No. 882,593. PATENTED MAR. 24, 1908.

C. D. TABOR.

WEATHER STRIP.

APPLICATION FILED JULY 28, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

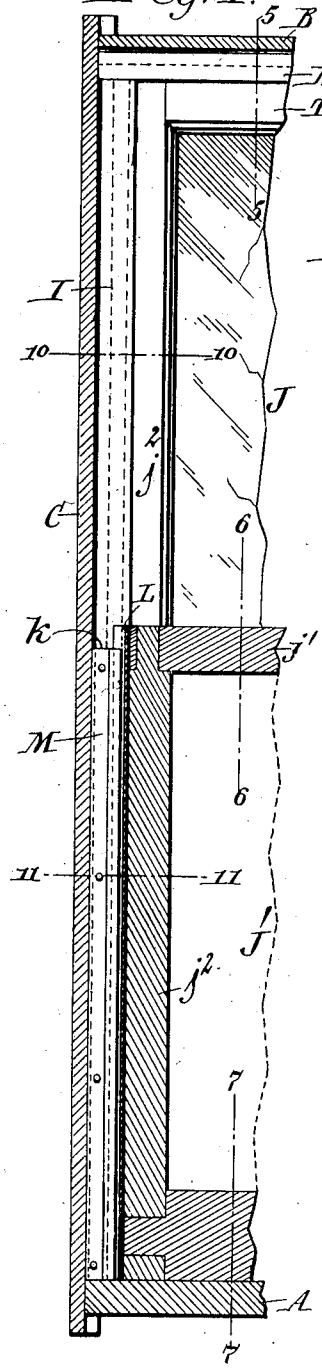



Fig. 4.

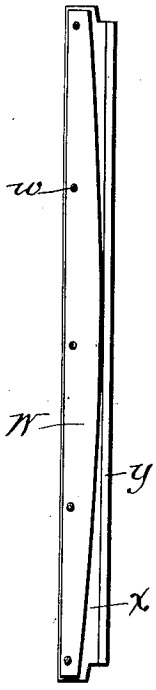



Fig. 2.

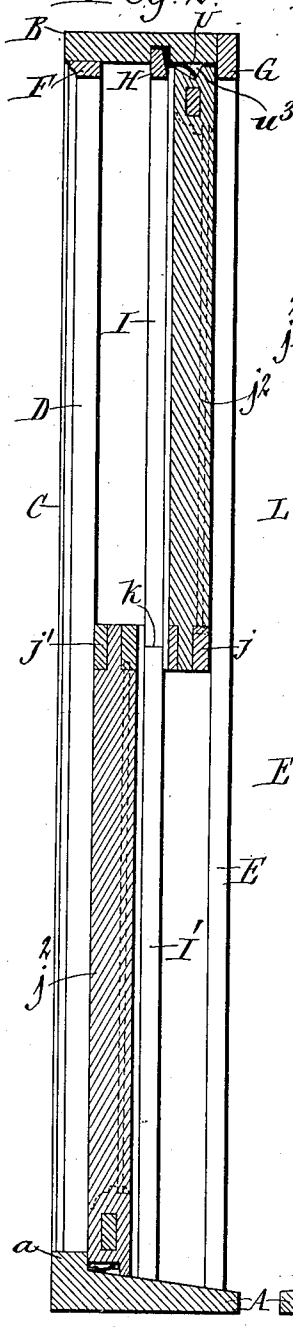
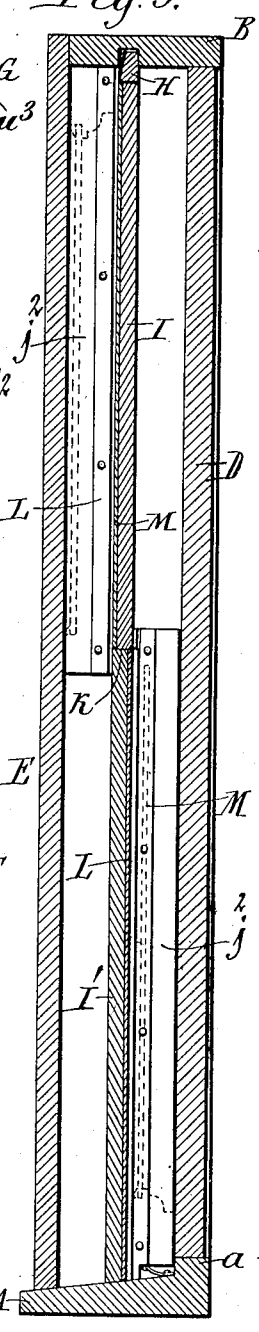



