

R. MOHR.
 WINDOW AND SCREEN ATTACHMENT.
 APPLICATION FILED AUG. 10, 1910.

1,001,294.

Patented Aug. 22, 1911.

3 SHEETS-SHEET 1.

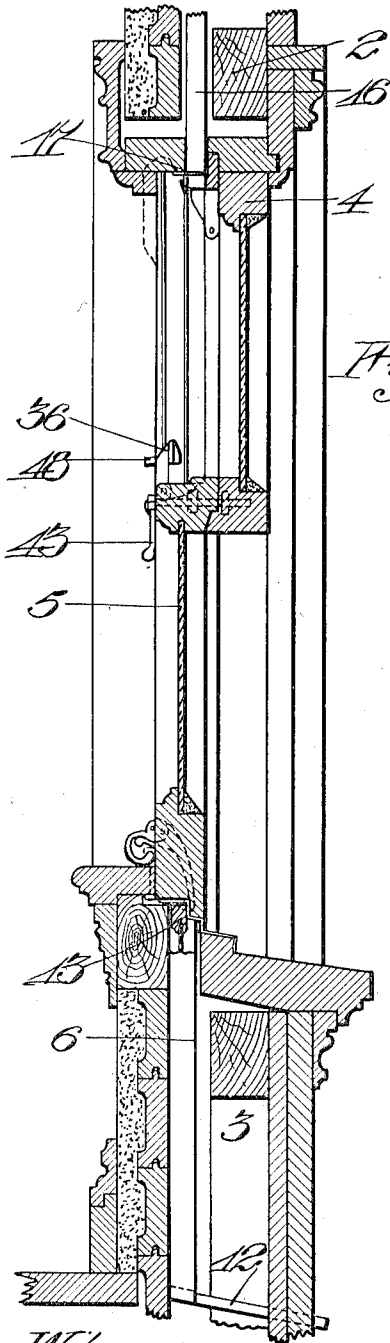


Fig. 1.

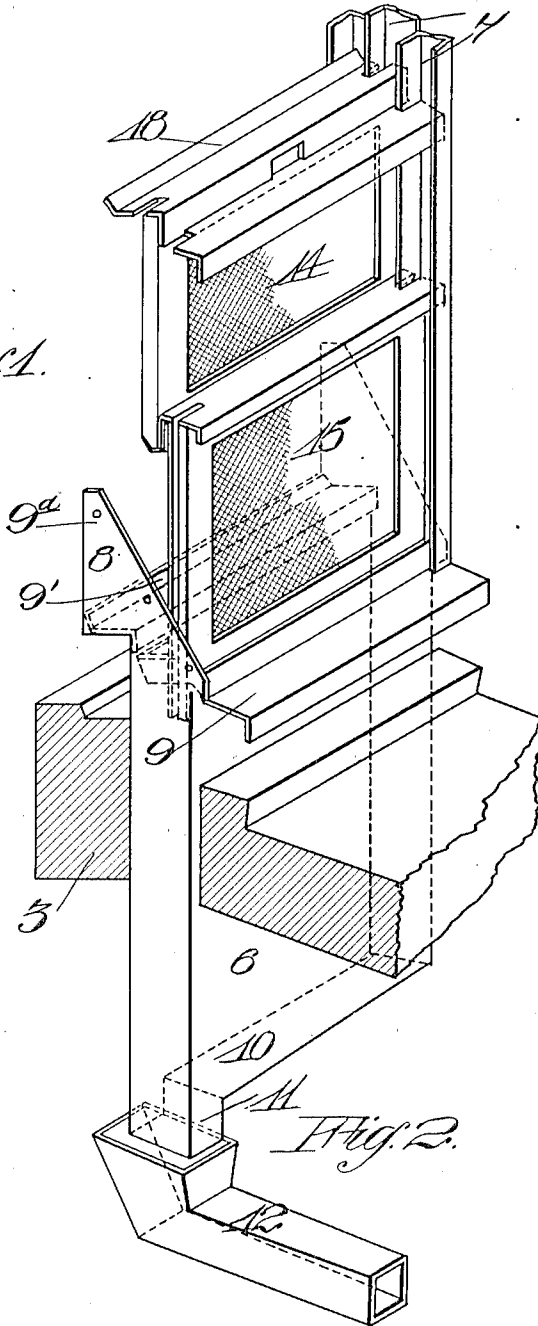


Fig. 2.

