

[54] WINDOW GUARD APPARATUS

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292/49; 292/53; 292/192

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[58] Field of Search 292/49, 259, 309, 53, 213,
292/142; 160/369; 49/56, 57, 50, 141; 85/3
R, 3 K, 3 S, 66

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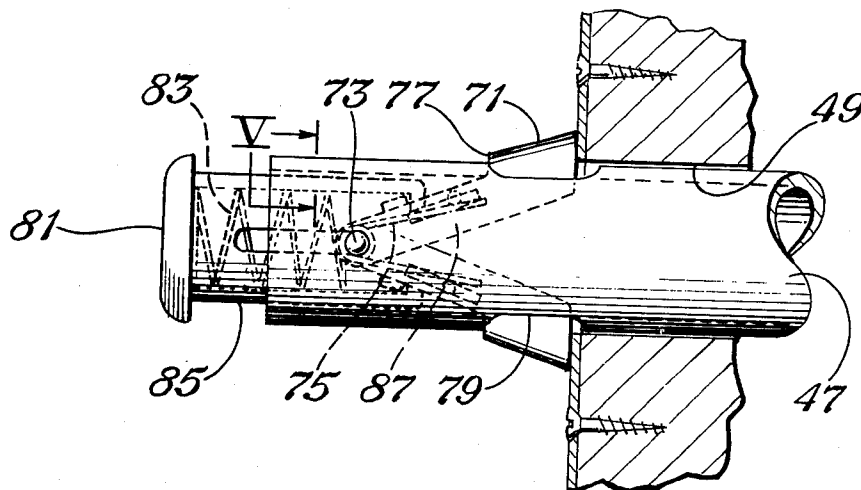
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[57]

ABSTRACT

Guard apparatus for a window or the like in a building characterized by a guard element that is hingedly mounted to a wall adjacent the window and adapted to prevent entry into the window from the exterior and having a fastener that is releasable by hand and without tools from the interior of the building to allow emergency egress through the window. The releasable fastener is inaccessible from the outside of the building. Also disclosed are specific structural details and preferred embodiments of the releasable fastener, as well as the double hinge element facilitating use thereof, making practical the window guard apparatus.

