

P. M. WICKSTRUM.
ANTITHRESHOLD AUTOMATIC WEATHER STRIP.
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1,054,158.

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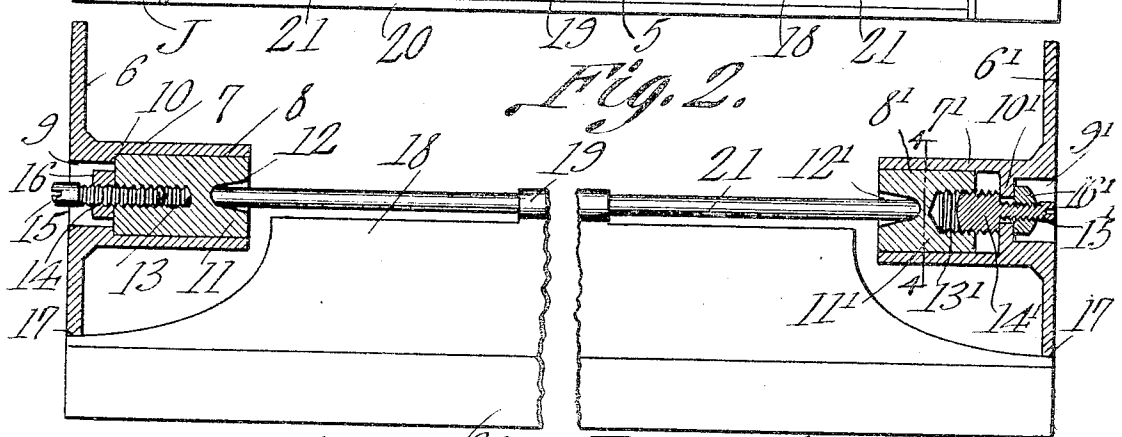
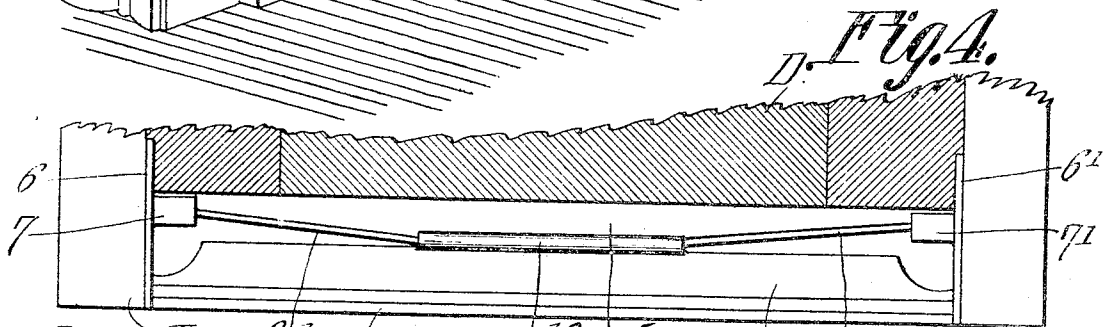
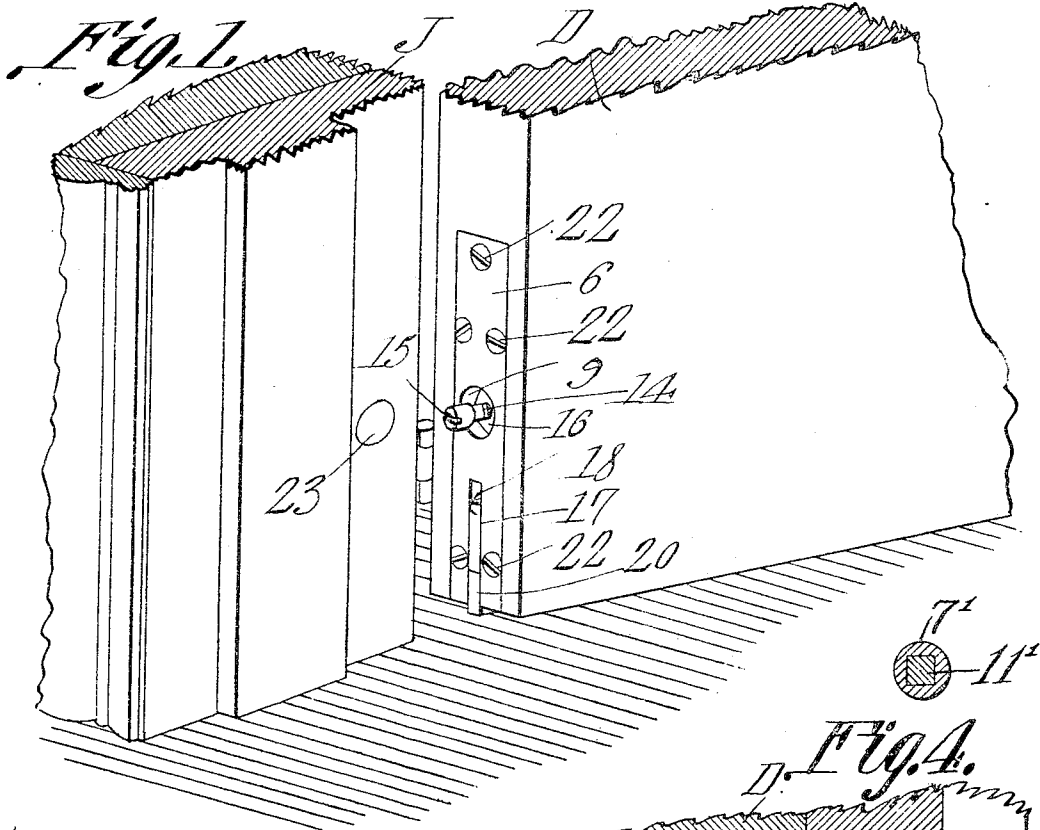


