

July 10, 1945.

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2,379,970

SAFETY WINDOW SCREEN AND DOOR LOCK

Filed Sept. 11, 1943

Fig. 1.

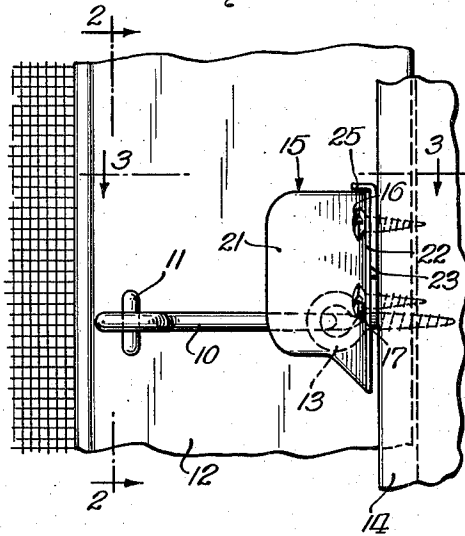


Fig. 2.

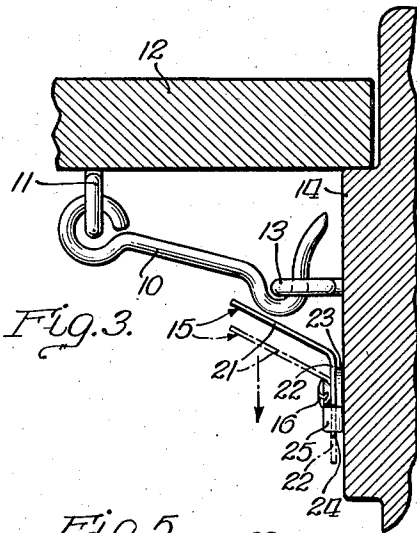
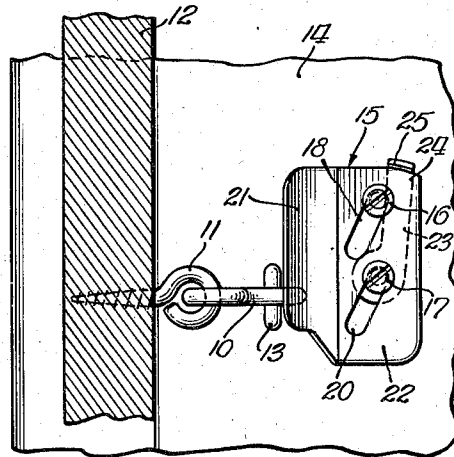


Fig. 4.

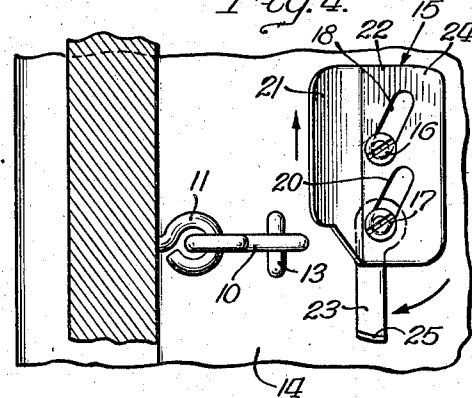


Fig. 3.

Fig. 6.

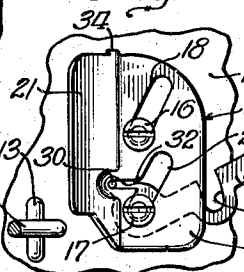


Fig. 7.

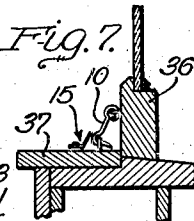
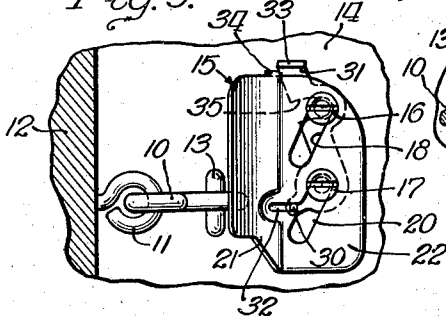


Fig. 5.



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2,379,970

SAFETY WINDOW SCREEN AND DOOR LOCK

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Application September 11, 1943, Serial No. 501,913

3 Claims. (Cl. 292-106)

This invention is directed to means comprising a safety mechanism for locking windows, screens, doors or the like. The device of this invention is primarily adapted for coacting with a hook and eye unit, so that such device need not necessarily be limited to lock the aforesaid articles, but has other uses wherever hooks and eyes are employed as for container or box covers or for any other hook locked members.

