

No. 608,275.

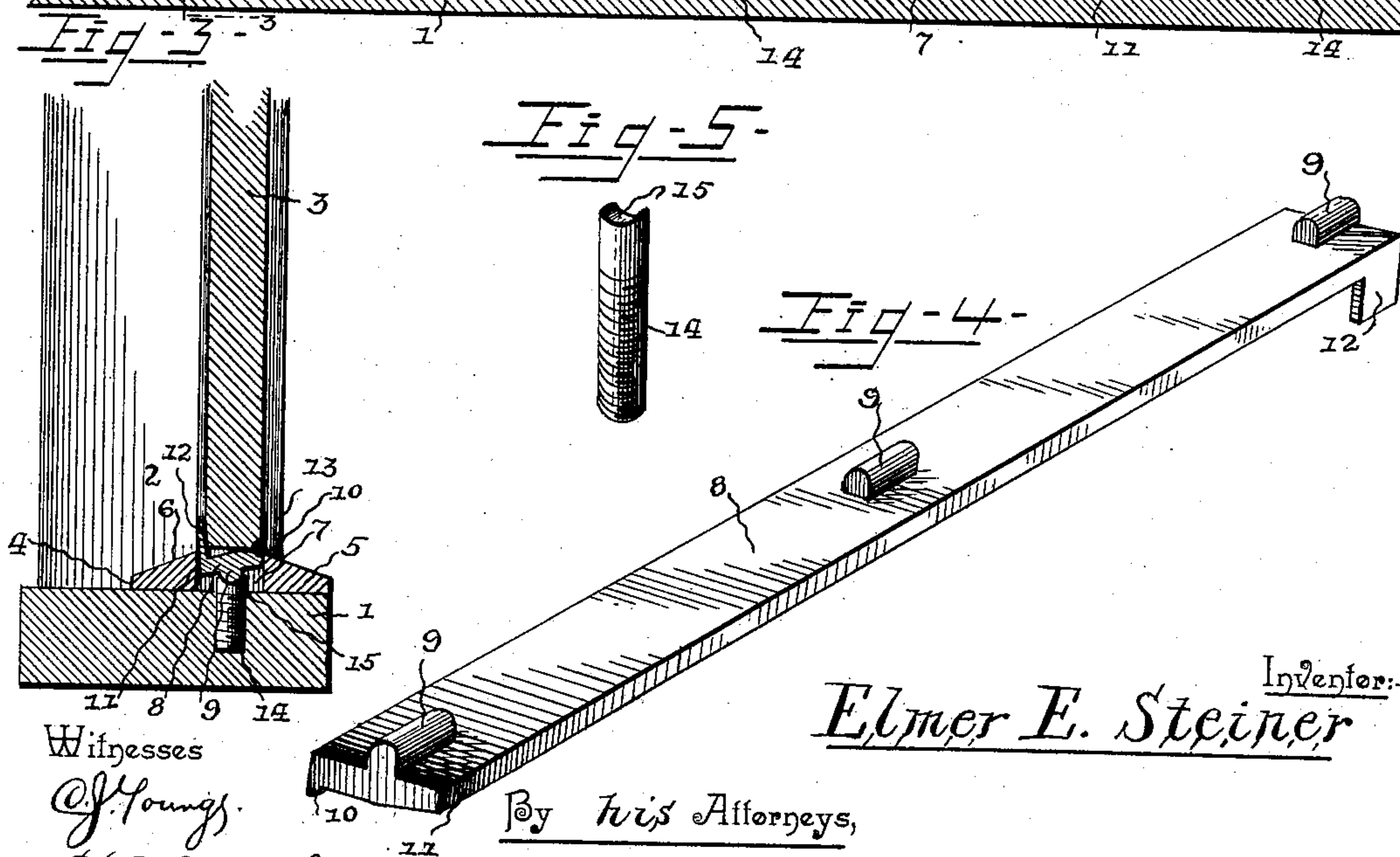