Witnesses:
Chas. Kasperberg
O. A. Mohr

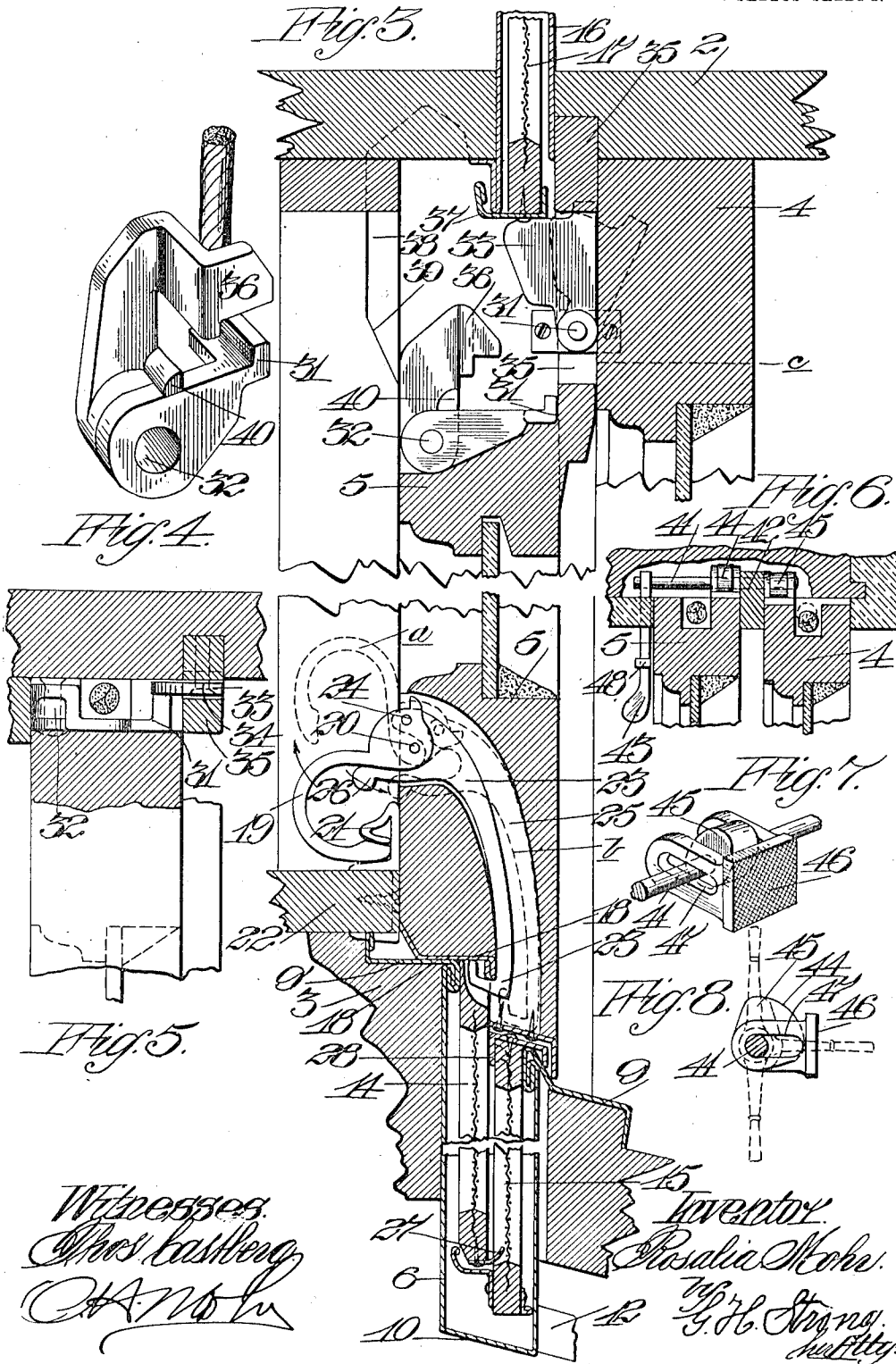
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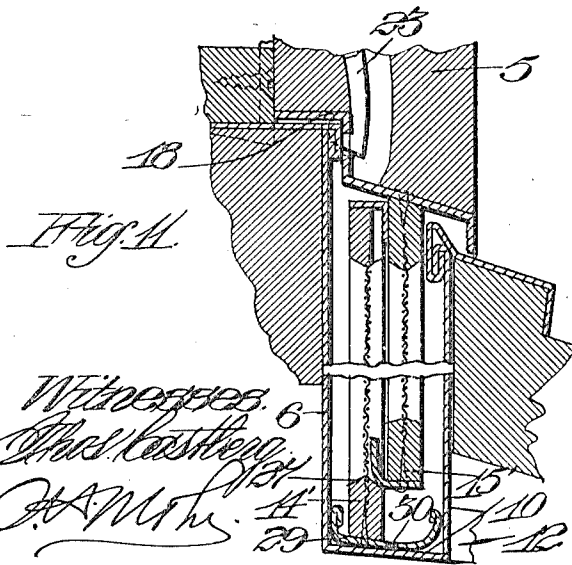
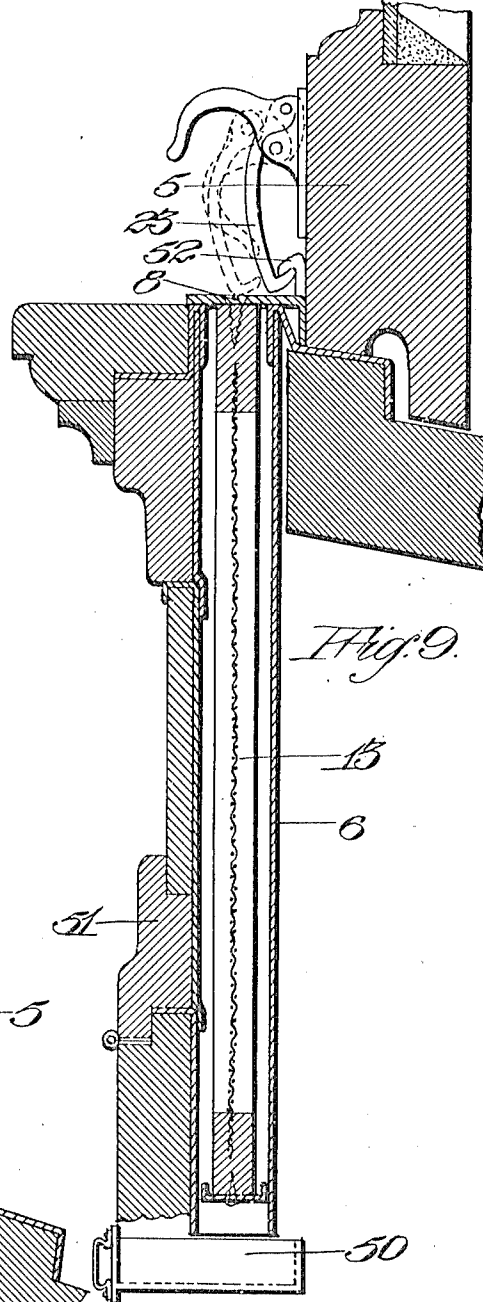
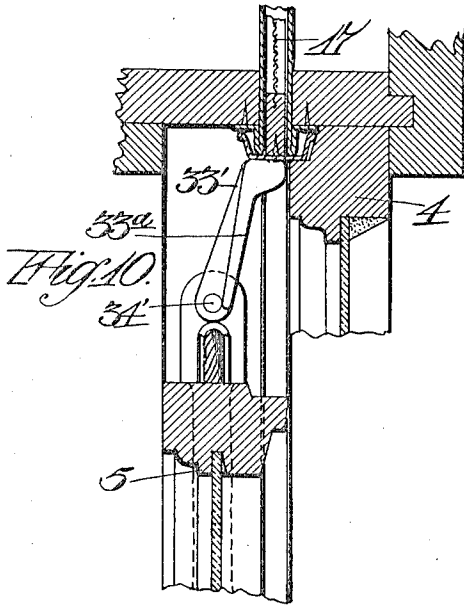


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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ROSALIA MOHR, OF SAN FRANCISCO, CALIFORNIA.

