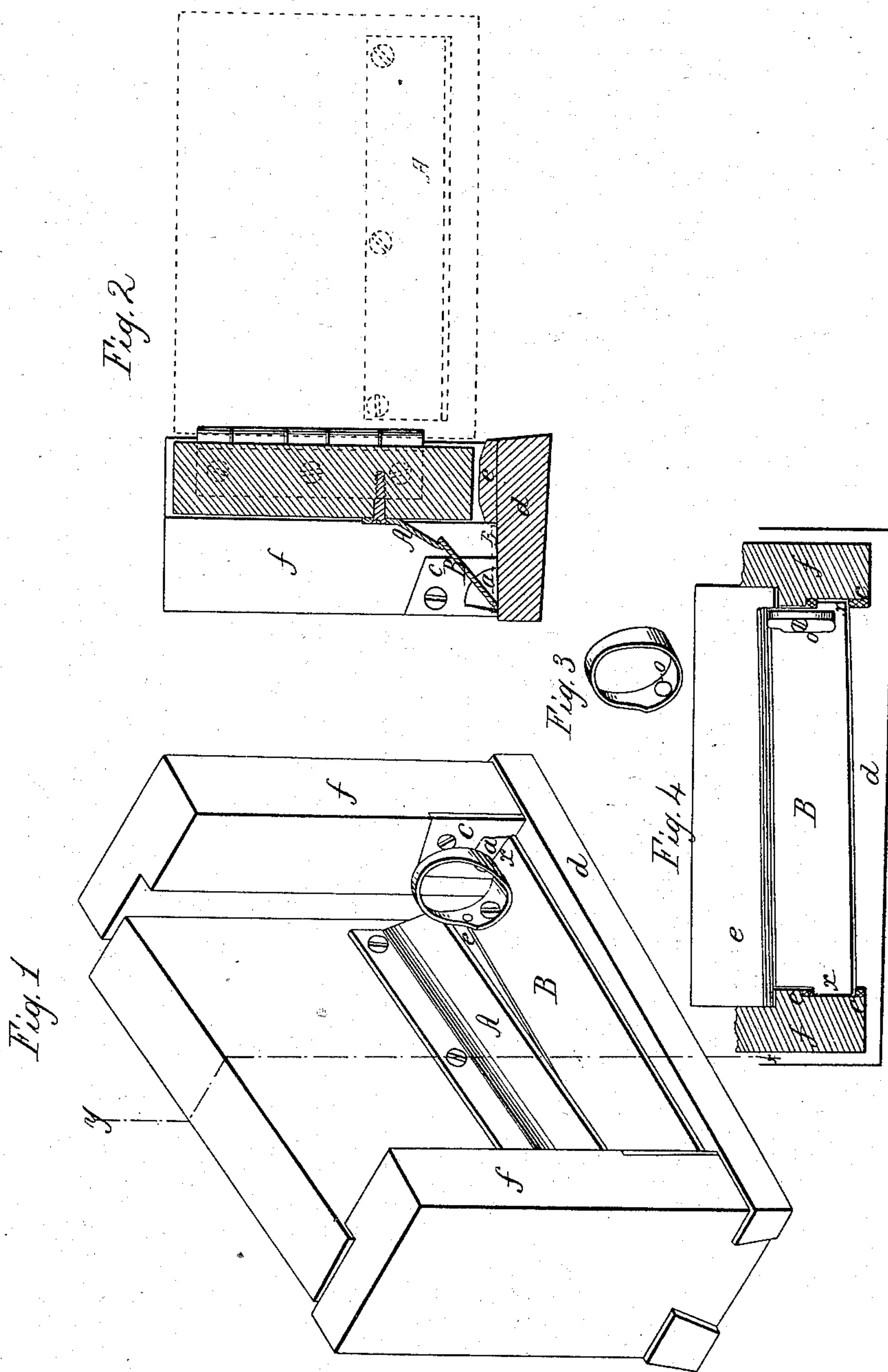


J. O. Clay.
Weather Strips.

N^o 39,718.

Patented Sept. 1, 1863.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES O. CLAY, OF HUDSON, WISCONSIN.

IMPROVEMENT IN WEATHER-STRIPS.

Specification forming part of Letters Patent No. 39,718, dated September 1, 1863.

To all whom it may concern:

Be it known that I, JAMES O. CLAY, of Hudson city, county of St. Croix, and State of Wisconsin, have invented a new and useful Improvement in Weather-Strips for Doors; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters marked thereon, which form a part of this specification.

Figure I represents a front perspective view of the door standing open a few inches, with my improvements attached. Fig. II represents a transverse sectional view of the door closed, with a like view of the weather-strips overlapped, and one of the boxes with its eye or socket. Fig. III represents the ring-tappet. Fig. IV represents a top view of the hinged weather-strip in its angular position in relation to the door-jambs and carpet-strip.

My improvements are designed to obviate the defects and objections to the weather-strips hitherto introduced into public use.

My invention consists in the construction of the eyes or sockets of the boxes, and the flat pivotal projecting ends of the tilting or adjusting strip, whereby these are rendered more efficient and are made at less expense than an ordinary hinge, and whereby the eye or socket of the box is caused to operate as an eccentric or wedge-cam to hold the outer and lower edge of the adjusting-strip in close contact with the door-sill when the door is closed; also, in the arrangement of the self-adjusting hinged strip in an angular relation to the door-jambs and carpet-strip or sill, by which means the overlapping edges of the two weather-strips are caused to be pressed firmly together throughout their entire length when the door is closed, as will be herein more fully described; also, in the use of a ring or disk formed tappet, arranged vertically, as herein described and illustrated, whereby all liability of catching or holding the apparel of persons passing through the doorway is obviated.