Fig. 3.




Witnesses.

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3 SHEETS—SHEET 2.

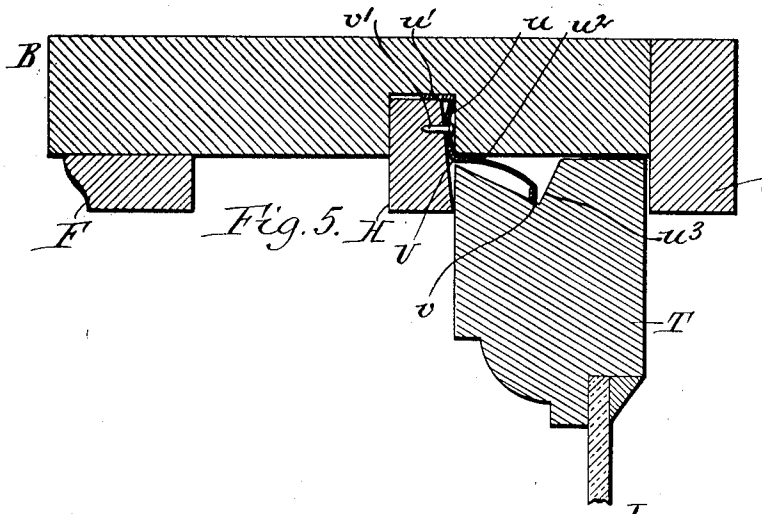



Fig. 5.

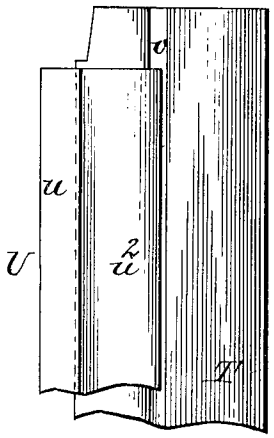



Fig. 8.

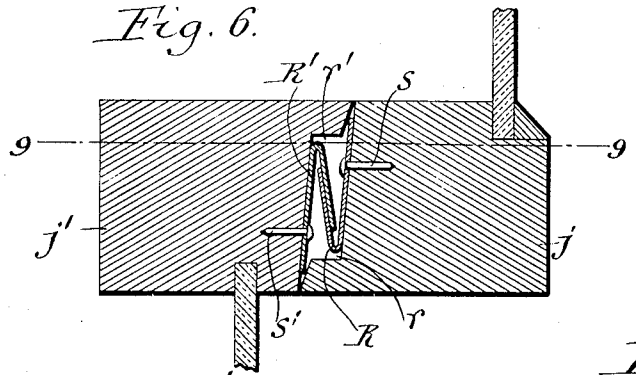



Fig. 6.