Fig. 3. 20 *P. M. Wickstrum*
Witnesses *J. R. Tomlin* Inventor
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UNITED STATES PATENT OFFICE.

PETER M. WICKSTRUM, OF LINCOLN, NEBRASKA.

ANTITHRESHOLD AUTOMATIC WEATHER-STRIP.

1,054,158.

Specification of Letters Patent.

Patented Feb. 25, 1913.

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To all whom it may concern:

Be it known that I, PETER M. WICKSTRUM, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Antithreshold Automatic Weather-Strip, of which the following is a specification.

This invention relates to weather strips for doors and contemplates the provision of a weather strip carried by the lower end of a door which shall be raised when the door is in open position and which shall be automatically depressed against the threshold or floor when the door is closed.

Another object of the invention is to provide a weather strip and means for raising and lowering same when the door is opened or closed, which shall be incased within the lower end of the door, so as to be hidden from view, and to eliminate encumbering the door.

The present invention also aims for the production of a device of the character indicated, which shall be simple, durable, substantial and inexpensive in construction, which shall be simple, convenient and efficient in operation, which is adjustable so as to depress the weather strip more or less, and which shall be applicable to various doors.

With the foregoing general objects outlined, and with other objects in view as will be apparent as the invention is better understood, the present invention resides in the novel construction and combination of parts hereinafter set forth and pointed out in the appended claims, it being understood that this device is subject to alterations or deviations in its details within the scope of the appended claims without departing from the spirit of the invention.

In the accompanying drawings, the preferred embodiment of the invention has been illustrated, similar reference characters having been employed to denote corresponding parts.

In the drawings:—Figure 1 is a fragmental perspective of a portion of the hinged edge of the door and door jamb embodying the present invention. Fig. 2 is a reduced sectional detail taken vertically through the lower end of the door. Fig. 3 is an enlarged side elevation of the present device, parts being broken away and parts being shown in section. Fig. 4 is a sectional

detail taken on the line 4—4 of Fig. 3, the section being on a reduced scale.

Referring in detail to the drawings, the door has been designated by the letter D; and the jamb to which the door is hinged by the letter J.

In carrying out the invention, the door D is provided with a recess 5 in its lower end extending from edge to edge, and face plates 6 and 6' are attached to the edges of the door over the ends of the recess 5. The plate 6 is attached to the edge of the door which is hinged to the door jamb and the plate 6' is attached to the free or swinging edge of the door, the said plates being preferably attached to the door by means of wood screws 22. The respective plates 6 and 6' have the opposite bushings 7 and 7' which project into the recess 5 and have bores 9 and 9' extending therethrough and through the bushings. The said plates 6 and 6' are also provided with open slots 17 in their lower ends. The inner ends of the bores 9 and 9', or those portions of the said bores within the bushings 7 and 7', are enlarged and square or non-circular in contour as designated by the numerals 8 and 8', the bushing 7' having a partition 10' between the enlarged portion 8' of the bore 9' and the outer portion of the bore, and the enlarged portion 8 of the bore 9 forming an inwardly facing shoulder or seat 10 within the bushing 7.

