

(No Model.)

J. J. SMITH & F. H. SCHWARTZ.

WEATHER STRIP.

No. 309,413.

Patented Dec. 16, 1884.

Fig. 1.

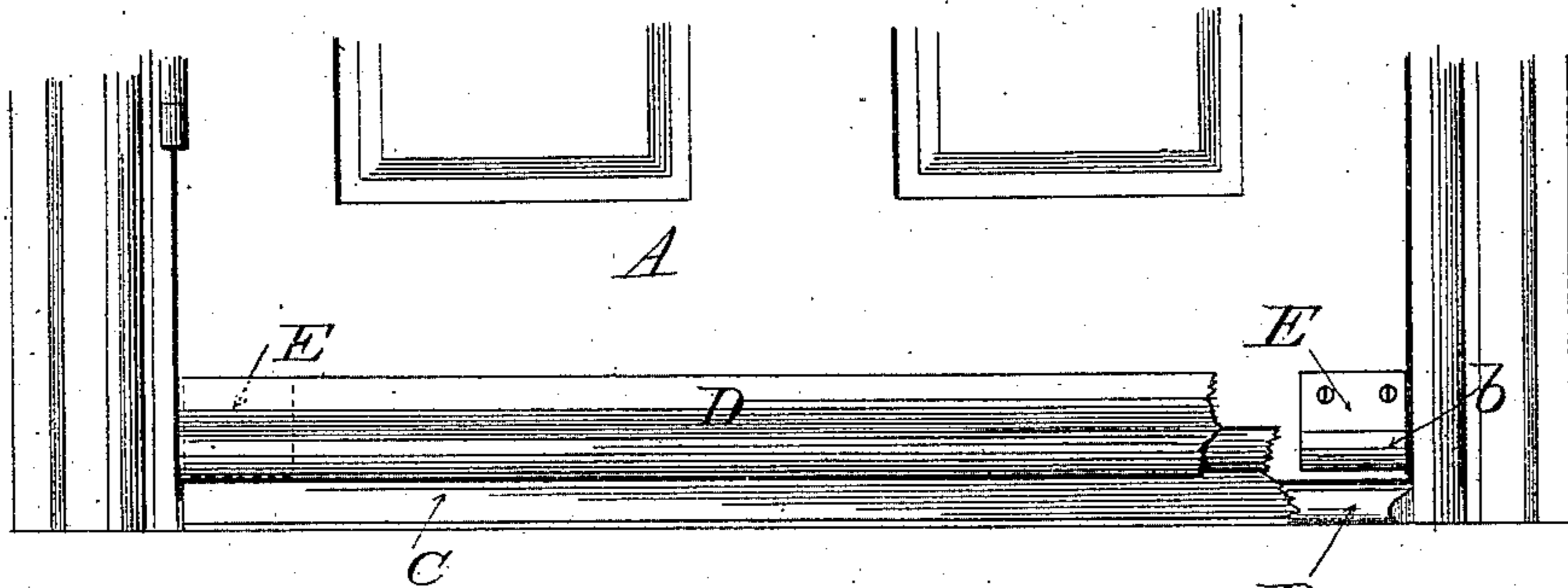


Fig. 2.

