April 7, 1931. S. B. ZIMMER 1,799,719

SCREENED CLOSURE CONSTRUCTION

Filed Oct. 24, 1928

Fig. 1.

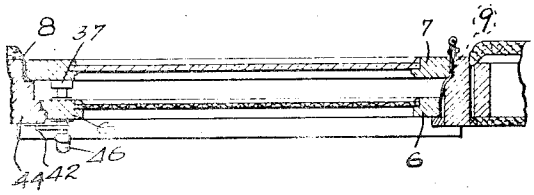


Fig. 2.

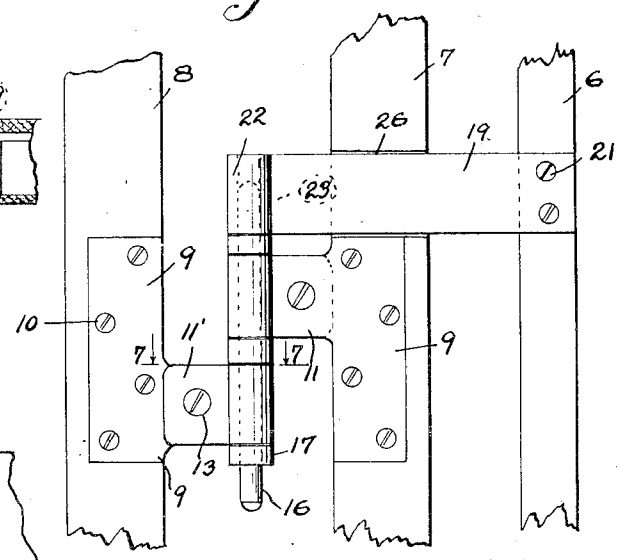


Fig. 3.

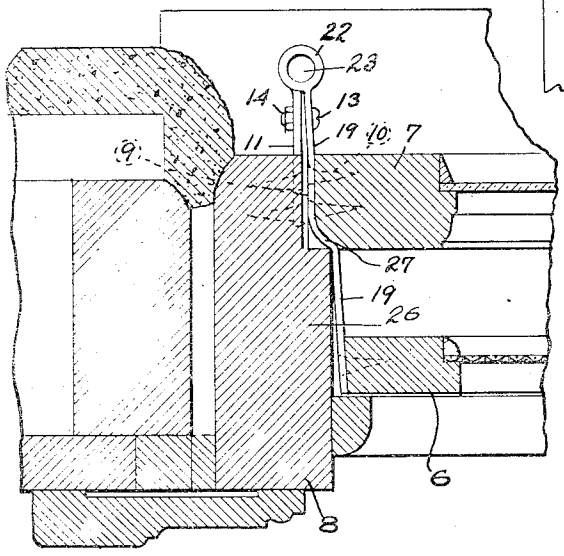


Fig 7

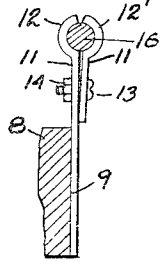


Fig. 6.

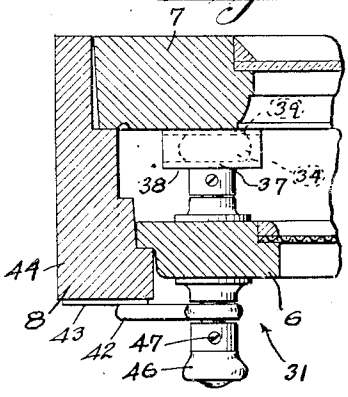


Fig. 4.