3 Claims, 6 Drawing Figures



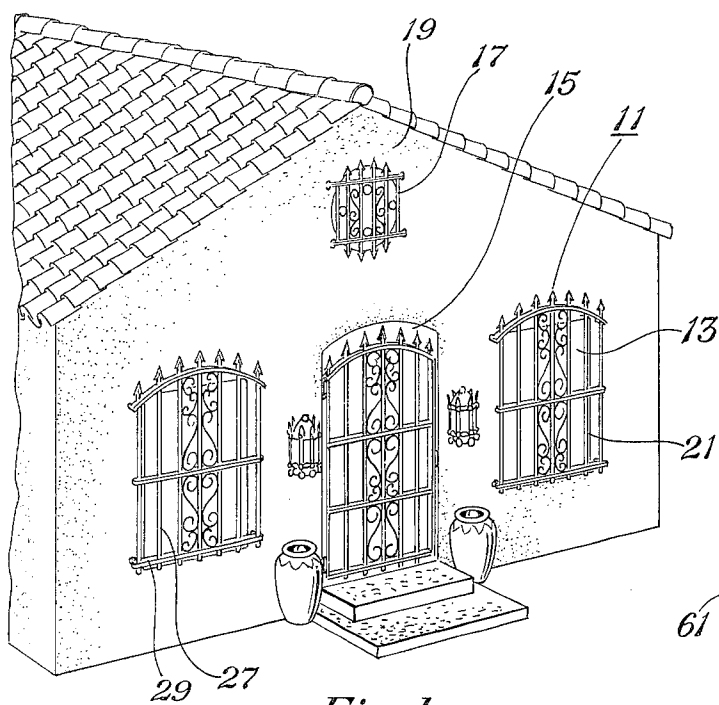


Fig. 1

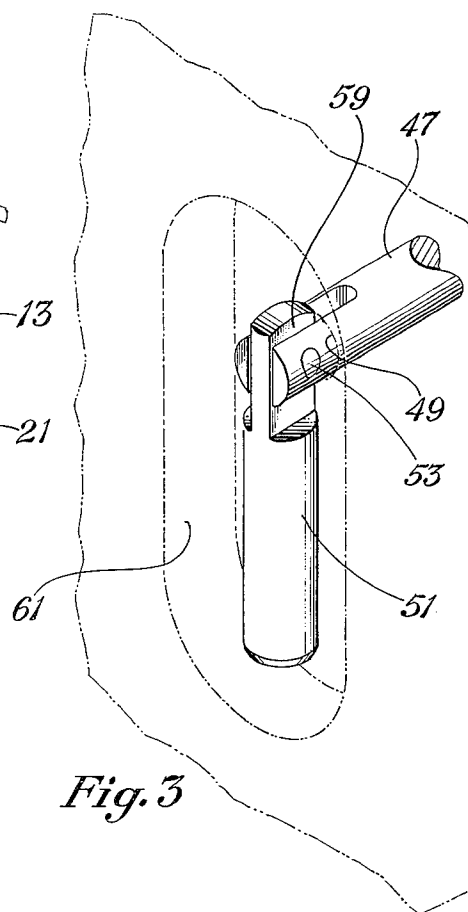


Fig. 3

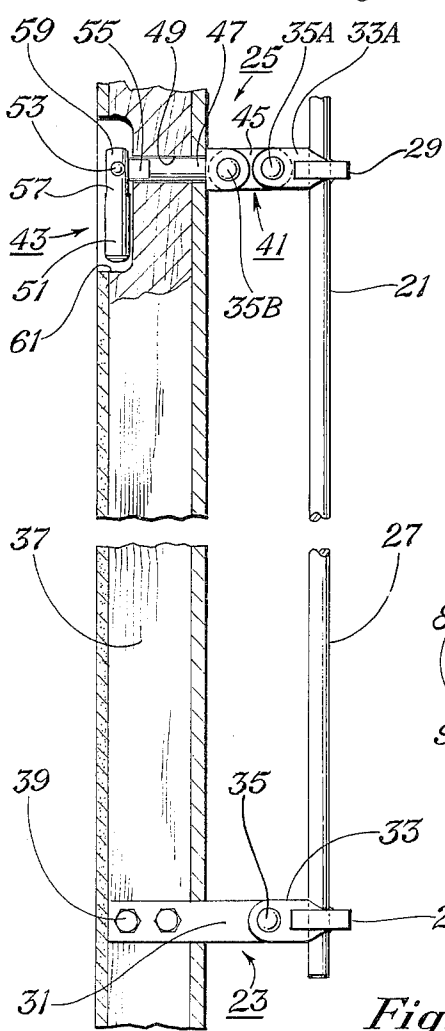


Fig. 2

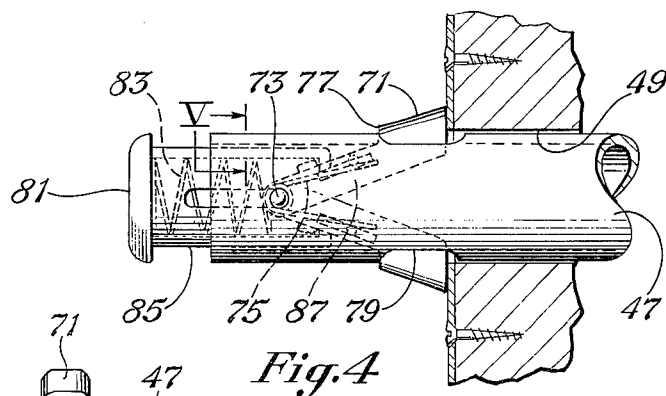


Fig. 4

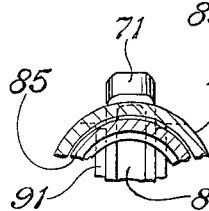


Fig. 5

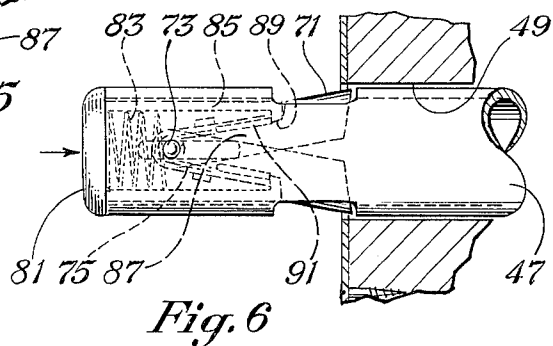


Fig. 6

WINDOW GUARD APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to guard, or security, apparatus for a window or the like in a building. More particularly, it relates to guard apparatus that prevents ingress through the window or the like, but allows emergency egress.

