(No Model.)

H. G. BATES.

AUTOMATIC WEATHER STRIP.

No. 531,991. Patented Jan. 1, 1895.

Fig. 1.

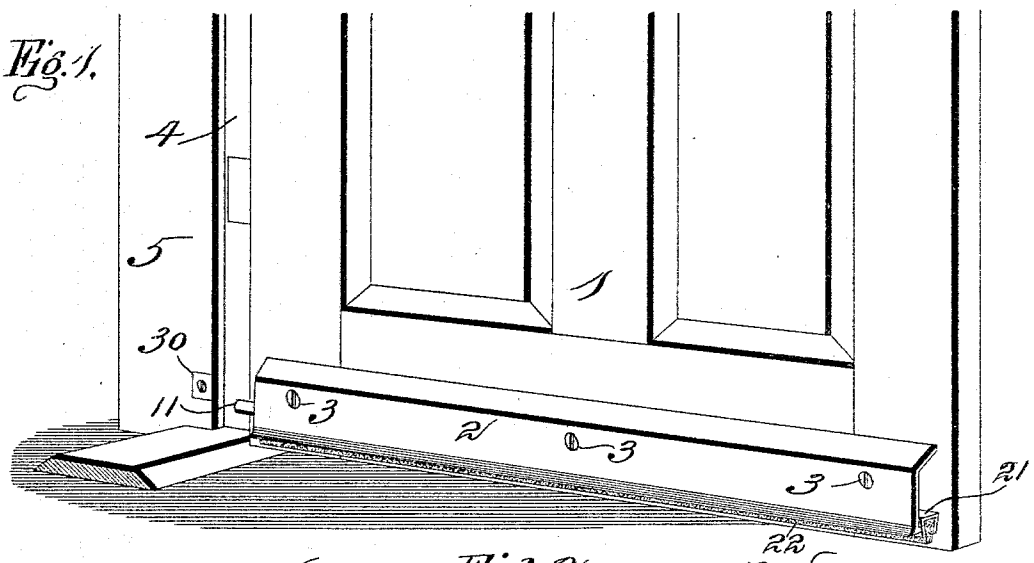


Fig. 2.

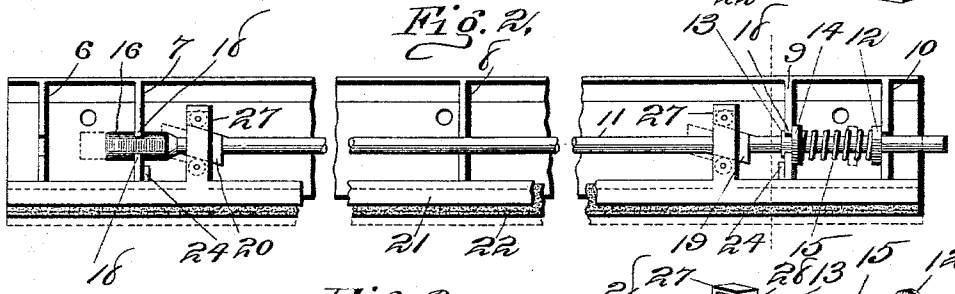


Fig. 3.

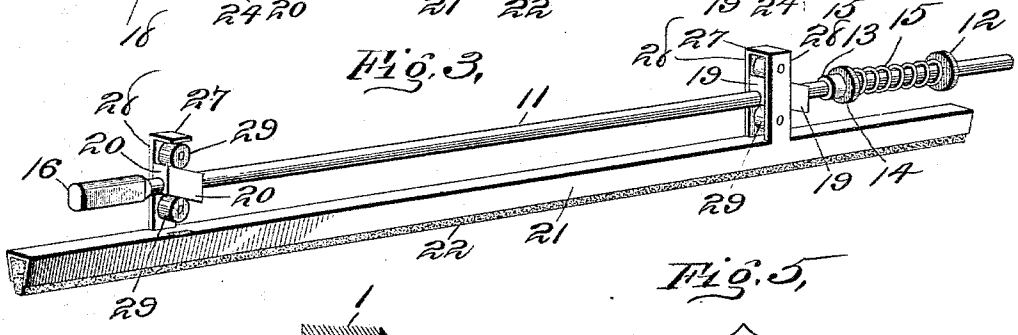


Fig. 4.

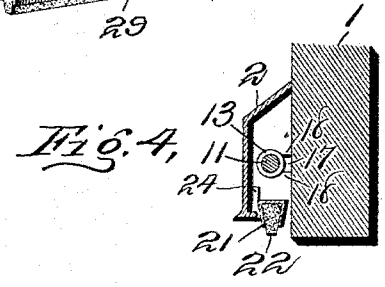
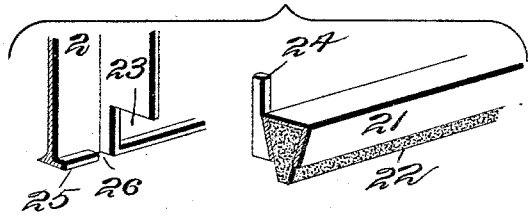


Fig. 5.



