Sept. 15, 1931. D. E. SHRAUGER 1,823,514

STORM SASH CONSTRUCTION

Filed Nov. 12, 1930 2 Sheets-Sheet 1

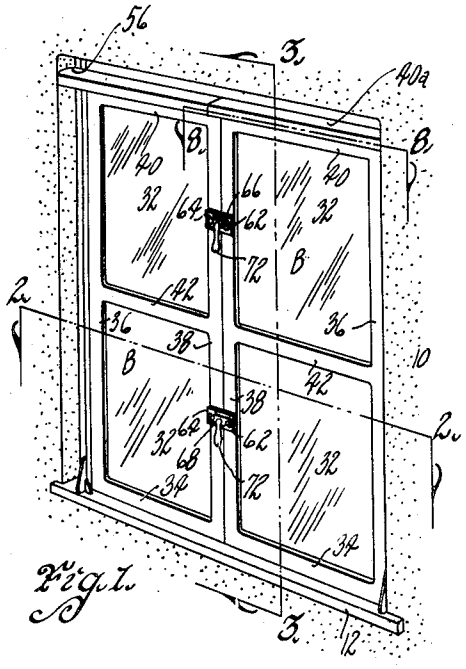


Fig. 1.

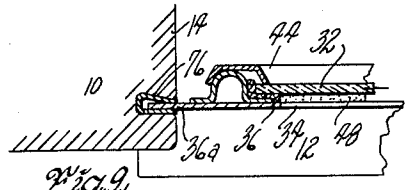


Fig. 9.

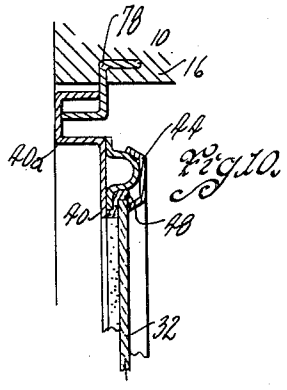


Fig. 10.

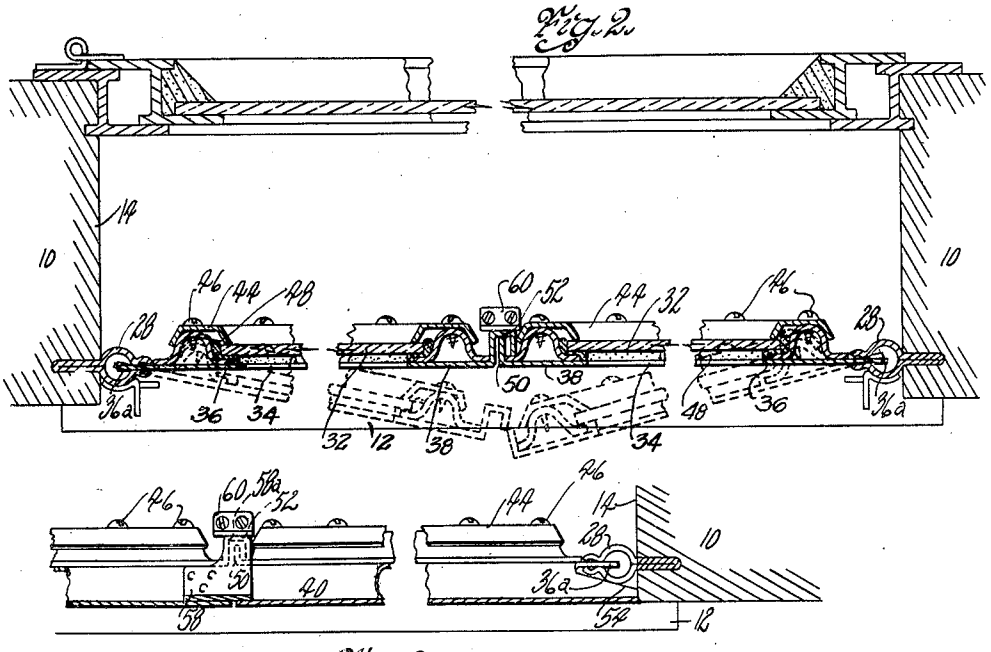


Fig. 2.