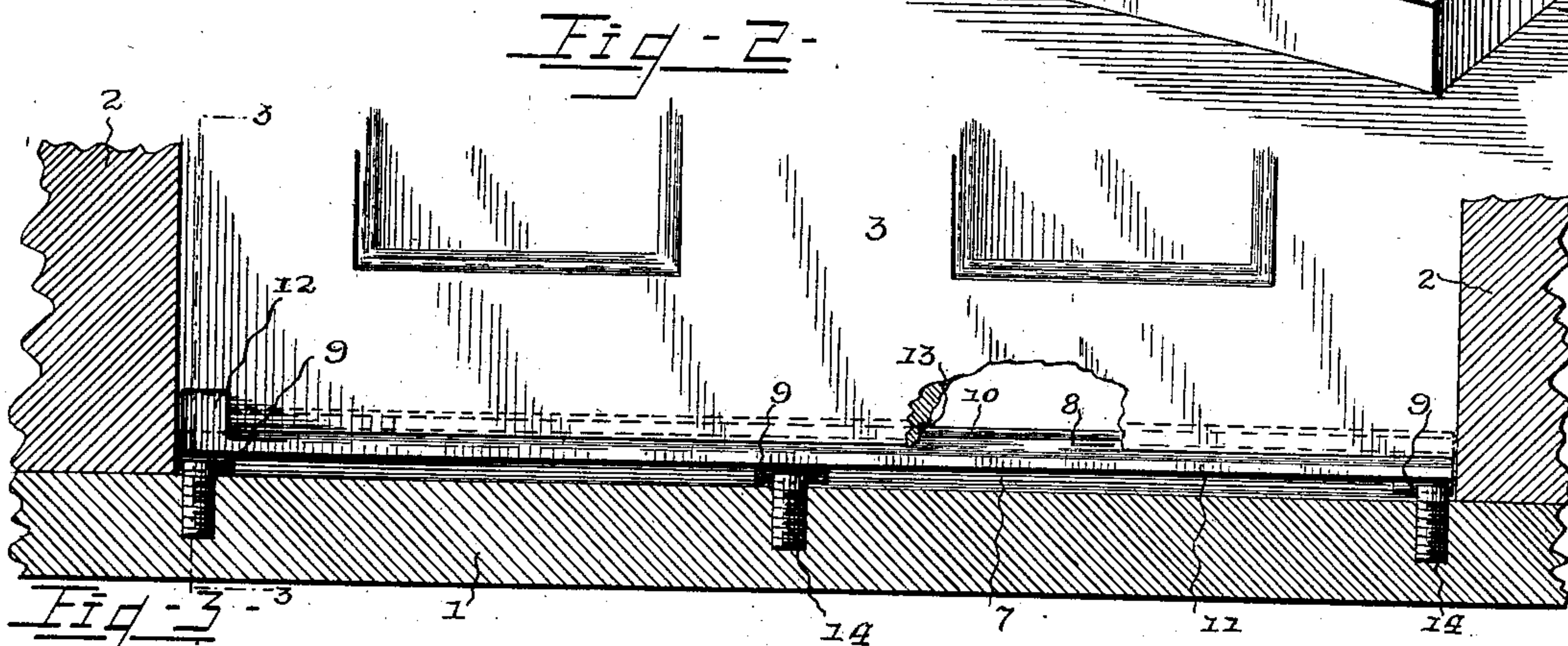
