Nov. 1, 1955 L. D. SPRINKLE 2,722,272

WINDOW AND SASH CONSTRUCTION

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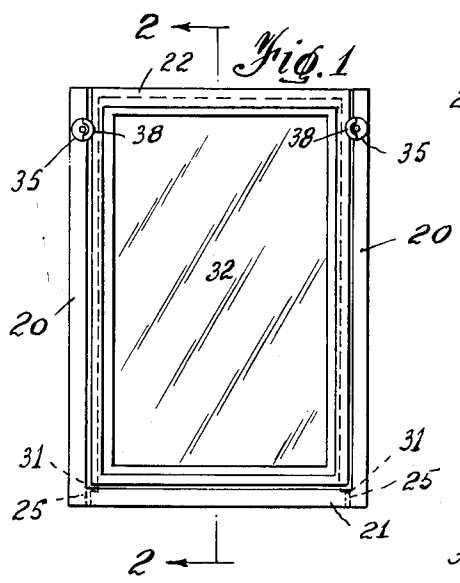


Fig. 1

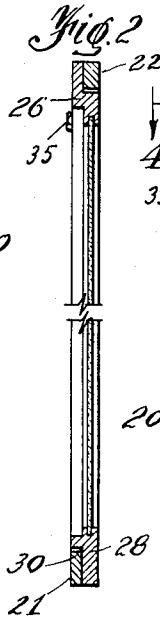


Fig. 2

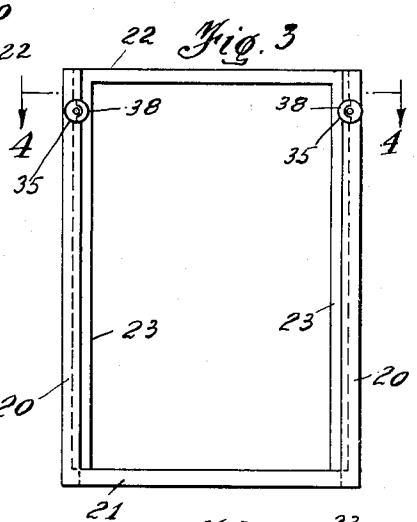


Fig. 3



Fig. 4

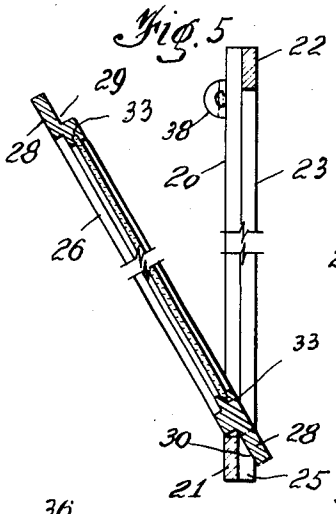


Fig. 5

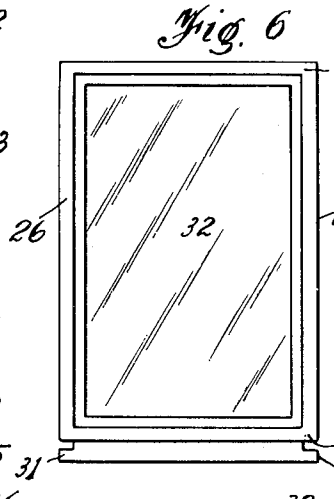


Fig. 6

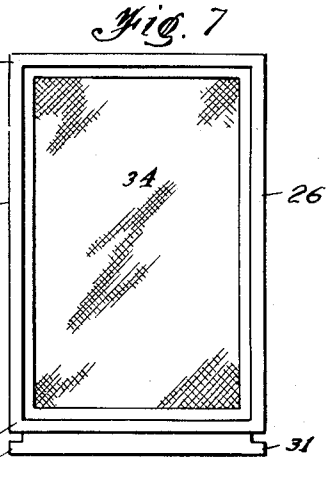


Fig. 7

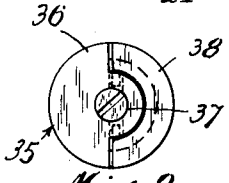


Fig. 8

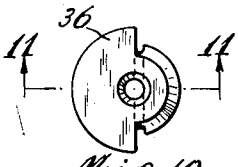


Fig. 10

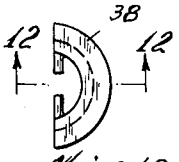


Fig. 12

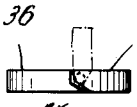


Fig. 9



Fig. 11



Fig. 13

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WINDOW AND SASH CONSTRUCTION

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5 Claims. (Cl. 160—128)

This invention relates to window construction and particularly to an interchangeable sash and frame construction.

