May 14, 1946. F. E. AMTHOR 2,400,280

WINDOW GUARD LOCKING DEVICE

Filed Feb. 28, 1945 2 Sheets-Sheet 1

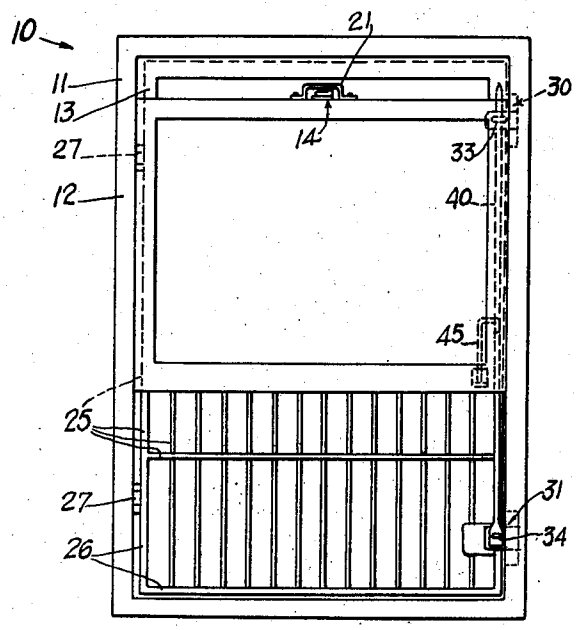


Fig. 1

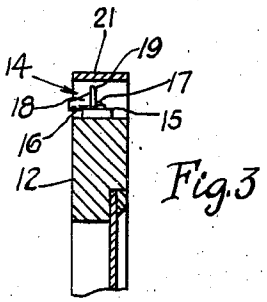


Fig. 3

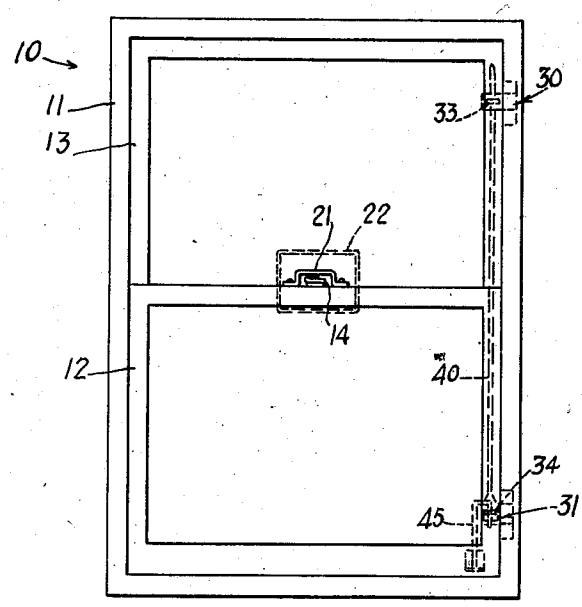


Fig. 2

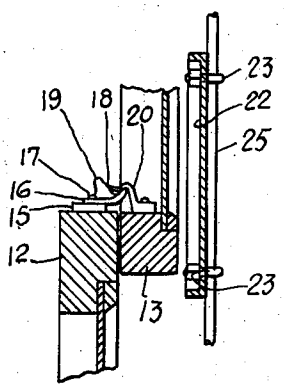


Fig. 4

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May 14, 1946. F. E. AMTHOR 2,400,280