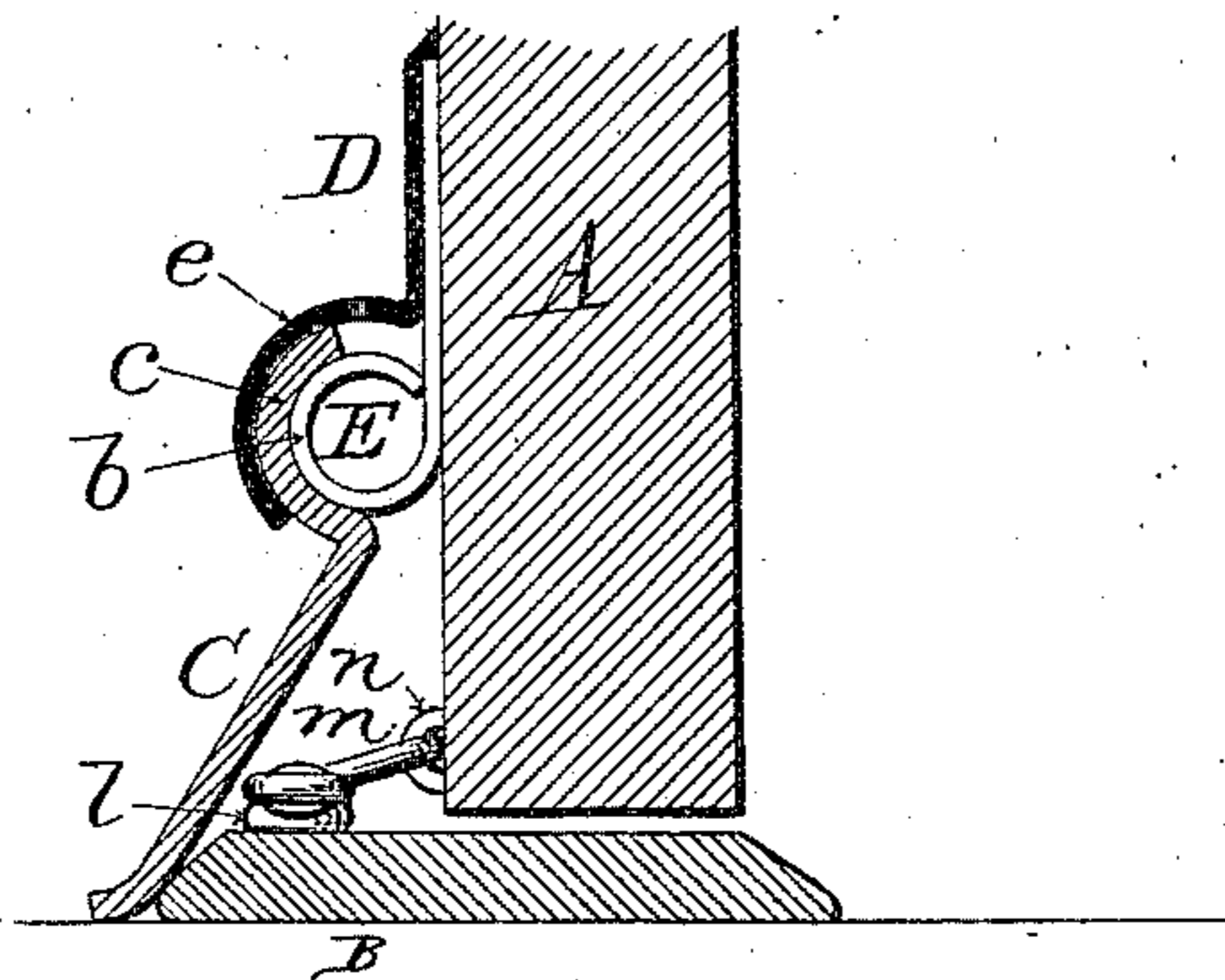


Fig. 4.