To enable others to make and use my invention, I will now describe the manner of construction and operation of the same.

The strips or plates of metal or other material, A and B, of suitable thickness, are made of a length equal to the width of the doorway, and the hinged adjusting-strip has an additional length of about half an inch, extending

a part of its width, as represented by the projecting ends *x x*, which serve as pivots or journals of a hinge. These pivots or flat projecting ends of strip B may be only long enough to retain the strip in place—say one-eighth of an inch instead of one-fourth of an inch—and they may be made at the same operation with and as extensions of the strip B.

The boxes C, one of which is shown in Fig. II, are made with an opening or socket, *a*, at their base, and secured at the bottom of the door-jambs by a single wood-screw each. The eye or socket *a* is of the same width as and corresponds with the width of the projecting or pivot ends *x* of the adjusting-strip B; but the eye diminishes in width toward the top to form the eccentric curve. The eye or socket may also be so formed as to allow the flat projecting pivot ends of the strip B to strike, when the door is shut, against the straight inclined outer boundary of the eye or socket, and thereby present no view of the eye or socket from outside the door when it is shut. It will be seen, when the box is inserted with its face flush with the door-jamb, and its base resting upon the sill, that the boundaries of the socket or eye at the sill-line and outer line are both straight lines forming an acute angle, and that its inner line of boundary is an irregular curve. The object, as above stated, of giving this eccentric form to the curved line of the eye is to wedge down the edge of the tilting or adjusting strip upon the door-sill. Strip A is bent or curved near its longitudinal center, so as to incline from the door at an angle of about forty degrees, as seen in the drawings, Fig. II. The strips A and B, as well as the boxes C, may be made of heavy or thick hoop-iron or brass, one and one-fourth inch wide, and also the tappet *o*.

Having described the manner of constructing the several parts of my weather-strips, I will proceed to describe the manner of applying and using the same. The boxes C being first secured to the door-jambs by a single screw each, the adjusting-strip B (which has the ring-tappet *o* riveted to it, as seen in the drawings) may be sprung sufficiently to permit its flat pivotal ends to enter the eye of the boxes. The door-strip A is then attached closely, by screws or other means, near the bottom of the door, so that its lower section shall stand out from the door, and its lower edge, when the

door is closing, will come in contact with the ring-tappet, below the center thereof, thus causing, by the movement of closing of the door, the edge of the strip A, through the medium of the tappet, to tilt the adjusting-strip B in the arc of a circle to its position when the door is closed. The movement of closing the door causes the adjusting-strip to rise gradually, and finally brings the edge of the adjusting-strip, as it rises on its hinges, under the edge of the door-strip A, and the overlapping edges in close contact.

It will be observed that I have arranged the adjusting-strip B (see Fig. IV) in an angular relation to the door-sill *d*, carpet-strip *e*, and door-jambs *f*, the right-hand end having its inner edge placed farther into the doorway, as the strip lies on the sill, than the end toward or next the door hinge. The result of this angular manner of arranging the adjusting-strip in its hinges is to cause additional pressure to be given by the fixed strip A against the overlapped adjusting-strip during the last part of the movement of the door in closing it. This arrangement also compensates for any want of exactness in fitting or making the strips perfectly plane, and always insures a perfectly tight joint between the strips. These overlapping strips A and B, at their ends where the tappet is fastened, will readily close or come in contact in closing the door, before the door is brought in contact with the rabbet of the door-jamb, and the additional pressure given to completely close the door against the rabbet will cause the two strips A and B to be pressed together firmly throughout their entire length. Besides, this additional pressure given in closing the door will cause the flat pivotal ends of the adjusting-strip B to wedge against the eccentric curve of the cam-shaped eye or socket *a*, thereby forcing the outer or lower edge of strip B to impinge and be held firmly down upon the sill, thus rendering the joints complete and tight. In opening the door, the hinged strip will be forced down upon the sill by the fixed strip A.

Among the advantages of my improved weather-strip may be enumerated its capability of being used upon doors with stone sills without drilling the sill, as was necessary in the use of my weather-strip patented November 17, 1862; also, the construction and arrangement of the tappet *o*, which presents but

a thin edge or width of periphery within the doorway, and of a form which cannot catch and hold to the apparel of persons in passing through the doorway is deemed to be a decided improvement upon those heretofore in use. Another advantage is the cheapness and facility of its manufacture, as all the parts may be quickly formed from common hoop-iron, from one to two inches wide, or of sheet-brass or other metal, by means of dies and chisels of the forms of the several parts, and there is but one rivet or fastening of any kind necessary to complete the manufacture ready to be applied to use; and an ordinary mechanic will be able to attach the entire improvements to a door in a few minutes, it requiring but five or six wood-screws for the purpose.

In securing the strips to doors of any construction, it will only be necessary to trim away the outer edge of the carpet-strip sufficiently to permit the adjusting-strip B to be placed in its proper angular relation, as shown in the drawings, and before described.

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

1. The construction of boxes C, with their cam shaped eye or socket *a*, in combination with the flat projecting ends *xx* of the adjusting strip B, to operate substantially in the manner and for the purposes described.

2. The construction of the eye of the boxes C with the one eccentrically-curved edge, to serve as a cam wedge to hold the edge of the weather-strip close down upon the sill, in the manner and for the purpose described.

3. The arrangement of the adjusting strip B angularly in relation to the door-jambs, sill, and carpet-strip, for the purpose of causing the joints between the overlapping strips and between the adjusting-strip and sill to be firmly and tightly closed, in the manner substantially as described.

4. The use and arrangement of the ring or disk formed tappet, in the manner and for the purpose set forth.

Subscribed by me this 5th day of March, 1863.

JAMES O. CLAY.

Witnesses:

H. P. K. PECK,
SAMUEL D. FITTON.