Sept. 22, 1931. C. G. JOHNSON 1,824,212

MOVABLE SEALING STRIP FOR DOORS

Filed April 12, 1928 3 Sheets-Sheet 1

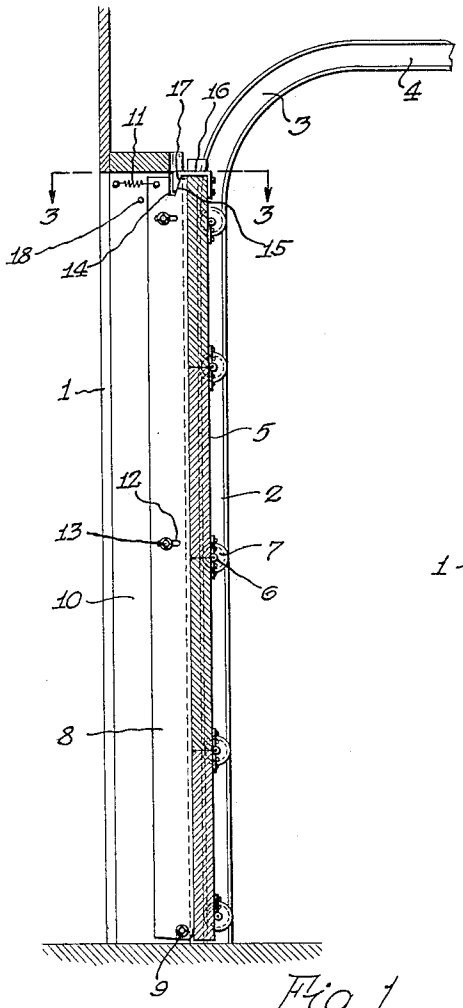

Fig. 1.

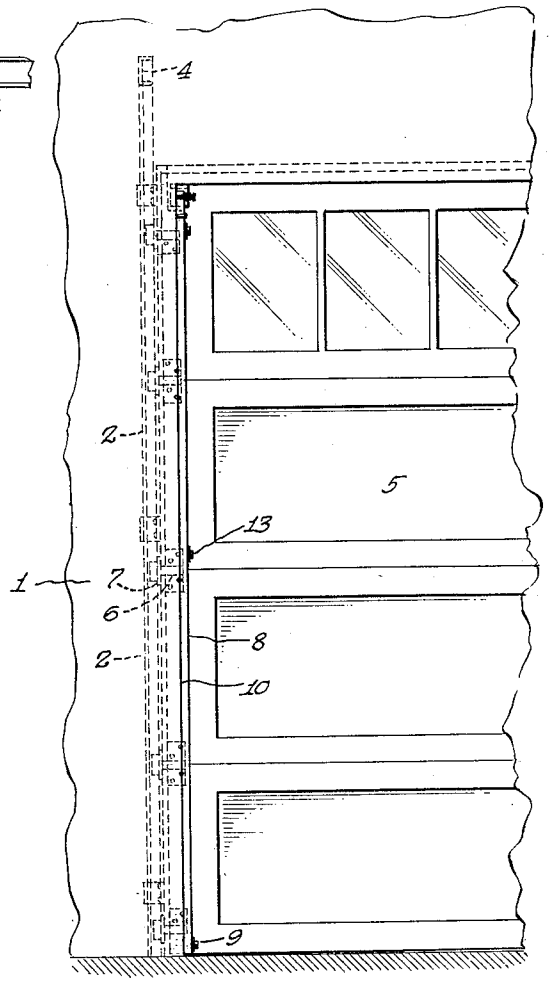

Fig. 2.

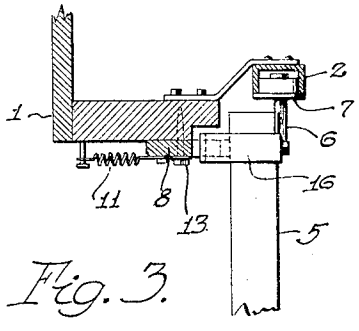

Fig. 3.