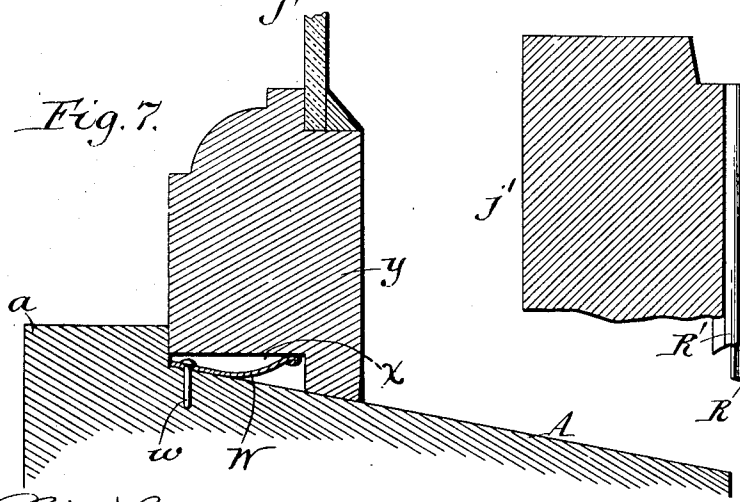



Fig. 7.

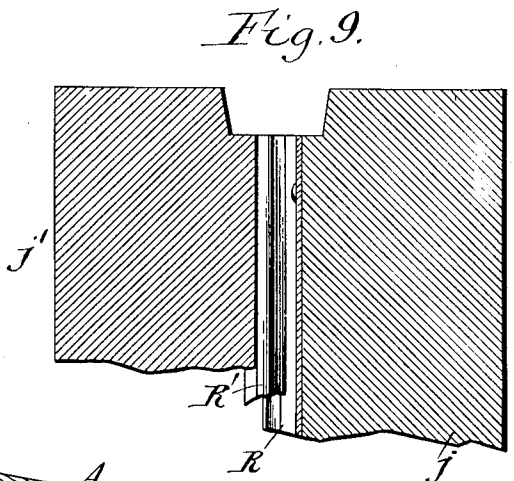



Fig. 9.

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3 SHEETS—SHEET 3.

Fig. 10.

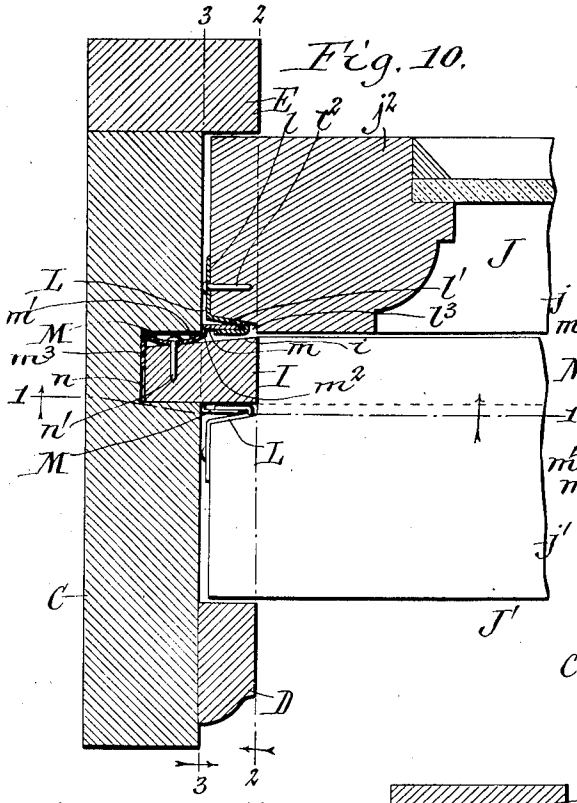



Fig. 11.

