

A. M. LANE.
WEATHER STRIP.
APPLICATION FILED MAR. 6, 1911.

1,020,992.

Patented Mar. 26, 1912.

3 SHEETS-SHEET 1.

Fig. 1.

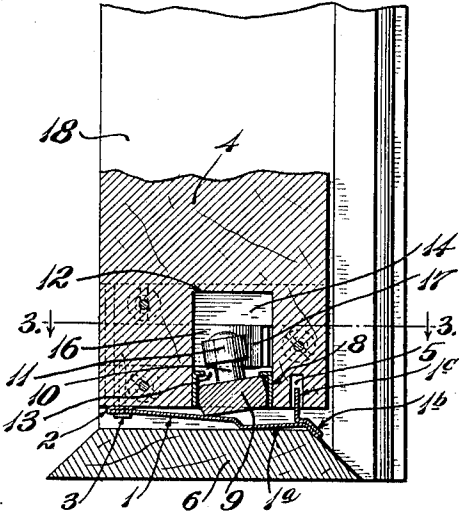


Fig. 2.

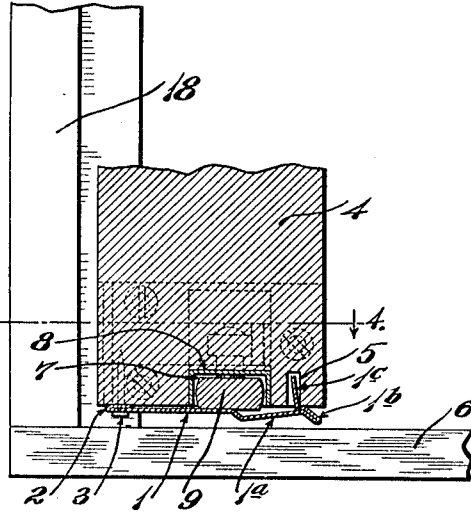


Fig. 3.

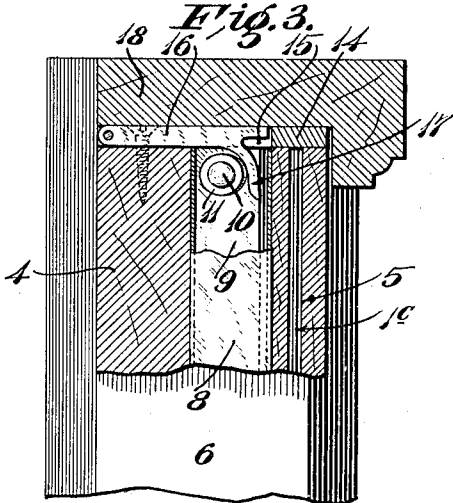


Fig. 4.

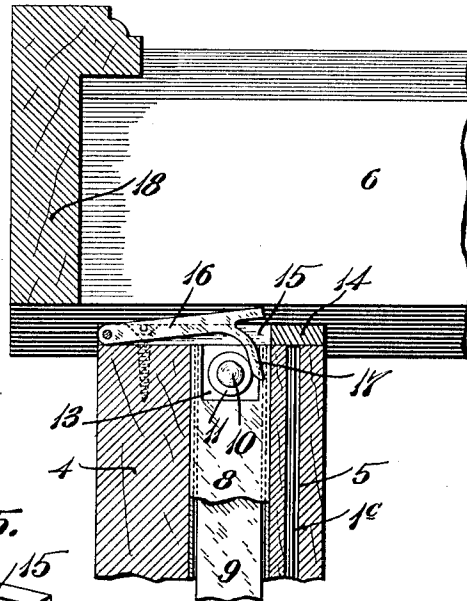
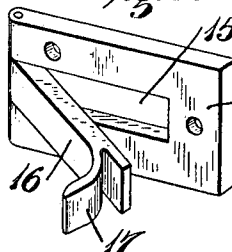


Fig. 5.



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3 SHEETS-SHEET 2.

Fig. 6.

