July 15, 1958 A. J. GANGL 2,842,810

SASHLESS WINDOW STRUCTURE

Filed July 11, 1955 2 Sheets-Sheet 1

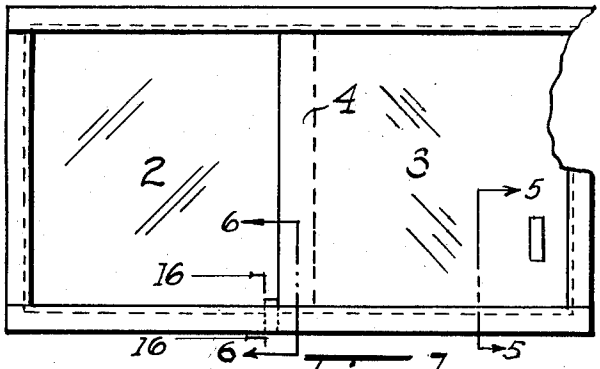


Fig-1

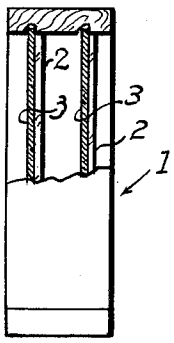


Fig-2

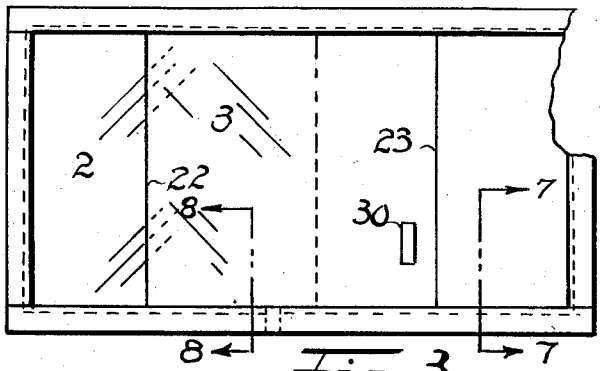


Fig-3

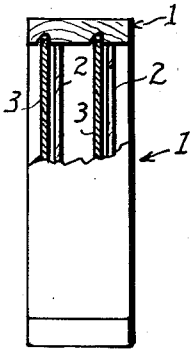


Fig-4

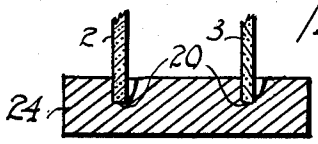


Fig 5

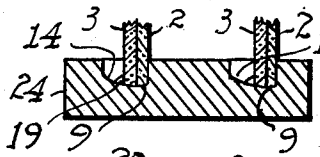


Fig-6

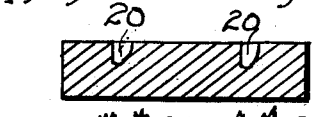


Fig 7

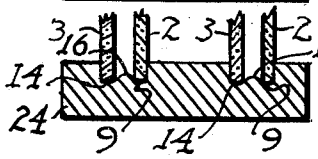


Fig-8

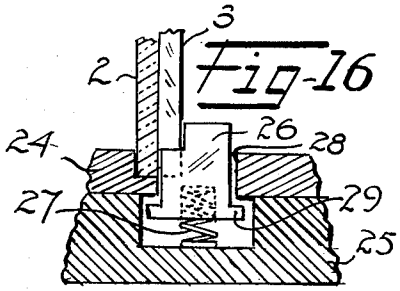


Fig-16

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SASHLESS WINDOW STRUCTURE

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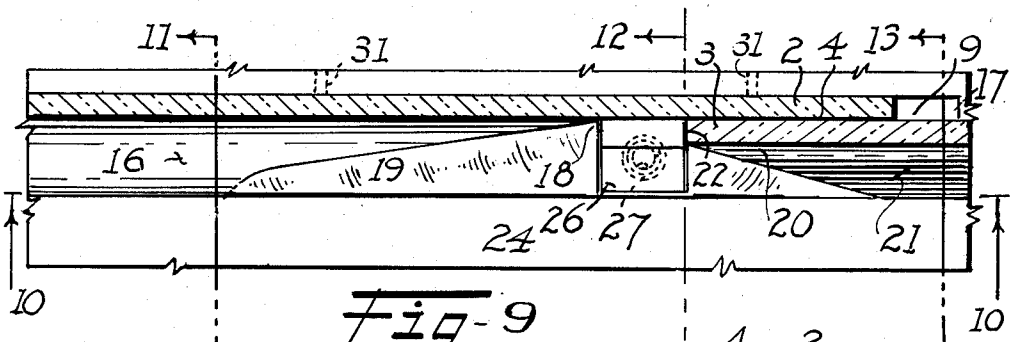