WINDOW AND SCREEN ATTACHMENT.

1,001,294.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed August 10, 1910. Serial No. 576,539.

To all whom it may concern:

Be it known that I, ROSALIA MOHR, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Window and Screen Attachments, of which the following is a specification.

This invention pertains to window screens and particularly to window screens adapted to be operated by the sashes, and to casings for the screens.

The invention is designed for the purpose of providing window screens which are mounted in protecting casings removably secured in the window frames of a building and within which the screens may telescope and be guided and protected; to provide means whereby the screens may be operated in conjunction with the sashes of the window or may be operated irrespectively of the operation of the window sashes; to provide in combination with the disappearing screens means whereby the same may be automatically or manually connected or disconnected from the window sashes and to provide means whereby the disappearing screens may be firmly locked at different elevations within their guides in conjunction with the window sashes.

An important object of the invention is the provision in combination, of window sashes, disappearing screens adapted to be connected automatically or manually with the sashes and in providing removable, detachable casings for the reception, guidance and protection of the screens and to provide in combination with the casing means whereby the same prevents the admission of debris to its interior and means whereby such debris as may possibly enter may be readily removed and also to provide in the casing means for the constant automatic and free discharge by drainage, of such water as may enter the casing either when the screens are being washed, or due to the beating in of rain water.

Further objects of this invention will be made manifest in the following specification among which is the provision of a rigid channeled or plain screen formed for guidance over suitable rails provided for their reception on the sides of the protecting casing.

The invention consists of the parts and

the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a sectional view of the window and frame, showing the screens in their respective casings or pockets. Fig. 2 is a perspective view of the casing, its screens and their guides and the drain spout, ready to be placed in a building. Fig. 3 is an enlarged sectional view showing the screen locking and connecting devices. Fig. 4 is a perspective view of the upper latches. Fig. 5 is a transverse section of the window and frame showing in detail the relative position and shape of the latches as regards the pulley rope. Fig. 6 is a plan view in section showing the sash lock. Fig. 7 is a perspective view of one of the cams and clamping shoes of the lock. Fig. 8 is a diagrammatic view showing the position of the locking cams. Fig. 9 is a modification of the lower section and the hook for lifting the same. Fig. 10 is a modified form of latch for the upper screen. Fig. 11 is a modification of the lower screen structure shown in Fig. 3.

The preferred form of my invention is clearly represented on Sheets 1, 2 and 3 of the drawings in which 2 represents the head frame and 3 the sill frame of a window structure, which manifestly may be for ordinary sliding, balanced upper and lower sashes 4 and 5; or it may be a structure built to accommodate casement or other windows, shown in the modified forms of my invention.

A particular feature of this invention is the structural and operative combination with the sashes, of disappearing screens and protecting casings therefor, which casings and screens are susceptible of various forms as may be determined by the requisites of special conditions and which I have shown by modifications.

In Fig. 1 the sashes 4 and 5 are shown in section and below the lower sash 5 is a casing or box 6 preferably adapted for quick and easy removal from the window structure 3. This casing, clearly represented in Fig. 2, is provided with detachable channel shaped guides 7 secured by screws or other devices through the walls 8 to the window frame. Thus after the casing has once been inserted in the wall, the rails 7 may be

removed for renewal without disturbing the body of the box 6, though this may be lifted from the wall whenever the emergency requires it.

