

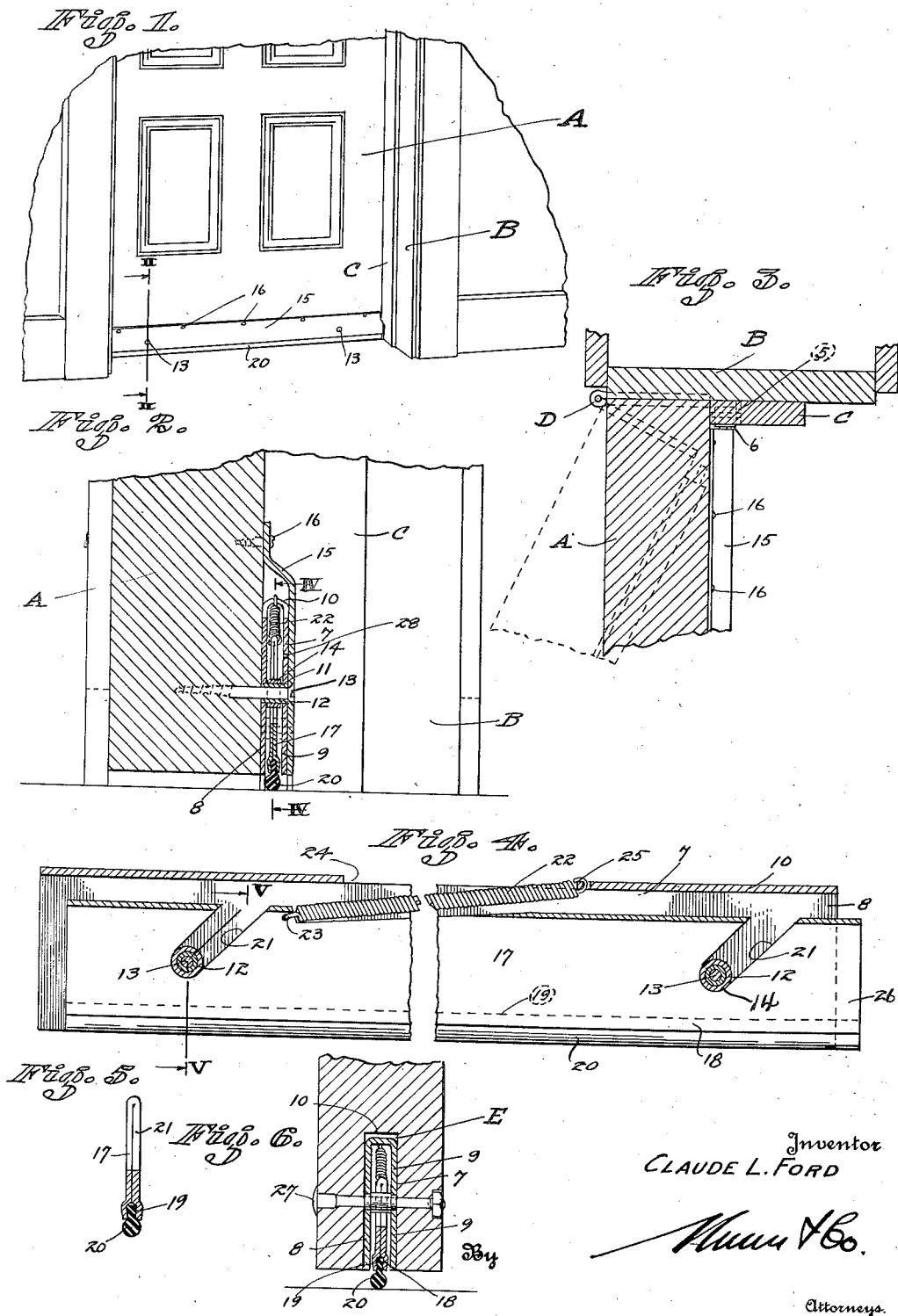
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WEATHER STRIP

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UNITED STATES PATENT OFFICE.

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WEATHER STRIP.

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The present invention relates to improvements in weather strips and has for its primary object the provision of a self or automatically operated device of this character which will instantly clear itself from the floor or co-acting surface the moment the door is swung from a closed position and which will act, the moment the door is fully closed, to effect a waterproof seal between the floor or co-acting surface and the lower edge of the door.

Another object of the invention is to provide a device of this character which co-acts directly with a floor surface without use of the customary sill and which, through the provision of novel features of construction will permit the door to move freely at all times.

Another object of the invention is to provide a device of this character which is simple of construction, strong and durable, inexpensive of manufacture and reliable of operation.

Another object of the invention is to provide a device of this character whose working parts are readily accessible for the purpose of repair or lubrication.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

In the drawings:—

Figure 1 is a perspective view of a portion of a door and its frame showing an application of my invention thereto;

Figure 2 is a section on line II—II of Figure 1;

Figure 3 is a horizontal section through the hinge side of the door showing the strip in co-acting relation to the stop on the jamb of the door;

Figure 4 is a horizontal section on line IV—IV of Figure 2;

Figure 5 is a vertical section through the movable strip member on the line V—V of Figure 4; and

Figure 6 is a vertical section through a portion of a door showing a slightly modified form of the invention.

