

Sept. 2, 1924.

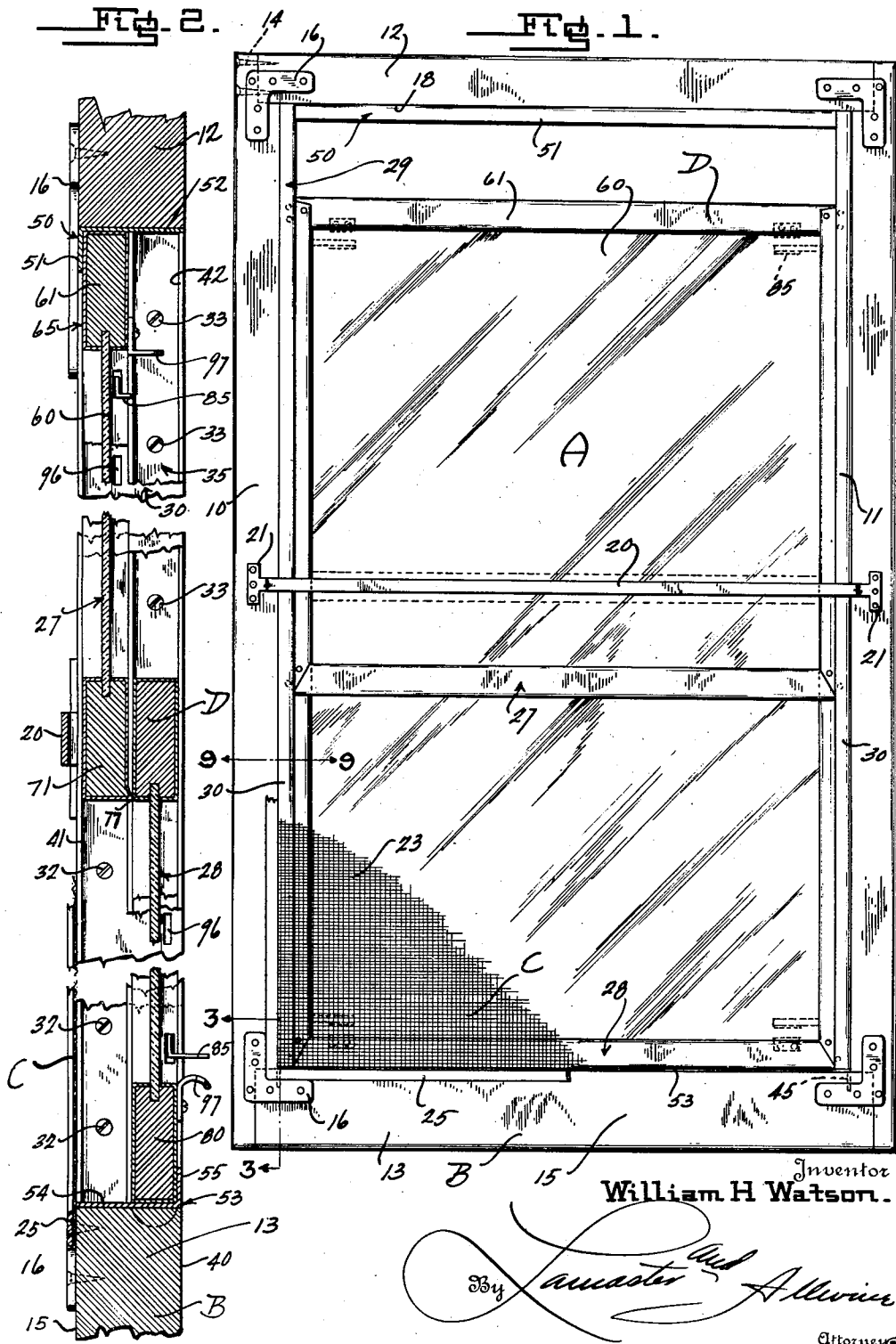
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W. H. WATSON