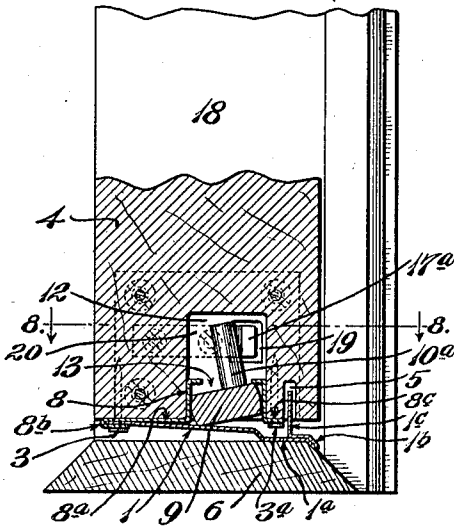


Fig. 7.

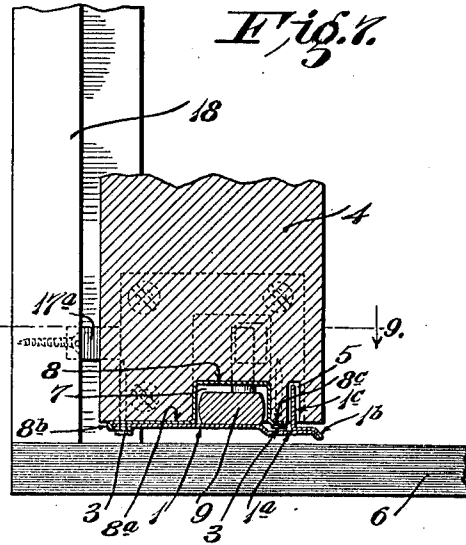


Fig. 8.

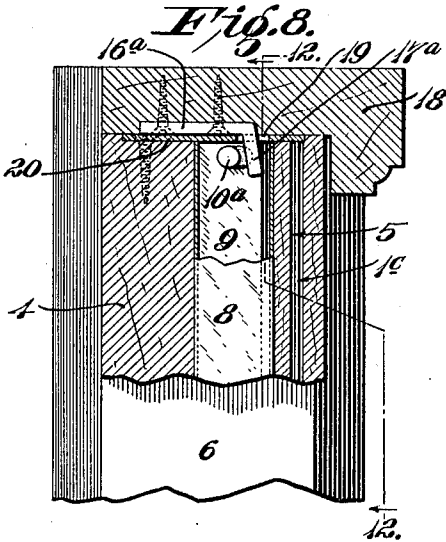


Fig. 9.

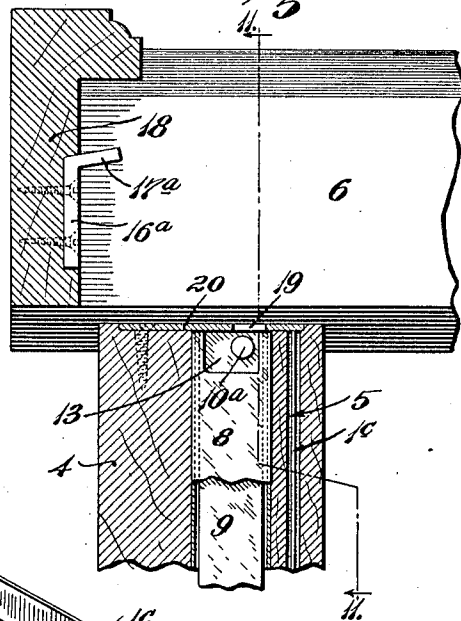
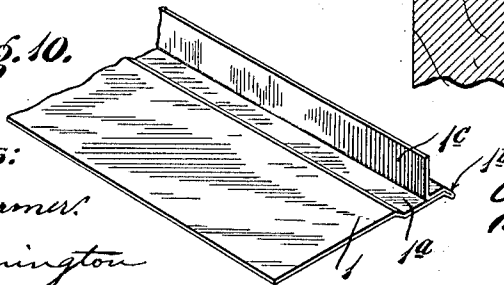


Fig. 10.