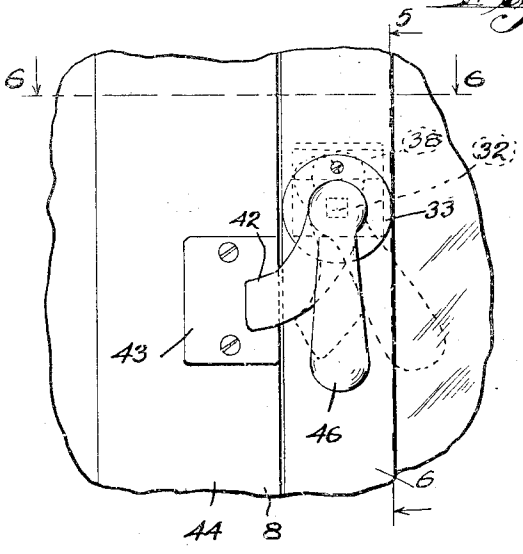
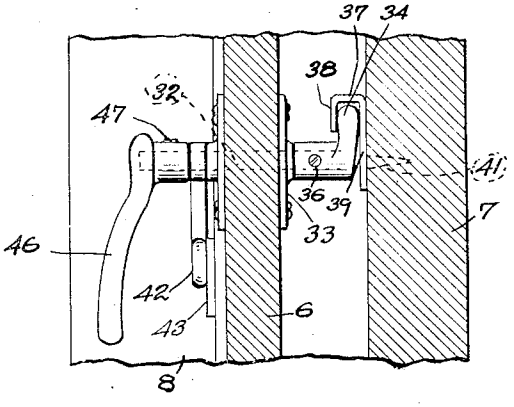


Fig. 5.



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UNITED STATES PATENT OFFICE

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SCREENED-CLOSURE CONSTRUCTION

Application filed October 24, 1928. Serial No. 314,706.

This invention relates to hinged closure constructions, and more especially to an improved method of mounting a hinged closure and a suitable screen for the opening with which the closure is associated.

An object of the invention is the provision of a novel method of hanging a screen in relation to a window or other closure by means of which the screen may be disposed upon the inside of the closure, permitting the closure to open outwards from its casement.

A further object is the provision of a hinged closure construction provided with a suitable screen which also is hinged, both the closure and screen being so mounted that they open outwards.

A still further object is the provision of a novel manner of mounting a closure and screen as above described, in which the screen and the closure are both mounted upon the same hinges so that in moving, they swing about coincident axes.

A still further object is the provision of a novel catch or fastener designed primarily for employment in conjunction with a closure and screen mounted as above described, and by means of which both the closure and screen may optionally be fastened in closed position, or the screen alone may be fastened in closed position with the closure either partly or fully opened.

A still further object is the provision of a novel closure construction having the general characteristics described, and provided with friction or other suitable means for releasably retaining the closure in adjusted open position after it has been released by the fastening means.

It is a further object of the invention to provide a method of mounting a closure and screen upon a casement, which will produce a relatively simple and inexpensive construction, and one which is generally superior in efficiency and serviceability, as well as attractive in appearance.

The invention possesses other objects and advantageous features, some of which, with those enumerated, will be set forth in the following description of the invention's particular embodiment which is illustrated in the drawings accompanying and forming a part of the specification.

Referring to the drawings:

Figure 1 is a horizontal sectional view taken through a window casement, and showing a sash and screen pivotally mounted therein in a manner incorporating the features of my invention.

Fig. 2 is an enlarged side elevation of the hinge by means of which the sash and screen of Fig. 1 are mounted.

Fig. 3 is a horizontal sectional view taken through one side of the casement and the sash and screen of Fig. 1, and showing the hinge of Fig. 2 in plan, the sash and screen being moved to closed position.

Fig. 4 is an enlarged front elevation of the fastening device employed with the structure of Fig. 1. The full lines indicate the positions of the device when fastening both the sash and screen to the casement, and the dotted lines indicate the position of the device when the sash and screen are fastened together but are released from the casement.

Fig. 5 is a vertical sectional view taken through the sash and screen frame, upon the line 5—5 of Fig. 4, the direction of view being indicated by the arrows and showing the fastening device in side elevation.

Fig. 6 is a horizontal sectional view taken upon the line 6—6 of Fig. 4, with the direction of view indicated by the arrows, and showing the fastening device in plan.

Fig. 7 is a horizontal sectional view taken upon the line 7—7 of Fig. 2, the direction of view being indicated by the arrows.