It is known from experience that when hooks and eyes are used as for locking a screen door, a window screen or any kind of a door, that children will invariably find a way to open such hooks as a matter of natural curiosity or to be able to open a door to get out when not watched. Dogs or even cats may also be able to cause unlatching of a hook by jumping against a door. The situation is not fool proof by any means. Another thing which occurs every now and then is the self latching of the hook upon the slamming of a door which is purely accidental but also very annoying and difficult when that does occur.

One of the main objects therefore of this invention is to provide a locking mechanism in combination with a hook and eye in such a manner as to guard against hooks becoming unhooked from hook eyes particularly where doors are being rattled or otherwise shaken by a small child, animals or even by some outsider who is trying to gain entry by jarring or pounding a hooked door.

Another object of this invention is to be able to use a hook and eye so mounted as to eliminate any accidental latching of the hook with the eye. Also the hook is mounted for swinging in a horizontal plane instead of the usual vertically operable position when employed for locking a door which permits greater ease of handling since the hook is moved out of the adjacent corner between the door and door frame instead of upwardly in said corner in the usual way.

A further object is to provide a locking device which can be easily operated manually by adults through proper manipulation but also one which is of a nature as to be maintained secretly operable to younger children so that they cannot readily acquire the knack of opening the same.

Other objects and advantages shall hereinafter appear in the following detailed description of the device of this invention having reference to the accompanying drawing forming a part of this disclosure.

In the drawing:

Fig. 1 is a front elevational view of a preferred

embodiment of this invention, viewed as seen from the interior of a house and looking at a screen door;

Fig. 2 is a sectional view edgewise of the plane of the door substantially as seen along the line 2-2 in Fig. 1;

Fig. 3 is a plan sectional view of the above device as taken along the line 3-3 in Fig. 1;

Fig. 4 is an illustration identical with Fig. 2 but with the hook lock moved to inoperative position for permitting the removal of the hook from its latching eye;

Fig. 5 is an illustration of a modified locking mechanism coacting with a hook and as viewed in the same manner as Fig. 2;

Fig. 6 is an other view of the modified arrangement of Fig. 5 with the locking means shifted to permit removal of the hook from its eye; and

Fig. 7 is a diagrammatic showing of one of either form of hook and lock means as applied to a window or the like.

Figs. 1 to 4 inclusive are concerned with a preferred arrangement of the present device. These figures show a hook 10 with its connected screw eye 11 secured to a screen door 12 with the hook having latching engagement with the screw eye 13 fastened to the door casing 14. It should be noted that the hook is mounted for swinging in a horizontal plane as best shown in Fig. 3.

A guard or lock in the form of a shield 15 is mounted on the casing 14 adjacent the end of the hook 10 that is connectible with the eye 13. The shield 15 is shiftable generally vertically upon the screws 16 and 17 which provide the instrumentalities for mounting shield 15, and slots 18 and 20 of the shield cooperate with the screws to permit the shifting of the shield.

Shield 15 is preferably made by bending a flat plate or thin sheet metal piece to form two distinct legs 21 and 22, the former providing a safety guard surface primarily for holding the hook 10 locked when in latched position, and the latter having the screw slots 18 and 20 therein which cooperate with the screws 16 and 17 to dispose the leg 22 in substantial parallel relation to the wall of the casing as best shown in Figs. 1 and 3.

The slots 18 and 20 in leg 22 are disposed at an angle to a vertical line bisecting screws 16 and 17 as shown in Fig. 2 to permit the shield 15 to move upwardly and also to move leg 21 away from the hook 10 into the position illustrated in Fig. 4 whereby sufficient clearance is provided for permitting the hook to be freed from screw eye 13.

The shield 15 could be utilized so as to be moved up and down at will, but to provide a means for securing the shield in its hook locking position is one of the essential attributes of this invention. The locking of shield 15 is accomplished by providing a latch 23 swingable on screw 17 as a pivot. When shield 15 is down as in Figs. 1 and 2 the latch 23 may be swung upwardly over the edge 24 of the shield by taking hold of the projecting ear 25 provided for that purpose. By swinging latch 23 down into the position shown in Fig. 4, the shield can be freely moved to either holding or to the disengaged position.

