

Oct. 14, 1941.

E. C. SWANSON

2,259,008

WEATHER STRIPPING

Filed Oct. 22, 1938

2 Sheets-Sheet 1

Fig. 1.

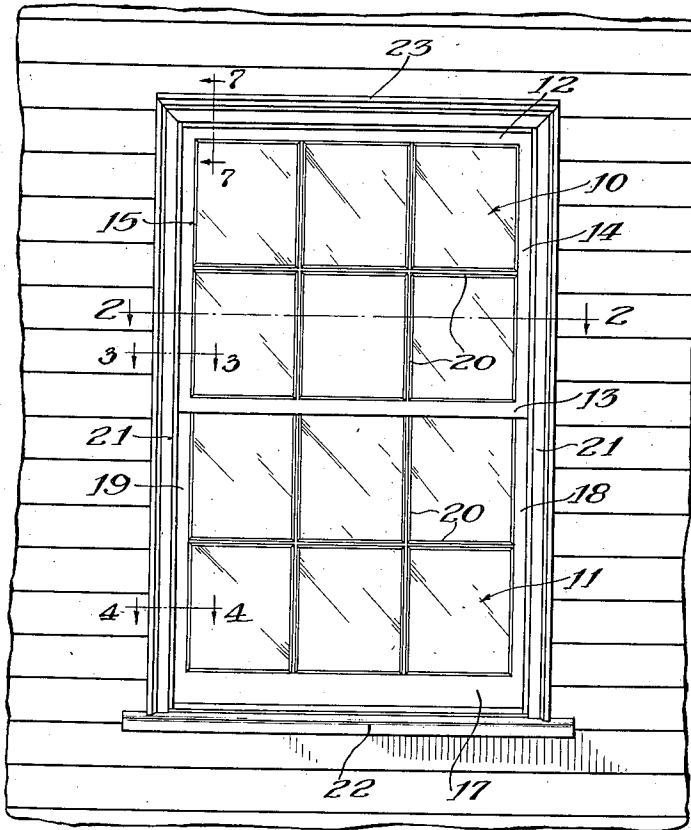
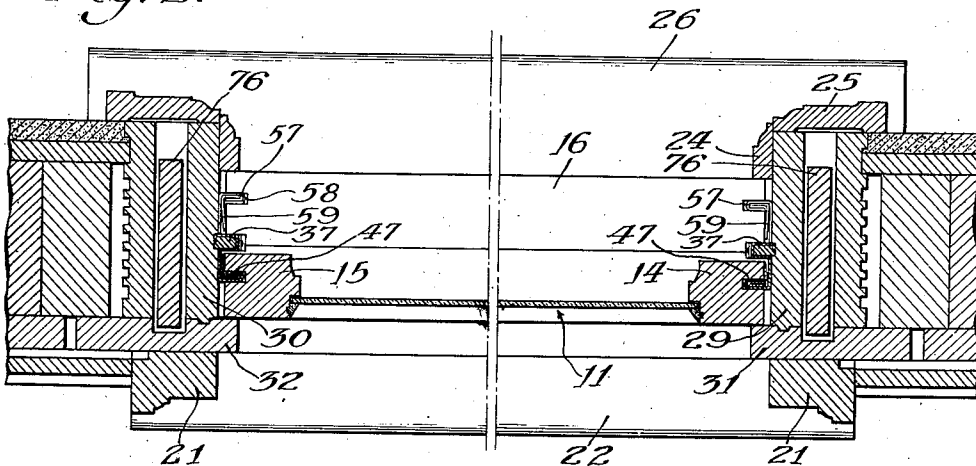


Fig. 2.



Inventor:  
Earl C. Swanson  
By: *Harold Olson*  
Attorney.

Oct. 14, 1941.

E. C. SWANSON

2,259,008

WEATHER STRIPPING

Filed Oct. 22, 1938

2 Sheets-Sheet 2

Fig. 3.