Fig. 8.

Inventor
Darius E. Shrauger
By Bair, Freeman & Sinclair
Attorneys

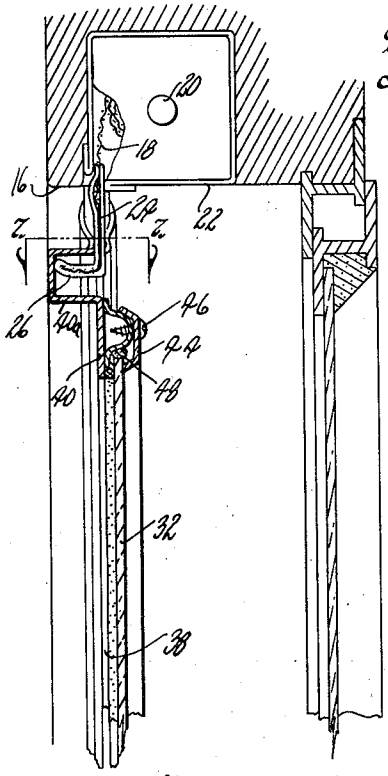
Witness
Edw. Lebey

Sept. 15, 1931. D. E. SHRAUGER 1,823,514

STORM SASH CONSTRUCTION

Filed Nov. 12, 1930 2 Sheets-Sheet 2

Fig. 3.



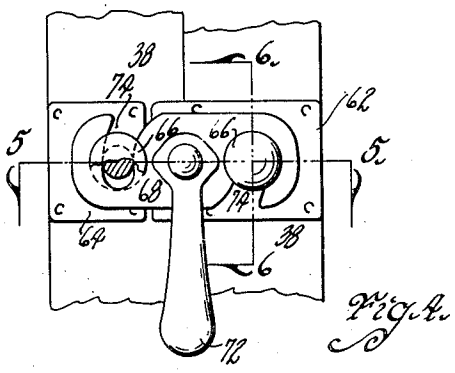


Fig. 4.

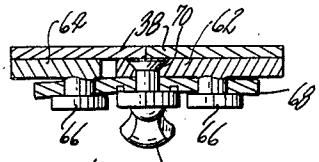


Fig. 5.

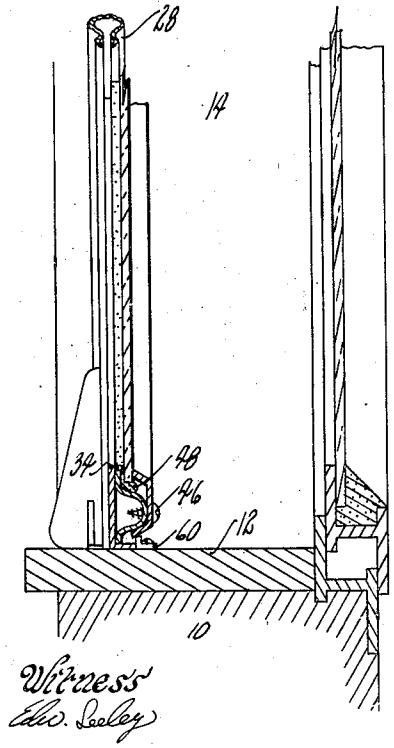


Fig. 6.

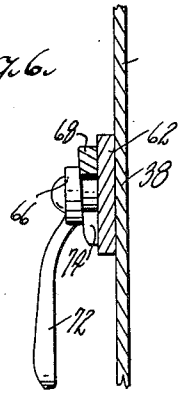
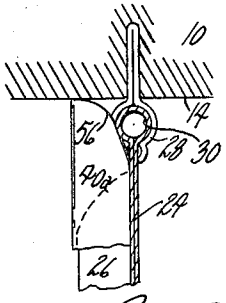


Fig. 7.



Witness
Edw. Seeley

Inventor
Darius E. Shrauger
By Bair, Freeman & Sinclair
Attorneys

Patented Sept. 15, 1931

1,823,514

UNITED STATES PATENT OFFICE

DARIUS E. SHRAUGER, OF ATLANTIC, IOWA

STORM SASH CONSTRUCTION

Application filed November 12, 1930. Serial No. 495,123.

