Oct. 18, 1949. W. LESCAZE 2,485,296

EXTERIOR SLIDING WINDOW

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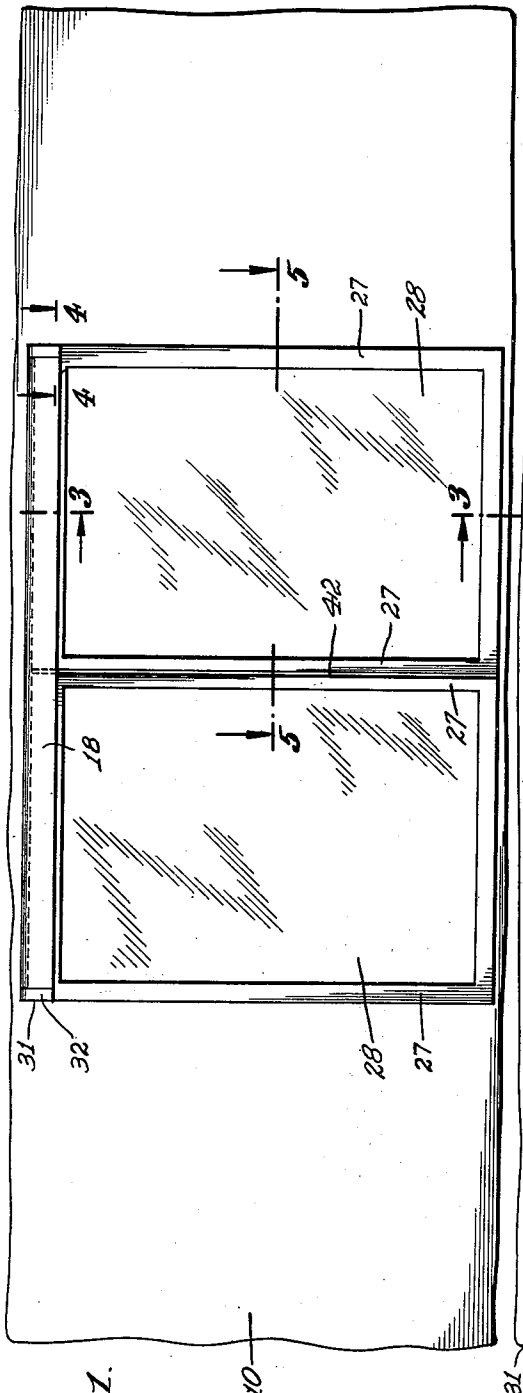


Fig. 1.

