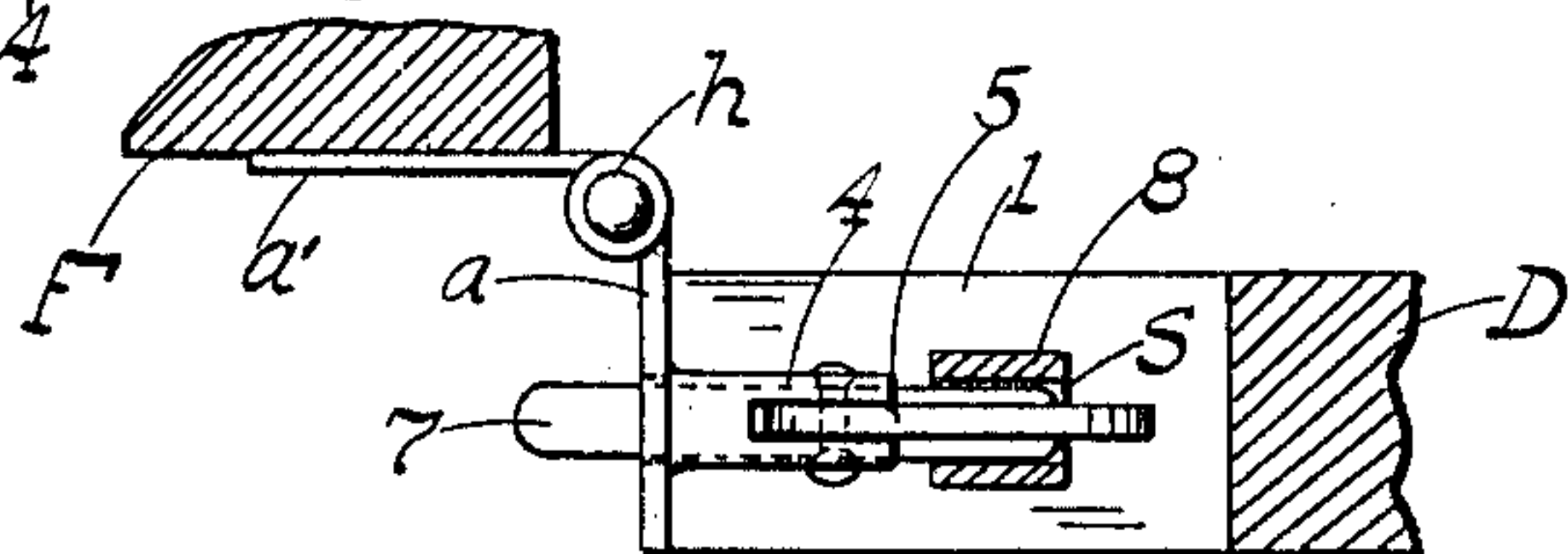


FIG. 5.

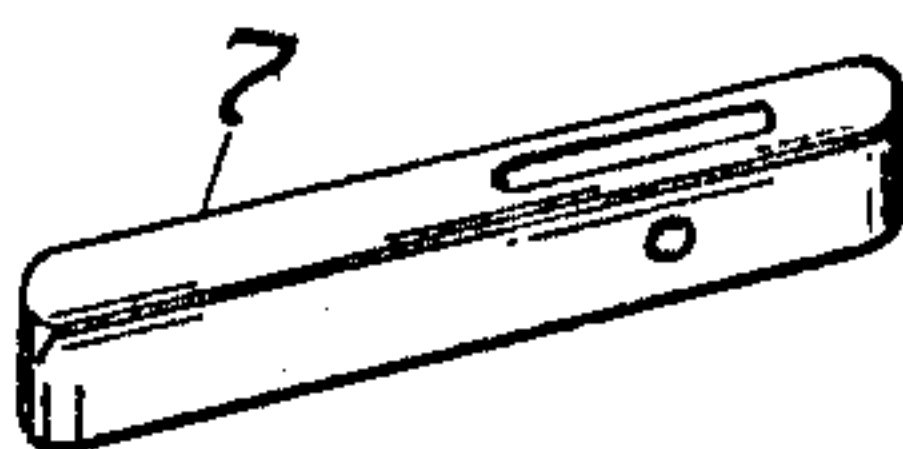


FIG. 6.

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# UNITED STATES PATENT OFFICE.

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COMBINED WEATHER-STRIP AND DOOR-CHECK.

984,306.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, DAVID E. SHIPLEY, JESSIE E. LEWIS, and CHARLES H. GEORGE, citizens of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented certain new and useful Improvements in Combined Weather-Strips and Door-Checks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention has relation to improvements in weather-strips which will at the same time serve as a door check; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a face view of a door in closed position (parts broken away) showing our invention applied thereto; Fig. 2 is a sectional view of the door swung open showing the position of the parts corresponding to such open position; Fig. 3 is an enlarged vertical section (parts in elevation) on the line 3—3 of Fig. 1; Fig. 4 is a vertical section on the line 4—4 of Fig. 2; Fig. 5 is a horizontal section on the line 5—5 of Fig. 2; and Fig. 6 is a detached perspective of the tongue operating between the leaves of the hinge.