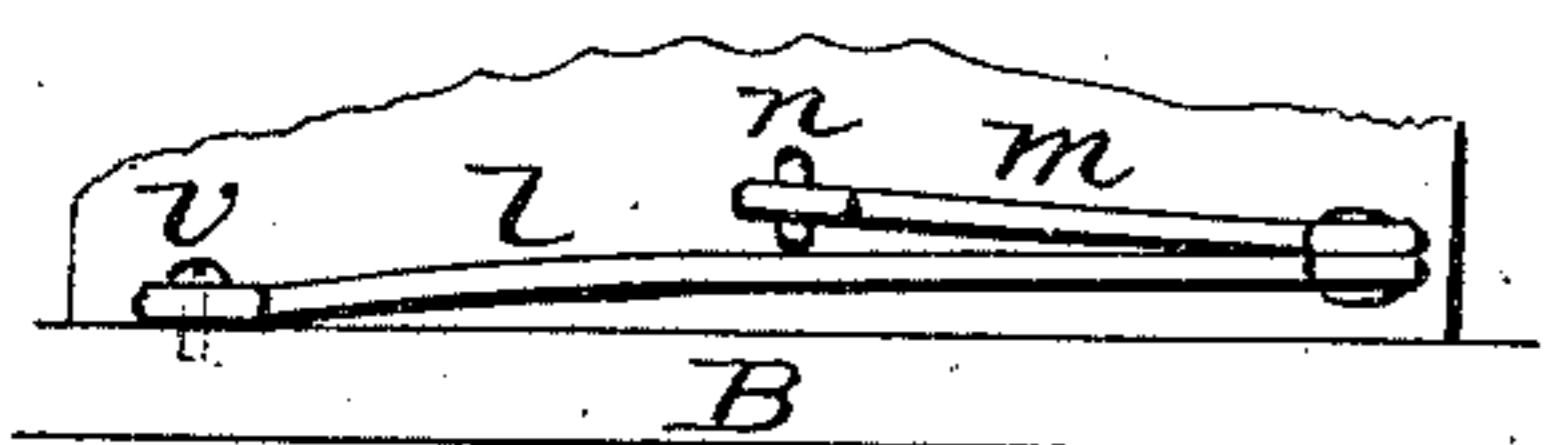
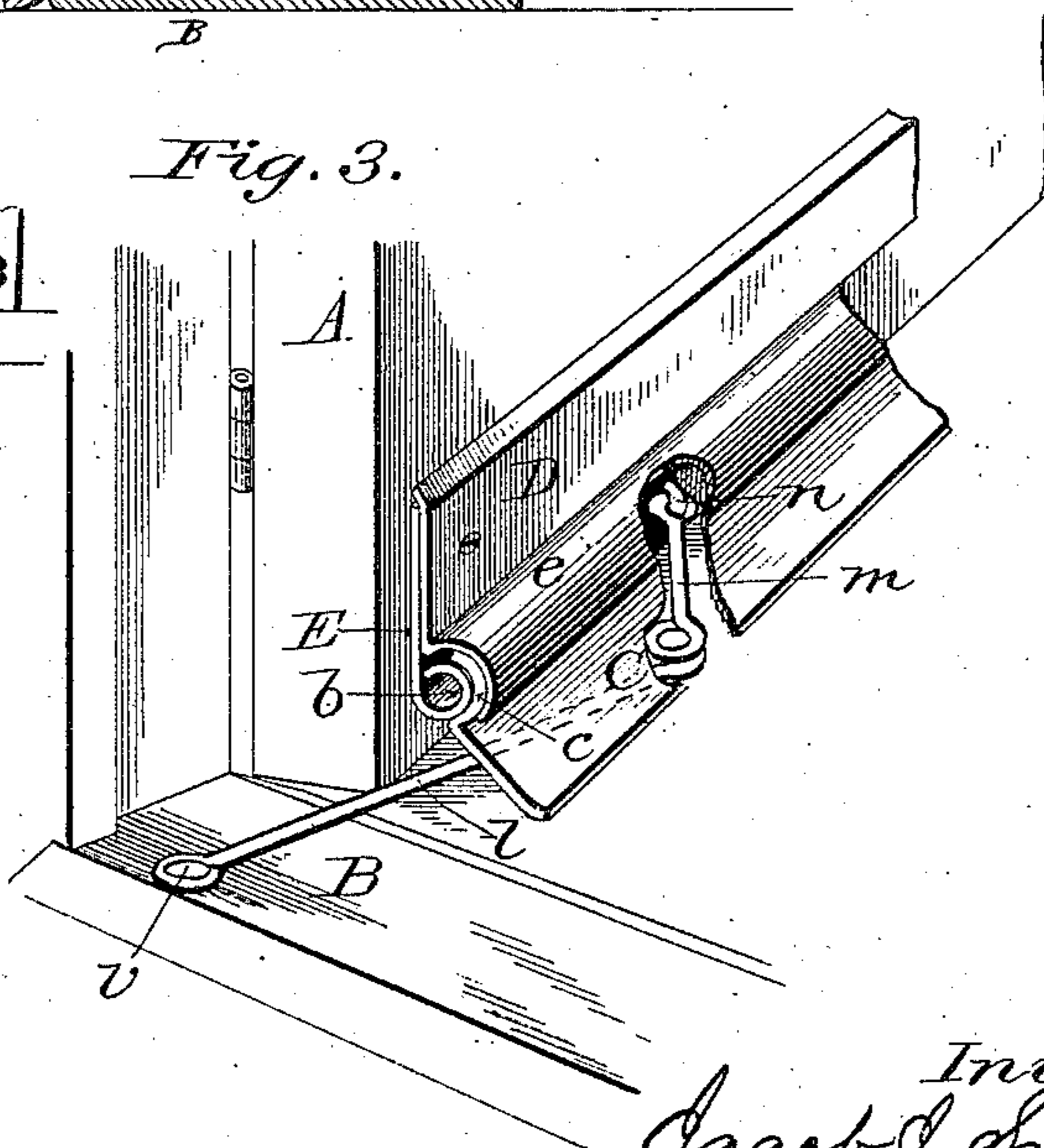