While my present invention is particularly designed for use in swinging doors of the kind illustrated, its use is found advantageous upon what are known in the art as French doors and windows and swinging casements.

For the purpose of illustration, (A) rep-

resents a swinging door, (B) the jamb, and (C) the stop, the latter located near the hinge (D) as shown in Figure 3, and same is provided with a morticed bracket (5) 60 carrying an anti-friction roller (6) which extends slightly beyond the exposed broad surface of the stop. The purpose of this roller will be described presently.

At (7) is indicated a casing, the same 65 formed preferably of a single strip of metal bent in U-form to provide parallel side walls (8) and (9) and a connecting top wall (10). This casing has its side walls formed with aligned apertures (11) and passing there- 70 through is a bushing (12). Two of these bushings are shown in the present example and same are in horizontal alinement. Passing through these bushings are fasten- 75 ing screws (13) or equivalent devices whereby the device can be quickly attached to the door. Extending around the bushings (12) are anti-friction sleeves (14).

The casing (7) is secured to one side of the door (A) so that the edges of the walls 80 (8) and (9) come flush with the lower edge of the door. A housing strip (15) is secured at (16) to one side of the door so as to extend over the casing (7). This housing strip is freely detachable in order that ac- 85 cess may be had to the casing and the working parts therewithin. The screws (13) also pass through the lower portions of the said housing strip, as shown in Figure 2.

Located between the parallel side walls (8) 90 and (9) of the casing (7) is a strip carrying member (17). This is formed of a single piece of sheet metal bent on itself and formed at its edges to provide a channel (18) for a weather strip which has a reduced side portion 19 of a size to be frictionally held 95 within the channel and an enlarged rounded side portion 20 disposed outwardly beyond the member 17. This strip may be formed of rubber, felt or any other elastic or plia- 100 ble material and the base of the strip is relatively broad so as to take firm contact with the floor surface or the like when the strip is in its sealed or projected position.

The strip carrying member (17) is formed 105 with cam slots (21) which extend down from the top of the member, terminating approximately medially thereof. These slots accommodate the anti-friction sleeves (14), as clearly shown in Figure 4. 110

A coiled spring (22) has one end attached at (23) to the strip carrying member (17).

The spring extends up through a slot (24) in the casing (7) and the opposite end of the spring is connected at (25) to said casing so as to normally pull upward on the member (17). This retracts the strip (20) into the space between the side walls of the casing (7) and clears the strip from the floor surface.

At this time it shall be assumed that the door (A) is open and that incident to the upward pull upon the member (17), one end of the latter is projected beyond the casing (7) as at (26), Figure 4. The protruding end (26) of the member (17) is adapted to co-act with the anti-friction roller (6) on the stop (C). The co-action of the parts occurs as the door is moved to its closed position, the roller (6) bearing against the end (26) of the member (17) so as to force the latter downward against the action of the spring (22). In so doing the broad lower end of the strip (20) is advanced into yielding engagement with the floor surface so as to seal the joint between said surface and the lower edge of the door.

The invention suggests an assemblage of parts that can be quickly put together or taken apart as the occasion demands. The entire device can be attached to a door without requiring any costly alterations in the construction thereof or rendering the door unsightly. The construction of the device is also such that its working parts are protected against injury incident to accidental kicking of the door.

In the modification shown in Figure 6 I mortice the lower edge of the door as at (E). The casing (7) is extended into the mortice and bolted to the door as at (27). In this manner all parts of the device are concealed and the elastic strip (20) extends down from the door in line with the vertical center thereof.

The outer wall (9) of the casing is provided with an oil hole (28) above each of the anti-friction sleeves (14). In this manner the working parts can be lubricated when the housing strip (15) is removed.

The construction of the strip carrying

member (17) is such that its free lower edges can be pinched against the restricted end of the strip (20) to hold the same normally in place and at the same time permit the strip to be removed and replaced by a new one when desired.

It shall be understood that alterations and changes in the construction of the device can be made within the scope of the hereto appended claim.

I claim:

A weather strip structure for doors comprising an inverted U-shaped casing adapted to be arranged on one face of a door with the lower edges of its side walls coincident with the lower edge of the door, a housing strip adapted to be secured to the door and to cover the casing, means for securing the casing and housing strip to the door, an oblong carrying member disposed sidewise between the walls of the casing and obliquely movable therein, said carrying member being formed of a metallic blank bent upon itself longitudinally at its middle portion and having the marginal portions of its longitudinal sides bent outwardly and inwardly to provide a flared socket, a weather strip of flexible material having a reduced side portion disposed within the socket and frictionally held by the walls thereof, and an enlarged rounded side portion located outwardly beyond the socket, said carrying member further having sloped recesses opening at one end through the upper side of the member and disposed so as to receive the means for securing the housing strip and casing to the door and thereby coact with the said securing means to permit of oblique movement of the strip carrying member, a spring connected to the strip carrying member and the casing for moving the said member in one direction so as to effect the projection of one end of the member beyond one end of the casing when the door is opened, and means adapted to be connected to the door frame and disposed so as to engage the projecting end of the strip carrying member for the purpose set forth.

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