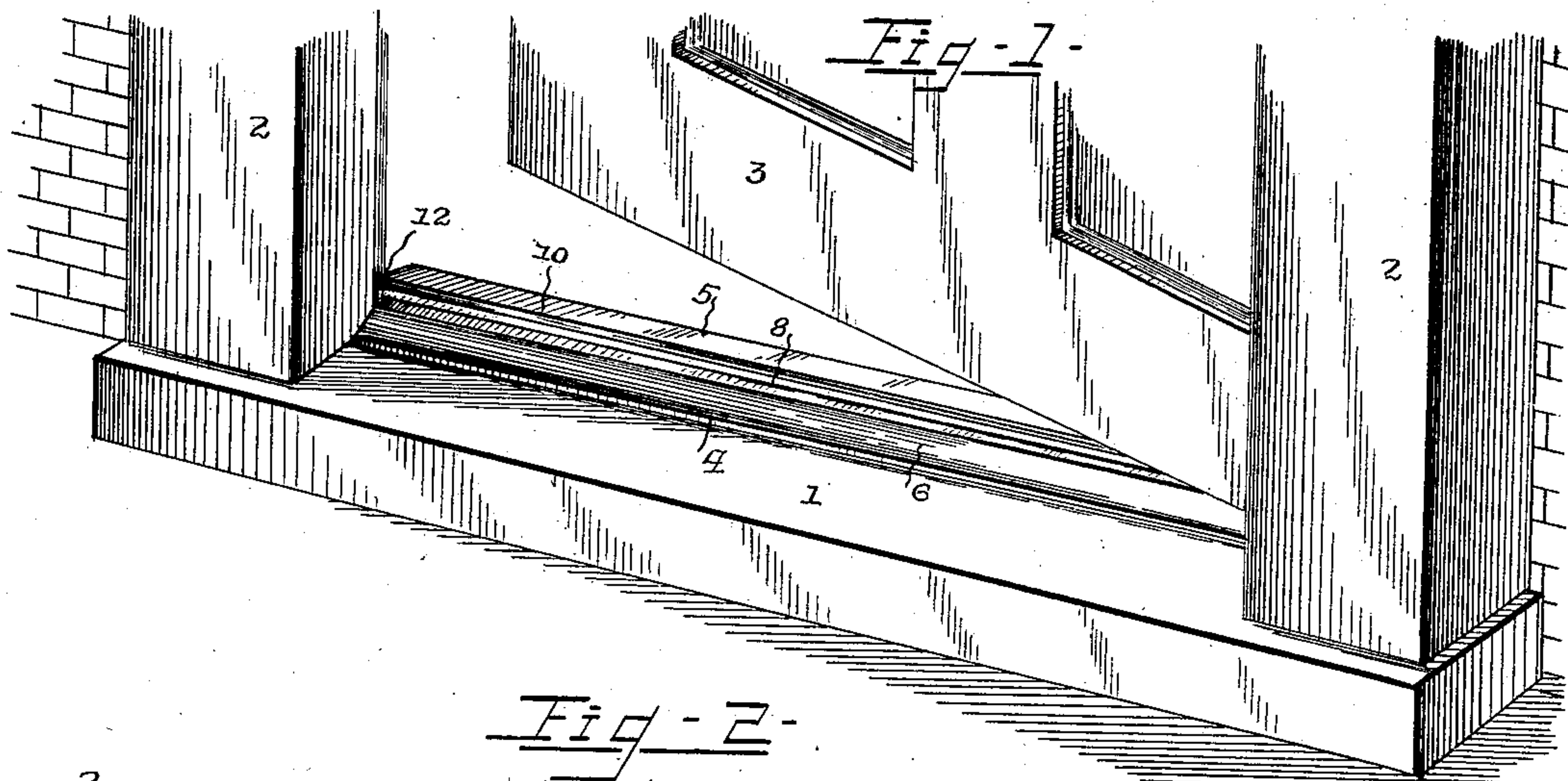
Patented Aug. 2, 1898.