Bearing blocks 11 and 11' are slidably mounted in the bushings 7 and 7', respectively, the said bearing blocks being square or non-circular in contour to correspond with the inner portions or sockets 8 and 8' of the respective bores. The said bearing blocks 11 and 11' are provided with the respective sockets 12 and 12' in their inner ends, and the bearing block 11 is arranged to normally seat against the shoulder 10, thereby preventing the outward movement of the bearing block 11 beyond the said shoulder.

A screw 14 is engaged into a threaded socket 13 in the outer end of the bearing block 11 and has its outer end or head projecting beyond the corresponding edge of the door, a jam or binding nut 16 being mounted on the screw 14 to contact with the block 11 so as to lock the screw 14 in any adjusted position to which it is set.

A screw 14' is engaged into a screw-threaded socket 13' in the outer end of the

block 11' and seats against the partition 10'. This screw 14' has a reduced and screw-threaded extension 15' passing through the partition 10' and a jam or binding nut 16' is mounted on the reduced extension or end 15' in order to contact with the partition 10' and retain the screw 14' in any adjusted position.

A flexible or resilient truss rod 21 is arranged within the recess 5 and has its extremities engaging the sockets 12 and 12' of the respective bearing blocks 11 and 11'. This rod 21 may be of any suitable material and gage so as to provide the proper resiliency or flexibility, and is of a length suitable for the particular door to which it is applied.

A strip or head 18 has its ends engaging in the slots 17 of the face plates 6 and 6' and has its upper edge contracted longitudinally and provided with a tubular portion 19 through which the intermediate portion of the rod passes. This strip or head 18 is arranged within the recess 5 and the rod 21 in passing through the tubular portion 19 supports the same. A weather strip 20 of rubber or other suitable flexible material is secured to the lower edge of the head 18, the length of the head 18 and weather strip 20 being equal to the width of the particular door to which they are applied.

A metallic button or contact plate 23 is secured to the door jamb J to which the door is hinged, and is preferably flush therewith and is designed to lie in the path of the head 15 of the screw 14. This button or plate 23, however, is attached to the door jamb, primarily to prevent wear and to eliminate marring or injuring the door jamb, and may be dispensed with if desired.

In the operation of the present device, the intermediate portion of the rod 21 will be normally raised when the door is open, so as to raise or elevate the weather strip and retract the same within the lower end of the door, the rod 21 assuming a straight, or nearly straight, position. Then as the door is closed, the screw 14 will contact with the door jamb J or the contact plate 23 which will cause the bearing block 11 to be forced inwardly, in which event, the rod 21 will be flexed downwardly at its intermediate portion in order to depress the head 18 and the weather strip 20, so that the weather strip 20 contacts with the threshold or floor. As soon as the door is swung open, the rod 21 being flexible or resilient, will assume a normal straight line, or nearly straight line, position, thereby sliding the bearing block 11 outward against the seat 10 to project the screw 14 beyond the edge of the door and to again raise or retract the weather strip. In this manner, it will be seen that

the weather strip is normally raised when the door is opened, and when the door is closed, the weather strip will be automatically depressed against the threshold or floor so as to prevent the ingress or egress of currents of air underneath the door when the same is closed. The weather strip when depressed also excludes rain, snow, sleet and the like, and serves to effectually close the gap between the lower end of the door and the threshold or floor when the door is closed. It will also appear that the lower end of the door, may be spaced more or less from the floor so that the door will escape rugs, carpets or the like lying on the floor, the weather strip also being raised when the door is swung open so as not to interfere with objects on the floor underneath the door.

The bearing block 11' may be adjusted within the bushing 7' by rotating the screw 14', so that the rod 21 will assume a proper or slightly downwardly bowed position, when the door is opened, in order that the rod will be properly flexed downwardly when the door is closed. The screw 14 may also be adjusted so as to project more or less from the edge of the door in order that the rod 21 will be sufficiently flexed when the door is closed in order to depress the weather strip against the threshold or floor.