Storm windows and screens have been used for many years and many constructions have been proposed both for interchangeable house windows and screens. Most, if not all, of the constructions heretofore proposed have been objectionable for one or more reasons. Many of the proposed constructions are so complex as to make them prohibitively costly, virtually all must be removed and replaced from the exterior of the building and most have no satisfactory simple means for locking against removal from the outside.

It is an object of the present invention to provide an interchangeable window and screen construction which is simple in construction and free from the complexities of window and screen construction heretofore proposed.

Another object of this invention is to provide a window and screen construction in which the window and screen can be readily interchanged from the interior of the building.

A further object of the invention is to provide a simple yet positive locking arrangement for preventing removal of the window or screen from the exterior of the building.

Other objects and advantages of the invention will become apparent from a consideration of the following description and the accompanying drawings in which

Figure 1 is a front elevation of a window construction according to the invention taken from the inside of a building on which the sash is used.

Figure 2 is a section on the line **2—2** of Figure 1.

Figure 3 is a front elevation of a window sash forming a part of the construction of the invention taken from the inside of a building on which the sash is used.

Figure 4 is a section on the line **4—4** of Figure 3.

Figure 5 is a vertical section through a window construction according to the invention showing a window panel being inserted.

Figure 6 is a front elevation of a window panel forming a part of the construction of the invention taken from the inside of a building on which the sash is used.

Figure 7 is a front elevation of a screen panel forming a part of the construction of the invention taken from the inside of a building on which the sash is used.

Figure 8 is a top plan view of a locking mechanism forming part of the invention.

Figure 9 is an edgewise view of the locking mechanism shown in Figure 8.

Figure 10 is a top plan view of a sash engaging member forming a part of the locking mechanism shown in Figure 8.

Figure 11 is a section on the line **11—11** of Figure 10.

Figure 12 is a top plan view of a turning member forming a part of the locking mechanism shown in Figure 8.

Figure 13 is a section on the line **13—13** of Figure 12.

Referring to the drawings there is shown an outer

frame having stiles **20**, bottom rail **21** and a top rail **22** adapted to fit in a window frame. Each of the side members **20** is provided with an inwardly directed flange **23** forming a recess **24** within the balance of the stiles. The top rail **22** is equal in thickness to the thickness of flanges **23** on the stiles **20** and the bottom rail **21** is equal in thickness to the depth of the recess **24** in the stiles **20**. Each of the flanges **23** on the side member **20** terminates short of the bottom of the sash to form notches or pockets **25**.

A window panel having stiles **26**, a bottom rail **27** and a top rail **28** is provided to fit within the opening formed by the stiles **20**, bottom rail **21** and top member **22** of the sash. Each of the stiles **26** of the window panel is provided with a recessed portion adapted to fit around the inwardly directed flange **23** of the stiles **20** of the window sash. The top rail **28** of the window panel is provided with a recess **29** fitting around the top rail **22** of the window sash. The bottom rail **27** of the window panel is likewise provided with a recess **30** which fits around the bottom rail **21** of the window sash. A pair of lugs **31** project sidewise from the bottom rail **27** of the window panel and engage the notches or pockets **25** in the bottom of the sash when the window is in closed position (see Figure 1). A window pane **32** is mounted in slots **33** in all of the members forming the window panel.

An interchangeable screen panel (see Figure 7) all of the elements of which are identical to those of the window panel except that a screen **34** takes the place of the glass pane **32** is provided to enter the opening formed by the various members of the window sash in the same manner as the window panel described above.

A locking mechanism **35** is provided on each side member of the window sash adjacent the top thereof. Each locking mechanism is made up of a sash engaging member **36** rotatably mounted on a screw **37** or other suitable means and a turning or handle member **38** pivoted in the sash engaging member **36** to lie flat in the plane of the sash engaging member when not in use and to be movable to a position normal to the plane of the sash engaging member when it is desired to turn the sash engaging member into or out of engagement with the window panel.