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UNITED STATES PATENT OFFICE.

HUGH G. BATES, OF AVA, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN CONNOR, OF SAME PLACE.

AUTOMATIC WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 531,991, dated January 1, 1895.

Application filed February 12, 1894. Serial No. 499,885. (No model.)

To all whom it may concern:

Be it known that I, HUGH G. BATES, of the city of Ava, Jackson county, and State of Illinois, have invented certain new and useful Improvements in Automatic Weather-Strips, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved automatic weather strip, and consists in the novel construction, combination and arrangement of parts hereinafter described, designated in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a door and door casing, showing my improved weather strip attached to said door. Fig. 2 is a side elevation of my improved weather strip, the same being detached from the door, said view showing by solid lines the position the strip occupies when the door is open, and the dotted lines showing the position which it assumes when the door is closed. Fig. 3 is a perspective view of a sliding bolt, having my improved strip connected thereto. Fig. 4 is a vertical transverse section of a portion of a door and my improved weather strip, more clearly showing the construction of same. Fig. 5 is a perspective view of a portion of the casing in which my improved strip is located, and also showing a portion of the strip and a lug which is connected to said strip and acts as a guide for the strip as it ascends and descends.

Referring to the drawings, the numeral 1 designates a portion of a door having my improved device applied thereto in the position it assumes when said door is open.

2 designates the casing of the device, which is connected to the door by means of screws 3. Said casing is somewhat shorter than the width of the door, so that the door can pass into the rabbeted portions 4 of the jamb-casings 5 and allow said weather-strip and casing to pass between the jamb-casings.

The casing 2 is preferably constructed of malleable iron, and is so formed that the upper edge thereof will come in contact with the door and form a tight-joint therewith. The lower edge of said casing is open so that the weather strip can readily reciprocate vertically in the lower edge thereof.

The casing 2 is constructed with a series of vertical transverse partitions 6, 7, 8, 9 and 10, and the partitions 7, 8 and 9 form bearings for the horizontal reciprocating bolt 11. This bolt is constructed with a collar 12 adjacent one end, which comes in contact with the partition 10 when said bolt is in the position illustrated by solid lines in Fig. 2, and prevents said bolt from further movement toward the right.

13 indicates a sleeve, which is loosely mounted upon said bolt, and is constructed with an annular enlarged portion 14 upon one end, which comes in contact with the partition 9, and a coil-spring 15 is located upon said bolt intermediate the collar 12 and the sleeve 13 for holding said bolt in the position illustrated by solid lines in Fig. 2.

Formed on the opposite end of the bolt 11 from the collar 12 is an enlarged portion 16 having flat vertical sides. The purpose of this is that said bolt may not turn in the opening in the partition 7 during normal use. The openings in which said bolt is located in the partitions 7 and 9 are considerably larger in diameter than the bolt, and a cut-away portion 17 is formed in the partitions which is the same in length as the diameter of the bolt 11, so that said bolt can be readily detached from said partitions. By the construction of this cut-away portion 17 it forms projections 18 on the partition which projects out over the opening in which said bolt is located and prevents the enlarged portion 16 of said bolt from being detached from the partition while the weather strip is in operation, and the collar 13 is of such a size that it will fit snugly within the opening in the partition 9 and prevent said bolt from being detached from said partition until the collar has been withdrawn from the opening in which it is located.

Formed on the bolt 11, adjacent to the sleeve 13, are two projections 19, which are wedge-shaped in side elevation and so formed that the angle surfaces of said projections will be parallel with each other, and formed on said bolt adjacent to the enlarged portion 16, are two projections 20, which are the same in construction as the projections 19, and these pro-

jections are so formed that when the bolt is in the position illustrated in Figs. 2 and 3 they will be vertical, and the projections on one side of said bolt will be in vertical alignment with the projections on the other side of said bolt.

21 indicates a clamp, which is the same in length as the casing 2 and located beneath and parallel with the bolt 11. Said clamp is constructed of malleable metal and bent in the form of a channel-bar dovetail shape in cross-section and placed within the casing 2, so that its open or narrow side in which the weather-strip 22 is located will be down, and almost come in contact with the upper surface of the threshold when the door is closed. Said weather-strip projects a suitable distance below the lower edge of said clamp. A notch or cut-away portion 23 is formed in the lower ends of the partitions 6, 7, 8, &c., to allow the weather-strip to be placed within said casing, and the lower end of said partitions is engaged by the clamp 21 to limit its upward movement.