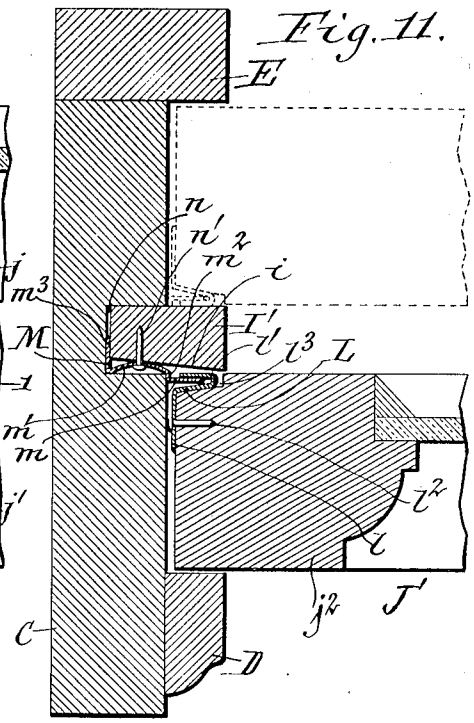



Fig. 12.

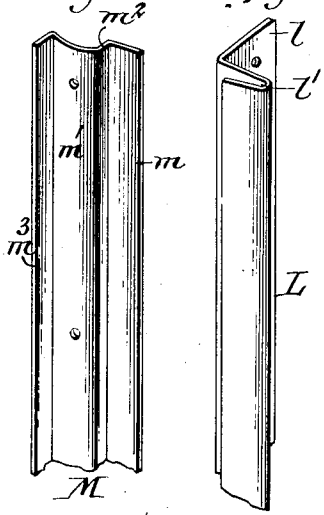
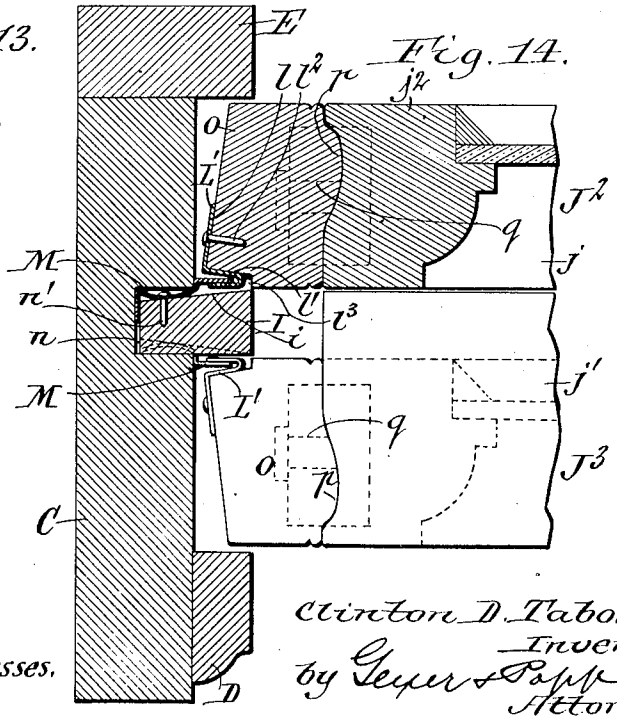



Fig. 13.




Fig. 14.




Witnesses,
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# UNITED STATES PATENT OFFICE.

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## WEATHER-STRIP.

No. 882,593. Specification of Letters Patent. Patented March 24, 1908.

Application filed July 28, 1904. Serial No. 218,512.

*To all whom it may concern:*

Be it known that I, CLINTON D. TABOR, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Window-Guards, of which the following is a specification.

This invention relates to a guard or closure for producing a weather tight joint between the sashes and the frame of a window.

It is the object of this invention to produce a guard for this purpose which is simple in construction and efficient in operation and which will not interfere with the free movement of the sash.