E. E. STEINER.

WEATHER STRIP.

(Application filed Nov. 30, 1897.)

(No Model.)



Witnesses

*C. J. Young*

*H. A. Bender*

By *his* Attorneys,

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# UNITED STATES PATENT OFFICE.

ELMER ELSWORTH STEINER, OF KNIGHTSTOWN, INDIANA, ASSIGNOR OF  
ONE-HALF TO LEVI MORTON EDWARDS, OF SAME PLACE.

## WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 608,275, dated August 2, 1898.

Application filed November 30, 1897. Serial No. 660,245. (No model.)

*To all whom it may concern:*

Be it known that I, ELMER ELSWORTH STEINER, a citizen of the United States, residing at Knightstown, in the county of Henry and State of Indiana, have invented a new and useful Weather-Strip, of which the following is a specification.

This invention relates to improvements in weather-strips of that class wherein a rocking or tilting strip is seated on the threshold of a door; and the object that I have in view is to provide a simple construction in which the pivotal supports for the tiltable strip are entirely housed and concealed from view, and thereby protected from the weather and accumulations of dirt.

A further object that I have in view is to provide means which may be readily applied to any ordinary door without respect to its condition—that is to say, whether the door is square with the door-frame or occupies a sagged position with relation thereto—such means providing for the adjustment of the tiltable strip to compensate for the sagging of the door and enabling a tight joint to be obtained between the door and the strip.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view with the door partially open and illustrating the improved weather-strip substantially flush with the sill-strips of the door-frame. Fig. 2 is a vertical sectional view through the door in its closed position and showing the weather-strip raised into close engagement with the lower edge of said door. Fig. 3 is a vertical sectional view on a plane at right angles to the plane of section in Fig. 2 and indicated by the dotted line 3 3, Fig. 2. Fig. 4 is a detail perspective view, on an enlarged scale and in an inverted position, of the tiltable strip removed from the door-frame and its supports. Fig. 5 is a detail perspective view of one of the adjustable supports for the tiltable strip.

Like numerals of reference denote like and

corresponding parts in each of the several figures of the drawings.

1 designates the sill, 2 the door-frame, and 3 a swinging door, which is hinged at one edge to the door-frame. All of these parts are of the usual or any preferred construction and no novelty therefor is herein claimed.

On the sill 1 is secured a pair of threshold-strips 4 5, which are arranged within the limits of the door-frame 2 and are secured to the sill 1 in any suitable way. These threshold-strips are arranged parallel to each other and suitably spaced apart to form between themselves a channel or groove 7, and the outer threshold-strip 4 has an inclined upper face 6, which slopes downwardly from the door when the latter is closed within the door-frame, and thus forms a watershed to direct the rain away from the door and sill.

8 designates a tiltable or rocking weather-strip, which is fitted within the channel 7, formed by and between the threshold-strips 4 5, and this tiltable strip 8 is so supported within the door-frame and between the threshold-strips that when the door is opened or partially opened the upper exposed face of the tiltable strip 8 lies substantially flush with the edges of the threshold-strips 4 5. This tiltable strip 8 is made in a single piece of metal, and on its lower side it is formed with a series of bearing-lugs 9. These bearing-lugs 9 are arranged in the central line of the tiltable strip, and they are spaced at suitable intervals from each other; but if desired a single longitudinal rib or flange may be formed on the lower face of said tiltable strip to constitute the rocking bearing therefor. I prefer, however, to employ the construction shown by Fig. 4 of the drawings and to make each bearing-lug 9 with a rounded or segmental lower edge for the purpose of fitting it removably and tiltably in the series of adjustable bearings presently described. The tiltable strip 8 is provided on its upper side or face and at the rear edge thereof with a longitudinal flange 10, which is inclined upwardly and rearwardly from the horizontal flat face at the middle of said strip 8, and at the front edge of the strip 8 its upper face is inclined downwardly and forwardly, as indicated at 11, so that the front part of the tiltable strip may



assume a position where its inclined front edge is flush with the inclined edge or face 6 of the outer threshold-strip 4 when the door is opened, thus providing a continuous inclined face on the tiltable plate or strip and the outer threshold-strip for shedding water away from the pivotal bearings of the tiltable strip 8. This tiltable strip or plate 8 is further provided with an upwardly-extending lifting-arm 12, which is situated at one end and the front edge of said tiltable plate. By reference to Fig. 4 of the drawings it will be seen that the tiltable plate or strip 8 includes as integral parts of its structure the curved bearing-lugs 9, the longitudinal flange 10 at its rear edge, and the lifting-arm 12 at its front end edge. All these parts are made integral with the tiltable plate 8, and the simplicity and durability of the device are thereby promoted.

If desired, a longitudinal recess 13 may be cut in the lower edge of the hinged door 3 for the purpose of receiving the inclined flange or rib 10 at the rear end of the tiltable plate or strip 8; but it is not essential that this groove shall be cut in the lower edge of the door.

In my improved weather-strip I provide a series of adjustable bearings for pivotally supporting the tiltable plate or strip 8 in operative relation to the hinged door, and these supports are adjustable independently of each other, so that they may be raised or lowered at either side of the door for the purpose of adjusting the tiltable plate or strip and compensating for sagging in the door.

In the preferred embodiment of the adjustable bearings or supports for the tiltable plate or strip I employ a series of three bearings 14, each of which is provided with a threaded body or shank and a curved recess in the upper extremity thereof, said curved recess constituting a seat 15 for one of the curved bearing-lugs 9 on the lower face of the tiltable strip, one of said adjustable bearings or supports being shown by Fig. 5 of the drawings.