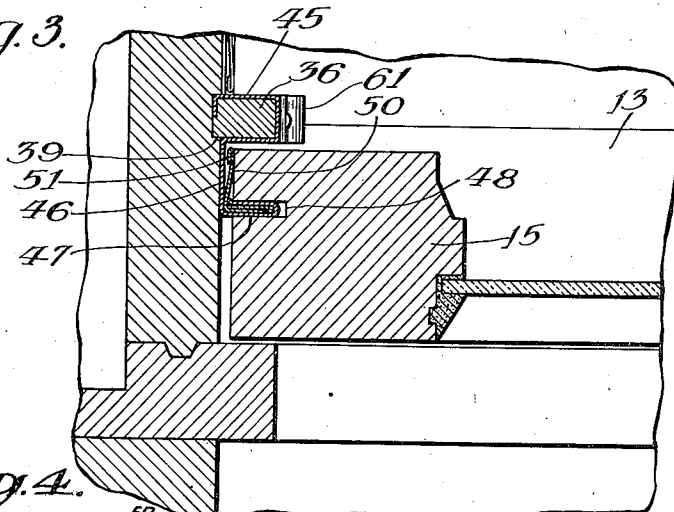


Fig. 6.

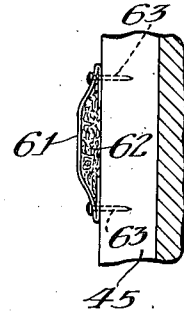


Fig. 4.

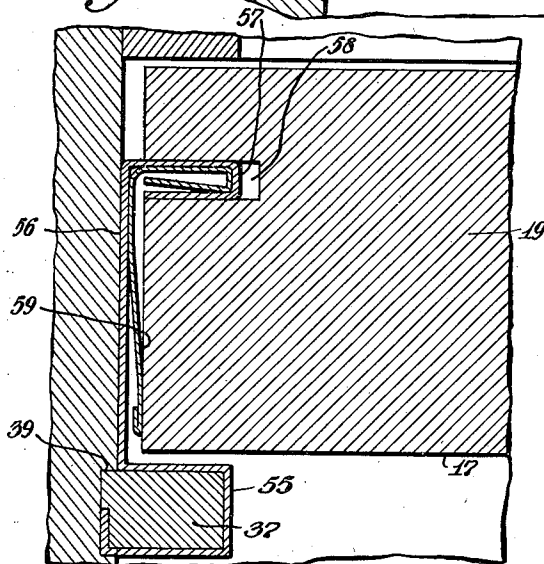


Fig. 5.

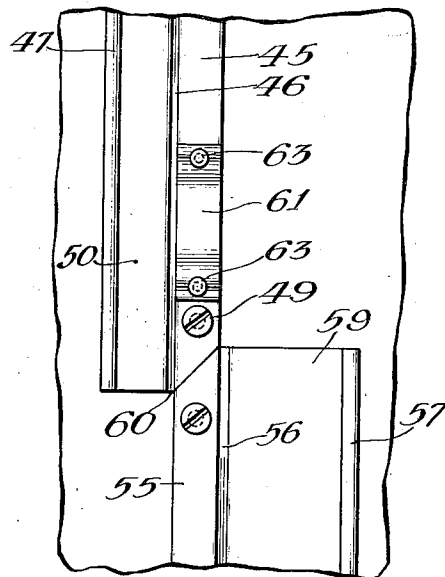


Fig. 7.

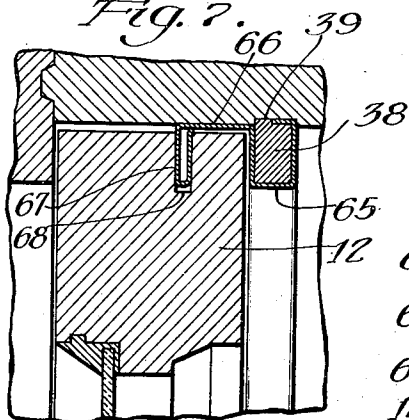
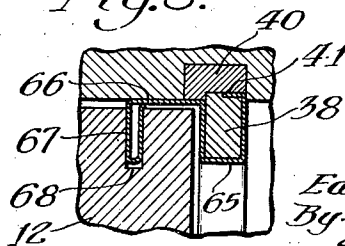


Fig. 8.



Inventor:  
Earl C. Swanson,  
By: Harold Olson  
Attorney.