UNITARY SCREEN AND CLOSURE ARRANGEMENT FOR WINDOW OPENINGS

Filed July 21, 1922

2 Sheets-Sheet 1



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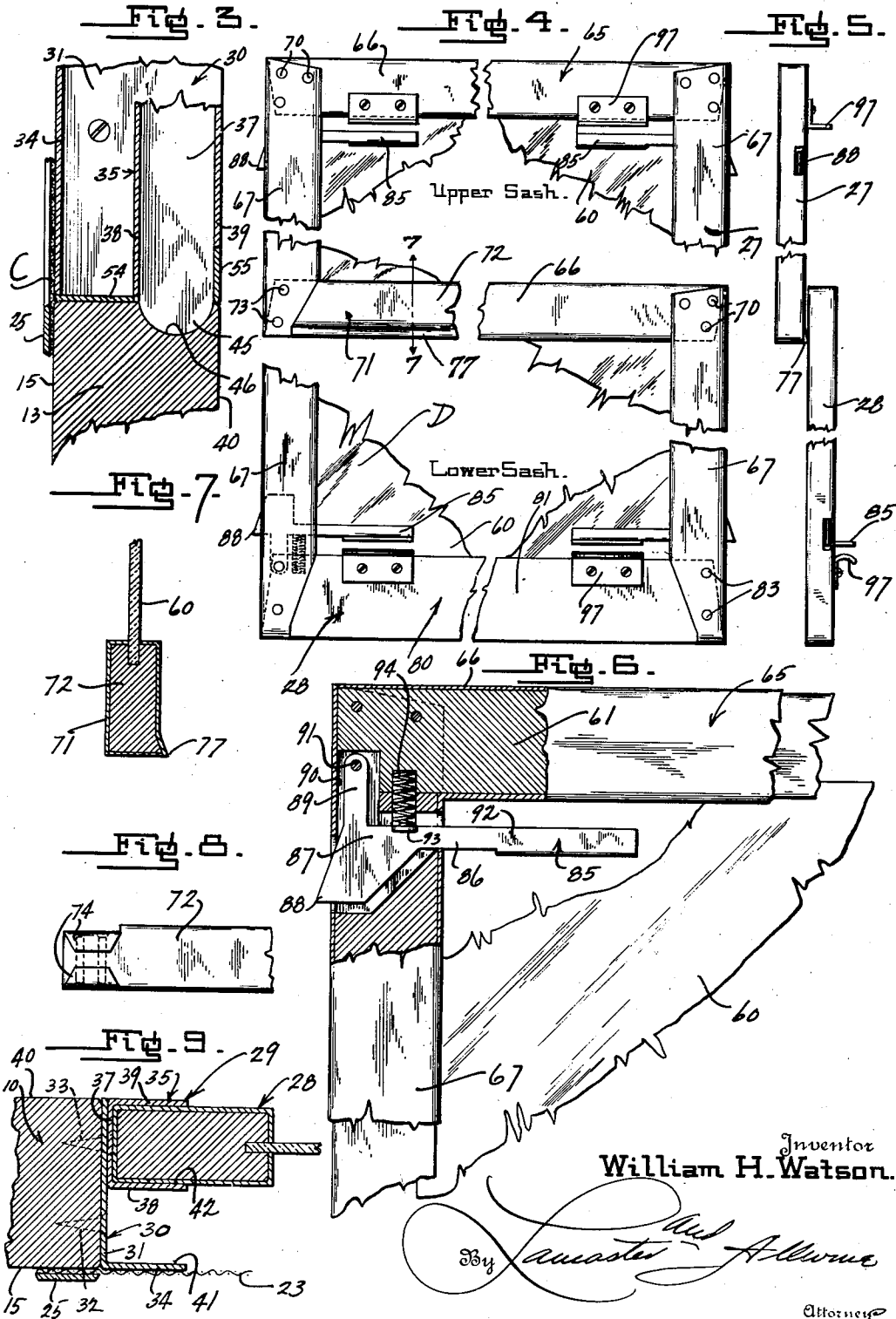
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UNITED STATES PATENT OFFICE.

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UNITARY SCREEN AND CLOSURE ARRANGEMENT FOR WINDOW OPENINGS.

Application filed July 21, 1922. Serial No. 576,523.

To all whom it may concern:

Be it known that I, WILLIAM H. WATSON, a citizen of the United States, residing at Wellington, in the county of Sumner and State of Kansas, have invented certain new and useful Improvements in Unitary Screen and Closure Arrangements for Window Openings, of which the following is a specification.

This invention relates to a novel window unit, whereby the same may be utilized in connection with the frame work of porches and like building construction, and embodies screen and glass arrangements, whereby the units may be selectively utilized to provide a screened opening, or as a sash controlled window opening.