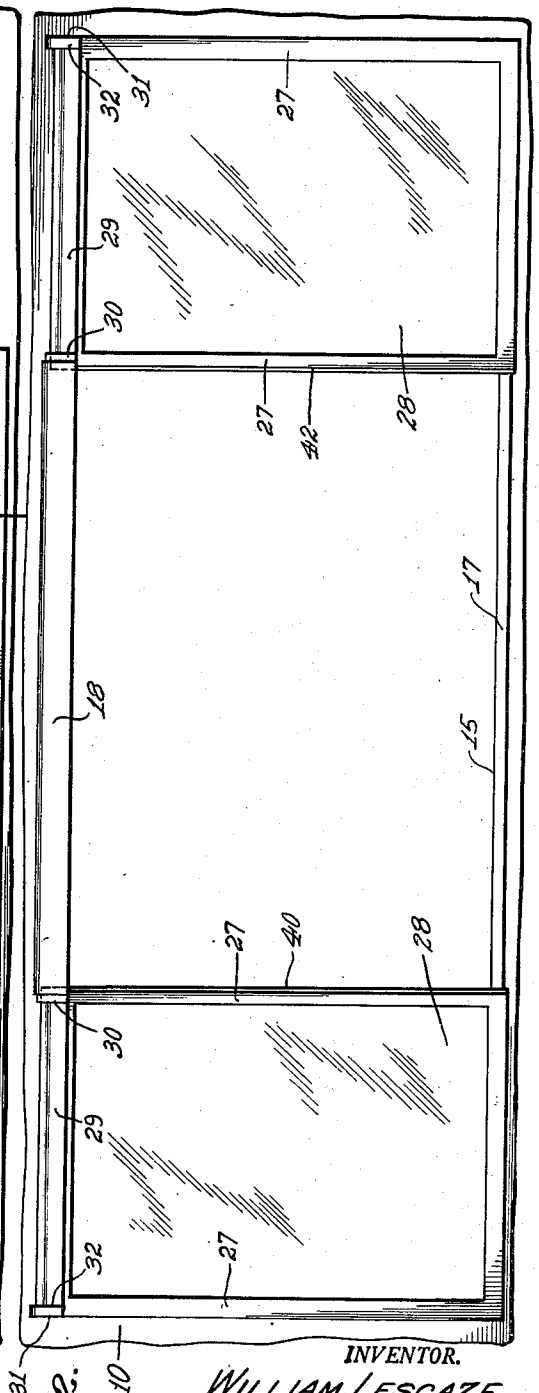


Fig. 2.

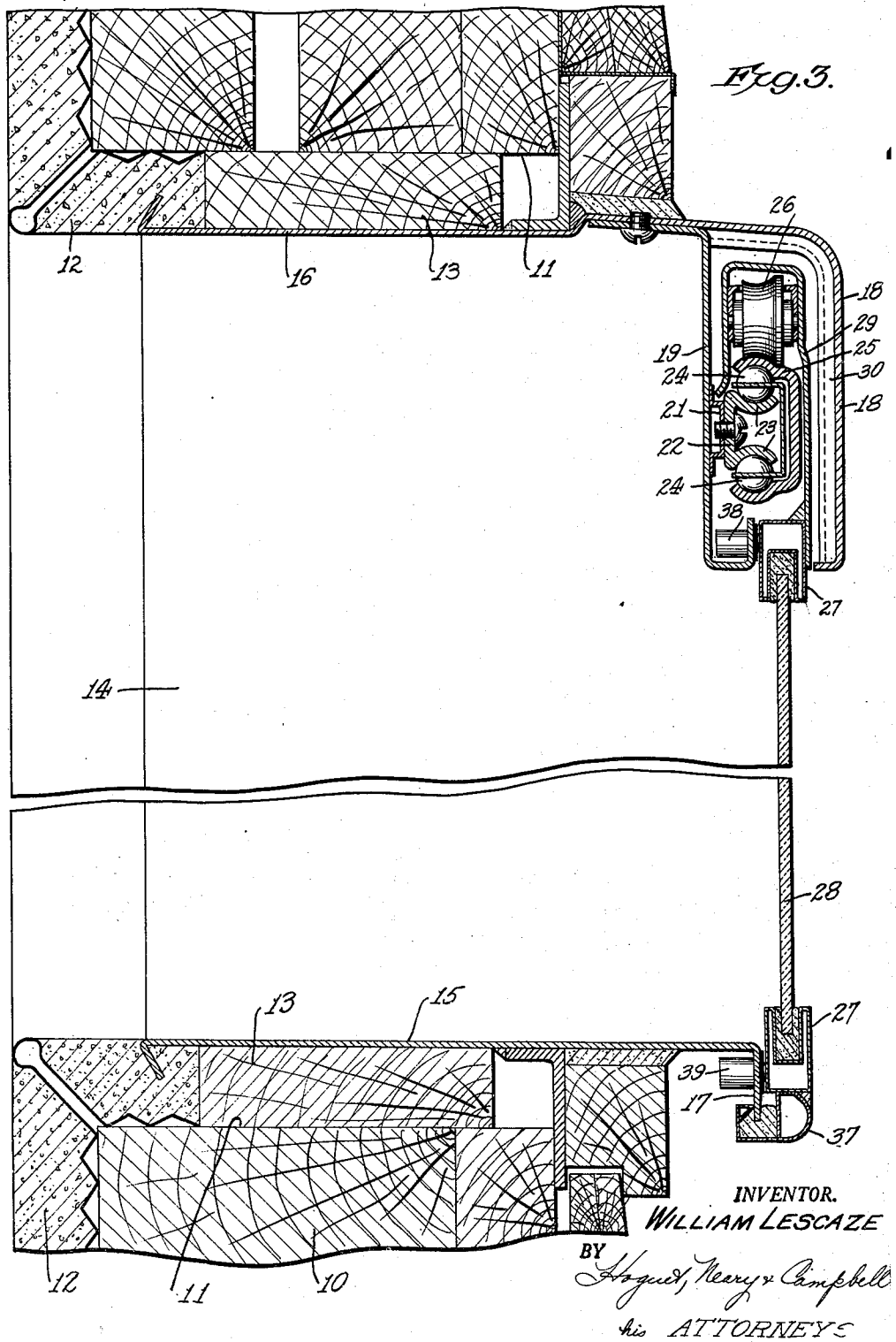
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EXTERIOR SLIDING WINDOW