Fig-9

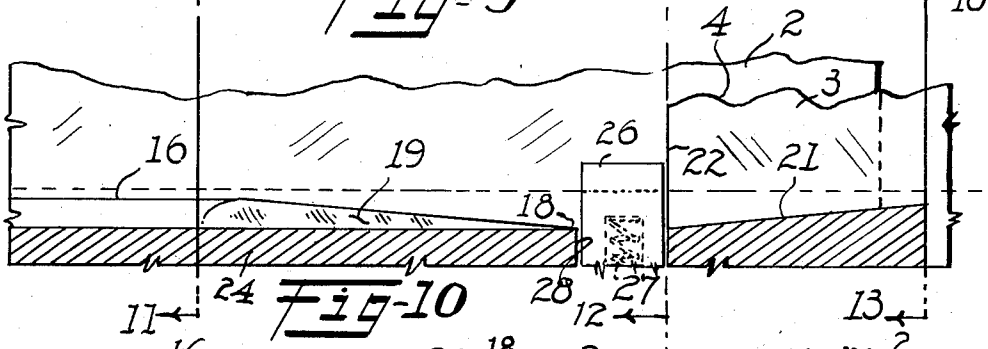


Fig-10

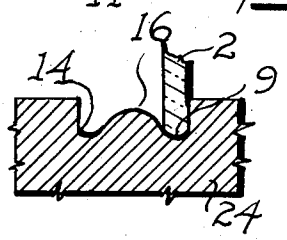


Fig-11

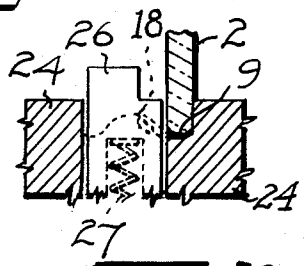


Fig-12

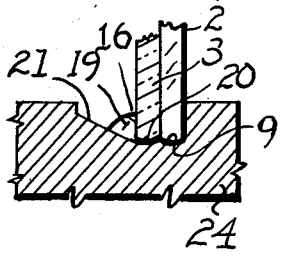


Fig-13

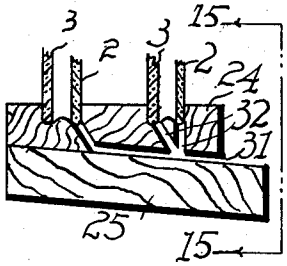


Fig-14

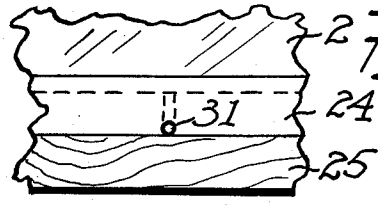


Fig-15

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United States Patent Office 2,842,810 Patented July 15, 1958

2,842,810

SASHLESS WINDOW STRUCTURE

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Application July 11, 1955, Serial No. 521,293

2 Claims. (Cl. 20—52)

This invention relates in general to windows and in particular to sashless windows wherein the window panes are slideable horizontally to open and closed positions.

Sashless windows are now in common use and comprise generally a rectangular framework having top and bottom horizontal tracks containing the window panes which are overlapped partially when in the closed position and are slideable horizontally to move the windows into either the open or closed position as is desired.

Obviously, in windows of this type, the window panes must be fitted closely together to provide an airtight seal when the window panes are in the closed position. When the panes are slid horizontally to the open position it is obvious that the panes will rub together and should there be any small particles of grit or the like between the panes, the surface of the window panes will be scratched and marred.

In addition the locking means for windows of this type comprises generally a swing type of lock that is fastened to one of the window panes by a hole drilled therethrough and it is virtually impossible to construct such device so that the fastening bolt is flush with the surface of the window pane. In numerous cases when the window is slid to the open position this protruding bolt has struck against the other window pane with sufficient force to crack the window pane.

It is the principal object therefore to provide a sashless window having horizontally slideable window panes with means for guiding the window panes apart when slid to the open position.

A second object is to provide a sashless window wherein the horizontally sliding window panes are guided together when slid to the closed position.

A still further object is to provide a sashless window with nothing protruding from the panes to strike against other panes.

An additional object is to provide a sashless window having an improved window locking mechanism.

Additional objects and advantages of my construction will be obvious to those skilled in the art on reading the following specification in the light of the attached drawings. It must be understood that the information disclosed therein is by way of example and illustration only and is not to be construed as a limitation. The invention herein is to be limited only by the terms of the appended claims and by the prior art.

In the drawings illustrating one preferred embodiment of my idea:

Figure 1 is a side elevation parts broken away of the windows in the closed position.

Figure 2 is an end elevation parts broken away taken on Figure 1.

Figure 3 is another side elevation parts broken away similar to that seen in Figure 1 but with the windows in the open position.

Figure 4 is an end elevation parts broken away taken on Figure 3.

Figure 5 is an enlarged sectional view as taken along the line 5—5 of Figure 1.

Figure 6 is an enlarged sectional view as taken along the line 6—6 of Figure 1.

Figure 7 is an enlarged sectional view as taken along the line 7—7 in Figure 3.

Figure 8 is an enlarged sectional view as taken along the line 8—8 in Figure 3.

Figure 9 is an enlarged broken away detailed plan view showing the construction of one of the window channels.

Figure 10 is a side elevation as seen at the line 10—10 in Figure 9.

Figure 11 is an end view as would be seen at the line 11—11 in Figures 9 and 10.