In applying my weather-strip to a door it is only necessary to secure the threshold-strips 4 5 in parallel relation to each other and the sill 1 to form therebetween the channel 7 and to secure the adjustable supports or bearings 14 to the sill at proper intervals from each other and in the space occupied by the channel or groove 7, the curved seats 15 of the adjustable supports being exposed above the upper face of said sill 1. The tiltable plate or strip 8 may now be dropped into position between the threshold-strips 4 5 to have its inclined rib or flange 10 lie flush substantially with the upper face of the inner threshold-strip 5, while the inclined face 11 at the front edge of said strip or plate 8 is substantially flush with the inclined face 6 of the outer threshold-strip 4. The strip or plate 8 has its bearing-lugs 9 fitted snugly in the curved seats 15 of the adjustable supports,

and the lifting-arm 12 of said plate or strip 8 lies in the path of the door for the latter to impinge against said arm and depress the front edge of the tiltable plate or strip 8 when the door is closed. It will be evident that as the door is opened the tiltable plate or strip 8 will drop back into place in the channel 7, so as to lie substantially flush with the threshold-strips 4 5; but when the door is closed the arm 12 is brought into contact with the door, and the continued movement of the latter rocks or tilts the strip or plate 8 on the pivotal connection of its lugs 9 with the supports or bearings 14, thus raising the rear edge of the tiltable strip or plate for its inclined flange 10 to have tight engagement with the lower edge of the door or the recess 13 therein.

One of the important features connected with my improved construction is the central line of bearing for the rocking or tiltable strip 8, whereby the pivots or supports for said strip 8 are entirely concealed or housed beneath the body of the strip. This construction is advantageous from the fact that the pivotal supports for the strip are entirely concealed or housed beneath the strip, and water is thus prevented from having access to the pivotal supports and freezing beneath the plate or strip; also, accumulations of dust and dirt are prevented, and the strip is maintained in a condition practically free from clogging.

Another important feature connected with my improved weather-strip is the independent vertical adjustment of the strip at either end thereof, due to the employment of the adjustable bearings or supports 14. It is evident that one or the other of the adjustable supports at either end of the tiltable plate or strip may be raised or lowered more or less to correspondingly adjust the tiltable plate and bring it into operative relation to the lower edge of the door, thus compensating for any sag which may take place in the door during the practical service thereof.

The described construction of the adjustable supports for the tiltable strip or plate enables a weather-strip to be applied to a door without respect to its condition, thus overcoming one of the practical objections which have been encountered in the application of ordinary weather-strips to doors. It is of course understood by those skilled in the art that doors when exposed to the weather are liable to warp and shrink, besides sagging on their hinge connection with the door-frame, and as a result the door does not fit truly in the door-frame, but assumes a position technically called "out of square" with the frame.

The construction of the strip and its supporting means herein described obviates the objection heretofore encountered in practice of applying weather-strips to sagged doors, and a further advantage of my invention is that the strip and its supporting and operat-



ing means may be applied to ordinary thresholds or door-sills without cutting away and defacing the sill or the door-frame.

5 It is evident that changes in the form and proportion of parts and in the details of construction may be made without departing from the spirit or sacrificing the advantages of the invention.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

15 1. The combination with a channeled sill, of the series of independently-adjustable supports secured in said sill to lie within the channel thereof and having seats in their upper ends, and a tiltable metallic plate provided on its lower side with central bearing-lugs fitted in said seats of the supports and said plate arranged within the sill-channel  
20 to house and conceal the supports which lie centrally within the side edges of said plate, substantially as described.

2. The combination with a sill having

threshold-strips arranged to form a channel, of the threaded supports secured in series to 25 the sill centrally within the channel thereof and provided with curved seats in their upper ends, and a tiltable metallic plate arranged horizontally within said channel and provided with the central depending bearing- 30 lugs which fit loosely in the seats of the supports to make the plate have a central line of bearing thereon, said supports being adjustable independently in the sill to raise the plate in proper relation to the lower edge of 35 a door and said plate further provided with a flange adapted to impinge against a door, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 40 the presence of two witnesses.

ELMER ELSWORTH STEINER.

Witnesses:

PATRICK SHEA,  
GRANT H. THAYER.