WINDOW GUARD LOCKING DEVICE

Filed Feb. 28, 1945 2 Sheets-Sheet 2

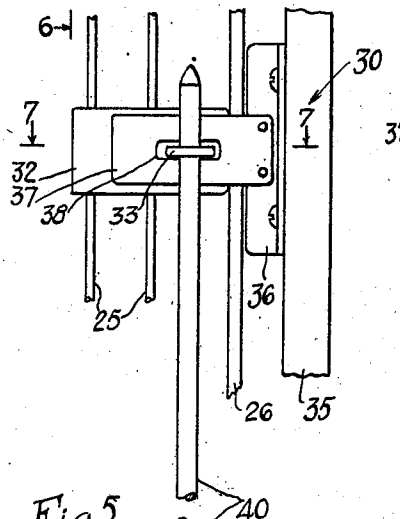


Fig.5

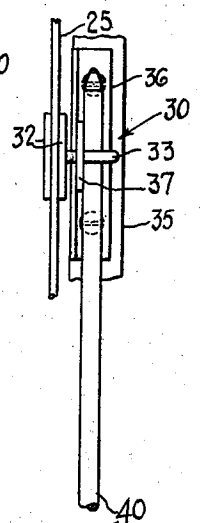


Fig.6

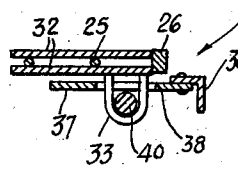


Fig.7

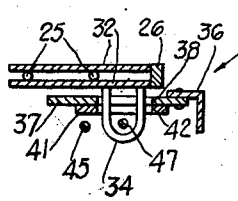
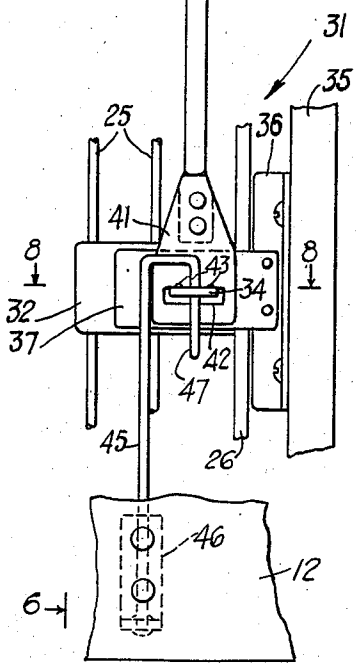


Fig.8



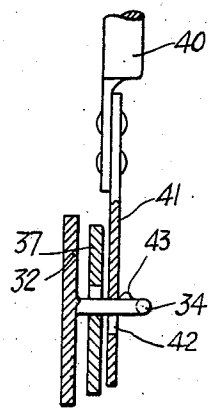
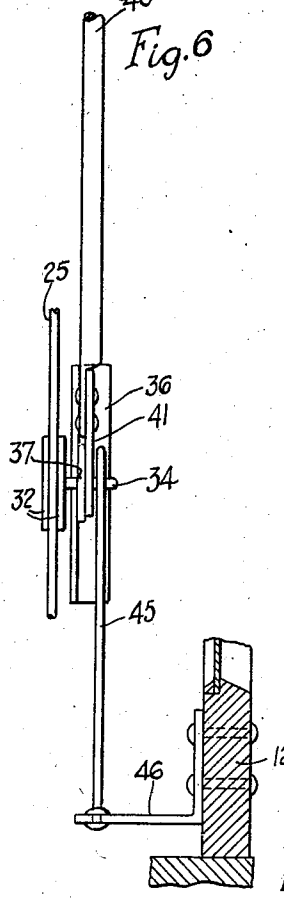


Fig.9



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Patented May 14, 1946 2,400,280

UNITED STATES PATENT OFFICE

2,400,280

WINDOW GUARD LOCKING DEVICE

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Application February 28, 1945, Serial No. 580,162

9 Claims. (Cl. 292—1)

This invention relates to window guard locking devices.

One object of the invention is to provide a locking device of the character described having improved means whereby the device retains a guard positively closed but in a releasable manner when a window sash is opened, a part automatically preventing the device from being released when the sash is closed.

Heretofore window guards have been held closed by key operated devices such as padlocks. In the event of fire it was often necessary to find the key, which was sometimes mislaid, in order to open the guard for egress by way of fire escapes or other means. Compliance with the fire laws requires that the occupants of a factory or other building must have the windows instantly available for exit in the event of hazard, and this has been a source of frequent difficulty and of violation of the law, due to key locked window guards.