For all practical purposes, the screws 16 and 17 can be adjusted to establish enough friction between the parts such as shield 15, latch 23 and the heads of the screws whereby the shield will stay in its raised position as in Fig. 4 without being so held manually. Also, latch 23 will be frictionally held in the position indicated in Figs. 1, 2 and 3 by the friction of the shield 15 on one side, and the wall of the door casing 14 on the other side. If such latch 23 should become dislodged for some unexplained reason, it is very unlikely that shield 15 would ever be displaced vertically a sufficient amount during normal use to allow hook 10 to become accidentally unhooked from its receiving eye 13.

In the modification illustrated in Figs. 5 and 6, the construction is very much the same as in the first described form of hook locking mechanism. The difference is exemplified by having the shield and latch provided with cooperating means for causing raising of the shield during the unlatching of the latter as a simultaneous operation. This is accomplished by providing a pin 30 on the latch 31 for engaging in a slot 32 formed horizontally in the leg 22 of the shield 15 and this slot is preferably a continuous portion of the slot 20.

By manipulating the latch 31 through catching hold of the ear 33 thereof and moving same to position the latch as in Fig. 6, the shield is automatically raised clear of the hook in the same fashion as heretofore by one operation. The limits of movement of the latch 31 are determined by a lug 34 when the latch is in locked position, while the screws 16 and 17 in their respective slots will stop the shield and prevent further movement of latch 31 beyond the position shown in Fig. 6 inasmuch as the pin 30 will then also be stopped by the edge of the pin slot 32 in safety shield 15.

In the latter construction, the latch 31 is also shaped in the manner of a hook having an arcuate notch 35 for the purpose of engaging the shank of screw 16. This permits the center of gravity of the latch to be disposed in a location substantially at the screen door side of the screws 16 and 17 to aid in holding the latch in shield locking relationship. The latch 23 may also be made in a like manner so that it will not be solely dependent upon friction alone to hold the same in its Fig. 2 position. In the form in Figs. 5 and 6, the weight of the shield 15 on pin 30 will also hold the latch against the shank of screw 16 as best illustrated in Fig. 5.

In Fig. 7, one form of device is shown in position to hold a window 36 in locked relation with

respect to its sill 37. Other applications of the invention have not been illustrated as they are merely variations of the embodiments shown and are readily conceivable from the present adaptations. Obviously the parts are interchangeable from the positions portrayed in the drawing if conditions require the same to be so used or as a matter of choice.

It is to be understood that certain changes are possible in the device of the present invention and that the same is not to be limited to the exact form, construction, arrangement or combination of parts disclosed or described, nor shall the same be construed to being limited to the particular uses herein set forth.

I claim:

1. A safety hook locking mechanism for use with a hook and eye, comprising a guard shield, vertically spaced supporting members for positioning said shield adjacent said hook, said shield having slots therein to permit limited movement of said shield relative to said supporting members, whereby said shield may be moved into a position to prevent release of said hook from the hook eye, said shield slots being angularly positioned with respect to a line bisecting said spaced supporting members to permit said shield to be shifted diagonally with respect to said hook to provide clearance for the latter to unhook the same from the hook eye, and pivotally supported releasable latch means to optionally hold said shield in its hook guarding position, said latch means upon release allowing said diagonal shifting of said shield to move the same out of the path of the hook.

2. A mechanism for preventing accidental release of a hook from its hook eye, comprising a guard shield supported for movement into and out of the path of motion of the swingable end of said hook, said shield having a slotted portion and a hook holding portion disposed at an angle to said slotted portion, fastening means for said shield coacting with the slots in the slotted portion of said shield to permit limited movement of the latter, the shape of said slots in the slotted portion being such as to allow said shield to move generally vertically with respect to said hook and also in a direction laterally away therefrom, whereby said hook holding portion is moved vertically and laterally out of the normal path of said hook to permit release thereof from its hook eye, and latch means to lock said shield against movement while said hook holding portion is in guard position to prevent accidental release of the hook from the hook eye.

3. A hook guard mechanism for preventing accidental release of a hook from its hooking eye, comprising a shield, means for supporting said shield for limited movement into and out of the normal swinging path of said hook, lock means to hold said shield in the path of said swingable hook to prevent removal of the latter from the hooking eye, and cooperative means carried by said lock means and shield respectively to cause said shield to move out of the hook path simultaneously with the release of said shield locking means, whereby said hook may be unhooked from its hooking eye.

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