In the accompanying drawings consisting of 3 sheets: Figure 1 is a fragmentary vertical section, on a reduced scale, parallel with the plane of the sash taken in line 1—1, Fig. 10, showing the guard applied to a window in which the sashes are capable only of a vertically sliding movement in the frame. Figs. 2 and 3 are vertical cross sections, on a reduced scale, taken in lines 2—2 and 3—3, Fig. 10, respectively. Fig. 4 is a detached bottom view of the lower sash showing the lower weather strip bearing against the same. Figs. 5, 6 and 7 are fragmentary vertical sections, on an enlarged scale, in lines 5—5, 6—6 and 7—7, Fig. 1, respectively. Fig. 8 is a fragmentary top plan view of the upper sash and the top weather strip bearing against the same. Fig. 9 is a fragmentary horizontal section in line 9—9, Fig. 6. Figs. 10 and 11 are horizontal sections, on an enlarged scale, in lines 10—10 and 11—11, Fig. 1, respectively. Figs. 12 and 13 are fragmentary perspective views of a pair of coöperating strips for producing a tight joint between the sash stiles and the frame jambs. Fig. 14 is a horizontal section similar to Fig. 10, showing my improved weather guard applied to a window in which the sashes are capable of both a vertically sliding and a rotary movement in the frame.

Similar letters of reference indicate corresponding parts throughout the several views.

The window frame shown in the drawings comprises a bottom or sill A having a stool *a*, a top or head B, sides or jambs C, inner and outer stops D, E applied to the jambs, and inner and outer stops F, G applied to the head. The head of the frame is provided intermediate of its inner and outer stops with a parting or check stop H which may be constructed in one piece and each of the jambs has a parting or check stop constructed of upper and lower sections I, $I^1$. J represents the upper or outer sash which is guided at its edges in the channels or ways formed on the frame between the parting and outer stops and $J^1$ the lower or inner sash which is guided in the channels or ways formed on the frame between the inner and parting stops thereof. The division or joint between the upper and lower sections of each side parting stop is preferably arranged at the junction of the meeting rails $j$, $j^1$ of the sashes when the same are closed, as shown at $k$ in Figs. 1, 2 and 3.

That part of the guard which produces a weather tight joint between each sash stile $j^2$ and the adjacent jamb of the frame consists of two coöperating strips or members L, M. The strip L is carried by the sash stile and constructed of sheet metal which is bent to form an attaching or base flange $l$ and a channel $l^1$ arranged at right angles to the flange and opening outwardly adjacent to the inner end of the attaching flange. The strip L has its flange $l$ secured to a vertical edge of one of the sash stiles by nails $l^2$ or otherwise, and its channel arranged in a rabbet $l^3$ formed on that vertical corner of the respective stile which faces the adjacent parting or check stop of the frame. When thus attached to the sash stile the open side of the channel $l^1$ of the stile strip faces inwardly or toward the adjacent jamb. Each of the jamb strips M is likewise constructed of sheet metal so as to form a longitudinal tongue $m$, an attaching or base web $m^1$ arranged in rear of the tongue and connected at its front edge by a shoulder or off-set $m^2$ with the tongue, and a flange $m^3$ arranged at the rear edge of the web and projecting in a direction opposite to the shoulder thereof. The web of the strip M is arranged between the side of a parting stop and the adjacent side of the groove $n$ in the jamb which contains said stop, its flange $m^3$ is arranged between the back of this stop and the bottom of said groove, its shoulder $m^2$ engages with the adjacent corner of said groove and its tongue $m$ projects outwardly into the channel of the stile strip, as shown in Figs. 10 and 11. The jamb strips are preferably secured to the parting stops by nails $n^1$ passing through the webs thereof. The channels of the upper sash are arranged on the inner side of its stiles while the channels of the lower sash are arranged on the

outer side of its stiles, whereby the companion stiles of the sashes on the same end of the window have their channels brought on opposite sides of the intervening parting stop of the adjacent jamb. Each of the stile strips is preferably of the same length as the stile to which it is attached. The jamb strips which coöperate with the stile strips of the upper sash are arranged on the outer side of the upper sections of the jamb parting stops and are of the same length as said sections but the inner side of these stop sections are not provided with such strips. The jamb strips which coöperate with the stile strips of the lower sash are arranged on the inner side of the lower sections of the jamb parting stops and are of the same length as these sections but the outer sides of these sections are not provided with such strips.