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Fig. 3.



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Fig. 4.

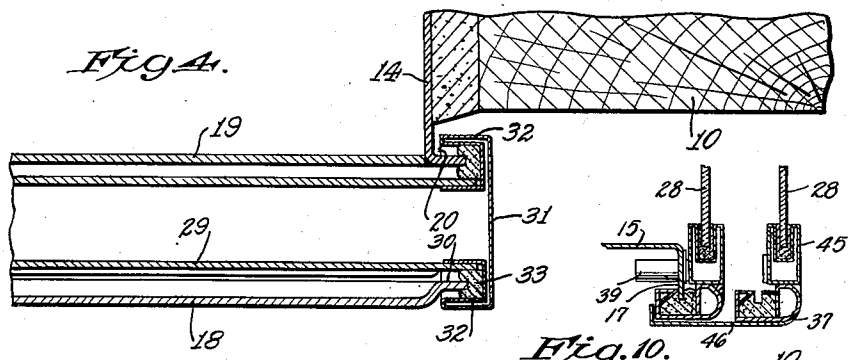
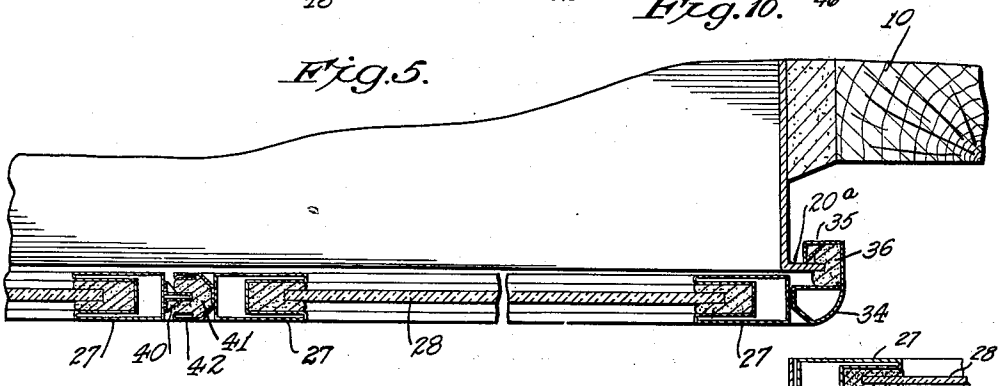


Fig. 10.

Fig. 5.



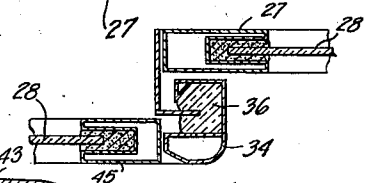


Fig. 11.

