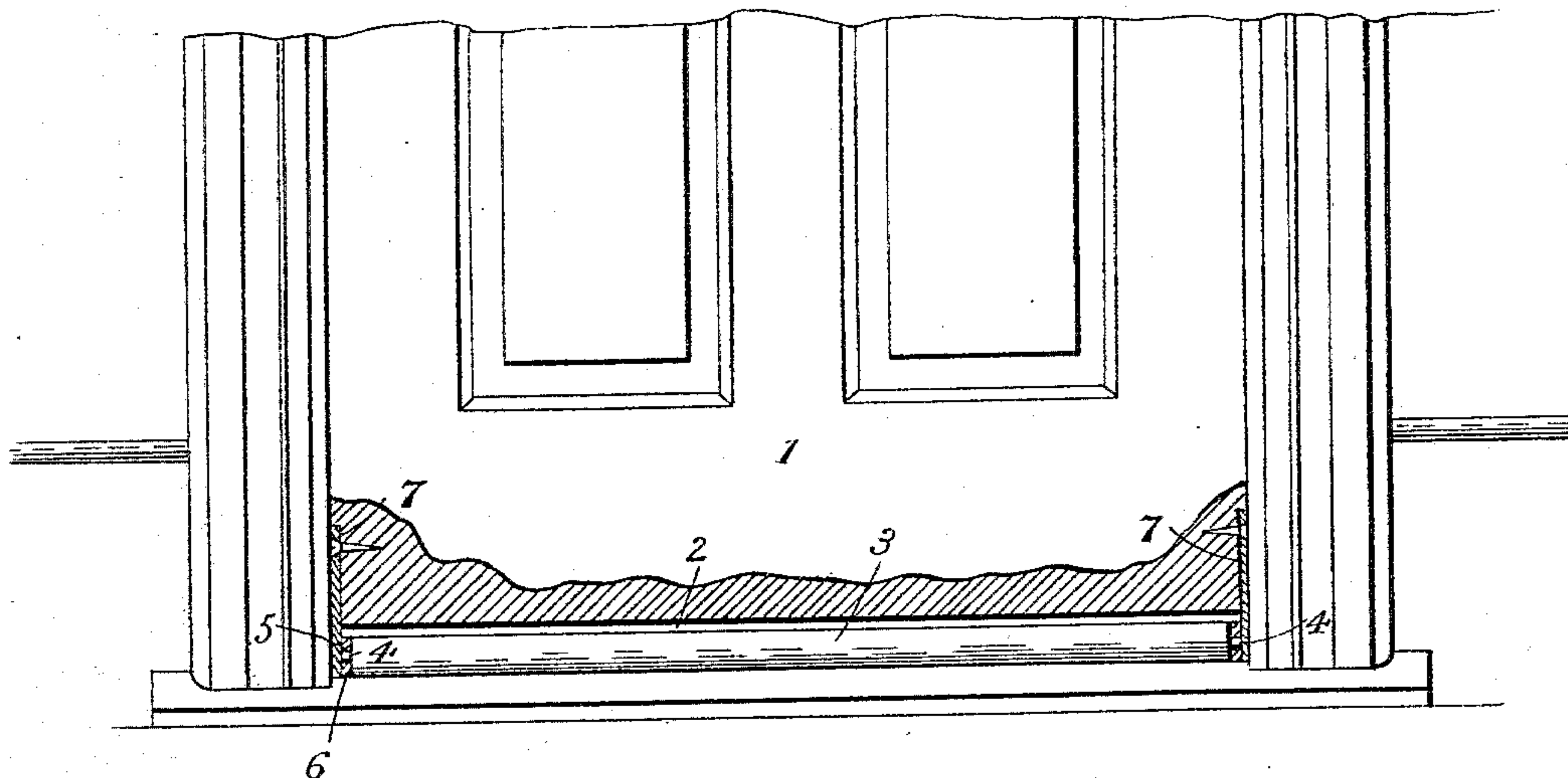


(No Model.)