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JACOB JAMES SMITH AND FRANK H. SCHWARTZ, OF LIMA, OHIO.

WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 309,413, dated December 16, 1884.

Application filed July 24, 1884. (No model.)

To all whom it may concern:

Be it known that we, JACOB J. SMITH and FRANK H. SCHWARTZ, of Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Weather-Strips for Doors, of which the following is a specification.

This invention relates to weather-strips for doors; and the invention consists in certain combinations and details of construction, as hereinafter specified.

Figure 1 is a front elevation of a door with our improved weather-strip applied, with a portion broken away to show the hinge. Fig. 2 is a vertical section of the same on the line *x x* of Fig. 1. Fig. 3 is a perspective view showing the door open and the strip supported by the carrier or support, and Fig. 4 is a front view of the carrier.

A great variety of weather-strips have been devised; but for various reasons but few of them have been brought into practical use. Some have proven defective on account of the manner in which they are hinged to the door. Others require springs to elevate them and a stop of some kind to force them down on the door-sill when closed, which renders them more or less complicated and liable to get out of order. In that class which has the hinge extending the entire length of the strip a difficulty is found to arise from the fact that in country houses the door is often found to be warped or sprung, so that when the hinged strip is secured thereto it will not work freely in the joint, and hence fails to operate perfectly.

The object of our invention is to provide a hinged weather-strip that will obviate these difficulties, and which can be applied to any ordinary door, even though the latter be out of true, and still work perfectly, and also to furnish a cheap, simple, and durable device not liable to get out of order. To accomplish these results we construct the hinged plate C in the form shown in Figs. 2 and 3—that is to say, we make a straight plate as long as the door is wide, or nearly so, of the proper width, and curve its upper edge in the form of a segment, *c*, as shown. This plate C we prefer to make of cast-iron, to give it the necessary weight, and also to prevent it from being bent or otherwise accidentally bruised or sprung out of shape, though it may be made of gal-

vanized iron by wiring its lower edge or making it double in whole or in part, to impart to it the necessary weight and rigidity; or it may have a small cast-iron plate riveted upon it for this purpose. The plan of making it of a single piece of cast-iron we, however, consider the best, as its shape is such that it can be readily cast, and it can be made very cheaply. We then provide two hinge-supports, E, of the form shown in Figs. 1 and 2, there being one for each end. These consist, simply, of a small plate an inch or two in width, having their lower ends formed in a true circle, as shown at *b*, Figs. 1, 2, and 3, corresponding in diameter to the curvature of the lip *c* of plate C, as shown. These may be made of sheet or cast iron, as may be preferred. We then provide a strip, D, of galvanized iron, of a length corresponding with the plate C, the lower edge or portion of which is curved or bent into a segment of a circle corresponding with the curvature of the lip *c* of plate C, so that when in place it will lap over the same, as shown in Figs. 2 and 3. This constitutes the whole of the weather-strip proper. To apply it to a door the hinge-plates E are either first fastened upon the outside of the door, one near each edge, as represented in Fig. 1, the plate C then laid against them, and the strip D then placed over all, and fastened to the door by tacks or screws, or the hinge-plates E may first be riveted or soldered to the inside of plate D, so as to unite them firmly, and then the parts be secured to the door. This latter we consider the better plan in case the hinge-plates E be made of sheet metal, as they will then be sure to be in the proper position, so that when purchased any person can apply them without trouble or mistake. If the hinge-plates E be made of cast-iron, they and the plate D will each be provided with one or more holes for the insertion of screws, as shown in Fig. 3, the holes being made to register, and thus hold the curved lip *c* of plate D in proper relation to the circular portion *b* of the hinge-plates E, so as to provide the proper space between them for the lip *c* of plate C to play freely in. By this construction and arrangement of the parts it will be seen that plate C is supported on the two separate bearings, one at or near each edge of the door, and thus, though the door may