Figure 12 is an end view as would be seen at the line 12—12 in Figures 9 and 10.

Figure 13 is an end view as would be seen at the lines 13—13 in Figures 9 and 10.

Figure 14 is an enlarged broken away end view showing inside and outside sashless windows together with the window sill and the window track drainage system.

Figure 15 is a view as seen at the line 15—15 in Figure 14.

Figure 16 is a broken away view as seen at the line 16—16 in Figure 1.

My window comprises a window frame designated generally by the numeral 1 and containing therein the fixed window pane 2 and sliding window pane 3 which, as is common, are fitted in tracks in the window frame to operate horizontally slidably therein from the closed position as illustrated in Figure 1 in the drawings to the partially open position as illustrated in Figure 3 or to the fully open position if desired. It will be noted in Figure 1 in the drawings that the window panes 2 and 3 are partially overlapped as indicated at 4 when the windows are in the closed position and that the window overlap increases as shown in Figure 3 as the moveable window pane 3 is slid to the open position.

With the window panes 2 and 3 in the closed position as illustrated in Figure 1 in the drawings it is necessary that the overlapped portions at 4 fit tightly together and, if possible, provide a weather tight seal. To accomplish this, prior constructions have formed the horizontal window tracks as closely together as possible to provide a nearly weather tight fit at the overlapped portions 4. This construction, however, has resulted in the panes 2 and 3 remaining in close contact when the pane 3 is slid to the open position as illustrated in Figure 3 with the result that the surfaces of the panes 2 and 3 may be scratched by any abrasive substances that may be lodged therebetween.

In place of the parallel window tracks for the lower edges of the window panes 2 and 3 as would be found in present day construction, I have provided tracks for the lower edge of the window panes 2 and 3 whereby the window pane 3 is deflected away from the pane 2 as the window pane 3 is moved to the open position and whereby the window pane 3 is guided into close contact with the window pane 2 at the lapped portion 4 when the window pane 3 is moved to the closed position.

The window pane 2 is contained in the track 9 which extends past the edge of the pane 2 as indicated at 17 in Figure 9 in the drawings to permit movement of the pane 2 and allow its removal for cleaning or replacement. In the embodiment illustrated, the track 9 is parallel to the track 14 and separated therefrom by the ridge 16 as seen best in Figure 11 in the drawing. The ridge 16 tapers to a point 18 which is slanted away from the window pane 2 as indicated at 19.

The window pane 3, in the closed position, is contained in the track 20 which is sloped as indicated at 21

toward the window pane **2**. This construction will be seen clearly in Figure 13 in the drawings and it will be obvious that the slope **21** will ensure that the window pane **3** is at all times in close contact with the window pane **2** when in the closed position.

When the window pane **3** is moved to the open position with respect to the window pane **2**, the leading edge **22** of the window pane **3** will be guided by the point **18** onto the sloping surface **19** and into the track **14** away from the window pane **2**. When the window pane **3** is moved from the open to the closed position the opposite edge **23** of the window pane **3** will come into contact with the sloping surface **21** to guide the window pane **3** into the track **20** and ensure that the lapped portions **4** of the windows **2** and **3** will be in close contact.

As stated previously it has been the practice heretofore to provide a lock for this type of window in the form of a catch attached to the moveable window pane **3** through a hole drilled in the window pane and engageable with a hook or other suitable device attached to the window frame **1**. To overcome the necessity of drilling holes in the glass and to provide a more efficient and easily manipulated lock I have developed the lock indicated in Figure 16 in the drawings. My improved lock comprises the member **26** which is seated on the spring **27** in the window sill **25** to operate through the opening **28** in the window track member **24**. The opening **28** is positioned immediately forward of the window pane **3** so that the spring **27** will force the member **26** into the path of the window **3** when the window is in the closed position. To release the lock, the member **26** is pressed downwardly manually and the window pane **3** is slid to the open position over the member **26** thereby maintaining the member **26** in the depressed position. The member **26** is maintained in the opening **28** against the action of the spring **27** by the shoulder **29** which engages with the bottom of the opening **28** in the window

track **24**. Manipulation of the window pane **3** is facilitated by the handle **30** which is attached to the window pane **3** by any well known means.

Drainage from the window tracks **9**, **14** and **20** is provided by the channel **31** which is joined to the window tracks by the ducts **32**. While only one channel **31** is shown it will be obvious that additional channels and ducts would be provided as required.

What I claim as my invention is:

1. In a sashless window having a window frame with a first groove in the frame arranged to receive a stationary window pane and a second groove arranged to receive a movable window pane in partially overlapped relationship with the said stationary window pane when in the closed position, an angular bottom in the said second groove sloping toward the stationary window pane and adapted to maintain the said partially overlapped portions tightly together, a third groove alongside the said first groove, a ridge between the said first and third grooves terminating in a point in the second groove to deflect the movable window pane into the third groove when the said movable window pane is moved from the closed to the open position.

2. In a sashless window as claimed in claim 1, a lock comprising a manually operable spring loaded stop positioned in the said second groove to project into the path of the movable window pane and to engage with the lower corner of the said movable window pane.

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