It is therefore an object of the invention to provide means for avoiding these difficulties and at the same time to assure that the guards are locked when the factory is closed, without requiring any special attention, and that such locking be accomplished in an effective and reliable manner.

Another object of the invention is the provision of an improved locking means which is released automatically on opening the window and is maintained in position to positively non-releasably lock the guard on closing the window.

Since ventilation requires that windows be frequently opened, it is necessary to provide that this can be done without releasing the guard and without requiring any particular manipulation for assuring that the guard is locked when the window is closed. It is of course the practice always to lock the windows in closing up a factory for the night, even where guards are provided.

It is therefore another object of the invention to furnish improved locking means permitting a maximum range of free opening of the windows, and to cause each of the guards to be locked at a plurality of remotely spaced points upon closing and locking the windows.

Another object is to furnish an improved locking device having a plurality of locking portions remotely spaced from each other for reliably closing a guard or other closure for a window, door, or the like, including an elongated member common to both locking portions and positively removably locking one of them, together with a supplemental locking element adjacent to the other locking portion for positively closing the latter to thus cause the elongated member to be non-removably held, and preferably to provide for so mounting the elongated member in its released position as to maintain the first mentioned locking portion in positively locked position and whereby the said adjacent element can be engaged without requiring manipulation of the elongated member.

Another object of the invention is the provision of a locking device for a window guard which fulfills the above mentioned requisites and includes improved means to safeguard the window sash lock against possible manipulation through openings in the guard if the window pane is broken.

Other objects and advantages of the invention will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention comprises the novel features, combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated in the annexed drawings, wherein like parts are designated by the same reference characters throughout the several views.

In the drawings:

Figure 1 is a view in front elevation with the lower sash in open position showing a device embodying the invention, including a protector for the conventional sash lock.

Fig. 2 is a similar view but with the window closed and showing an additional protector for the sash lock.

Fig. 3 is an enlarged, fragmentary partly sectional view of a sash and lock with the protector for lock.

Fig. 4 is an enlarged, fragmentary, partly sectional view of window sashes closed by said lock and the said additional protector of Fig. 2.

Fig. 5 is an enlarged, fragmentary view in inside elevation of the guard and locking device therefor.

Fig. 6 is a sectional view on line 6—6 of Fig. 5.

Figs. 7 and 8 are sectional views on lines 7—7 and 8—8 respectively of Fig. 5.

Fig. 9 is an enlarged sectional fragmentary view showing the elongated member resting in the operative position shown in Fig. 2.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined, but, useful embodiments may be produced involving less than the whole.

It will be obvious to those skilled in the art to

which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawings, therefore, are submitted merely as showing a preferred exemplification of the invention.

Referring in detail to the drawings, 10 denotes a device embodying the invention. The same may include a window frame 11 having a lower sash 12 and an upper sash 13 slidable in the frame in the usual manner, these sashes having translucent or opaque panes and being maintained closed by any suitable means such as the conventional lock 14. The same may include a base 15 fixed to the top of the lower sash and carrying a plate 16 eccentrically swiveled thereon at 17. This plate has an arcuate upraised cam-shaped flange 18 and a finger piece 19. On the lower rail of the upper sash is fixed a hook 20 under which the cam element 18 engages when the plate 16 is turned by the finger piece 19 to lock the window. In unlocked position, the plate 16 clears the hook 20 so that the window can be freely opened. This lock is shown open in Fig. 3 and closed in Fig. 4. For a reason hereinafter apparent, a guard element 21 such as a yoke or casing extends over the lock and is fastened to the lower sash, being open at the front for access to the finger piece and to permit the cam element 18 to engage the hook 20. A modified protector 22 may consist of a rectangular box-like member secured to the guard 25 on the inner side thereof by spot welding to the guard or by yoke bolts 23 whereby the protector is adjustable along the vertical bars of the guard to set in the most desired relation to the lock 14. By interposing washers, the protector 22 may be placed as closely as feasible to the lock 14. Either or both of the protectors 21, 22 may be used, and they prevent the lock 14 from being opened through the spaces between the guard bars in the event that the window panes are broken. Since the locking of the guard itself is dependent upon maintaining the window closed, it is essential that suitable protection be accorded to the lock 14.