be warped or sprung, the plate will work freely, it not bearing or binding at any intermediate point. At the same time the overlapping lip *e* of the plate D conducts the water down upon the outer face of the hinged plate C, and the joint is such that the rain cannot be driven through it, even though the edge of lip *e* does not fit snugly against lip *c* all along. The plate C can be shoved lengthwise into its bearings after the latter have been secured to the door, and a brad driven into the door at the outer end of the plate will prevent it from being accidentally displaced; or a small lip can be left on the ends of plate D, to be bent down after the plate C is inserted, which will answer the same purpose. If by any means the plate C shall be shoved toward the hinged edge of the door, it will be restored to its place as soon as the door is closed by its projecting end coming in contact with the door-jamb, thus requiring a stop at the outer or free edge of the door only. By making a small lip at each end of plate D, as suggested, it is held secure against movement either way, and the door need not be disfigured by even the brad suggested. The hinged plate C is designed to have its outer edge drop by gravity upon the sill, just in front of the threshold or strip B, as shown in Fig. 2, and to support it when the door is opened, so it will readily pass over the threshold, we provide a brace or support, as represented in Figs. 2, 3, and 4. This "support" or "carrier," as we term it, is composed of two short pieces of metal, *l* and *m*, which may be of stiff wire or thin light bars of metal of different lengths, the former being about twice the length of the latter. They are riveted together at their ends in such a manner as to form a free joint, and the opposite end of the shorter bar *m* is secured to the front side of the door A, close to its bottom and underneath the hinged strip C, by means of a small staple or eyebolt, as shown in Figs. 2 and 3, while the free end of the bar or rod *l* is pivoted by a screw, *v*, to the top of the threshold B, just in front of the door, as shown in said figures, and near the side where the door is hinged. When the door is closed, the part

m will be folded over the part *l*, as shown in Fig. 4, and they will then rest upon the threshold under the hinged strip C, just in front of the edge of the door, as shown in Fig. 2; but when the door is swung open the carrier will be unfolded and made to assume an angular position, as indicated in Fig. 3, in which case the rod *l* will rest across the face of the threshold, and thus be supported in a horizontal position, while its end where pivoted to the rod *m* will be thrust outward from the door, under the weather-strip C, thereby holding the latter raised high enough to ride over the threshold as the door is closed. As the door is closed, the rod *m* is carried around and folded over and in line with the rod *l*, or very nearly so, thereby drawing their jointed ends back under the weather-strip, when they will rest upon the top of the threshold and in line therewith, as shown in Figs. 2 and 4. By this arrangement we dispense with the carrier or support, which has heretofore been placed inside of the room, and where it was in the way and liable to become bent or displaced by accident, and at the same time protect it from the snow and ice outside.

Having thus described our invention, what we claim is—

1. The combination of the supports E, provided with the circular bearings *b*, the strip C, provided with the curved lip *c*, to fit on said bearings, and the strip D, provided with the overlapping curved lip *e*, all arranged to operate substantially as described.

2. The weather strip or plate C, provided with the curved lip *c* at its upper edge, hinged to the door by the correspondingly-curved surfaces of the parts *b* and *e*, substantially as shown and described.

3. In combination with a hinged weather-strip, the carrier or support consisting of the pivoted rods *l* *m*, secured to the threshold and door, substantially as shown and described.

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