The top of the box 6 is formed with sill or cap flanges 9 and 9' bent to perfectly and snugly fit the sill or frame and to prevent the access of dust, debris or rain through the joints and into the frame, but in order to facilitate the washing, cleaning and drainage of the inclined bottom 10 of the box, a drain spout or ventilator 11 is made at one end and adapted to discharge into a separate drain 12 which may be permanently left in the wall.

Within the vertical space of the casing 6 is mounted either a single screen 13, Fig. 1, or a sectional telescopic one as at Fig. 2, which has inner and outer lapping sections 14 and 15, and which telescopic screen may be used only when the distance below the sash 5 will not permit of the use of a single screen 13 of sufficient length to close the opening of the window when the sash is raised.

The size of the screen is determined by the depth of the pocket and the depth of the pocket is, as a rule, determined by the height of the sill from the floor. It often happens that the traveling distance of the sash is greater than the depth of the pocket, in which event, the screen being in form a rigid simple frame, can be made to telescope into as many sections as necessary to accommodate the space exposed.

The pocket into which the lower screen slides being a ventilated and drained receptacle designed in form to allow for its convenient removal in the event of such becoming necessary, and for placing within the wall, it has been arranged so that with but slight deviation from the usual form of construction the studs or masonry, whatever the case may be, are not affected materially.

The top part of the opening to the pocket is formed to render its application to the sill and frame absolutely weather proof, by means of the projecting flashings 9 and 9' and the flexible side plates 8.

In forming the opening for the passage of the screen, it is the intention to prevent the entrance of all foreign matter.

It may here be stated that the outer portion of the guide rails 7 are continued upward acting as channel guides for the top screen 17 and are connected to a box 16 removably supported in the head frame 2 and in which is slidable an upper screen 17 adapted to be operated in conjunction with the lower sash 5.

A feature of the invention to which particular attention is called, is the means whereby the sash may be connected and disconnected automatically to the screen 13 or the screen 17, or both of the screens, at will.

These means are so designed that the sashes 4—5 may be operated irrespectively of the screens in the casings 6 or 16.

Since it is desired at frequent intervals to open the window by moving either one of the sashes and not expose the screens, the screen 13 has formed upon its upper rail a flange 18 adapted to coincide with the top flanges 9 of the casing 6 for the purpose of forming a perfect seal over the opening of the casing 6, and also for the purpose of concealing the screen 13 and effectually hiding the same from view when it is desired, as stated, to move the sashes 4—5 without exposing the screens. A further purpose of forming the flange 18 on the top of the screen section 13, is to prevent the ingress of debris into the casing 6, which would be possible after the lower sash 5 had been raised were no such closure for the top of the casing provided. The means for forming the connection between the sash 5 and the lower sash 4 either automatically or manually, comprise suitable hook-shaped window lifts 19 pivoted at 20 in the bottom rail of the lower sash which is adapted when the sash is lowered to pass over and in under suitable keepers 21 formed to engage the point of the pivoted lifters 19 and secured in any appropriate manner to the window stool 22. This peculiar lifter 19 of which there may be one at either side of the window sash, has the triple function, first, of being a lock when in engagement with the keeper 21, second, of being the means by which power is applied to lift the sash; third, of providing a lever whereby a hook 23 may be engaged or disengaged from the top flange 18 of the window screen 13 to lift the same from its casing and to hold the screen and sash tightly together.

It may be here stated that reference to a window screen 13 also includes reference to the complementary telescopic screens 14 and 15.

The hook 23 is pivoted at 24 upon the lifter 19 and is permitted to move freely in a chamber 25 formed in the bottom rail of the sash 5, and is provided with a small knob 26 relatively below its pivot 24, and projecting from the face of the sash 5 so that when it is desired to raise the sash 5 without lifting the screen 13 the hook is uncoupled from its engagement with the flange 18 by pressing backwardly on the knob 26 after the lifter 19 has been turned upwardly to the position shown in dotted lines *a*, which will throw the hook into a position shown by the dotted lines *b*, Fig. 3. The first movement of the lifter 19 swings the fulcrum 24 rearwardly into the pocket 25 and allows the bill of the hook 23 to be lowered and disengaged from the screen top 13, and, as stated, if then the knob 26 be pushed backwardly, this will throw the hook into

the chamber 25 and the sash 5 may be raised without lifting the screen 13.