## UNITED STATES PATENT OFFICE

2,259,008

## WEATHER STRIPPING

Earl C. Swanson, Bayport, Minn., assignor to  
Andersen Corporation, Bayport, Minn., a cor-  
poration of Minnesota

Application October 22, 1938, Serial No. 236,475

4 Claims. (Cl. 20—52)

My invention relates to improvements in weather stripping for windows of the sliding sash type generally called double hung windows.

My invention aims to provide a more satisfactory construction than any heretofore devised insofar as I am familiar with the art. Broadly stated, my invention has for its object to provide a simple and effective weather stripping which combines many of the advantages of other structures heretofore devised but without their disadvantages.

My invention contemplates essentially a unitary weather strip so constructed and arranged that one part will interlock with the sash and another bear by spring pressure against the sash stile.

A further object of my invention is to provide a weather strip which may be easily installed in the window frame and which will permit ready insertion of the sashes into, and their removal from, the frame.

Still another object of my invention is to provide a two-piece parting stop for a window frame, each piece having secured to it the weather stripping for one of the sashes.

A specific object of the invention is to provide a weather strip for the side of a sliding sash comprising a channel-shaped member adapted to cover the parting stop and having a wing member extending laterally therefrom which is provided at its extremity with a rib adapted to interlock in a groove in the sash stile. Together with this part of the structure, I also provide a spring tension member adapted to bear against the sash stile.

Further objects of the invention and the advantages thereof will be more fully brought out as the description proceeds.

In the accompanying drawings I have illustrated a practical embodiment of my invention. For clearness and to enable those skilled in the art to make and use my invention I have shown the same in great detail both as to the construction of the window frame and its sashes as well as the weather stripping. But it is to be understood that I do not limit myself to the precise details of construction illustrated. This is particularly true with respect to the window frame and its sashes. It is to be understood, then, that my invention is not to be limited otherwise than as set forth in the appended claims.

In the drawings:

Fig. 1 is a front elevation of a double hung window embodying my invention;

Fig. 2 is a horizontal sectional view on a larger scale and taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary sectional view of the upper sash taken on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged fragmentary sectional view of the lower sash taken on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary elevation of a side jamb showing my two-piece parting stop with the weather strips in place and showing also the use of a check rail pad;

Fig. 6 is a fragmentary side elevation showing the check rail pad illustrated in Fig. 5;

Fig. 7 is an enlarged fragmentary vertical section through the top rail of the upper sash taken on the line 7—7 of Fig. 1 and illustrating the head weather strip; and

Fig. 8 is a fragmentary vertical sectional view like Fig. 7 showing a modification consisting in the use of a subparting stop provided with a groove to receive the weather stripped parting stop instead of forming the groove directly in the jambs as shown in the other figures.

Referring now to the drawings, I have illustrated in Fig. 1 a window embodying my invention as the same will appear to an observer standing outside and in front of the house. The window comprises an upper sash 10 and a lower sash 11 which are mounted for sliding movement in a frame presently to be described.

The upper or outer sash 10 includes a top rail 12, a meeting rail 13 and side rails or stiles 14 and 15.

The lower or inner sash 11 has a check rail or meeting rail 16, bottom rail 17 and side rails or stiles 18 and 19.

Each of the sashes may be divided into any desired number of light areas by the use of suitable muntin bars 20.

As seen from the outside, the window includes outer casing members 21, a sill 22 and, if desired, a water drip 23.

Upon the inside of the window I provide the usual inner stop 24 and inside casing or trim 25. I have also provided the customary stool 26.

The features thus far described are more or less standard features of window construction to which I make no claim in this application. The description of them is herewith included for the sake of completeness of disclosure only.

As heretofore stated, each of the sashes is mounted for vertical sliding movement in the window frame. The said frame comprises a head jamb (not shown), side jambs 29 and 30 and the sill 22 heretofore mentioned.

The frame also includes outside stops or blind

stops 31 and 32 and a head blind stop (not shown).

It will be understood that the channels in which the sashes slide are formed by the side jambs, the inside stops 24 and the outer stops or blind stops 31 and 32, together with a parting stop which will now be described.