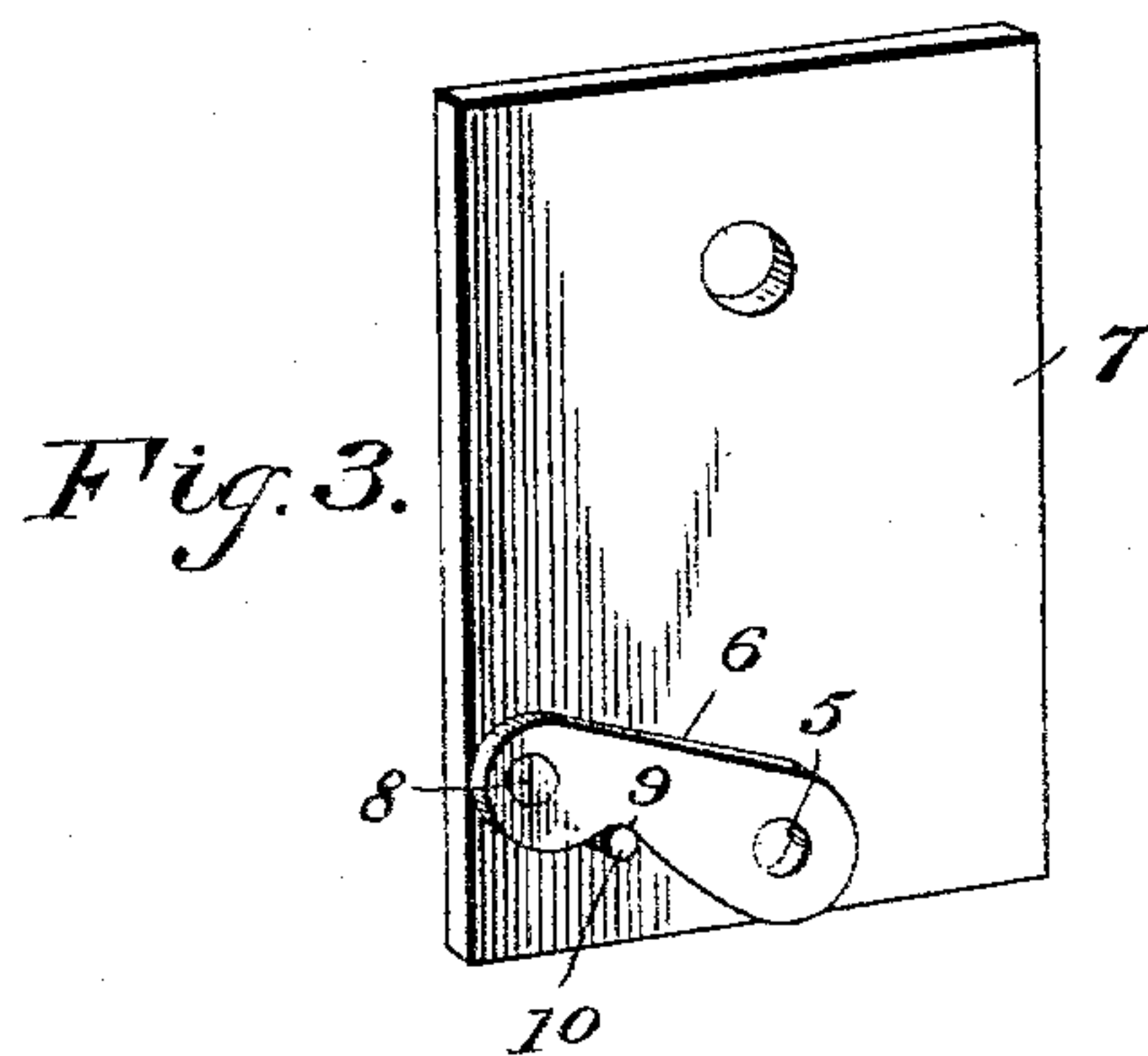