When the sash 5 is in its lower position, as shown, clearly in Fig. 3, and the hook is left in engagement with the top of the screen 13 and the sash 5 is being raised, the engagement of the hook bill with the screen 13 will cause the same to be lifted simultaneously with the sash, as it is raised, and in the event that the screen is of the telescopic type 14—15, when the inner section 14 has been raised a limited distance, it will engage, by means of a projecting bottom plate 27, with a flange 28, formed in the top of the outer screen section 15, and thereafter as the sash 5 is further raised the two sections will travel upwardly, together forming a screen closure of height equal to the space between the bottom rail of the sash 5 and the top of the casing 6.

In Fig. 11 the relation of the hook 23 and its engaging flange 18 is slightly modified, and the interlocking plate 27 is formed on the outer section 15', instead of on the inner section 14', the operation of the two sections being substantially the same in either case.

In order to avoid as far as possible the accumulation of debris within the casing 6, there is attached to the screen sections 14' and 15' a tray-shaped flange 29 adapted, when the screen is in its uppermost position, to effectually close the mouth of the casing, thus preventing any particles from being precipitated into the casing, and this tray may, if desired, be perforated as at 30; so that small particles, like grains of sand or the like, may be washed through the tray 29 during the washing operation of the screens and windows, and fall within the casing 6, and be discharged along the inclined bottom 10 of the same, and eventually out through the spout 12, which may be connected either to the drain system of the building, or simply fall without the walls of the same. The provision of this basket or tray is important, in that it will prevent the accumulation of material within the casing 6 when the screen sections are raised, as it effectually closes the mouth of the casing at such time, and should it become very much filled with the accumulation, this can be swept out when the screen is raised to its uppermost position, at which time the tray 29 is substantially flush with the sill of the window. The tray 29 is as wide as the opening in the casing and bears against its walls, preventing rattling of the screen and forming a movable bottom to catch material falling into the casing.

It will be seen from the foregoing, that the sash 5 may be raised independently along the guides 7 of the casing 6, or that it may be coupled and uncoupled at will, so

as to expose the screen 13 without reference to the relative position of the upper sash 4.

When it is desired to lower the upper screen 17 from its pocket or casing 16 the sash 5, which may at the time be either coupled or uncoupled from the lower screen, may be raised by means of its lifts 19 to a position sufficiently to enable one to have access to the outer and upper sash 4. The sash 4 is then pulled down a distance of two inches or more, thus allowing a shoe 31 which is pivoted at 32 in the meeting rail of the sash 5, to engage and push back a detent 33, which is pivoted at 34 in the parting strip 35, as clearly shown in Figs. 3 and 5. This detent has the function, when in its vertical position, Fig. 3, of supporting the lower rail of the upper screen 17, and as the shoe 31 presses the detent 33 from below the lower end of the screen 17, and clear thereof, the screen will drop a distance of approximately an inch and rest upon the surface of the member 31, which is in alinement with the top of the top rail of the lower sash upon which it then rests.

In order to positively pull the screen 17 from its casing 16, and overcome its friction in the slides, there is pivoted upon the pivot 32, an offset lever 36, which forms a latch adapted to be tilted back as the sash 5 is raised by engagement with a projecting angular flange 37, which is secured to the bottom of the screen 17. In order to allow the latch 36 to tilt backwardly as it engages the flange 37 a suitable recess 38 is made in the window frame, and when the sash 5 has been raised to its highest position, forcing outwardly the detent 33, the hook 36 will then be in a position above the lip of the flange 37 and after the screen 17 has dropped to the top of the sash 5, and the latter pulled downwardly, the latch or hook 36 will be caused to advance, and overlap the lip of the flange 37 by an inclined surface 39. Thereafter the screen 17 being connected to the sash 5 will travel uniformly therewith when the same is adjusted vertically within the guide rails 7. By this construction of separate devices, one for connecting with the screen 17 and one for connecting with the screen 13, the operator is enabled to lift the screen 13 as the sash 5 is raised, and also to couple to the screen 17, so that the sash 5 may be pulled to a center between the sill and the head of the window, leaving spaces above and below which are protected respectively, by the screens 17 and 13, it being optional with the operator to select either of the screens 13 and 17 without regard one to the other. The screen 17 must always be connected to the sash 5 by the latch when it is to be operated or pulled from its casing.

