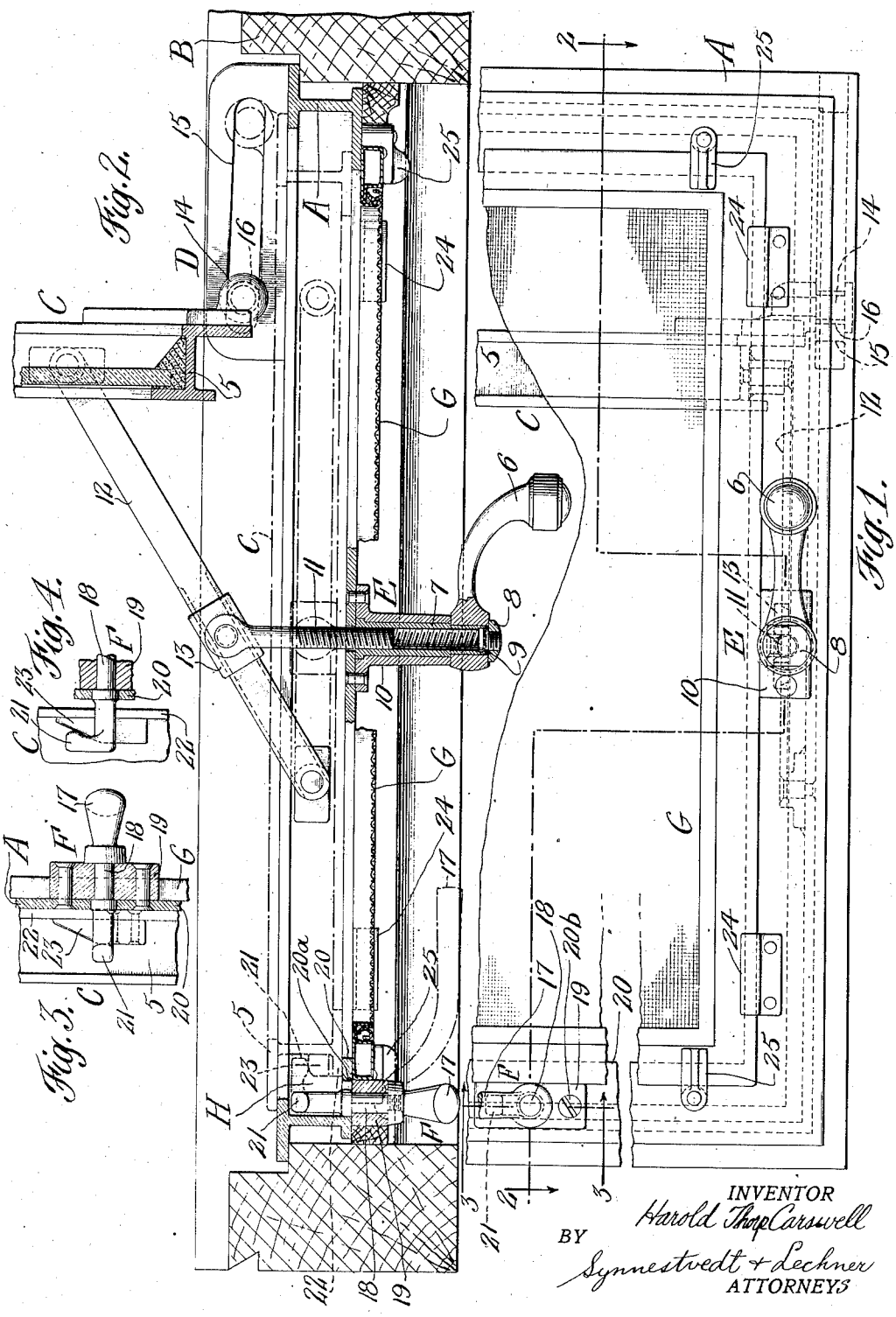
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CASEMENT WINDOW

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CASEMENT WINDOW

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This invention relates in general to improvements in casement windows and has for its primary object the provision of a novel arrangement of parts whereby screens may be applied to outwardly opening casement windows in a manner that the window may be fully and effectively manipulated from the inside without disturbing the screen.

A more specific object of my invention is the provision of a screened casement having an outwardly opening window which may be readily moved from open to closed positions without disturbing the screen, and in which the window can be drawn tightly to the frame and so locked without disturbing the screen.

A further object is to provide, in a casement window of the metallic type, novel means for operating the window and novel means for locking the window so arranged as to enable a screen to be detachably secured against the casement frame in such manner as not to be disturbed when operating or locking the window.

How the foregoing, together with such other objects and advantages as may hereinafter appear, or are incident to my invention, are realized, is illustrated in preferred form in the accompanying drawings, wherein—

Fig. 1 is a fragmentary elevational view of a casement window embodying my invention.

Fig. 2 is a plan section taken on the line 2—2 of Fig. 1 with certain of the parts appearing in elevation.

Fig. 3 is a sectional view of a detail of my invention, the section being taken substantially on the line 3—3 of Fig. 1, and

Fig. 4 is a fragmentary view similar to Fig. 3 but showing the parts in another position.