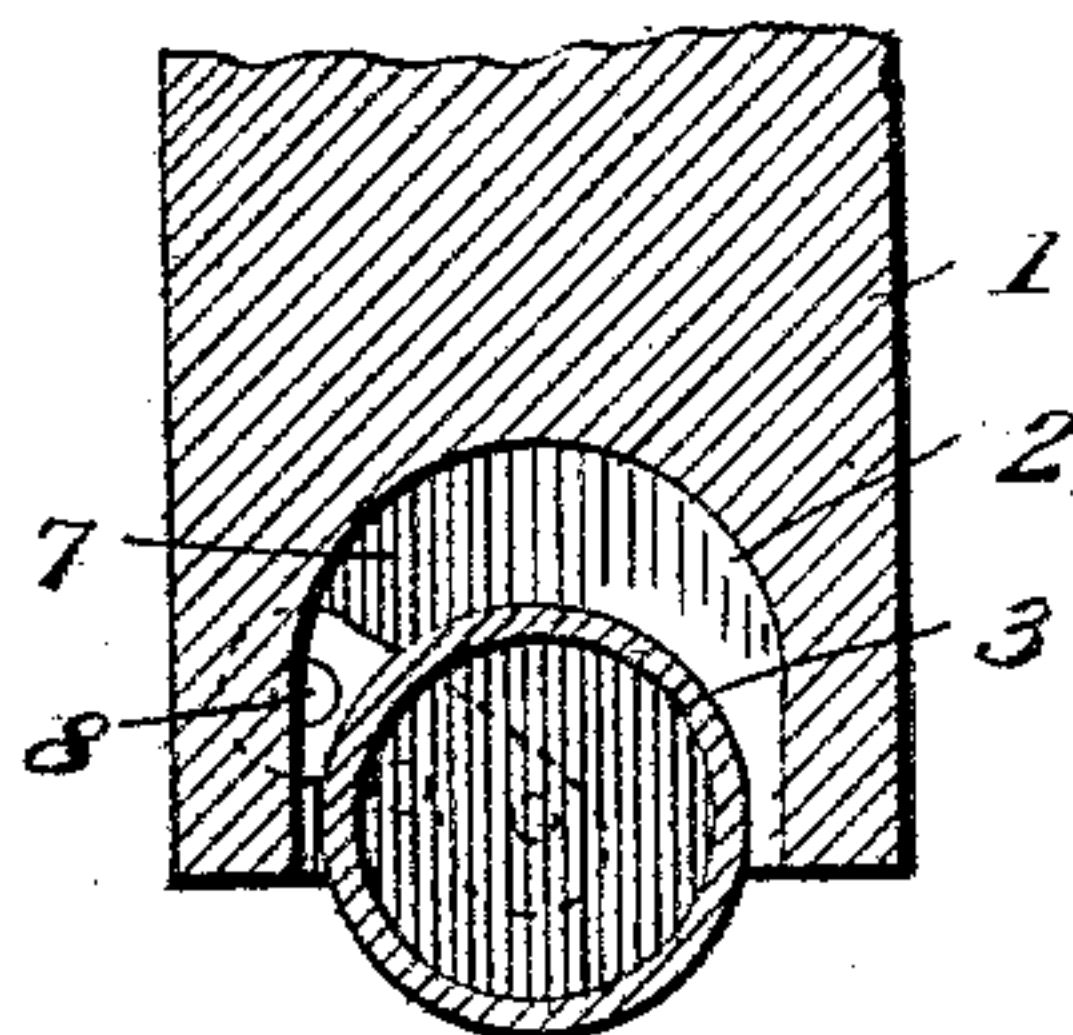
S. S. DENMAN.  
WEATHER STRIP.