When it is desired to detach the upper screen 17 from its position on the top of sash 5, this is done by pushing the sash with its superposed screen to the uppermost position, pocketing the screen, and then pushing up on the outer or upper sash 4 until it abuts the flat co-acting wall of the detent 33, when this will swing inwardly and under the shoe 31, which will rock upon its pivot 32, and by reason of engagement with a lug 40 the latch 36 will tilt the latter rearwardly, so as to disengage it from the lip of the flange 37 when the sash 5 may be pulled downwardly and the screen 17 will again take position upon the top edge of the detent 33, after which as the sash 5 is pulled farther down in its guides the latch 30 will be tilted to a vertical position again by the cam surface 39, and this will simultaneously, by means of lug 40 depress the shoe 31 into alinement again with the top surface of the meeting rail of the sash 5.

It will be observed that the detent 33 not only serves the purpose of supporting the screen 17 in its pocket 16, independently of any other element, but it also forms a lock to prevent the same from being pulled downwardly unless the upper window sash 4 is first lowered, so that its top rail is lower than the pivot 34, as shown by dotted lines c, Fig. 3.

The latch 36 is offset so as to provide clearance for the usual sash rope or chain of the window as at Fig. 4.

In Fig. 10 I have shown a form of detent 33' for supporting the screen 17, and by the use of which I am enabled to dispense with the shoe 31 and the latch 36. In this instance, the detent 33 is pivoted at 34' in the window frame, and is provided with an inclined face 33^a, so disposed that as the sash 5 is raised in its guides its rope groove will encompass the detent 33' and engage the wall 33^a, so as to withdraw the head of the detent from below the screen 17, after the window sash has been raised for position just below the screen 17; when the upper sash is raised it will engage a flange on the upper screen and replace the screen.

The flanges at the bottom of the upper screen are pan-shaped and may be used to contain a fumigating material when it is desired to fumigate the building, as in hospitals, jails, etc.

For the purpose of locking the sashes 4 and 5 at any position in the frame of the window, so as to firmly secure them against movement either when they are connected to, or free from the screens 13 and 17, I have provided, transversely mounted in the frame of the window, a suitable rocker shaft 41 in appropriate bearings 42 and provided on its inner end with a lever 43, whereby it may be rocked. At suitable points on the rocker shaft 41 are fixed two

cams 44 and 45, the former of which is substantially a quadrant, and adapted to turn through an arc of 90 degrees, approximately, and thrust outwardly a straddle shoe 46, having a slot 47 and passing over the rocker shaft 41. The cam 45 is substantially elliptical in shape, and is adapted to engage the sash 4 when the shaft 41 has been turned about 90 degrees. By this difference in the peripheral surface of the two cams 44 and 45, it is possible by throwing them entirely free of the edge surface of the sashes 4 and 5 to lift the sashes unrestricted in their movement, or if it is desired to lock one of the sashes as for instance 4, then the handle 43 is turned to bring the cam 45 into engagement with its shoe 46, adapted to bear on the side of the sash 4, and thereby jam the same, locking it at any point in its vertical slides. When it is desired to lock both the sashes, further rotation of the rocker shaft 41 will bring the locking cam 44 into frictional contact with its shoe 46, which will be pressed into snug engagement with its co-acting sash 5.