In window frames as heretofore constructed, the side and head jambs are provided with what is generally called a parting stop which forms one side of the channels in which each of the sashes slides. In general, such parting stops as heretofore used comprise a single unitary piece of material such as a wood strip which is secured to its jamb in such a way as to define a channel or space on each side of it.

According to my invention, the parting stops for the side jambs are made in two pieces designated 36 and 37, the former being the upper half and the latter, the lower half. The parting stop 38 for the head of the frame is made in a single piece.

As will be seen particularly in Figs. 3, 4 and 7, the said parting stops are set into very shallow grooves 39 in their respective jambs. The reason for making these grooves very shallow will be more fully brought out when I come to describe the insertion of the sashes into the frame.

Instead of forming this very shallow groove for the parting stops directly in the jambs, I may provide a sub-parting stop 40 as particularly shown in Fig. 8. This sub-parting stop may be provided with a shallow rabbet 41 into which the parting stop may be set.

I will proceed now to describe the construction of the weather stripping at the sides of the frame. Considering, first, the upper sash as particularly illustrated in Fig. 3. I have secured to the half parting stop 36 a metal strip 45 which completely covers the parting stop and has a portion 46 extending laterally therefrom and is bent again to form a rib 47 which is adapted to interlock with the side rail or stile of the sash by entering a groove 48 formed therein. The weather strip may be of any suitable metal but for practical purposes should be non-corroding such as aluminum, bronze or zinc. Furthermore, the portion of the weather strip thus far described should be made of sufficiently heavy gauge metal to lend it substantial rigidity so that it will not be deformed in use. Metal of 8 or 9 gauge (.016" or .018") has been found in practice to satisfy all the requirements.

The strip 45 which is thus formed to completely surround and cover the parting stop is secured to the latter by means of suitable flat head screws 49 which also serve the purpose of securing the parting stop to the jamb. In practice these screws should also be made of non-corroding metal such as aluminum or bronze.

In addition to the interlocking weather strip thus far described, my invention includes also the use of a spring tension member arranged to bear against the side rails or stiles of the sash. This spring tension member is indicated in Fig. 3 by the reference character 50 and comprises a relatively thin spring metal strip which is secured to the rib 47 by inserting it in the space between the two parts of the heavier strip which form the rib 47. This lighter and, therefore, more resilient member 50 is also made of non-corroding metal such as aluminum or bronze. In order to prevent raw or sharp edges, the exposed edge of the strip 50 is suitably hemmed, as at 51.

It is to be noted that the spring member 50 is

secured to the rib 47 so that its free edge extends toward the parting stop 36. By so arranging the member 50 the greatest spring pressure is exerted against the sash stile at the point which is nearest the parting stop and thus eliminates any chance of vertical leakage of air or dust upwards along the sash.

The weather stripping for the lower sash is constructed in substantially the same manner as that for the upper sash. The details of construction are shown particularly in Fig. 4 in which the parting stop 37 is shown to be covered by the metal weather strip 55 which has a portion 56 extending laterally therefrom and which, in turn, is bent at its remote end to form the rib 57 which is located in the groove 58 of the sash stile. Here, again, I have provided a spring tension member 59 which is secured in the rib 57 and bears with its greatest pressure against that part of the sash stile which is nearest the parting stop 37.

As will be seen from Fig. 5, the strips 45 and 55 and the parting stops to which they are secured are so cut as to form a mitre joint, as at 60.

Thus, by looking at Fig. 5, it will be seen that the weather stripping for the sides of the sashes comprises in each instance a channel-shaped member which covers the parting stop and which has extending laterally therefrom a wing-like member provided at its extreme end with a rib for interlocking engagement with the sash stile. And in addition to the foregoing, there is provided a spring tension member for bearing against the stile.

To complete the description of the weather stripping at the sides, I also refer to the use of a check rail pad 61 shown in detail in Figs. 5 and 6. This pad comprises a thin resilient metal member such as aluminum or bronze bent into suitable shape to extend away from the parting stop and covering an inner filler member 62 of felt or other suitable compressible material. The check rail pad is secured to the parting stop by any suitable fastening means such as nails 63. As is well understood in the art, such check rail pads are used in order to make a tight joint between the ends of the check rails of the sashes and the parting stop.