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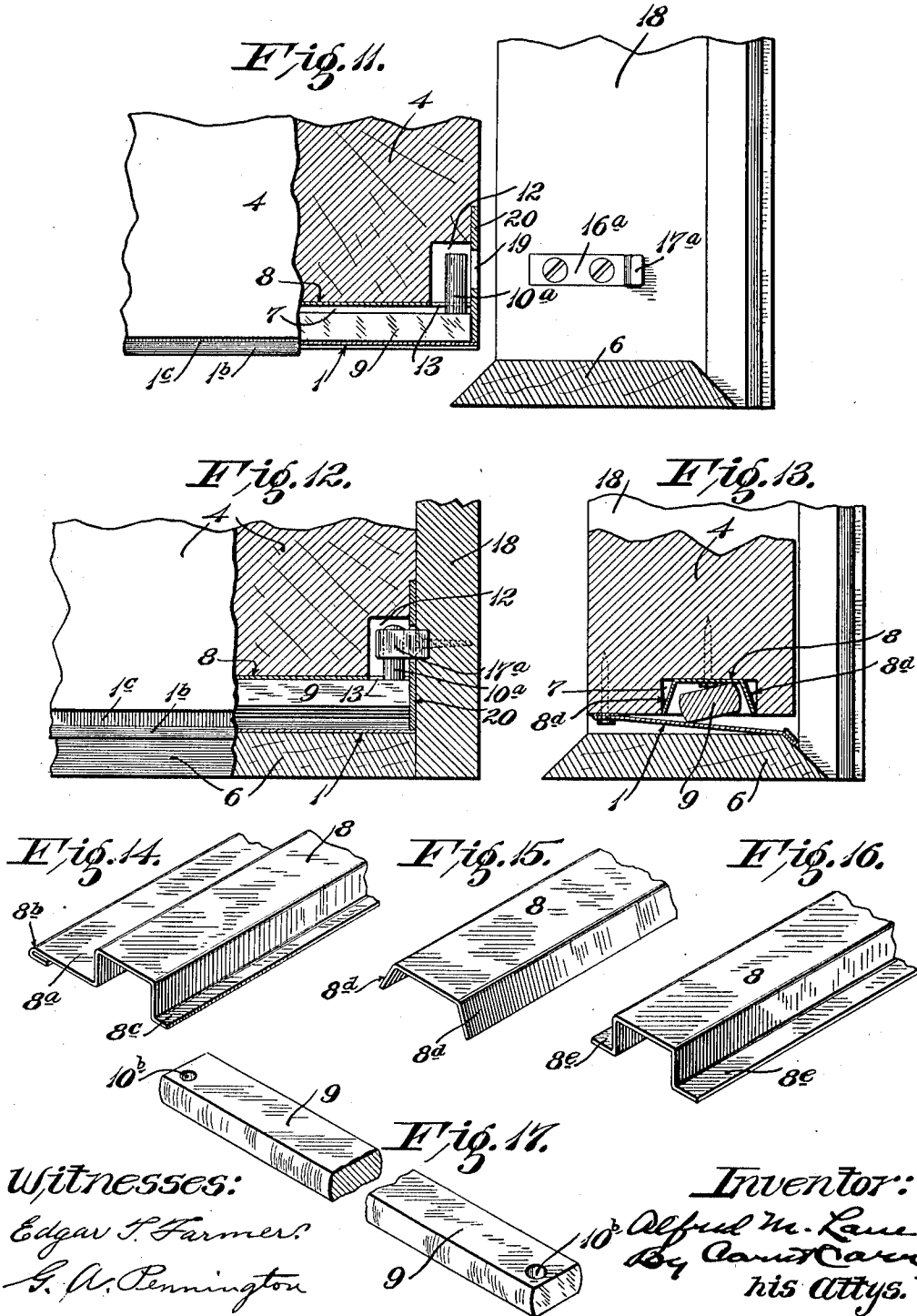
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3 SHEETS-SHEET 3.



Witnesses:

Edgar T. Farmer,
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UNITED STATES PATENT OFFICE.

ALFRED M. LANE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO MONARCH METAL WEATHER STRIP COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

WEATHER-STRIP.

1,020,992.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed March 6, 1911. Serial No. 612,580.

To all whom it may concern:

Be it known that I, ALFRED M. LANE, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Weather-Strips, of which the following is a specification.