Referring to the drawings, and more particularly to Figs. 1 and 2, the device comprises, in general, a casement frame A secured in any suitable manner to the window jamb B; an outwardly opening window C, in this instance hinged at D in such manner as to cause the window when opening to move toward the center of the window opening for cleaning purposes; an operating device E for opening and closing the window; and a locking device F for locking the window in closed position. The casement frame A and the sash 5 of the window C are preferably of metallic construction and are substantially Z-shape in cross section. It is pointed out that when the window is closed, as indicated in dot and dash lines in Fig. 2, the frame and sash occupy substantially the same space as either one, transversely considered. It will also be observed that a space H is provided between the frame and sash.

The operating device E and the locking device F are of such construction and are so arranged as to enable me to secure a screen G against the casement frame A on the inside in such manner that the window C may be manipulated from the inside without disturbing the screen while, at the same time, fullest measure of compactness is secured.

The operating device E comprises a rotatable handle 6 extending sufficiently clear of the window jamb to permit of its rotation without striking the jamb, which handle is provided with an internally threaded shank 7, in this instance detachably secured to the handle by means of the nut 8, the shank being preferably provided with a squared portion 9 fitting a square hole in the handle to ensure rotation of the two together. The handle with its shank is carried by the casement frame A by means of the mounting or bearing member 10 which is secured as by means of rivets to the lower cross member of the frame. The shank 7 operates on a rod 11 provided with external threads corresponding to the internal threads of the shank and causes the rod to reciprocate in accordance with the direction of rotation of the handle. The reciprocatory movement of the rod 11 is transmitted to a link 12 pivoted at one end to the frame A and at its other end to the window sash 5, the connection being made by means of a swivel shoe 13 carried by the rod 11 and having dove-tailed engagement with the link. From the foregoing it will be seen that upon rotation of the handle in a clock-wise direction the link oper-

ates on the window C to close it, the hinge pin 14 moving in the slot 15 to the position indicated in dot and dash lines. It is to be noted that the slot 15 is disposed at an angle to aid in the closing of the window and thus reduce the power required to turn the handle. If desired, friction at this point may further be reduced by providing a freely rotatable sleeve 16 on the hinge pin 14.

The locking device F for locking the window in its closed position comprises an operating handle 17 carried by the frame A and preferably located approximately midway of the height of the frame. The handle is provided with a shank 18 having a bearing in the member 19 secured in any suitable manner to the frame. The shank 18 extends through the flange 20 of the frame A into the space H hereinbefore mentioned, and is provided at its inner end with a latch or arm 21, which arm engages the inner surface of the flange 22 of the window sash 5, thus locking the window in its closed position. Although the arm 21 may directly engage the flange 22, I prefer to provide a cam or taper plate 23 with which the arm is adapted to engage. By providing such a plate it will be seen that the locking device F, in addition to serving as a lock, also serves as a means for drawing the window tightly to the frame in its final movement. Thus it will be seen that the device F will function to cause proper and tight closure of the window. In this connection it is pointed out that without the provision of such a device effective closure would not result, as the opening and closing device cannot tightly jamb the sash against the frame. Furthermore, it will be understod that any lost motion in the operating device E will be taken up by this device F, as well as spring in the frame. The operation of the locking device is clearly illustrated in Figs. 2, 3 and 4.

In connection with the manner of assembling the device F it is pointed out that the shank 18 with the handle removed is inserted into the elongated slot 20^a, then the member 19 is placed on the shank and secured to the frame by means of the screws 20^b. The handle 17 is then screwed onto the threaded end of the shank and the shank may then be riveted over to prevent the handle from unscrewing as it is operated.

In connection with the devices E and F, it is pointed out that they are very compact and may readily be mounted marginally of the casement frame so that ample room is provided for detachably securing the screen G against the frame with sufficient lap of the screen, as clearly illustrated in Figs. 1 and 2.

In this instance, the screen is supported on the clips 24 secured on the frame and a plurality of catches 25 are provided at suitable points for securing the screen against the frame. To remove the screen, the catches 25 are rotated 90° and the screen is slightly lifted to clear the clips 24. The particular manner of securing the screen against the frame may be varied from that described without departing from the scope of my invention.

From the foregoing it will be seen that through the practice of my invention, outwardly opening casement windows may be equipped with screens in a novel manner, so that the window can be manipulated without disturbing the screen, both as to opening and closing the window and as to drawing the window tightly to the frame and locking it in closed position.

While I have described but one form of hinge it is to be understood that various other types may be employed as desired.

I claim:—

1. In combination, a metallic casement frame of substantially Z-shaped cross section, an outwardly opening window having a metallic sash of similar cross section, said sash when closed providing with the frame a rectangular space, and lock means carried by the frame for locking the sash to the frame including a locking member located within said space engageable with the sash and an operating handle for the locking member operable from the inside.

2. In combination, a metallic casement frame of substantially Z-shaped cross section, an outwardly opening window having a metallic sash of similar cross section, a locking handle mounted on the frame, said handle having a shank extending through a flange of the frame and said shank having a laterally extending arm, and a wedge shaped member secured to a flange of the window sash, said handle when operated moving said arm to engage the wedge portion of said member whereby to draw the window tightly to the frame and so lock it.

In testimony whereof I have hereunto signed my name.

HAROLD THORP CARSWELL.