I will now describe the weather stripping at the head of the window and which is illustrated in detail in Fig. 7. There it will be seen that the parting stop 38 is covered with a weather strip 65 so shaped as to substantially completely surround the parting stop and having a portion 66 extending rearwardly therefrom which, in turn, is bent over at its extremity to form a rib 67 which engages in a groove 68 formed in the top rail 12 of the upper sash. This strip 65 will be made of the same kind and gauge of metal as the strips 45 and 55 heretofore described.

In connection with the head weather strip it is neither necessary nor desirable to use a spring tension member. Such a member would have the tendency to push the upper sash downward in the frame or if made to press against the face of the top rail 12 would tend to bind the sash in closed position.

The sashes may be counterbalanced by suitable weights 76 which are connected to the sashes by sash cords, or chains, trained about the usual pulleys (not shown). Of course, any other method of counterbalancing may be employed as this feature has nothing to do with my weather stripping invention.

It will, of course, be apparent that no par-

tical difficulty will be encountered in installing the weather stripping for the head, the sill, and the check rails. To install the weather stripping for the sides, the two halves of the parting stop are inserted into the groove in the jamb, or the groove in the sub-parting stop, on one side of the frame, it being understood that the weather strip is attached to each half of the parting stop. It is necessary only to drive a very few screws, usually only three, for each half of the parting stop. The upper sash is now inserted and the parting stop for the upper half of the opposite side is put in place with the upper sash at the bottom of the opening. This is done by inserting the lower end of the last mentioned parting stop in its proper place and following through by pressing the top end into place and then fastening with the screws. To install the lower sash, it is first seated into the side where the parting stop has already been applied and then, with the lower sash held about in the center of the opening, the lower half of the parting stop for the other side is fitted into the stile of the sash. Thereupon the sash is swung into position with the result that the last mentioned parting stop snaps into place in the groove provided for it. Then the few screws are turned up. Because of the very shallow groove formed in the jambs, or in the sub-parting stop, it is not difficult to snap into place the half parting stop for the lower sash. It will also be noted that in applying this last mentioned parting stop with its weather strip, the weather strip may be pressed firmly against the stile by compressing the spring member against the wing member. Thus, substantial depth is provided for movement of the sash with the result that only a slight pressure is required to seat the parting stop in the groove.

Thus, it will be seen that I have provided weather stripping for a window which will insure to the greatest extent that it shall be air and dust-tight. The construction is simple and economical and is easily installed and removed by ordinary workmen without the use of special tools.

I claim as my invention:

1. The combination with a window frame for

sliding sashes having a parting stop forming one wall of the channel in which the sashes slide, of a weatherstrip having a portion fitting over said parting stop, a wing member extending laterally from said portion and into said channel, a rib at the outer edge of said wing member entering a groove in a sash stile, and a separate resilient member located between said wing member and the sash stile pressing against the latter.

2. The combination with a window frame for sliding sashes having a parting stop forming one wall of the channel in which the sashes slide, of a weatherstrip having a portion fitting over said parting stop, a wing member extending laterally from said portion and into said channel, a rib at the outer edge of said wing member entering a groove in a sash stile, and a separate resilient member located between said wing member and the sash stile and pressing against the latter, said resilient member having a free edge closely adjacent said parting stop.

3. A weatherstrip for a sliding sash mounted in a frame having a parting stop, comprising a portion secured to said parting stop, a wing member extending laterally therefrom and provided with a rib adapted to enter a groove in a sash stile, and a separate resilient member of lighter gauge than said wing member between said parting stop and said rib and adapted to bear against the side of said sash stile, said resilient member having one edge secured to said rib and the other edge free.

4. A weatherstrip for a sliding sash mounted in a frame having a parting stop, comprising a portion secured to said parting stop, a wing member extending laterally therefrom and provided with a rib adapted to enter a groove in a sash stile, and a separate resilient member of lighter gauge than said wing member between said parting stop and said rib and adapted to bear against the side of said sash stile, said resilient member having one edge secured to said rib and the other edge free, said free edge being closely adjacent said parting stop.

EARL C. SWANSON.