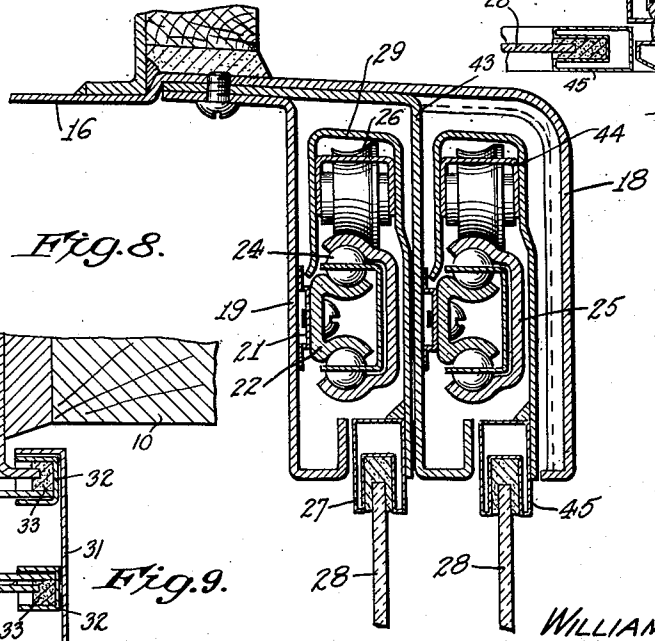


Fig. 8.

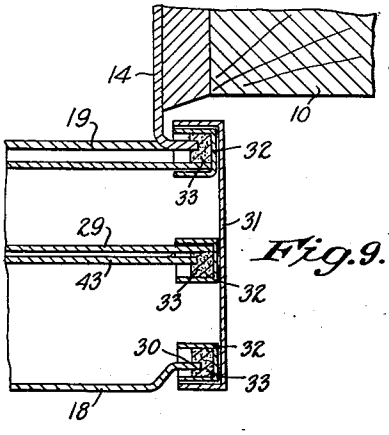


Fig. 9.

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EXTERIOR SLIDING WINDOW

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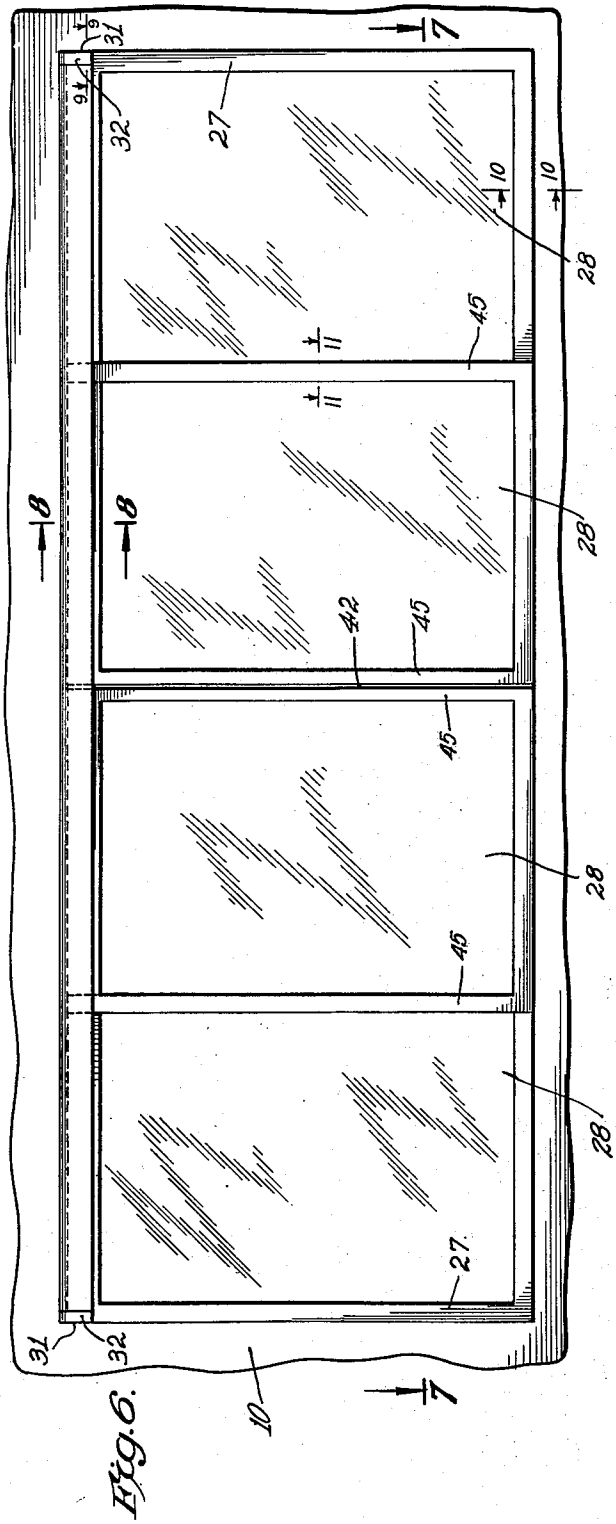