The guard 25 may be constructed of heavy wire mesh or of interconnected vertical and horizontal bars, the latter being shown for convenience of illustration. It may be substantially coextensive in size with the entire window and may comprise a rectangular marginal frame 26 hingedly connected at 27 to a side of the window frame to swing outwardly. A locking device for the guard 25 comprises a plurality of locking sections 30, 31 at the opposite side of the window frame adjacent to the top and bottom of the guard to securely lock the same. Each locking section includes a base member 32 consisting of one or more plates spot welded, riveted, bolted or otherwise secured to the guard. Each of these base members is provided with an eye, that for the top being designated as 33 and for the bottom as 34. Fixed on a portion 35 of the building wall are angles 36 suitably secured thereto. On these angles are rigidly mounted the strikes or jamb pieces 37 having openings 38 to receive the respective eyes 33, 34 with a suitable clearance. Common to the locking sections 30, 31 is a removable, elongated member or rod 40 having an upper end portion received in the eye 33. To the lower end of the rod is affixed a plate 41 having an opening 42 of sufficient size to receive the eye 34 with ample clearance. The strike lies between the member 40 and the guard and may be considered as engaging the member or both, but they are perforated to receive the eyes 33, 34 only to carry the weight of the guard conjointly with the hinges 27. As thus far described, the member 40 may rest on the lower eye 34 to positively lock the upper lock section 30. To assure that the member 40 shall not slip off from the eye 34, the latter may be upwardly inclined or bent adjacent to its free end as at 43. To prevent release of the lower end of the member 40 from the eye 34, a hook 45, having a portion of U-shape inverted form is affixed to a base such as an angle member 46 which is rigidly secured to the bottom portion of the lower sash 12. The sliding sash maintains the leading end portion 47 of the hook in alinement with the eye 34, whereby when the sash is moved to closing position the hook engages in said eye and prevents release of the lower part of the member 40. Thus the upper and lower locking sections 30, 31 are locked in a positive manner. Upon opening the lower sash, the hook 45 is disengaged from the eye 34 and the sash may be raised as far as desired.

In operation, the window may be opened for ventilation as desired. If the bottom sash 12 is opened, the hook 45 is raised, disengaging the lower eye 34 so that the lower locking section 31 is released. However, the upper locking section 30 remains positively locked so that the guard cannot accidentally open by pressure or otherwise. This locking of the upper section is maintained because the rod 40 is held in operative position by its own inertia, resting on the lower eye 34, or retained by the projections 43. If it is desired to open the guard, the rod 40 is merely slipped off the lower eye 34 and withdrawn from the upper eye 33, thus opening the upper locking section 30. No key operated locks are needed to open or close the guard. When the bottom sash is closed, the alined hook 45 engages the lower eye so that both sections 30, 31 are positively locked. This locking action may be consummated by closing the lock 14, the latter having its associated protectors 21 or 22 or both, to prevent lifting of the lower sash by breaking the glass pane and manipulating the lock 14 through spaces between the guard bars. Of course, those spaces as in the case of woven wire may be too small for access to the lock 14, at least in the region adjacent to that lock.

I claim:

1. A window guard lock for a sash slidable in a window frame, including a guard member having a first eye and a second eye, said eyes being in alined vertically spaced relation to each other, a removable rod having a first portion engaged in the first eye for a positive locking engagement therewith, said rod having a second portion having an opening receiving the second eye whereby the rod is adapted to rest on the second eye, in engagement with the first eye, the second eye projecting beyond the second portion, brackets secured to the window frame and having sections having openings to removably receive the eyes, said sections lying between the guard member and the rod, and an element fixed on said sash for movement therewith to enter the second eye when the sash is closed and to release the second eye when the sash is opened, said element serving to positively lock the second portion of the rod against disengagement from the second eye, whereby upon opening the sash the rod is removably carried by the second eye in positive locking engagement with the first eye so that the thus locked guard member can be opened by merely removing the rod, and upon closing the sash the rod is locked by said element against removal.