An object of my present invention is to provide a storm sash particularly adapted for mounting on a window equipped with a rolling window screen.

Still a further object is to provide a storm sash of simple, durable and inexpensive construction consisting of a two part sash, each part having a vertical flange along one side for fitting into a slit opening of a rolling screen guide whereby to support the storm sash relative to a window frame which is equipped with a rolling window screen.

Still a further object is to provide the flanges on the storm sash of considerable width so that they can have sliding movement relative to the rolling screen guides for thus allowing for expansion and contraction and inaccuracy of dimensions or misalignment and yet providing a weather seal between the window frame or the rolling screen guide thereon and the storm sash to prevent the entrance of cold air.

Another object is to provide a top flange on the storm sash engageable with the rolling screen construction for providing a weather seal along the top of the storm sash.

Still a further object is to provide a means for mounting a storm sash of this construction on a window frame which is not provided with a rolling window screen.

Another object is to provide a fastening means between the two parts of the storm sash for connecting them together edge to edge and constraining them to engage a stop mounted on the window sill and to also engage along their upper edges with the rolling screen construction.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view viewed from the inside of the building showing my storm sash applied to a window frame equipped with a rolling window screen.

Figure 2 is an enlarged horizontal sectional view on the line 2—2 of Figure 1.

Figure 3 is a vertical enlarged sectional view on the line 3—3 of Figure 1.

Figure 4 is an inside elevation of a fastening means on the storm sash.

Figure 5 is a sectional view of the same on the line 5—5 of Figure 4.

Figure 6 is a vertical sectional view on the line 6—6 of Figure 4.

Figure 7 is a sectional view on the line 7—7 of Figure 3 showing the coaction of the upper part of the storm sash with the rolling screen construction.

Figure 8 is a sectional view on the line 8—8 of Figure 1 showing the upper part of the storm sash construction in section.

Figure 9 is a sectional view similar to the lower left hand part of Figure 2 showing a modified construction; and

Figure 10 is a sectional view similar to the upper left hand part of Figure 3 showing a modified construction usable with the construction shown in Figure 9.

On the accompanying drawings I have used the reference numeral 10 to indicate a wall. A window opening is formed in the wall and is defined by a sill 12, side jambs 14 and a head jamb 16. The window opening is screened by a rolling screen 18 rolled on a shaft 20.

The shaft 20 has its ends journaled in the ends of a rolling screen box 22 which constitutes a casing for the screen 18 when rolled up. A control bar 24 is secured to the free edge of the rolling screen 18 and is provided with a finger ledge 26.

Rolling screen guides 28 of tubular construction are inserted in the side jambs 14 and are adapted for the edges of the rolling screen 18 to be guided therein, these edges extending through a slit opening formed in each guide 28. An alignment block 30 is formed on each end of the control bar 24 and these are slidable in the rolling screen guides 28.

The foregoing description refers to a rolling window screen of general construction and forms no part of my invention. I merely utilize the tubular rolling screen guides 28 with their slit openings for the purpose of

supporting my storm sash construction without in any way affecting the operation of the rolling window screen itself.

My storm sash construction includes a pair of storm sashes B having frames made preferably of metal although they can be made of wood or other construction and transparent coverings 32 of glass or the like. The frame of each sash B includes a bottom rail 34, side rails 36 and 38, a top rail 40 and where necessary, one or more intermediate cross rails 42. The glass 32 can be retained in position by any suitable means, such for instance as by means of retainer members 44 held in position by screws 46. Putty is indicated at 48 for sealing the joint between the frame and the glass.

Each side rail 36 terminates in a flange 36*a* while a weather seal joint is formed between the side rails 38 as shown best in Figure 2. This joint consists of an angular flange 50 on one rail 38 and a channel-shaped flange 52 on the other rail 38. The bottom rails 34 are adapted to rest directly on the window sill 12.