Fig. 6.

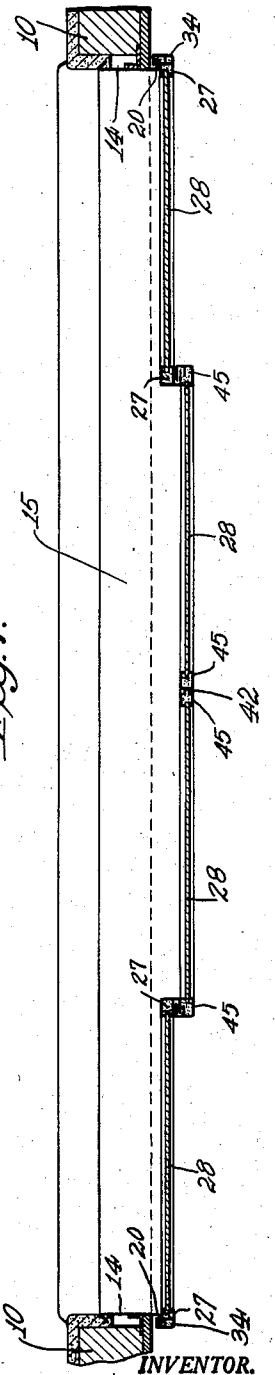


Fig. 7.

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UNITED STATES PATENT OFFICE

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EXTERIOR SLIDING WINDOW

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Application January 6, 1945, Serial No. 571,598

5 Claims. (Cl. 189—64)

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The present invention relates to windows and embodies, more particularly, a window structure adapted to be utilized with an opening to provide the entire area of the opening for ventilation purposes where the window is moved to the fully opened position.

More particularly, the invention relates to window structures of the sliding type, wherein full advantage is taken, for purposes of ventilation, of all of the available area of the opening in the building structure.

In sliding windows of the type now commonly used, certain disadvantages arise that are well known. The usual double hinge sliding window, for example, requires counter-weights or spring balances to maintain the sashes in an open or closed position, and less than one-half of the opening in the building structure is available for purposes of ventilation. Where the sashes are sliding in a common plane, the building structure has had to be designed to receive the sashes when the latter are slid into the fully open position.

An object of the present invention is to provide a sliding window structure, the sliding elements of which move in a plane other than that of the building structure.

A further object of the present invention is to provide a sliding window structure of the above character wherein the entire area of the opening in the building structure is made available for purposes of ventilation.

Yet another object of the invention is to provide a sliding window structure of the above character wherein the entire structure is provided as a unit and adapted to be mounted on the building structure without modification of the latter.

Another object of the invention is to provide a sliding window structure of the above character adapted to be mounted as a unit on the exterior of the building structure to make available the entire window opening in the structure for purposes of ventilation.