In building construction, a problem somewhat difficult of solution, has been presented in the hanging of hinged windows which are to be provided with screens. It is of course, desirable that both the screen and window sash be mounted to pivot outwards from the casement, because otherwise, the hanging of draperies is interfered with; and also, if the casement swings inward, the problem of providing a rain-proof closure, can not be solved satisfactorily. If the screen and sash are separately hinged for pivotal movement outwards in opening, and the screen is dis-

posed outside the window, of course it will be impossible to have the screen in operative position with the window open; and if the screen is disposed inside the sash and each is hinged separately from the other for movement outwards in opening, access to the window is impossible. In its broad conception therefore, my invention is to overcome this difficulty by providing means for pivotally mounting a closure such as a window sash or door and a screen, upon common pintle pins for movement about coincident axes of rotation, the screen being disposed inside the closure. A novel fastening device is also provided, by means of which both the sash and screen may be fastened in closed position, or the screen alone may be fastened closed with the closure in either partially or fully opened position. Means are further provided for releasably retaining the closure in adjusted open position after the fastening means have been disengaged therefrom.

Specifically describing the invention in the most practical form thereof, of which I am at present aware, the hinge by means of which both the screen frame 6 and window sash 7 or other closure are mounted within a casement 8, comprises a pair of hinge straps, each of which includes a plate 9 having apertures therein through which screws 10 or analogous fastening means may be extended to secure one of the straps to the casement 8. A wing 11 extends laterally from the plate 9 and is provided at its outer end with an arcuate portion 12; and a separate wing or plate 11′ having a complementary arcuate portion 12′ is adjustably attached thereto by a bolt 13 and nut 14 by means of which the wings 11 and 11′ may be pressed tightly against the pintle pin 16 which is retained between the arcuate portions 12 and 12′. This pintle pin 16 is provided with preferably three spaced collars 17 which may be integral therewith or otherwise formed according to the most convenient method of manufacture; and the arcuate portions 12 and 12′ grip the pintle pin 16 between two of the collars 17. Preferably the two straps of the hinge are identical in construction, the wing 11 of each being disposed adjacent one end of the fastening plate so that by simply inverting one of the straps, it may be disposed between the other two collars 17 as clearly shown upon Fig. 2. The screen frame 6 is also mounted upon the pintle pin 16 through the expedient of an extending hinge strap 19. The outer end of this strap 19 is provided with apertures through which screws 21 or other fastening means may be passed for the support of the screen frame 6; and a socket 22 is formed upon the inner end of the strap 19. This socket 22 is disposed upon an extension 23 of the pintle pin 16 above the uppermost collar 17, with the result that it may be removed therefrom by simply lifting it in a direction parallel to the axis of the pin 16. An extension 23 is formed upon each end of the pintle pin 16, with the result that the hinge is adapted for either left hand or right hand installation by simply inverting the assembled straps and the pintle pin 16, after which the strap 19 may be disposed upon the uppermost extension 23.

A recess 26 is formed in the hinged edge of the sash 7, for the accommodation of the strap 19 when both the screen frame 6 and sash 7 are in closed position; and in order to permit the employment of the usual jamb 26 around the edges of the sash 7, the strap 19 is offset as shown at 27 upon Fig. 3. Therefore, no interference is encountered in moving the screen frame 6 and sash 7 to closed position.

The fastening device which I have designed for employment in conjunction with the hinge above described, is indicated in its entirety at 31, and includes a shank 32 mounted for pivotal movement within escutcheon plates 33, one of which is securable to each side of the screen frame 6 so that the shank 32 extends through a hole in the screen frame 6. A short arm 34 is preferably removably securable, by means of a fastening screw 36, to the shank 32 upon the outer end thereof. This arm 34 is engageable with a catch plate 37 fastened to the sash 7 and formed by bending a plate of suitable resilient material, back upon itself with the edge 38 thus bent, spaced from the body 39 of the plate, a distance equal to or slightly greater than the thickness of the arm 34, so that the arm 34 can be received therebetween. Screws 41 or other suitable fastening means may be passed through holes in the body 39 to secure the catch plate 37 in position. Another arm 42, preferably longer than the arm 34, is rigid with the shank 32 upon the inside of the screen frame 6. This arm 42 is preferably curved as clearly shown upon Fig. 4, to engage a strike plate 43 rigid with the inner face of the casement 44 so that the screen frame 6 is held against opening outwards as long as the arm 42 is in engagement with the plate 43. It is also readily apparent that the sash 7 is also held against movement outward, as long as the arm 34 is engaged with the catch plate 37. An operating handle 46 is rigidly and preferably removably attached by means of a screw 47, to the inner end of the shank 32. A convenient method of manufacturing the fastening device 31, is to make the shank 32 of square stock, and to provide both arms 34 and 42 and the handle 46, with square apertures within which the shank may be disposed. Suitable longitudinal adjustment of the shank 32 may be effected, after which the parts may be held in adjusted position by tightening the screws 36 and 47.