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MOVABLE SEALING STRIP FOR DOORS

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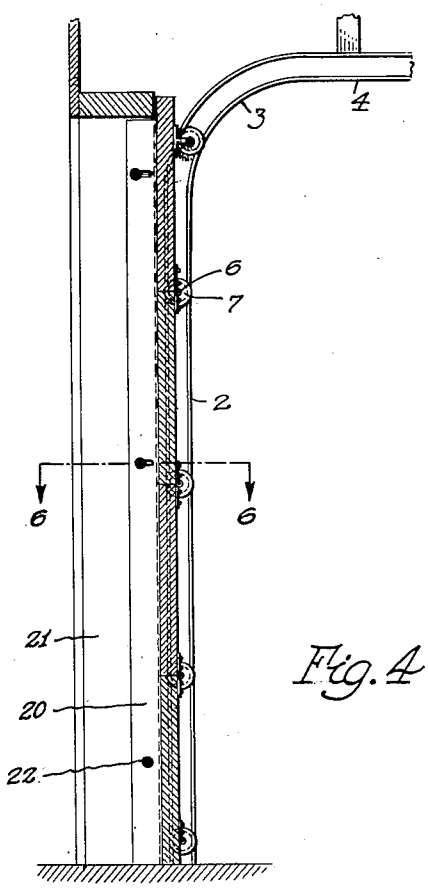

Fig. 4.

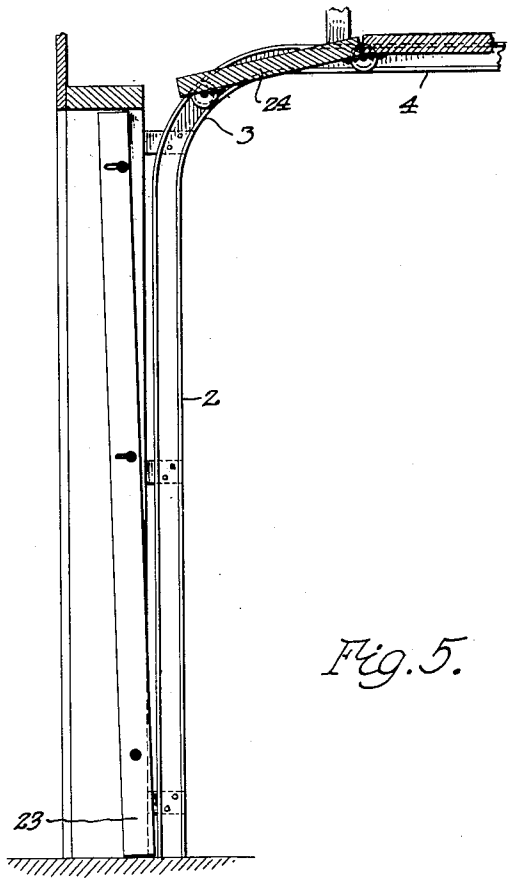

Fig. 5.

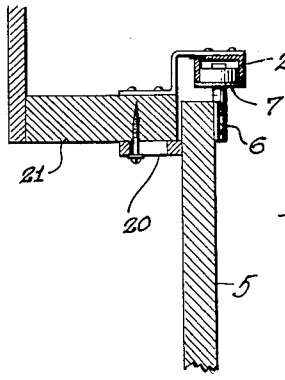

Fig. 6.