No. 559,686.

*Fig. 1.* Patented May 5, 1896.



*Fig. 2.*



Ingvencor

*Samuel S. Denman*

Witnesses

Witnesses  
Julius M. Keefe  
J. J. Keefe

By His Attorneys.

Cashover



# UNITED STATES PATENT OFFICE.

SAMUEL S. DENMAN, OF PAXTON, ILLINOIS.

## WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 559,686, dated May 5, 1896.

Application filed February 23, 1894. Serial No. 501,177. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL S. DENMAN, a citizen of the United States, residing at Paxton, in the county of Ford and State of Illinois, have invented a new and useful Weather-Strip, of which the following is a specification.

The invention relates to improvements in weather-strips.

Heretofore automatic weather-strips have been provided and have consisted of narrow flat strips arranged in slots at the bottom of doors and connected with the latter by swinging links; but these weather-strips require operating devices for automatically lowering the flat strips to the sill when the door is closed and for similarly raising them to clear the floor when the door is opened. Weather-strips have also been provided consisting of a roll arranged in the slot of the door and having an enlarged bore to receive a longitudinal spindle, and this construction has necessitated the employment of a spring-actuated plate for forcing the roll downward; but such spring-actuated device operates as a brake to retard the rotation of the roll and causes it to drag over the sill and the floor.

The object of the present invention is to provide an automatically-operating weather-strip, which will dispense with the spring-controlled operating devices and which will permit a roller to rotate freely on its journals to avoid frictional contact with the sill and floor in opening and closing a door and which will also permit the roller a free vertical movement, so as to ride readily over a sill or the like.

The invention consists in the combination, with a door, provided at its bottom with a groove, of a pair of attachment-plates secured to the edges of the door at the ends of the groove, inclined links pivoted at their upper ends to the inner faces of the end plates, provided at their lower ends with bearing-openings and having recesses at their lower edges at points intermediate of their ends, the links being arranged to swing transversely of the door in line with the swing of the latter in opening and closing, a roller arranged longitudinally of the door in the grooves thereof and provided at its ends with rigid

journals, arranged in the bearing-openings of the links and stops mounted on the inner faces of the end plates adjacent to the recesses of the links and limiting the downward movement of the roller.

In the drawings, Figure 1 is a longitudinal sectional view of the lower portion of a door provided with a weather-strip constructed in accordance with this invention. Fig. 2 is a transverse sectional view. Fig. 3 is a detail perspective view of one of the end plates, illustrating the manner of mounting the link.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a door provided at its lower edge with a longitudinal groove 2, adapted to receive a hollow roller 3 and to permit the same to move vertically. The roller is provided at its ends with rigid journals 4, which are arranged in bearing-openings 5 of pivoted links 6, mounted on end plates 7, and the latter are secured to the edges of the door at the ends of the groove 2. The end plates are arranged in recesses of the door and their outer faces are flush with the side edges of the same. The links are disposed at an inclination, being pivoted at their upper ends and provided at their lower ends with the said bearing-openings 5, and they are arranged to swing transversely of the door in a line with the movement of the latter in opening and closing, so as to permit the roller to move readily upward and forward automatically to pass over a sill or the like.

The links are provided at points intermediate of their ends with recesses 9, adapted to receive stops 10, mounted on the inner faces of the end plates to limit the downward movement of the roller and prevent the latter from swinging too far out of the groove of the door. The recesses at the lower edges of the links permit the lower ends of the latter to have sufficient drop, and at the same time enable the studs or projections, which form the stops, to be securely mounted on the end plates a sufficient distance from the lower edges thereof to insure the proper strength. The links swing in a curved path in a line with the movement of the door in opening and closing and thereby prevent the



roller from binding through the swing of the door, as would be the case were the roller to move in a straight vertical line or path.

It will be seen that the weather-strip is 5 simple and comparatively inexpensive in construction, that it is purely automatic in its operation, and that it dispenses with the spring-controlled devices for holding it against the sill when the door is closed and for lifting it 10 therefrom when the door is opened. It will also be apparent that the roller is adapted to ride frictionlessly over a door-sill or the like.

What I claim is—

15 In a weather-strip, the combination with a door provided at its bottom with a longitudinal groove, of attachment-plates secured to the edges of the door at the ends of the groove, and provided with inwardly-extending pro- 20 jections forming stops, a roller arranged in the groove and provided at its ends with rigid

journals 4, and inclined links arranged on the inner faces of the attachment-plates, pivoted at their upper ends to the same and provided at points intermediate of their ends 25 with recesses to receive the said stops, and having bearing-openings at their lower ends receiving the journals 4 of the roller, said links being arranged to swing transversely of the door in a line with the movement of the 30 same in opening and closing, whereby the roller will be caused to swing in a curved path to prevent it from binding during the opening and closing of the door, substantially as described.

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

SAMUEL S. DENMAN.

Witnesses:

T. M. TRICKEL,

EDWIN C. BOGARDUS.