Further objects and advantages of the invention will appear as it is described in greater detail in connection with the accompanying drawings, wherein

Figure 1 is a view in front elevation of a window constructed in accordance with the present invention, the elements thereof being shown in the closed position;

Figure 2 is a view similar to Figure 1 showing the window sashes moved into the open position;

Figure 3 is a view in vertical transverse section taken on the line 3—3 of Figure 1 and looking in the direction of the arrows;

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Figure 4 is a view in horizontal section taken on the line 4—4 of Figure 1 and looking in the direction of the arrows;

Figure 5 is a view in horizontal section taken on line 5—5 of Figure 1 and looking in the direction of the arrows;

Figure 6 is a view similar to Figure 1 showing a modified form of window in which four sashes are provided to span the window opening;

Figure 7 is a view in horizontal section taken on line 7—7 of Figure 6 and looking in the direction of the arrows;

Figure 8 is a view in vertical section taken on line 8—8 of Figure 6 and looking in the direction of the arrows;

Figure 9 is a view in horizontal section taken along line 9—9 of Figure 6 and looking in the direction of the arrows;

Figure 10 is a view in vertical transverse section taken along the line 10—10 of Figure 6, looking in the direction of the arrows, when the window sashes are moved into overlapping position; and

Figure 11 is a view in horizontal section taken along line 11—11 of Figure 6 and looking in the direction of the arrows.

With reference to the above drawings and particularly Figures 1–5, a building structure is shown at 10 as being provided with a window opening, the edge of which is shown at 11. The interior of the building structure may be provided with plaster 12 and a stop or other element 13, of wood or other suitable material, is provided within the window opening.

In accordance with the present invention, a unitary window structure is provided consisting of a metal casing 14 forming a sill 15 and top piece 16. The sill 15 extends outwardly and is downwardly flanged at 17 to overhang the outer side of the building structure.

The top piece 16 also extends outwardly of the side of the building structure and is downwardly flanged at 18 to form a hood or cover member for the sash hanging mechanism to be described presently. The hood is completed by an inner plate 19 which is suitably secured to the top piece 16 and which serves as the supporting mechanism for the hanger.

As shown in Figures 4 and 5, the side walls of the casing 14 are formed with flanges 20 and 20a to enable the casing to be sealed when the sashes are in the closed position. The flanges 20 lie in the same plane as the plate 19 while the flanges 20a lie adjacent the inner edge of the sash. This sealing structure will be described more par-

ticularly hereinafter in connection with the sash structure.

In order that the sash may be slid from a closed to an open position, the hood 18 is provided with a telescoping hanger mechanism comprising a channel member 21 mounted on the plate 19. A U-shaped guide member 22 is secured to the channel 21 and formed with top and bottom guide tracks 23. Roller bearings 24 running in the tracks 23 support a track 25 upon which rollers 26 are adapted to run.

The sash consists of a frame 27 in which a glass plate 28 is mounted, the entire structure of the window preferably being of a suitable metal. The sash frame 27 is hung on the rollers 26 by means of a hanger 29 in which the rollers are journaled. The sash frame 27 may be secured to the hanger 29 by welding as indicated.

The details of the telescoping hanger structure are well known in the art and form no part of the present invention, this invention residing in the combination of elements forming the unitary sliding window structure herein described.

At each end of the hood 18, a reduced section 30 is formed, and the hanger 29 is provided with a sealing cap 31 having flanges 32 in which suitable sealing material 33 is provided. The reduced section 30 is received within the flanges 32, as seen in Figure 4, thus effectively sealing the interior of the hood when the sash is in its closed position.

The outer vertical edge of the sash frame 27 is provided with a sealing strip 34 having a flanged reentrant portion 35 forming a grove within which a suitable sealing material 36 is received. The flange 20a is adapted to be received within the groove to engage the material 36 in the closed position of the sash frame 27, thus effectively sealing the sash to the casing at the sides of the window when the window is closed.

The bottoms of the sash frames 27 are sealed to the flange 17 by means of a strip 37 which is similar to the strip 34, the flange 17 being sealed to the strip 37 similarly to the way in which flange 20a is sealed to strip 34. Spring pressed bullet plungers 38 and 39 in the plate 19 and bottom flange 17 urge the frame outwardly to maintain wiping engagement between the strips 34 and 37 and the stationary flanges on the casing at all times.