The present device is simple, durable, substantial and inexpensive in construction and may be applied to various doors in a convenient and ready manner without encumbering the door to which it is applied, and the device is also adjustable to suit the varying circumstances. The present device is also sensitive for the reason that a slight inward thrust of the screw 14 will buckle or flex the rod 21 to a considerable extent at its intermediate portion so as to lower or depress the weather strip, it being noted that the screw 14 may be adjusted so as to span the space or gap between the edge of the door and the jamb when the door is closed. It will be apparent, that the weather strip in being depressed may dispense with the threshold entirely so that the weather strip may contact directly with the floor.

From the foregoing, taken in connection with the drawings, it will be seen that the present invention provides a desirable device of this character for automatically closing the opening between the lower end or bottom of the door and the threshold or floor when the door is closed, so as to shut out or exclude noises, light, air, dust, water, odors and the like.

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

1. The combination with a door, of a pair of bearing blocks carried by the lower

end of the door adjacent its edges, one of the blocks normally seating outwardly, a flexible truss rod having its extremities engaging the blocks, a weather strip carried by the intermediate portion of the rod, means for adjusting the other block for adjusting the normal position of the truss rod, and an adjustable member carried by the former block and adapted to contact with the jamb of the door when the door is closed so as to flex the rod and depress the weather strip.

2. The combination with a door having a recess in its lower end extending from edge to edge; face plates attached to the edges of the door over the ends of the recess, and having opposite bushings projecting into the recess; bearing blocks slidably mounted in the bushings, one of the bearing blocks normally seating outwardly in the corresponding bushings; a truss rod having its extremities engaging the said blocks; a weather strip carried by the intermediate portion of the truss rod; means for forcing the said block inwardly when the door is closed so as to flex the rod and depress the weather strip, and means for adjusting the other bearing block so as to adjust the normal position of the truss rod.

3. The combination with a door having a recess in its lower end extending from edge to edge; face plates attached to the edges of the door over the ends of the recess, having opposite bushings projecting into the recess, and having bores extending therethrough and through the bushings, the bores within the bushings being enlarged and non-circular; non-circular bearing blocks slidably mounted in the enlarged and non-circular portions of the said bores, one of the bearing blocks normally seating outwardly in the corresponding bushing; a flexible truss rod having its ends engaging the bearing blocks; an adjustable member carried by the said bearing block and projecting beyond the edge of the door to strike the door jamb; means for adjusting the other block so as to adjust the normal position of the truss rod; and a weather strip carried by the intermediate portion of the rod.

4. The combination with a door having

a recess in its lower end extending from edge to edge; face plates attached to the edges of the door over the ends of the recess, having opposite bushings projecting into the recess, and having bores extending therethrough and through the bushings, the bores within the bushings being enlarged and non-circular and one of the bushings having a partition therein; non-circular bearing blocks slidably mounted in the bushings, the bearing block in the other bushing normally seating outwardly therein; a screw engaged to the outer end of the block in the former bushing, and having a reduced extension passing through the said partition; a screw engaged to the outer end of the former block and projecting beyond the edge of the door so as to strike the door jamb when the door is closed; a flexible truss rod having its extremities engaging in the said sockets; and a weather strip carried by the intermediate portion of the said rod.

5. The combination with a door, of a flexible truss rod terminally supported by the door, a weather strip carried by the intermediate portion of the truss rod, means for limiting the outward movements of the ends of the truss rod, one of said means being adjustable to adjust the normal flexed position of the truss rod, and means whereby the truss rod is given an end thrust when the door is closed so as to depress the weather strip.

6. The combination with a door, of a pair of bearings carried thereby, a truss rod terminally supported by the bearings, a weather strip carried by the intermediate portion of the truss rod, one of the bearings seating outwardly, and an adjustable outwardly seating member carried by the other bearing for adjusting the normal flexed position of the truss rod, one bearing being adapted to be forced inwardly when the door is closed so as to flex the truss rod and depress the weather strip.

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

PETER M. WICKSTRUM.

Witnesses:

C. M. WICKSTRUM,
A. D. HARRIS.