For preventing longitudinal movement of the clamp 21, I have constructed it with one or a series of vertical guides 24, which engage the inwardly projecting flange 25 of the casing 2 in suitable notches 26.

By the construction of these guides the clamp which supports the weather strip can only move in a vertical plane.

Connected to the upper side of the clamp 21 are two brackets 27, which are each constructed of two vertical bars 28, the lower ends of which are formed on or fixed to the upper edge of the clamp 21 adjacent the edges thereof, so that a space will be formed between said vertical bars to allow the bolt 11 to pass between them and also to allow room for anti-friction rollers 29. These brackets 27 are so located upon the clamp 21 that when the bolt is placed within said bracket in the manner illustrated in Figs. 2 and 3, the anti-friction rollers 29 will engage the wedge-shaped projections 19 and 20 of said bolt.

One end of the bolt 11 projects beyond the adjacent end of the casing 2 when the door is open, and is retained in this position by the coil-spring 15 until said door is closed. When the door is closed, the projecting end of the bolt 11 comes in contact with the jamb-casing, which will cause the bolt to be pushed into the casing 2, as illustrated by dotted lines in Fig. 2, until it is flush with the adjacent end of the casing. When the bolt is pushed into the casing in the manner hereinbefore described, the lower wedge-shaped projections 19 and 20 of said bolt will come in contact with the adjacent anti-friction rollers 29, which will cause the clamp 21, which carries said anti-friction rollers, to be pushed down, which will cause the weather strip 22 which is carried by said clamp to be brought in contact with the upper surface of the threshold and form a tight joint between said threshold and the weather-strip.

To prevent the end of the bolt 11, which comes in contact with the jamb-casing from marring the same, I have countersunk a piece of metal such as 30 into said casing at the point where said bolt comes in contact therewith, so that said bolt will strike said piece of metal and thus prevent marring or disfiguring of the jamb-casing at this point. When the door is opened and the bolt 11 is caused to be disengaged from the jamb-casing by the door swinging from it, the spring 15 will throw the bolt out, which will cause the upper wedge-shaped projections 19 and 20 of said bolt to engage the upper anti-friction rollers, and cause the clamp 21 to be elevated which will cause the weather-strip 22 to be disengaged from the threshold and allow the door to readily swing open.

In order that the device can be made to operate on right and left hand doors, I have constructed the bolt 11 reversible relative to the casing and the clamp 21. This is done by the operator disengaging the sleeve 13 from the partition 9, which will allow the end of the bolt which carries said sleeve to be disengaged from the partitions 9 and 10, and when said bolt is so disengaged the enlarged portion 16 of said bolt is withdrawn from the partition 7, and said bolt is then disengaged from the brackets 27 of the clamp 21, and said bolt is reversed and replaced within said brackets 27, and is then replaced in the partitions 6, 7, 8 and 9 and the sleeve 13 is made to engage the partition 7, the coil-spring 15 being located between the partitions 6 and 7 when the reversed operation is performed, and the enlarged portion 16 engages the partition 9 in the same manner it engages the partition 7.

What I claim is—

1. In a weather-strip device, a horizontally reciprocating, spring-pressed actuating rod or bolt mounted in suitable bearings in the casing or door and adapted to be pressed inward against said spring by contact with the door-jamb when the door is closed, said rod being provided upon its upper and lower sides with wedge-shaped projections, in combination with a suitable frame or clamp mounted parallel with said rod and carrying the weather-strip proper, said frame having secured thereto upwardly projecting brackets or boxes through which the rod passes, said brackets inclosing anti-friction rollers on opposite sides of the rod, which engage said projections when the rod reciprocates in either direction, whereby a vertically reciprocating movement of said strip-carrying clamp is effected, substantially as set forth.

2. In a weather-strip device a suitable casing, a clamp for holding the weather-strip, a series of brackets connected to said clamp carrying anti-friction rollers, a bolt having wedge-shaped projections which engage said

anti-friction rollers and cause said brackets and clamp which carries the weather-strip to be vertically reciprocated when the bolt is horizontally reciprocated, and a spring bearing upon said bolt for throwing the same out when the door is opened, substantially as set forth.

3. The herein described weather-strip device comprising a casing 2 containing a series of vertical partitions, a horizontal bolt 11 having wedge-shaped projections 19, 20, formed on or fixed thereto, mounted in said partitions, a collar 12 formed on or fixed to said bolt, a sleeve 13 loosely mounted on said bolt, a coil-spring 15 mounted on said bolt between said sleeve and collar, a series of brackets 27 carrying anti-friction rollers 29 located within said casing and adapted to engage said projections on the bolt, a clamp 21 which holds the weather-strip and carries the brackets 27, and vertical guides 24 engaging notches 26 in the inwardly-projecting flange 25 of said casing, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HUGH G. BATES.

Witnesses:
R. D. BURNS,
JOHN MILLER.