The object of our invention is to provide a door with a bottom hinged apron which will automatically drop into engagement with the floor upon the closing of the door, the action of the apron in such swing toward and against the floor having the effect of a door check. With the opening movement of the door, the apron will automatically oscillate upwardly out of contact with the floor, thereby allowing the door to swing uninterruptedly to a full open position if desired. The closing and opening movements of the door thus control the corresponding movements of the apron, all as will hereinafter fully appear from a detailed description of the invention which is as follows:—

Referring to the drawings, D represents an ordinary door, and F the door-frame in which the same is mounted as usual. Formed in the door opposite the leaf *a* of the bottom hinge *h* secured to the door and jamb respectively, is a chamber 1 intersected by the upper and lower alining vertical passages 2, 3 respectively, the latter passage being the longer of the two and extending

through the bottom of the door. Projecting from the leaf *a* into the chamber 1 are ears or lugs 4 between which is hinged a cam 5 provided with a depending arm 6, the latter being pivotally connected to a link or tongue 7 freely and loosely operating through the leaf *a* and normally projecting outwardly beyond the leaf for an open position of the door. The link is kept in such protruding position by the depression of the plunger 8 which operates freely in the passages 2, 3, the portion of the plunger in the chamber being provided with an elongated slot *S* terminating in an upper convexed wall *w* against which the cam surface plays.

The upper end of the plunger is provided with a reduced stem 8' forming an annular shoulder *s* with the plunger proper, said shoulder supporting the lower end of a compression spring 9, the upper end of which bears against the end of the passage 2, the stem 8' playing freely through the coils of the spring. The expansion of the spring tends to force the plunger downward, which thereby depresses the cam 5, oscillating the arm 6 outwardly and hence correspondingly driving the link or tongue 7 outwardly (Fig. 2). With the closing of the door however, the tongue is forced against the leaf *a'* secured to the door-jamb, this action driving the tongue inwardly, oscillating the cam upwardly, and thereby raising the plunger 8 and compressing the spring 9 (Fig. 1). The dropping and raising of the plunger (corresponding to the opening and closing of the door respectively) is availed of for purposes of respectively elevating and depressing the apron 10 carried by the door and which serves both as a weather-strip and a door-check. This apron is hinged along its upper edge in a recess *r* formed in the door a suitable distance above the lower edge of the door, the width of the apron being such as to strike the floor for a dropped position, when at an angle of substantially forty degrees to the floor.

Projecting from the inner face of the apron at a suitable distance from the hinge axis thereof, and opposite the base of the passage 3, is an arm or right-angular offset 11 which carries an eyebolt (or equivalent member) 12 projecting inwardly at right angles to the offset, the end of the eyebolt being pivotally coupled to the lower adjustable extension 8'' of the plunger 8. This extension is screwed to the plunger proper,



and when accurately adjusted is held in proper position by the jam-nut *n*.

From the connections described it is clear that as the plunger is forced upward with the closing of the door (as already described) the apron 10 will drop into engagement with the floor, thus serving both as a door-check (where the door is closed forcibly by hand or spring closing devices) and as a weather-strip (Fig. 1); when the door is opened, the plunger will drop (under the action of the spring 9) and thus elevate the apron (Fig. 2).

Having described our invention, what we claim is:—

In combination with a door hinged to swing about a vertical axis, a horizontal apron hinged along its upper edge above the bottom of the door and adapted to engage the floor with a downward oscillation of the apron, a chamber formed in the door opposite the hinge-leaf secured to the door and having vertical passages intersecting said chamber, a plunger in the chamber and lower passage, and terminating in a reduced stem confined in the upper passage, a compression spring encircling the stem and bearing with its opposite ends respectively against the closed end of said upper passage, and the shoulder formed at the base of

the stem, the plunger being provided with an elongated slot in the chamber, a cam pivotally mounted in the chamber and engaging the upper wall of the slot, an arm depending from the cam, a tongue linked to the arm and operating loosely through the door-hinge leaf and normally projecting beyond the leaf for an open position of the door, a screw-extension on the plunger in the lower passage leading from the chamber, an offset projecting from the under surface of the apron at a suitable point from the hinge-axis thereof, a bolt leading from said offset and pivotally coupled to the adjacent lower end of the screw-extension of the plunger, the tongue being forced in with a closing of the door, by contact with the jamb, and the cam rocked to elevate the plunger and thereby depress or drop the apron against the floor, whereby said apron serves both as a weather-strip and door-check.

In testimony whereof we affix our signatures, in the presence of two witnesses.

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JESSIE E. LEWIS.  
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Witnesses:

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