When the jamb and stile strips are in their operative position, the tongues and channels thereof are interlocked and arranged substantially parallel with the plane or side of the sash, whereby a weather tight joint is produced between the sash and frame, while permitting the sash to slide vertically and also to move freely toward and from the jamb without pulling on the parting stop, thereby avoiding the tendency to displace the same which otherwise would be liable to occur. By securing the jamb strips to the parting stop sections and interlocking the stile strips therewith in the manner described, these strips also serve to hold the parting stop sections in the grooves of the jambs. In order to provide the necessary space between each parting stop section and the opposing wall of the jamb groove for accommodating the web of the respective jamb strip, the inner part of each parting stop section is reduced, preferably by beveling that side of the parting or check stop from its front edge toward its rear edge, as shown at *i* Figs. 10, 11 and 14. The upper sections of the jamb parting stops are beveled in this manner on their outer sides while those of the lower sections are beveled on their inner sides. By thus beveling the upper and lower sections of the parting stops, respectively, on opposite sides their front edges or faces are not reduced, thereby rendering the faces of each pair of stop sections uniform and even in appearance.

For the purpose of properly filling the space between the beveled side of each parting stop section and the opposing wall of the jamb groove, the web of the respective jamb strip is curved so that it bears at its crown against the beveled side of the stop and at its ends against the opposing side or wall of the jamb groove, as shown in Figs. 10 and 11. The jamb strip is preferably so bent that upon introducing the same with the parting stop section into a jamb groove the web will be deflected or sprung and put under tension which causes the parting stop section to be held firmly against rattling. By engaging the rear flange of the jamb strip with the rear edge of the parting stop this flange serves as a gage for nailing the strip on the parting stop in position to properly coöperate with its stile strip. In assembling the sash and the jamb parting stops of the window when thus equipped with my improved guard, the upper sections of the jamb parting stops are first placed in the grooves of the jambs after which the upper sash is passed outwardly underneath said sections into the outer guide ways of the frame and then moved upwardly for engaging its stile strips with the upper jamb strips. It is possible to thus move the upper sash underneath the upper stop sections inasmuch as the joint between the parting stop sections is at the meeting rails of the sashes and the upper sash is usually somewhat shorter than the lower sash. One of the lower parting stop sections is now put in place and then the inner or lower sash is engaged at one end therewith and moved upwardly its fullest extent in the inner guide ways of the frame. Finally, the other lower parting stop section is placed in its jamb groove and then the inner sash is lowered so as to engage its stile strips with those on the lower sections of the jamb parting stops. When the inner sash is in its uppermost position its lower end extends a short distance below the joint between the stop sections. This however does not interfere with the placing of the final section of the parting stop inasmuch as this can be accomplished by taking advantage of the slight looseness between the parts and by slightly tilting or springing the final stop section while introducing its upper end behind the lower end of the inner sash. When inserting the parting stop sections in the grooves of the jambs the shoulders between the webs and tongues of the jamb strips serve as stops which engage the face of the jamb and determine the extent which the strip and stop can enter the jamb groove for causing the parts to coöperate properly.

If desired the nails which fasten the jamb strips to the parting stops may be omitted but it is preferable to employ the same because their use facilitates assembling of the parts. Furthermore, by connecting the jamb strips with the parting stops, these parts may be conveniently removed together from the frame to afford free access to the usual weight pockets in the jambs when the sash balancing weights require adjustment.

My improved construction of guard for securing a weather tight joint between the frame jambs and sash stiles is equally applicable to windows in which the sashes are mounted to rotate and also move vertically in the frame, a window of this character be-

ing shown in former patents granted to myself, for instance, No. 621,953, March 28, 1899. Such an application of my improved weather guard is shown in Fig. 14 in which O represents the hanger bars or strips which are arranged between the sashes $J^2$, $J^3$ and the frame. Each of these bars is arranged at its rear edge in a guide way of the frame while its front edge is provided with a rib $p$ which engages with a corresponding groove in the opposing edge of the sash. The sash and hanging bars are connected by horizontal pivot pins or bolts $q$ shown in dotted lines, which causes the bar and sash to move vertically together but permits the sash to tilt or turn on the bars. When the sash is thus tilted, the cam action of the coöperating rib and groove of the hanging bar and sash causes the bar to rock transversely in the guide way of the jamb in a well known manner. When these hanging bars are employed, channel strips $L^1$ are attached thereto in the same manner as in the construction of window previously described in which the sash stiles engage directly with the guide ways of the frame.