When it is desired to place a window or screen panel in the sash the bottom rail **28** of the panel with projecting lug **31** is inserted through the opening formed by the stiles **20**, to the bottom rail **21** and the top rail **22** with the lug beyond the inwardly directed flanges **23**. The panel is then turned in the opening until the lugs **31** enter the notches **25** in the bottom rail **21** of the sash and the recess in the stiles, top rail and bottom rail of the panel fit around the flanges **23**, the top rail **22** and the bottom rail **21** respectively of the sash. The turning member **38** of the locking mechanism is then turned 180 degrees to bring the sash engaging member **36** over the stiles **26** of the panel, thereby locking it in place against removal from the exterior of the building.

While there is illustrated and described herein a preferred embodiment of the invention it will be understood that the invention may be otherwise embodied within the scope of the following claims.

I claim:

1. A window structure comprising a quadrangular sash having a central opening therein, a recess around three sides of said sash on one surface thereof, a second recess on the fourth side of said quadrangular sash on the opposite face of the sash from the first recess, notches in the stiles of said sash at the end of said second recess forming a continuation thereof, a window panel adapted to fit in the first recess, said panel having a dependent flange adapted to fit in the second recess,

lugs on said dependent flange extending outwardly therefrom engaging the notches in the stiles of the sash and locking means on the sides of the sash transverse to the second recess for engaging the window panel to retain it in the sash.

2. A window structure comprising a sash having substantially parallel side members to form a rectangular opening, an inwardly directed flange projecting inwardly into the opening on both stiles to form recesses therein on the interior face of the sash, a recessed portion in the top rail corresponding to the recesses in the stiles, a recessed portion on the bottom rail on the face of the sash opposite to the recesses on the top rail and stiles, a longitudinal notch in the bottom rail at each end of the recess beneath the flanges on the stiles, a window panel adapted to fit into the opening formed by the stiles, the top and bottom rails of the sash, outwardly directly flanges on said window panel entering the recesses in the top rail and stiles to lie flush with the interior face of the sash, a dependent flange on the panel adapted to fit in the recess in the bottom rail of the sash, said flange having longitudinal lugs extending outwardly therefrom to enter the notches in the bottom rail of the sash and lie flush with the flanges on the stiles of the sash adjacent the top rail for engaging the window panel to retain it in the sash.

3. A window structure as claimed in claim 1 in which the locking means comprises a flat circular member pivoted for rotation around its center point on each of the stiles to overlap the recess formed therein, an arcuate portion of said circular member being pivoted on a line adjacent to and parallel to the diameter of the member the radial width of said arcuate portion being not less than the distance the circular member overlaps the recess whereby said portion may be raised to a position normal to the plane of rotation of the circular member to provide access to the recess in the stile and act as a handle for rotating the circular member.

4. A window structure comprising a sash having substantially parallel top and bottom rails connected by substantially parallel stiles to form a rectangular opening, an inwardly directed flange projecting into the opening on both sides to form recesses therein on the interior face of the sash, a recessed portion in the top rail corresponding to the recesses in the stiles, a recessed portion on the bottom rail on the face of the sash opposite to the recesses on the top rail and stiles, a longitudinal notch in the bottom rail at each end of the recess beneath the flanges on the side members, a panel in the opening in the sash, said panel having outwardly directed flanges thereon entering the recesses in the top rail and stiles of the sash to lie flush with the interior face of the sash, a dependent flange on said panel fitting into the recess in the bottom rail of the sash, said flange having longitudinal lugs extending outwardly therefrom to enter the notches in the bottom rail of the sash and form with the flanges of the side members a continuous flush external face and rotatable locking means on the two stiles of the sash permitting entry of a panel into the opening in one position and engaging the panel to retain it in the sash upon rotation from that position.

5. In a window structure having an outer sash provided with recesses in the top and sides thereof on one face of the sash and a corresponding recess in the opposite face of the sash and a window panel having similar cooperating recesses in the top rail, the stiles and the bottom rail forming flanges on the panel fitting within the recesses in the outer sash, a locking structure comprising a flat circular member pivoted for rotation around its center on each of the sides of the sash to overlap the recess formed therein, an arcuate portion of said member being pivoted on a line adjacent to and parallel to the diameter of the member, the radial width of said arcuate portion being not less than the distance the circular member overlaps the recess whereby said arcuate portion may be raised to a position normal to the plane of rotation of the circular member to provide access to the recess in the side member and to act as a handle for rotating the circular member.

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