The primary object of this invention is the provision of a window unit, which may be utilized in connection with porch constructions, and includes a screen arrangement and a sash arrangement which may be individually used or used in combination, according to the type of porch construction or to the season of the year.

A further object of this invention is the provision of a window unit including sash and screen arrangements of compact assembly, which may be used in connection with various types of building constructions, without the necessity of providing complicated frame work, such as is provided in the ordinary window frame.

A further object of the invention is the provision of a window unit of the above described character including a sash arrangement which may be utilized as a storm sash arrangement in combination with an ordinary window construction.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the drawings, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views.

Figure 1 is an outside view of the improved window unit.

Figure 2 is a longitudinal cross sectional view taken through the improved unitary screen and closure arrangement showing various associated details thereof.

Figure 3 is a fragmentary view, partly in section, taken substantially on the line 3—3 of Figure 1.

Figure 4 is a front elevation of the upper

and lower sash members utilized in connection with the window units.

Figure 5 is a fragmentary edge elevation of the upper and lower sash members showing the same in their relative positions.

Figure 6 is a fragmentary view, partly in section, showing a novel type of latch member, as used in connection with the sashes of the improved window unit.

Figure 7 is a fragmentary cross sectional view, taken substantially on the line 7—7 of Figure 4.

Figure 8 is a bottom view of a corner section of the improved sash utilized as a part of this invention.

Figure 9 is a fragmentary transverse cross sectional view, taken substantially on the line 9—9 of Figure 1.

In the drawings, wherein for the purpose of illustration is shown but the preferred embodiment of this invention, the letter A indicates the improved unitary screen and closure arrangement which includes a frame construction B; screen construction C; and sash arrangement D.

Referring to the frame construction B, the same is preferably of soft wood, and of finished appearance, including the vertical side pieces 10 and 11 and the top and bottom pieces 12 and 13 respectively. The junctures of the top and bottom pieces and the side pieces may be effected in any approved manner, as by mortising the top and bottom pieces 12 and 13 into the ends of the side pieces 10 and 11, and utilizing securing elements 14. The outside surface 15 of the frame B may have the L-shaped reinforcing clips 16 suitably attached thereto at the jointed connections of the various pieces of the frame B, in order to provide a stable rectangularly shaped frame defining an opening 18. A transverse metallic brace 20 may be utilized in connection with relatively large or oversize frames, having the ends 21 thereof suitably offset and apertured, for receiving securing elements. The brace member 20 may extend transversely of the outside of the frame B for attachment to the side pieces 10 and 11, so that the same is positioned midway of the top and bottom 12 and 13 of frame B, and substantially parallel therewith; the same being offset in such manner as to provide for the attachment of the screen and sash arrangements of this invention, as will be hereinafter more fully described.

Referring to the screen arrangement C, the same preferably comprises a rectangularly shaped piece of foraminous material 23, which is secured to the outside surface 15 of the frame B, as by flat molding 25; in such manner that the screen 23 lies flush against the outer surface of the frame B, entirely covering the opening 18 defined by frame B, while not extending into said opening to interfere with the sash arrangement D.

Referring to the sash arrangement D, the same preferably comprises upper and lower sash members 27 and 28 respectively; and means 29 whereby the same may be effectively retained for vertical sliding within the frame B. The means 29 is a novel arrangement, such that the sash members 27 and 28 may be detachably assembled in compact relation entirely within the opening 18 of the frame B; it being possible by detachment of the means 29 to permit use of the frame B in connection with the screen arrangement C in an effective manner on screen porches, during seasons of the year during which the temperature is mild enough to dispense with a closure arrangement, such as is provided by the sashes 27 and 28. The guide means 29 for receiving the sashes 27 and 28 is preferably of metal and includes a substantially L-shaped member 30 for each side piece 10 and 11 of the frame B, each of said sections 30 including a leg 31 for attachment as by screw members 32 and 33 to the facing surfaces of the side pieces 10 and 11, so that the other leg or flange 34 of each of said metal sections 30 extends inwardly of the opening 18 defined by the frame B, and substantially flush with the outside surface 15 thereof. It is to be noted that the leg 31 of each metal section 30 is of substantially the same width as the thickness of the frame side pieces 10 and 11, so that the same entirely cover the surfaces of said sides 10 and 11 which face the opening 18. A metal channel or substantially U-shaped section 35 is provided with the metal section 30, including a bight portion 37 which is adapted for attachment to the exposed surface of each leg 31 of a section 30, as by the securing elements 33, each of said channel sections 35 including legs or flanges 38 and 39 which extend into the opening 18 of the frame B; the flange 39 preferably lying flush with the inside surface 40 of the frame B. In this manner, outside and inside grooves 41 and 42 respectively are provided by the outside, intermediate, and inside flanges 34, 38 and 39 of the guide sections 30 and 35; which are provided longitudinally of the frame side pieces 10 and 11 and within the opening 18, for the reception of the sash members 27 and 28. It is possible that the grooves 41 and 42 may be provided upon one side