The construction of the guard for producing a weather tight joint between the meeting rails of the sashes is as follows: R, $R^1$ represent two similar weather strips each of which is constructed of sheet metal in the form of a channel. The opposing faces of the meeting rails are rabbeted as shown at $r$, $r^1$ so as to form a chamber between the same when both sashes are in their normal closed position. The rabbet on the meeting rail of the outer sash faces upwardly while that on the meeting rail of the inner sash faces downwardly. In each of these rabbets one of the channel weather strips is secured in such position that it coöperates with the strip of the other meeting rail for producing a weather tight joint between the meeting rails. The weather strip of the outer meeting rail has its channel opening upwardly and one of its flanges is secured to the bottom of its rabbet by nails $s$. The weather strip of the inner meeting rail has its channel opening downwardly and one of its flanges is secured to the bottom of its rabbet by nails $s^1$. When the meeting rail weather strips are in their proper position the front or unattached flange of each of these strips extends across or overhangs the path of the front flange of the other meeting rail strip. This arrangement of the meeting rail strips causes the same to engage each other upon closing both the inner and outer sashes, as shown in Fig. 6, and produces a weather tight joint between the same. By thus arranging the meeting rail weather strips in rabbets formed thereon, these strips are concealed and produce a neater appearance than when the same are exposed. Furthermore, this construction permits of spreading the flanges of each meeting rail strip so as to allow for greater variations in the distance between the sashes without liability of interfering with the proper engagement of these strips with each other upon closing both sashes.

A weather tight joint is produced between the top rail T of the upper or outer sash and the head of the frame by a guard which is constructed as follows: U Figs. 5 and 8 represents a top weather strip constructed of sheet metal to form an attaching web $u$, a gage flange $u^1$ arranged at the rear edge of the attaching web, a wing $u^2$ arranged at the front edge of the attaching web and projecting in a direction opposite to said gage flange and a bearing flange $u^3$ arranged at the free end of the wing. The web of the top strip is arranged between the outer side of the top parting stop H and the opposing wall of the groove in the head containing said stop, its gage flange engages over the top of the stop, its wing curves outwardly and downwardly between the head of the frame and the upper sash, and its bearing flange projects downwardly and is arranged in line with a rabbet $v$ formed on the upper edge of the top rail. The web is fastened to the top parting stop by nails $v^1$ so that the same goes with this stop upon applying or removing the same from the groove in the head of the frame. In order to provide the necessary space for receiving the web of the top weather strip the upper or rear part of the top parting stop is reduced in thickness this being preferably effected by beveling the outer side of this stop from its front edge to its rear edge, as shown in Fig. 5. The web is preferably curved and bears at its crown against the top stop while its ends bear against the opposing wall of the groove containing the top parting stop. This web is slightly sprung into place so as to produce a snug fit between the parts which prevents rattling. The face of the top parting stop thus retains its full width so that it is uniform with the face of the parting stops of the jambs.

During the last part of the upward or closing movement of the upper sash the upper rabbet thereof engages the bearing flange of the top weather strip and causes its wing to gradually roll or straighten out against the head of the frame, thereby producing a tension on this strip which causes the same to produce a perfectly tight joint between the top rail of the upper sash and the head of the frame. By engaging the flange at the free end of the wing with a rabbet on the top rail any dust, rain or wind entering between the upper sash and the frame is directed over the top of the wing toward the base thereof where the course of the weather is checked and turned back, thereby rendering the joint between the sash and frame at this place absolutely weather proof.