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MOVABLE SEALING STRIP FOR DOORS

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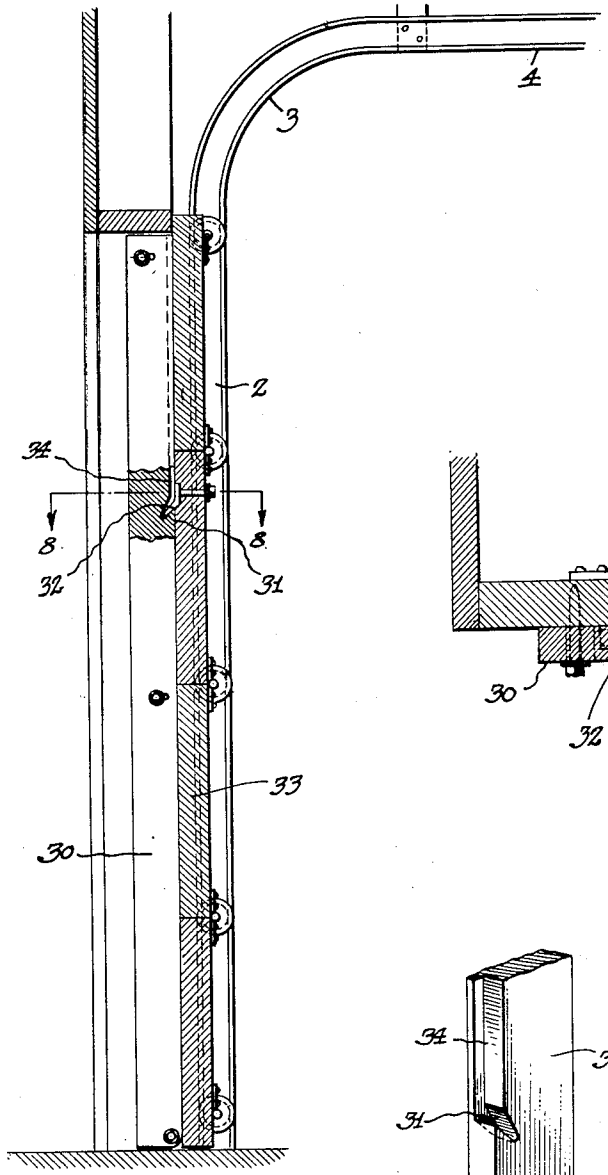

Fig. 7.

Fig. 8.

Fig. 9.

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Patented Sept. 22, 1931 1,824,212

UNITED STATES PATENT OFFICE

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MOVABLE SEALING STRIP FOR DOORS

Application filed April 12, 1928. Serial No. 269,474.

The present invention pertains to a novel movable sealing strip which is acted upon by a closure member such as a door or window for the purpose of sealing the lateral spaces between such member and the sides of the frame.

The principal object of the invention is to provide a construction of this character which operates automatically when the door is brought into closing position. The invention is herein described in connection with garage doors of the sliding type, wherein the door may be composed of hinged sections which roll on a track; but the principle of the invention is applicable also to closure members generally such as sliding doors and windows of various types.

The invention embodies movable sealing strips or moldings pivotally supported by the jambs or slides of the frame. They are positioned and mounted in such a manner as to permit swinging movement towards the door when in closing position, and the latter is provided with suitable means for drawing these members when it reaches the closing position. Springs are provided for normally retracting the sealing strips away from the door opening; and in one form of the invention the pivot point of the strips is an intermediate point, so that one end of each strip is drawn by the springs into the path of the door. When the door descends to its closing position, it engages this projecting end and tilts the major portion of the strip in the direction of the door opening so that the strip engages the door and has a sealing effect in conjunction therewith. In other embodiments of the invention the door carries brackets which have a wedge action in sloping notches cut in the strips, whereby the strips are drawn into contact with the door when the latter reaches its closing position.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings, in which—

Figure 1 is a vertical section of a door constructed according to the invention;

Fig. 2 is a front elevation thereof;

Fig. 3 is a section on the line 3—3 of Figure 1;

Fig. 4 is a vertical section of a modified form of door construction, showing the door in closed position;

Fig. 5 is a section in the same plane, showing the door raised to open position;

Fig. 6 is a section on the line 6—6 of Figure 1;

Fig. 7 is a vertical section of another modified construction;

Fig. 8 is a section on the line 8—8 of Figure 1; and

Fig. 9 is a fragmentary perspective view of one of the sealing strips, showing the notch in the strip and the path leading thereto for the movement and action of the actuating member.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

In Figures 1, 2 and 3, showing one embodiment of the invention, is illustrated a door frame 1 of usual construction provided at its vertical sides with vertical track sections 2. These sections are bent at their upper ends as at 3 and continued horizontally as at 4.