strip of the casing C by means of a single metallic section, so formed as to provide the flanges 34, 38 and 39. However, the other side strip of the frame B will have to be fitted with two detachable sections 30 and 35, in order that the sashes 27 and 28 may be assembled or detached with respect to other details of the window unit. In order to provide for the true placing of the channel sections 35, the lower ends thereof are provided with the projecting portions 45 which extend below the lower marginal edges of flanges 38 and 39, as a part of the bight portion 37, for disposal within suitable sockets 46 provided in the body piece 13 of the frame B.

The upper sash 27 is adapted for longitudinal sliding within the opening 18 by having the sides thereof placed in the longitudinal outer grooves 41 of the retaining means 29. On the other hand, the lower sash 28 is adapted for disposition within the grooves 42 provided by the means 29. A top weather strip 50, preferably of metal, and L-shaped in cross section is provided for attachment to the under surface of the frame top piece 12, to provide the downwardly extending flange portion 51, preferably lying flush with the outer surface 15 of the frame B and adapted for cooperation with the top edge of the sash section 27, in providing a leak proof connection thereof with respect to the frame B. When the sash section 27 is closed, this strip 50 includes the portion 52 which is adapted for attachment to the under surface of the frame top piece 12, being of such length and width as to entirely cover said under surface. A weather strip 53 is preferably provided for the frame bottom piece 13; the same being substantially L-shaped in formation and including a relatively wide portion 54 adapted for engagement against the top surface of the frame bottom piece 13 to entirely cover the same, and an up-standing flange portion 55 which extends into the frame opening 18 and preferably lies flush with the inside surface 40 of frame B, to cooperate with the lower sash 28 in providing a leak proof joint, when said sash is closed. Thus, it can be seen that the entire inside surfaces of the frame B, which define the opening 18 are metal covered for receiving the sash sections 27 and 28 in an effective and detachable manner.

Referring to the construction of the upper and lower sash members 27 and 28 respectively, they are somewhat similar in formation, each including a pane of glass 60, supported in the ordinary manner by the wooden frame 61. Both the upper and lower sash sections have the wooden frame 61 thereof metal covered. In the case of relatively small sashes it is merely neces-

sary to metal cover the side stiles, which are adapted for sliding in the grooves 41 and 42 of the sash guide means 29. However, in relatively large sashes, a construction similar to that illustrated in Figure 4 is provided, whereby the top and side pieces of the frame 61 are covered with a metal member 65 which is suitably cut and bent to provide a top portion 66 adapted for covering the top rail of the frame 61, and depending side portions 67 for covering the side rails thereof, the ends of the side portions 67 preferably overlapping the ends of the top metal portion 66; said overlapping ends being suitably affixed as by rivet elements 70. The rail 71 of the upper sash 27 is provided with a metallic covering 72, the ends of which extend under the ends of the metal portions 67 of the metallic covering member 65, and are secured thereto as by means 73. The lower ends of the metal side portions 67 are provided with the flanged portions 74 which extend below and are crimped under the bottom surface of the rail 72 as shown in Figure 8, in order to provide a compact encasement for the wooden frame 61. The forward and lower end of the rail 71 is provided with the pointed extension 77 which extends across the sash a distance corresponding to the distance between the flanges 38 at opposite sides of the window frame and cooperates with the outside surface of the upper portion of the lower sash frame 28, in the manner illustrated in Figure 2 of the drawings to provide a leak proof connection. The rail 80 of the lower sash section 28 is metal encased as by a bent metal casing 81, which is assembled similar to the metal casing material 72 for the upper sash 27, as by having the lower extended end portions of the metal sides 67 bent therebelow; the ends of the metal casing portion 81 being overlapped by the ends of the side portions 67, and being secured together as by retaining elements 83.