2. A window guard lock for a sash slidable in a window frame including a guard member having a first engagement element and a second engagement element, said elements being in alined, vertically spaced relation to each other, a removable elongated member having a first means for positive vertically sliding engagement with the first element and a second means for releasable engagement with the second element, with the elongated member supported by the second element in positive engagement with the first element, jamb portions on the window frame engaging between the guard member and the elongated member to thus hold the guard member closed, and means mounted on the sash for positive locking engagement with the second element when the sash is closed and for releasing the second element when the sash is open, said last mentioned means cooperating with the second means to positively retain the same against release from the second element, whereby upon opening the sash, the elongated member remains mounted to positively lock the guard member at the first element subject to instant disengagement from the second element and removal for opening the guard member.

3. A window guard lock for a sash slidable in a window frame, including a guard member having a first engagement element and a second engagement element spaced therefrom, a removable member having a first means for positive engagement with the first element and a second means for releasable engagement with the second element, jamb portions on the window frame engaging the removable member to thus hold the guard member closed, and locking means mounted on the sash for positive engagement with the second element to positively retain the removable member against disengagement from the second element, the locking means being movable by opening movement of the sash to release the second element to permit removal of the removable member and disengagement thereof from the first element for opening the guard member, one of the elements cooperating with the removable member to mount the same with the first means in locked engagement with the first element when the locking means is in disengaged position, and the said first means so cooperating with the first element as to be disengaged from the first element upon removal of the removable means, and engaged with the first element upon mounting the removable means as aforesaid.

4. A window guard lock for a sash slidable in a window frame, including a guard member having a first element and a second element spaced therefrom, an elongated removable means having different means individually cooperating with said elements to form with the first element a positive first locking means and with the second element a second locking means that is releasable as distinguished from the first locking means, jamb portions on the window frame engaging the elongated removable means to hold the guard closed, and a third locking means mounted on the sash for engaging the second element and cooperating with the removable means to positively lock the same to the second element, said third locking means being engaged with the second element upon closing movement of the sash and being released from the second element upon opening movement of the sash.

5. A window guard lock for a sash slidable in a window frame, including a guard member, a first lock and a second lock remotely spaced therefrom, said locks interconnecting the guard member with the window frame, the second lock having a removable member constituting a bolt for the first lock, a bolt for the second lock mounted on the sash to close and open the second lock upon closing and opening the sash, the removable member cooperating with the bolt that is mounted on the sash to be locked thereby against removal from the second lock and in this position to lock the first lock closed.

6. A device including a locking means having a bolt provided at one end with an engagement portion, the locking means having a first locking portion closed by the bolt and a second locking portion having an independent bolt, the second locking portion engaging said engagement portion and preventing movement of the first mentioned bolt when the second locking portion is closed by its bolt.

7. A device including a locking means having a removable bolt provided at one end with a hole, the locking means having a first locking portion closed by the bolt and a second locking portion including a perforated projection, a strike having an opening to reecive the projection, the latter removably extending through the strike and through said hole in said bolt, and the second locking portion having means engaging in the said perforation to thus lock both locking portions closed.

8. A window guard lock for a sash slidable in a window frame, including a first locking section and a second locking section spaced therefrom, the first section having a sliding bolt of sufficient length to engage the second section when locked in the first section, the second section having a slide bolt mounted on the sash to open the second section when the sash is raised and to close the second section when the sash is closed, the first mentioned bolt and the second section having means whereby the first mentioned bolt is releasably retained by the second section in position to lock the first section when the second section is open with the first mentioned bolt being positively retained in said locking position when the second section is closed.

9. A device including a first locking section and a second locking section remote therefrom, said sections having respectively a first bolt and a second bolt, said bolts being movable for projection and retraction to close and open their respective locking sections, the second section and the first bolt having cooperating means whereby the second section releasably maintains the first bolt in projected position when the second section is open and positively maintains the first bolt in projected position when the second section is locked closed.

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