To all whom it may concern:

Be it known that I, RALPH W. CROSS, a citizen of the United States, and a resident of Tyler, in the county of Smith and State of Texas, have invented a new and Improved Weather Strip or Seal for Sliding Window-Sashes, of which the following is a full, clear, and exact description.

The object of this invention is to provide a weather strip which will effectually and automatically seal the meeting edges of the upper and lower sashes of windows wherein the sashes have a sliding movement with relation to each other in the window frame, for the purpose of opening and closing the window.

Weather strips designed to prevent the entrance of air about the sides of window sashes are quite common, but notwithstanding the presence of such strips, considerable air will be admitted between the meeting faces of the top and bottom sashes, and it is the purpose of this invention to provide an effective and automatic sealing of this space when the window is closed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which:

Figure 1 shows a side elevation of the ends of a pair of window sashes, and also shows a portion of the inclosing frame, the view being broken for convenience of illustration, and showing also the improved weather-strip and a latch for holding the upper sash from movement, and showing the parts in the position which they will have when the window is closed; Fig. 2 is a similar view to Fig. 1, showing the lower sash raised with relation to the upper sash sufficiently to release the latch holding the upper sash and preliminarily to the lowering of the upper sash; Fig. 3 shows the upper sash lowered; Fig. 4 is a perspective view of a portion of the upper sash, and illustrating the latch for the upper sash and a portion of one of the cooperating parts of the weather-strip, also showing a portion of the inclosing window frame; Fig. 5 is a perspective view illustrating the operation of the swinging blade member of the weather-strip, said member being broken away to show underlying parts; Fig. 6 is a front elevation of the blade member, and also showing in dotted lines the operating device for said member; Fig. 7 is a vertical sectional view through the top of the lower sash, and illustrating the connection thereto of the operating device for the blade member; and Fig. 8 is a top plan view of a portion of the top of the lower sash.

In the drawings, A shows a window frame, and B and B' an upper and lower window sash, all of which, except as hereinafter set forth, may be of any usual or ordinary construction, it being understood that the sashes B and B' have a movement along vertical guides b and b' in the frame A, and that they are supported by counter-balanced weights (not shown) attached to flexible connections b', which pass over pulleys b", and are confined within recesses in the frame A, all in a manner which is well known.

The weather-strip comprises two members, one of which will be designated as the groove member C, it having at its lower edge an up-turned flange c', forming a groove c', to receive the blade member, as will be hereinafter set forth. The groove member C is made of some suitable thin sheet metal, and it is of a length approximating the length of the bottom of the upper sash B, and is affixed to the front inclined face b", by means of screws or other fastening devices b". The blade member D is constructed of some suitable strong but resilient metal, and it is secured along its upper edge to the outer beveled face d' of the lower sash B' by means of screws d', or by any other suitable fastening means. The lower edge of the blade member D is entirely unattached, and is free to be forced outward away from the beveled face d' in order that its lower edge may enter the groove c' of the groove member C, as clearly shown in Fig. 1 of the drawings. The blade member D is of substantially the same length as the groove member C, and approximately of the length of the top of the lower sash B'.

It is intended that the blade member D shall be automatically moved outward away from the sash B' as the windows approach the closed position, so that the lower edge of the blade may enter the groove and effect the sealing of the space between the window sashes as the closing operation is completed, as shown clearly in Fig. 1 of the drawings.

To secure the automatic outward springing of the blade member D and its automatic return to a normal position, there are pro-
vided swinging levers E, which are pivoted at their lower edges by means of staples e, or by any other suitable pivotal means within a longitudinal groove or recess F formed in the beveled face d of the top of the lower sash B'. The levers E at the ends adjacent the ends of the top of the lower sash will be provided with rearwardly-extending arms e', arranged to be engaged by dogs or paws e, which are fastened to the window frame in the path of movement of the arms e' and at such a point as to cause the levers E to be tilted to force outward the lower edge of the blade D as the lower sash approaches the closed position. The side pieces of the lower sash will be provided with vertically-extending grooves e, to afford a clearance for the dogs e'. The foregoing arrangement is such that, the upper sash being raised, the lowering of the lower sash brings the arms e' into contact with the dogs e, and causes the levers E to swing about their pivots e and to spring away from the sash C' the blade D, so that its lower edge will fit into the groove e' of the groove member C, thus effectually sealing the space between the sashes, and preventing the entrance of air and dust particles. The raising of the lower sash automatically causes the blade D to resume its normal position.

Obviously it would be unwise, if not impossible, to lower the upper sash B until the lower sash had been moved upward sufficiently to permit the blade D to resume its normal or retracted position, and therefore there is provided a latch M for the upper sash, comprising a lever pivoted at m to the window frame A, and having at one end a down-turned toe m', arranged to fit into the sockets m of a latch plate m fastened to the front of the window sash B, at one side thereof. This lever M is automatically moved to cause its toe m' to engage the sockets m in the socket plate m, by means of a spring m, which is fastened at one end to a stud m and at its opposite end engages the lever or latch M. The lower end of the lever M is rounded upon its outer surface, and constitutes a cam, and when it is in locking engagement with the upper sash, this cam-like lower end m is in the path of movement of the upper edge of the lower sash, so that the raising of the lower sash sufficiently to cause it to engage the cam-like end m of the latch lever M, will result in the automatic withdrawal of the locking toe m from the latch plate m, and thereafter the upper sash may be lowered, or the lower sash raised to any extent desired.

The operation of the weather-strip, it is thought, has been sufficiently set forth in connection with the foregoing description of its construction and organization and a further description of its operation will be found unnecessary.

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

1. A weather-strip or seal for the meeting edges of sliding window sashes, comprising a strip of sheet metal bent upwardly at its lower edge attached to the inner face of the bottom of the top sash, a blade member attached to the outer face of the top of the lower sash, a pivoted cam carried by the lower sash and located beneath the blade member, an arm carried by said cam, and a dog located in the path of movement of said arm, to spring the blade member to cause it to engage the upturned end of the groove member.

2. In a weather-strip or seal for sliding window sashes, in combination, a groove member carried by one sash, and a blade member carried by the other sash, means to cause said blade member to engage the groove member as the window sashes are closed, a spring latch for automatically locking the sash carrying the groove member and having a cam-like part projected into the path of movement of the window sash carrying the blade member, to be engaged thereby, to automatically release the latch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RALPH WALDO CROSS.

Witnesses:
R. E. GASTON,
H. W. AUSTIN.