The meeting edges of the sash frames 27 are sealed by the structure shown in Figure 5. The left-hand sash frame 27 is provided with a rib 40 which engages sealing material 41 carried in a U-shaped strip 42 secured to the adjacent vertical edge of the right-hand sash frame 27. When the sash frames 27 are in a closed position, the rib 40 engages the sealing material 41 and seals the sashes together while in the position shown in Figure 5.

In the form of the invention shown in Figures 6 ,7, and 8, the window structure is such that the span of the window opening is closed by four sliding sashes instead of two, as in Figures 1–5. In this modification of the invention, the casing and manner of mounting it in the window opening is similar to that shown in Figures 1–5.

In order to accommodate the greater number of sashes, however, the hood 18 is formed with an intermediate plate 43 which is similar in structure to plate 19 and supports a second hanger 44 which is similar to the hanger 29. The hanger 44 supports a second sash frame 45, similar to the sash frame 27, thus providing two sliding sashes on either side of the window, as shown

in Figures 6 and 7. The hood may be sealed in the same manner as described above in connection with Figures 1, 2 and 4, inclusive. Thus, the hanger 44 may be provided with a cap similar to the cap 31 which is adapted to cooperate with suitable flanges formed on the hood 18 and the intermediate plate 43 to form an effective seal, as illustrated in Figure 9. A seal may be formed at the side edges of the inner and outer sashes when in a closed position by suitable cooperating flanges formed at the inner edges of the two outer sashes and at the outer edges of the two inner sashes, as shown in greater detail in Figures 7 and 11. The sashes may be closed at the bottom by the downwardly extending flange 17 which cooperates with strips 37 like the strip 37 in Figure 3, as illustrated in Figure 10. Flange 46 formed on strips 37 of the outer sashes is provided to position the outer sashes with respect to the inner sashes. To this end the flange 17 comprises three portions, two of which lie directly beneath the two outer sashes in Figure 7 and the third of which lies directly below the two center sashes in this figure.

It will be apparent that the details of the window structure, as well as of the sliding sash and related elements, may be varied considerably and various forms of sealing devices provided to seal the movable elements to one another and to the adjacent stationary elements, and the invention is not to be limited save as defined in the appended claims.

I claim:

1. A sliding window assembly comprising a casing adapted to be received in a window opening, a hanger carried by the casing exteriorly thereof, a window sash, means to mount the sash on the hanger, a hood covering the mounting means, and a cap on the hanger engaging one end of the hood when the sash is in a closed position to close the end of the hood.

2. A sliding window assembly comprising a casing adapted to be received in a window opening, a hanger carried by the casing exteriorly thereof, a window sash, means to mount the sash on the hanger, a hood covering the mounting means, and a cap on the hanger engaging one end of the hood when the sash is in a closed position to close the end of the hood, said cap having flanges overlying the end of the hood.

3. A sliding window assembly comprising a casing adapted to be received in a window opening, a hanger carried by the casing exteriorly thereof, a window sash having a frame, means to mount the sash on the hanger, means to mount the hanger slidably on the casing, flanges on the bottom and sides of the casing, and strips on said sash frame having flanges and grooves to receive the flanges on the casing to seal the sash to the casing when the sash is in the closed position.

4. A sliding window assembly comprising a casing adapted to be received in and line a window opening, outwardly extending flanges on the outer edges of the bottom and sides of said casing, sashes, means on the upper member of said casing supporting said sashes for horizontal sliding movement in a plane located exteriorly of and adjacent to said flanges, means on said sashes embracing said flanges, an open ended hood on said upper member projecting forwardly beyond said flanges and enclosing said supporting means and means movable with said sashes for closing the ends of said hood.

5. A sliding window assembly comprising a casing adapted to be received in and line a window

opening at the top and bottom, a downwardly and outwardly extending flange on the forward edge of the bottom wall of said casing, a sash, means on the top member of said casing for supporting said sash for sliding movement over the front face of said flange, means on said sash embracing said flange and a hood on the top member overhanging said supporting means and a cap on said sash closing said hood.

WILLIAM LESCAZE.

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