The top rail 40 of each storm sash B terminates in a channel shaped flange 40*a*. The flange 40*a* is adapted to partially encircle or cover the finger ledge 26 of the control bar 24 and the free edge of the flange is adapted to contact with the control bar as shown in Figure 3. As shown in Figure 8 the lower flange of the portion 40*a* is cut away as indicated at 54 to clear the rolling screen guide 28. As shown in Figure 7 the upper flange of the portion 40*a* is cut away as indicated at 56 to clear the aligning block 30.

A weather proof joint is formed between the channel-shaped flanges 40*a* of each storm sash B as shown in Figure 8. A filler member 58 is secured to one of the flanges 40*a* and overlaps inside the other one. A portion 58*a* of the filler member 58 covers the upper end of the channel-shaped flange 52 to prevent entrance of air at this point.

A stop 60 for the lower ends of the storm sashes B is mounted on the window sill 12, the control bar 24 serving as a stop for the upper ends of the sashes. A fastening means is provided for the sashes which may be of any suitable type, but preferably one which has a tendency to draw the bars 38 of the sashes towards the stop 60 and the control bar 24. I have illustrated a fastening means which will accomplish this purpose including a mounting plate 62 secured to one of the rails 38 and a mounting plate 64 secured to the other one. Headed studs 66 are secured to the mounting plates 62 and 64. A locking plate 68 is pivoted on a pin 70 carried by the mounting plate 62. A handle 72 is provided for the locking plate 68.

As shown in Figure 5, the locking plate 68 is of obtuse angle formation. As shown in Figure 6, the portions of the plate 68 adjacent the slots 74 are slightly slanting. It will thus be obvious that when the handle 72 is rotated in a clockwise direction the ends of the locking plate 68 are wedged beneath the headed studs 66 producing a tendency for the sashes B to bend in the same direction as the ends of the locking plate 68 and thereby constraining the rails 38 of the sashes B toward outward movement and consequent engagement at their lower and upper ends with the stop 60 and control bar 24 respectively.

As shown in Figures 9 and 10 my storm sash construction can be used on a window frame which is not equipped with rolling window screens. In place of rolling window screen guides, channel members 76 are provided on the side jambs 14 into which the flanges 36*a* of the sashes B may be extended. A flange 78 may be embedded in the head jamb 22 with which the channel shaped flange 40*a* of the sashes B may coact. The members 76 and 78 may be embedded in the jambs or mounted thereon after the window frame is made, if desired.

Practical installation

In the installation of my storm sash construction the control bar 24 is first moved to its upper limit of movement and the left hand sash B placed in position. The right hand sash B is then placed in position, the sashes originally assuming the position shown in dotted lines in Figure 2, after which they are swung to the full line position. The tubular portions of the screen guides 28 allow for swinging movement of the flanges 36*a* therein whereby the sashes may be readily installed.

After the fastening devices are manipulated the sashes are retained in their proper position with the flanges 40*a* covering the finger ledge 26. To remove the storm sashes from the window the operations just described are reversed.

The installation for the type shown in Figures 9 and 10 is the same as for the type made especially for windows equipped with rolling screens. The flanges 36*a*, it will be noted, substantially fill the slit openings of the rolling screen guides 28 and therefore form an effective weather seal at this point.

The flange 40*a* covering the finger ledge 26 provides a weather seal joint at this point and the weight of the sashes B hold them firmly down against the window sill. Felt packing or the like can be provided along the lower edges of the sashes if desired.

It will be obvious that the storm sashes can be readily installed after the rolling screen 18 is rolled up and can be as readily taken down without in any way affecting subsequent operation of the rolling screen. The flanges 36*a* coact with the guides 28 in such a way that they do not damage them and yet an efficient joint is formed at this point which will allow for contraction and expansion be-

cause the flanges can move relative to the guides 28 a considerable distance before being pulled out of the guides.

My construction eliminates the necessity of providing any special fittings for mounting a storm sash on a window frame which is equipped with a rolling window screen. It thus overcomes an objection heretofore raised in connection with rolling screens in that especially on hinged types of windows there is no place on the outside for installing a storm window and the rolling screen is in the way on the inside.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim as my invention:—

1. In combination with a rolling screen guide having a slit opening facing inwardly relative to a window frame, a storm sash having a flange to fit into said slit opening whereby to support the storm sash relative to the window frame.