A door consisting of sections 5 hinged together at 6 is adapted to move on the track by means of rollers 7 extending therefrom and received in the track.

In order to effect the automatic sealing action already mentioned, I provide a pair of vertical sealing strips 8 with their lower ends pivoted as at 9 to the sides or jambs 10 of the door frame. Springs 11 extend from the upper ends of the strips to fixed points on the adjacent jambs and in this manner normally retract the strips from the plane which the door occupies when closed. At intermediate points on the strips are formed transverse slots 12 which receive headed pins 13 extending from the frame sides 10. The pins obviously maintain the strips in vertical position, and in conjunction with the slots 12, permit an arcuate movement thereof.

The upper end of each strip has a notch

14 formed with a sloped surface 15. The upper corners of the sliding door carry brackets 16 with sloped portions 17 adapted to engage the sloped walls 15 of the notches. The relation of these parts is such that when the door comes to closing position as shown in Figure 1, the interaction of the sloped members 17 and notches 14 swings the strips against the springs 11 into firm engagement with the closed door whereby the sides of the door opening are effectively sealed. When the door is lifted, the springs retract the strips, and this movement is limited by stop pins 18 fixed to the upper ends of the frame sides 10.

In the embodiment shown in Figures 4, 5 and 6, the strips 20 are pivoted to the frame 21 at points somewhat above the lower extremities thereof as indicated by the numeral 22. Consequently the lower ends 23 of the strips, i. e. those portions beneath the pivot points 22, are projected into the door opening when the lowest door section 24 in rising, strikes the upper ends of the strips as illustrated in Figure 5. When the door is lowered, the lowest section 24 engages the ends 23 and forces them inwardly of the door frame, as a consequence of which the strips are swung into engagement with the surface of the door.

Figures 7, 8 and 9 illustrate a further modification wherein each strip 30 has a sloped notch 31 cut in its outer edge above the mid point thereof. The support of the strips is similar to that shown in Figures 1, 2 and 3. Sloping brackets 32 carried by the sectional door 33 are adapted to enter the notches 31 by way of a groove 34 cut in each strip from the upper end thereof to the notch. When the bracket enters the notch, its action on the sloped wall of the notch draws the strip into firm engagement with the door.

Although specific embodiments of the invention have been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claims.

What I claim is:—

1. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips pivoted to the frame and normally disengageable from said member in the uncovering position of the latter, and means operable by said closure member for swinging said strips towards said member when the latter approaches closing position.

2. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips having one end pivotally connected to said frame and normally disengageable from said member in the uncovering position of the latter, and means carried by said member for swinging the strips towards said member when the latter approaches closing position.

3. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips having one end pivotally connected to said frame, and sloped members carried by said closure member and adapted to enter sloped notches in said strips for drawing the same towards the member when the latter approaches closing position.

4. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips pivoted to the frame and normally disengageable from said member in the uncovering position of the latter, means for swinging said strips towards said member when the latter approaches closing position, and means for limiting the swinging movement of said strips.

5. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips pivoted to the frame, and means for swinging said strips towards said member when the latter approaches closing position, said strips having transverse slots, and guide members fixed in said frame and passing through said slots, whereby to limit the swinging movement of said strips.

6. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips pivoted to the frame, means for swinging said strips towards said member when the latter approaches closing position, and means tending to retract said strips from said member.

7. In combination with a frame and a closure member slidably mounted to cover and uncover the frame, sealing strips pivoted to the frame, means for swinging said strips towards said member when the latter approaches closing position, and springs joining the free swinging ends of said strips to said frame for normally retracting the strips from said member.

In testimony whereof I affix my signature.

CLARENCE G. JOHNSON.