The invention relates to weather strips and more particularly to those adapted for the edges of doors and casements or hinged and swinging windows.

It has for its principal objects to produce a simple and inexpensive construction which can be readily applied to an ordinary door or window without material alteration, to produce a strip adapted to cooperate with an ordinary threshold plate or side of the casing, to obviate the necessity of providing ridges or projections on or adjacent to the threshold plate or side of the casing which cooperates with the strip, and to attain certain other advantages hereinafter more fully appearing.

The invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings which form part of this specification and wherein like symbols refer to like parts wherever they occur,—Figure 1 is a fragmentary view showing one side of the door frame in elevation and bottom portion of the door and the threshold plate in vertical section, the door being shown in closed position; Fig. 2 is a view similar to Fig. 1, the door being shown in opened position; Fig. 3 is a horizontal section taken on or about the line 3—3 of Fig. 1; Fig. 4 is a horizontal section taken on or about the line 4—4 of Fig. 2; Fig. 5 is a detail view of the pivotal actuating member for the weather strip; Fig. 6 is a view similar to Fig. 1 illustrating a modified construction; Fig. 7 is a view similar to Fig. 2 showing the construction illustrated in Fig. 6, the door being opened; Fig. 8 is a horizontal section taken on or about the line 8—8 of Fig. 6; Fig. 9 is a horizontal section taken on or about the line 9—9 of Fig. 7; Fig. 10 is a fragmentary detail view of a preferred form of resilient

strip; Fig. 11 is a vertical section taken on or about the line 11—11 of Fig. 9; Fig. 12 is a view taken on or about the line 12—12 of Fig. 8; Fig. 13 is a view similar to Fig. 1 showing a further modification; Figs. 14, 15 and 16 are fragmentary detail views of different forms of linings for the groove in the bottom of the door; and Fig. 17 is a fragmentary detail view of the rocking-bar which cooperates with the resilient strip.

As shown in Figs. 1 to 5, inclusive, the weather strip comprises a resilient plate 1, one of whose marginal portions is rebent or hemmed, as at 2, and secured by tacks or brads 3 to the bottom edge of the door 4 near one corner thereof, preferably the inner. The resilient strip 1 preferably comprises a straight portion adapted to bear close against the bottom edge of the door, a downwardly offset portion 1^a, and an angularly disposed, rebent marginal portion 1^b and upstanding flange 1^c. The upstanding flange portion 1^c works freely in a groove 5 in the bottom edge of the door near the outer corner thereof; and the rebent portion 1^b bears normally against the bottom edge of the door and clears the threshold plate 6 when the door is opened (see Fig. 2).

Extending longitudinally of the bottom edge of the door is a groove 7 which is preferably lined with a metallic boxing 8. Fitted loosely in the lined groove 7 is a flat bar 9 whose opposite side faces are preferably rounded. The bar 9 normally rests flatwise upon the resilient strip 1 when the door is in opened and nearly closed positions, and it has projecting from its upper face a stud 10 on which is preferably mounted an anti-friction roller 11. This bar 9 extends preferably throughout the entire length of the bottom edge of the door, and the stud 10 and roller 11 are located within a pocket 12 provided near the hinged side edge of the door and communicating with the lined groove 7 through an opening 13 in the intermediate portion of the lining 8, as shown in Figs. 1 and 4.

Secured to the hinged side edge of the door is a plate 14 which is slotted, as at 15 (see Figs. 4 and 5), and working in this

slot is a cam-lever 16 having a curved or eccentric portion 17 adapted to bear against the antifriction roller 11 on the stud 10 and thereby rock the bar 9, so as to bring one of its upper corners into contact with the bottom of the grooved portion 7 and its diagonally opposite corner against the resilient strip 1; whereby the strip 1 is moved into contact with the threshold plate 6 (see Fig. 1) when the door is closed. This is accomplished by the cam-lever 16 bearing with its outer face against the side 18 of the door frame as the door is closed. When the door is opened, the bar 9 is moved by the resilient strip 1 into normal horizontal position and thereby moves the roller 11 on the stud 10 against the cam projection 17 on the lever 16 and the lever is swung outwardly, as shown more clearly in Fig. 4.