In Fig. 9 I have shown my improved window screen 13 and its casing 6, as mounted on the inside of a building, and having its lower portion left open or bottomless, and thus allowing for the discharge of articles of debris and dust into a transversely removable, horizontal draw 50, mounted below a swinging panel 51, which is provided so that access may be had when necessary, to the interior of the casing 6. This particular form of arrangement of the screen and its casing is practical when it is desired to place the disappearing screen in an old building, thus avoiding the expense and labor of tearing out the studding in order to insert the casing 6 in line below sash 5. An appropriate hook 23 is employed to engage a suitable knob 52 secured to the screen cap 18 which covers the mouth of the casing 6 when the screen is in its lower position.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a window, a screen, a casing built within the window and adapted to receive the screen, flanges formed upon the top of the casing adapted to conform to the surface of the window sill and frame, and flanges secured to the top of the screen whereby the screen is supported upon the flanges of the caps of the screen casing.

2. A window screen, a casing removably mounted within the wall of the building and adapted to receive the screen detachable guide rails fastened to the upper end of the casing, sill flanges fastened to the top of the casing, and complementary flanges secured to the screens and adapted to rest on the flanges of the casing.

3. A window screen, a casing removably

mounted within the wall of the building and adapted to receive the screen, detachable guide rails fastened to the upper end of the casing, complementary flanges secured to the screens and adapted to rest on the flanges of the casing, and a dirt receptacle secured to the lower end of the screen whereby debris is prevented from falling into and accumulating within the casing when the screen is raised.

4. A casing adapted to be removably inserted within a window frame and between the partitions of the building, said casing being provided with sill engaging flanges and inclined bottom plate, and a discharge spout whereby debris may be removed from the interior of the casing.

5. A casing adapted to be removably inserted within a window frame and between the partitions of the building, said casing being provided with sill engaging flanges and inclined bottom wall, a discharge spout whereby debris may be removed from the interior of the casing, and a drain formed at one end of the casing.

6. A casing adapted to be removably inserted within a window frame and between the partitions of the building, said casing being provided with sill engaging flanges and inclined bottom wall, a discharge opening whereby debris may be removed from the interior of the casing, a drain formed at one end of the casing, a drain formed on the bottom of the casing, and a spout mounted in the walls of the building whereby the discharge from the drain of the casing may be delivered beyond the building.

7. The combination in a window structure, of movable sashes, flashings having flanges to rest upon the window sill and forming removable boxes, screens telescopic in said boxes and connected with the sashes, and screen guides connecting the flashings.

8. The combination in a window structure, of removable upper and lower boxes, guides connecting said boxes, sashes movable along said guides, screens having recessed edges adapted to embrace and travel on the guides, flashings formed upon the upper end of the lower box, and flanges on the bottom edge of one of the screens to rest on said flashings.

9. The combination in a window struc-

ture, of box-forming linings removably mounted between the walls of said structure, vertical strips of lining forming guides, window sashes slidable along said guides, screens telescopic with linings and having recessed edges engageable with the guides, and means whereby the sashes and screens may be coupled.

10. The combination in a window structure, of sill, stile and head members, side walls spaced to form chambers above and below the head and sill, linings forming upper and lower boxes in said chambers, an upper sash, a screen operable by said sash and adapted to be concealed in the upper box, a lower sash, and a lower cooperating screen having a flange adapted to cover the mouth of the lower chamber when the screen is concealed therein.

11. The combination in a window structure, of sill, stile and head members, side walls spaced to form chambers above and below the head and sill, linings forming upper and lower boxes in said chambers, an upper sash, a screen operable by said sash and adapted to be concealed in the upper box, a lower sash, a lower cooperating screen having a flange adapted to cover the mouth of the lower chamber when the screen is concealed therein, and a flange secured to the lower edge of the lower screen, forming a tray for debris falling into the screen box.

12. The combination in a window structure, of sill, stile and head members, side walls spaced to form chambers above and below the head and sill, linings forming upper and lower boxes in said chambers, an upper sash, a screen operable by said sash and adapted to be concealed in the upper box, a lower sash, a lower cooperating screen having a flange adapted to cover the mouth of the lower chamber when the screen is concealed therein, a flange secured to the lower edge of the lower screen, forming a tray for debris falling into the screen box, and a receptacle or drain for the lower box.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROSALIA MOHR.

Witnesses:

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FREDERICK E. MAYNARD.