The manner of operating the fastening device when employed with the hinge of Figs. 2 and 3, is substantially as follows:

When it is desired to move the sash 7 to either partially or fully open position, the shank 32 should be turned by means of the handle 46, a distance sufficient to disengage the arm 42 from the strike plate 43. The position of the device indicated in full lines upon Fig. 4, is that in which the arm 42 is engaged with the strike plate; while the position of the device indicated in dotted lines upon the same figure, is that in which the arm 42 is disengaged from the strike plate 43; but the arm 34 has not been moved out of engagement with the catch plate 37. Therefore, by moving the device to the position indicated in dotted lines, both the screen frame 6 and sash 7 may be swung outwards about their common pintle pin 16. When the sash 7 has been moved to the desired position, further rotation of the shank 32 will effect disengagement of the arm 34 from the catch plate 37, permitting the screen 6 to be moved back to closed position, after which the arm 42 may be again engaged with the strike plate 43, holding the screen 6 closed. The friction set up between the plates 9 and 18 of the hinge by tightening the nuts 14 upon their respective bolts 13, will be found sufficient to retain the sash 7 in adjusted open position against the action of the wind. When it is desired to close the window, the arm 42 should be disengaged from the plate 43 so that the screen 6 may be swung outwards. The shank 32 should be rotated far enough so that the arm 34 may be moved into register with the space between the portions 38 and 39 of the catch plate 37, whereupon by rotation of the shank 32, the sash 7 may be engaged by the arm 34, permitting the sash 7 to be pulled to closed position with the screen 6, after which the arm 42 may be again engaged with the plate 43 to fasten both the screen 6 and sash 7 closed.

It should be observed that I contemplate employing the structure above described, in the mounting of doors as well as windows; and in fact, in any association where it is desired to provide a hinged closure with a screen. It should also be noted that customarily, when providing a door with a screen, the screen is disposed outside the door. It is frequently the case that a residence is provided with an expensive and ornamental front door, and that the hanging of a screen door outside of such ornamental door, has a decided deleterious effect upon the general appearance of the residence. It is not desirable however, in many instances, to mount the screen inside the door to swing inwards. Therefore, by employing a construction embodying the features above described, the screen may be disposed inside the door with both screen and door mounted for movement outwards in opening, with the result that the screen is fully as serviceable as under other circumstances, and yet does not serve to alter the normal appearance of a residence.

Various changes may be made in the details of the invention as herein described, without departing from the scope thereof as defined by the appended claims.

I claim:

1. A screened closure construction comprising a casement, a closure pivoted thereto, a screen pivoted to the casement for movement about an axis coincident with that of the closure, and means for optionally fastening the screen or both the screen and closure in closed position.

2. A screened closure construction comprising a casement, a closure pivoted thereto, a screen pivoted to the casement for movement about an axis coincident with that of the closure, means for optionally fastening the screen or both the screen and closure in closed position, and means for maintaining the closure in adjusted open position.

3. A screened closure construction comprising a casement, a pintle pin associated therewith, a closure and a screen pivoted on said pintle pin, and means for optionally fastening the screen or both the screen and closure in closed position.

4. A screened closure construction comprising a casement, a pintle pin associated therewith, a closure and a screen pivoted on said pintle pin, means for optionally fastening the screen or both the screen and closure in closed position, and means for maintaining the closure in adjusted position.

5. A closure construction of the class described, comprising a casement, a pintle pin carried thereby, a plurality of members pivotally mounted on said pin, and releasable means operable to optionally lock one or all of said members in closed position.

6. A screened closure construction comprising a casement, a fixed hinge strap carried thereby, an elongated pintle pin seated in said strap, a closure, a hinge strap secured to said closure and journalled upon said pintle pin, a screen disposed upon the opposite side of said closure from said pintle pin, a hinge strap secured to said screen and pivoted upon said pin, and releasable means for fastening the screen or both the screen and closure in closed position.

In testimony whereof I have signed my name to this specification.

SAMUEL B. ZIMMER.