In Figs. 6 to 12, inclusive, a modification of the device is illustrated. In this case, the resilient strip 1 is similar to that illustrated in connection with the structure shown in Figs. 1 to 4, inclusive, with the exception that the offset portion 1^a rests flatwise throughout against the threshold plate 6 when the door is closed. Also, the metal lining 8 for the groove 7 in the bottom of the door is extended at one side under the edge of the door, as at 8^a, and its marginal portion 8^b is rebent over the margin of the strip 1 and secured by the tacks or brads 3. The lining is also provided with a short flange 8^c extending under the bottom edge of the door on the opposite side of the groove and secured by tacks or brads 3^a. In this modification a plate 16^a having a cam projection 17^a is secured to the side of the door casing 18, and said cam projection enters through an opening 19 in a plate 20 secured to the hinged side edge of the door and engages a stud 10^a on the bar 9 when the door is closed. Hence, the bar 9 is rocked in a manner similar to that effected by the cam-lever construction set forth in the previous modification.

In Fig. 13 a further modification is illustrated. In this modification the resilient strip 1 is a plain flat plate which is adapted to lie normally flatwise against the bottom edge of the door and moves with its free marginal portion only into contact with the threshold plate when the door is closed. In this construction the groove 7 in the bottom of the door is made somewhat wider than the grooves in the two previous constructions and the lining 8 is provided with flared sides 8^a so that, when the middle portion of the lining is tacked in place, said flared side portions are drawn against the sides of the groove. In other respects the construction may be similar to either of the above mentioned modifications.

In Fig. 16 the lining 8 is provided with

two marginal flanges 8^c adapted to be tacked to the under side of the door.

Preferably, the studs 10 and 10^a are secured to the rocking bar at one side of the middle, as shown in Figs. 6 to 9, inclusive, and, as more clearly shown in Fig. 17, the bars 9 are preferably made of uniform lengths and provided near each end with perforations 10^b to receive the studs 10 and 10^a and arranged so that the bars are adapted for either right or left hand doors. In case the bars 9 are too long for certain doors, one end may be cut off to fit the door in applying the strip.

Obviously, the device admits of considerable modification without departing from my invention. Therefore, I do not wish to be limited to the specific construction and arrangement shown. It is further obvious that the weather strip may be applied to the side edges as well as the bottom edges of doors and windows.

What I claim is:

1. A weather strip comprising a resilient metal strip secured at one edge to the edge of a door or the like and adapted to bear normally against the door, the door having a longitudinal groove of substantially rectangular cross section in its edge, a flat bar of substantially rectangular cross section fitted loosely in said groove, and means for rocking the bar in said groove when the door is closed, so that diagonally opposite corners of the bar respectively engage the bottom of the groove and inner face of the resilient strip, whereby the resilient strip is moved against the door frame.

2. A weather strip comprising a resilient metal strip secured along one marginal portion to the bottom edge of the door and adapted to bear normally against the door and also adapted to be moved into contact with the threshold plate, the door having a longitudinal groove of substantially rectangular cross section in its edge, a flat bar of substantially rectangular cross section fitted loosely in said groove and resting normally flatwise on said resilient strip, a projection on the upper side of said bar, and a cam device adapted to engage said projection when the door is closed, whereby the bar is rocked in the groove and the resilient strip is moved into contact with the threshold plate.

3. A weather strip comprising a resilient strip secured at one edge to the edge portion of a door or the like and adapted to bear normally against the door, the door having a longitudinal groove of substantially rectangular cross section in its edge, a flat bar fitted loosely in said groove, said bar being of a thickness and width approximately the same as the depth and width, respectively, of the groove and having semi-circular side

faces, and means for rocking the bar in said
groove when the door is closed, so that di-
agonally opposite corners of the bar respec-
tively engage the bottom of the groove and
5 inner face of the resilient strip, whereby the
free edge portion of said resilient strip is
moved away from the door.

Signed at St. Louis, Missouri, this 2nd.
day of March, 1911.

ALFRED M. LANE.

Witnesses:

G. A. PENNINGTON,
PAULINE AMBERG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