Latches 85 may be utilized in connection with the sash arrangement D, each of which embodies a pawl 86, having a head 87 thereon, which is provided with a tooth 88. A shank 89 extends outwardly from the head 87 and is suitably pivoted within the recess or pocket 90 of either of the sash sections as by means of a detachable element 91. A finger engaging handle 92 preferably extends from the pocket 90 into the opening of the sash upon which the improved latch 85 is mounted, said handle 92 extending substantially at right angles to the shank 89. An ear 93 is preferably bent from a portion of the pawl 86 for receiving a compressed spring 94 thereagainst, which is normally seated within a socket opening in the casing of the sash upon which the device 85 is mounted, so that the toothed end 88

of the pawl 86 will be forced outwardly from a side surface of said sash for co-operation in suitable openings 96 which are provided through the metal guide means 29 and the frame pieces of the improved unit A, so that either of said sash members 27 and 28 may be held in any adjusted position. The latch device 85 may, of course, be positioned in any manner in connection with the sashes. A desirable arrangement is that of providing a pair of the latch structures 85 for each sash, the devices 85 for the upper sash 27 being provided near the top rail of said upper rail, while a pair of the sash attachments 85 are provided for the lower sash adjacent the bottom or sill rail thereof. Each latch construction 85 is preferably provided with a finger engaging lifter 97 which is rigidly affixed to the rail of the sash adjacent to which the latch 85 is mounted.

From the foregoing description of this invention, it can readily be understood that a unit has been provided, which is of very compact formation, and supplies an economical window unit, which may be used as a screen member in connection with a screen porch construction or similar arrangement; or which may be used as a detachable sash arrangement to provide a closure for a screen covered window frame. The window frame A can, of course, be utilized individually in a window opening in combination with a common window construction, as a storm arrangement, or as a screen arrangement.

Various changes in the shape, size and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. A window construction including a frame defining an opening, means upon one side of said frame within said opening providing a pair of parallel grooves facing in the opening of said frame, a member positioned upon the opposite side of said frame providing a flange extending into said frame opening, a detachable member mounted upon the last mentioned side of said frame providing a pair of flanges extending into the opening of said frame cooperating with the first mentioned flange in providing a pair of parallel grooves extending along the side of said frame, and sashes for sliding within the grooves upon the sides of said frame.

2. A window construction comprising a frame defining an opening, means providing a pair of parallel grooves upon one side of said frame facing in the opening thereof, a substantially L-shaped member mounted upon the opposite side of said frame providing a flange extending into the opening of said frame, and a member substantially

U-shaped in formation attached to the last mentioned side of said frame and to the L-shaped member having a pair of flanges extending into the opening of said frame and
5 cooperating with said first mentioned flange in providing a pair of parallel grooves upon the side of said frame cooperatively positioned with respect to the parallel grooves provided by the means mounted upon the
10 first mentioned side of said frame.

3. A device of the class described comprising a frame defining a window opening, detachable metal sections attached to the side portions of said frame in the opening defined thereby to provide grooves extending longitudinally thereof and facing
15 in the opening of said frame, sashes for sliding within the grooves provided upon the side portions of said frame, a depending flange carried by the top portion of said
20 frame and disposed upon the outside of said frame for cooperation with one of said sashes and providing a leak proof connection, a strip carried by the lower portion
25 of said frame and including a flange extending upwardly adjacent the inside of said frame for cooperation with the other of said sashes in providing a leak proof con-

nection, and means carried by said sashes cooperating with said frame whereby said
30 sashes may be held in adjusted relation therein.

4. A device of the class described comprising a frame defining a window opening, detachable metal sections attached to the
35 side portions of said frame in the opening defined thereby to provide grooves extending longitudinally thereof and facing in the opening of said frame, sashes for sliding within the grooves provided upon the side
40 portions of said frame, a depending flange carried by the top portion of said frame and disposed upon the outside of said frame for cooperation with one of said sashes in providing a leak proof connection, a strip
45 carried by the lower portion of said frame and including a flange extending upwardly adjacent the inside of said frame for cooperation with the other of said sashes in providing a leak proof connection, means
50 carried by said sashes cooperating with said frame whereby said sashes may be held in adjusted relation thereto, and a screen arrangement carried by the outside of said frame.

WILLIAM H. WATSON.