2. In combination with rolling screen guides at the sides of a window frame, a pair of storm sashes, each having a flange, said flanges being adapted to fit into said guides whereby to support the storm sashes relative to the window frame and provide a weather seal between the sides of the window frame and said storm sashes and a weather seal joint between said sashes.

3. In combination with rolling screen guides arranged on opposite sides of a window frame, a pair of storm sashes, each having a flange to fit into one of said guides, said flanges being slidable relative thereto whereby the storm sashes may be engaged with said guides for thereby supporting the sashes relative to the window frame or disengaged from said guides whereafter the rolling screen may be extended into said guides.

4. The combination with a rolling screen, a control bar on the lower edge thereof, a rolling screen box and rolling screen guides, the guides being arranged on opposite sides of a window frame, of a pair of sashes, each having a flange to fit into one of said guides, said flanges being slidable relative to the guides whereby the sashes may be engaged with the guides to thereby support the sashes relative to the window frame, or disengaged from the guides and a flange on the upper end of each sash for contact with said control bar.

5. The combination with a rolling screen, a control bar on the lower edge thereof, having a finger ledge, a rolling screen box and rolling screen guides, the guides being arranged on opposite sides of a window frame, of a pair of storm sashes having flanges adapted to be extended into said guides for thereby supporting the storm sashes relative to the window frame, flanges on the upper ends of said storm sashes for contact with said control bar, said flanges being arranged to extend over and cover said finger ledge when the control bar is in raised position.

6. In combination with rolling screen guides, a pair of storm sashes having flanges adapted to fit thereinto whereby the storm sashes are supported relative to the window frame with the lower edges of said storm sashes resting on the sill of said window frame.

7. For use with a wall having a window opening therein, defined by a window frame, a device of the character described comprising channels in the sides of said window frame, said channels facing each other and a pair of sashes having edge portions adapted to extend into said channels and a separable connection between said sashes.

8. For use with a wall having a window opening therein, defined by a window frame, a device of the character described comprising channels in the sides of said window frame, said channels facing each other and a pair of sashes having edge portions adapted to extend into said channels, a separable connection between said sashes, said storm sashes resting on the sill of said window frame and having flanges at their top ends engageable with the top of said window frame.

9. For use with a wall having a window opening therein, defined by a window frame, a device of the character described comprising channels in the sides of said window frame, said channels facing each other, a flange extending downwardly from the top of said window frame and a pair of sashes having edge portions adapted to extend into said channels and a separable connection between said sashes.

10. In combination with rolling screen guides at the sides of a window frame, a pair of coverings for said window frame including frames having flanges slidably fitted in said guides.

11. In combination with rolling screen guides having tubular portions and slit openings, said guides being arranged on opposite sides of a window frame, coverings for said window frame including frames having flanges slidably engageable in said guides, said flanges being capable of pivotal movement in the slit openings of said guides and swinging movement in the tubular portions thereof.

12. The combination with rolling screen guides at the sides of a window frame and a top cross member forming part of a roll-

screen, of a pair of coverings for said window frame including frames having side flanges slidably fitted in said guides and top flanges to coact with said cross member.

13. In combination with rolling screen guides at the sides of a window frame, a pair of coverings for said window frame including frames having flanges slidably fitted in said guides, said last mentioned frames resting on the sill of said window frame and a stop on said sill for said coverings to engage against.

14. In combination with rolling screen guides at the sides of a window frame, a pair of coverings for said window frame including frames having flanges slidably fitted in said guides, said last mentioned frames resting on the sill of said window frame, a stop on said sill for said coverings to engage against, and a fastening means to keep said coverings against said stop.

15. The combination with rolling screen guides at the sides of a window frame and a top cross member forming part of a roll-screen, of a pair of coverings for said window frame including frames having side flanges slidably fitted in said guides and top flanges to coact with said cross member, and a fastening means for connecting said coverings together edge to edge and constraining them to engage said cross member.

Des Moines, Iowa, November 4, 1930.

DARIUS E. SHRAUGER.