The means for securing a weather tight joint between the frame sill and the lower sash in the closed position of the latter are as follows: *w* represents a bottom weather strip which is constructed of sheet metal and which is secured along its inner edge to the sill adjacent to the outer side of its stool *a* by nails *w* and gradually curves upwardly toward its outer edge. The latter is adapted to engage with an inwardly-facing rabbet *x* on the underside of the lower rail *y* of the inner sash. During the last part of the downward movement of the lower sash its rabbet *x* engages with the free outer edge of the bottom strip and gradually rolls or straightens the same downwardly against the sill. By providing a rabbet in the bottom rail for the bottom strip to engage with the incoming weather, such as wind, dust and rain, is prevented from passing over the free edge of the bottom weather strip but is directed underneath the same toward the base of the strip where the weather is effectually checked and turned back, thereby rendering this joint perfectly weather proof.

It has been found in practice that the free edge of the bottom weather strip when perfectly straight is liable to bear unevenly against the bottom rail and prevent rendering this joint tight. In order to overcome this the free edge of the bottom weather strip is curved convexly from its central part toward opposite ends, as shown in Fig. 4. When thus constructed the central part of the bottom weather strip is engaged first by the bottom rail upon closing the lower sash and then this rail during the continued downward movement of this sash gradually extends its engagement with the bottom weather strip toward opposite ends thereof, thereby insuring a continuous contact of this weather strip throughout its length with the bottom rail when the lower sash is fully closed and effectively excluding the weather at this place.

I claim as my invention:

1. A window guard comprising a stop arranged in a groove in the frame and having its rear part reduced and a weather strip arranged between said reduced part of the stop and the opposing wall of said groove, substantially as set forth.

2. A window guard comprising a stop arranged in a groove in the frame and having its rear part reduced by beveling one side thereof from its front edge to its rear edge, and a weather strip arranged between the reduced part of the stop and the opposing wall of said groove, substantially as set forth.

3. A window guard comprising a stop seated in a groove in the frame and a weather strip having a curved web arranged between said stop and the frame, substantially as set forth.

4. A window guard comprising a stop seated in a groove in the frame and having its rear part reduced, and a weather strip having a curved web arranged between the reduced part of said stop and the opposite wall of said groove, substantially as set forth.

5. A window guard comprising a stop seated in a groove in the frame and having its rear part reduced, and a weather strip constructed of sheet metal to form a curved web, a flange at the rear edge of the web and a shoulder at the front edge of the web, the web of said strip bearing at its crown against the reduced part of the stop and its opposite edges bearing against the opposing wall of the groove while said flange bears against the rear edge of said strip and said shoulder bears against the outer side of said frame, substantially as set forth.

6. A window guard comprising two coöperating weather strips one of which consists of a flange secured to the edge of the sash and a channel arranged in a rabbet on the side of the sash and the other consisting of a curved web arranged between a stop and the wall of a groove in the frame which receives the stop, a flange arranged at the rear edge of the web and bearing against the rear edge of the stop, a shoulder at the front edge of the web and bearing against the frame, and a tongue extending from said shoulder into said channel, substantially as set forth.

7. In a window guard, the combination of a frame, an upper sash, a lower sash, a parting stop arranged on the frame between the sashes and composed of upper and lower sections, the upper section being beveled rearwardly on its outer side while the lower section is beveled rearwardly on its inner side, a pair of coöperating weather strips having its members arranged respectively on the upper sash and between the beveled side of the upper stop section and the frame, and another pair of coöperating weather strips having its members arranged respectively on the lower sash and between the beveled side of the lower stop section and the frame, substantially as set forth.

Witness my hand this 6th day of June, 1904.

CLINTON D. TABOR.

Witnesses:
THEO. L. POPP,
EMMA M. GRAHAM.