2. Description of the Prior Art

The prior art has seen a wide variety of window guards, shutters and the like to prevent entry, or ingress, through a window, doorway or the like. The prior art guard apparatuses have not been totally satisfactory, since they suffered from one or more of a plurality of disadvantages as follows. Some of the prior art have completely blocked both egress and ingress and caused injury and death to people on the inside who were unable to escape in the event of a fire or the like. Others, such as shutters, were fastened in the middle and were easily opened by burglars or others who sought entry through the aperture guarded by the shutters. Still others had hinges that were easily disassembled to allow entry into the building. Attempts to foil the would-be burglar by employing hooks and the like has proved unsatisfactory. On the other hand, when bolts with nuts screwed on the inside were employed, an excessive amount of time would be taken to release the guard apparatus in the event of an emergency. Moreover, the nuts either required tools from the first to be operable by women and children or tended to become rusted or painted in place such that tools were required; and the tools frequently were not available in an emergency.

Thus, it can be seen that the foregoing apparatus did not provide a guard for a window or the like that was totally satisfactory in preventing ingress yet facilitating egress by a person on the interior of the building. Because of the disadvantages, guard apparatus fell into disfavor. Yet, there remains an urgent need for a satisfactory guard apparatus; particularly, in the crime ridden disadvantaged areas of today's cities.

Accordingly, it is an object of this invention to provide a guard for a window or the like in a building that obviates the disadvantages of the prior art and provides a guard element that prevents ingress and allows egress by a person on the interior of the building in the event of an emergency.

It is also an object of this invention to provide a guard element that effects the foregoing object and additionally can be easily opened by a woman or child without requiring tools or the like that might not be available in emergencies.

These and other objects will become apparent from the descriptive matter hereinafter, particularly when taken in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partial isometric view from the front of a house showing the guard elements of this invention employed over apertures, such as windows, doors and portholes to the attic.

FIG. 2 is a partial side elevational view, partly in section, of the embodiment of FIG. 1, showing the hinge, hinged mounting means, the double hinge and the releasable fastening means.

FIG. 3 is a partial isometric view of a releasable fastening means similar to that of FIG. 2.

FIG. 4 is a partial side elevational view of another embodiment showing a releasable fastening means in a latched position.

FIG. 5 is a partial cross sectional view taken along the line V—V of FIG. 4.

FIG. 6 is a partial side elevational view, partly in section, of the embodiment of FIG. 4 following release for egress.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to FIG. 1, the guards 11 are shown employed over windows 13, doorway 15 and attic porthole 17 of house 19. The guard, or guard apparatus, 11 comprises a guard element 21; hinged mounting means 23, FIG. 2; and releasable fastening means 25.

The guard element 21 traverses the length and width of the aperture, such as the window 13, and is adapted to prevent entry into the window from the exterior of the building. The guard element 21 may comprise a solid, opaque shield, such as a steel or aluminum shield, that can be decorated on the inside for viewing through the window and blocking out unsightly exterior surroundings; or that can be painted on the outside for suitably decorating old buildings or the like to make them more attractive. Yet, the guard element 21 must have the requisite structural strength to prevent entry into the building to be effective. As illustrated, however, the guard element 21 comprises a decorative grid that prevents entry through the window or the like, enhances the beauty of the window and building and still allows visibility therethrough. Specifically, the illustrated decorative grid making up the guard element 21 is composed of a plurality of bars 27 and cross pieces 29. The respective bars and cross pieces 27 and 29 are formed of a material designed to prevent entry therethrough. Such a material will ordinarily be metal. Preferably, the bars and cross pieces 27 and 29 are formed of case hardened or high carbon-content steel that cannot be sawed with a hacksaw or the like by a person, such as a burglar, seeking entry into the house 19. Moreover, the bars 27 are close enough together that the human body cannot go therethrough, thereby preventing uninvited ingress into the house 19. The cross pieces 29 are spaced to prevent bowing of the bars 27 to allow such ingress. The guard element 21 is hingedly mounted by way of the hinged mounting means 23 to allow swinging for proper egress.

The hinged mounting means 23 comprises the building member 31, the guard element member 33, and the hinge shaft 35. The building member 31 is permanently connected with a suitable structural element, such as the wall stud 37, of the house 19. As illustrated, the building member 31 is connected with the stud 37 by way of bolts and nuts 39 (the nuts not being shown since they are located interiorly of the wall and inaccessible to a person either inside or outside the building). Moreover, the heads of the bolts 39 will be suitably covered, as by a window jam, plaster or the like, so as to be inaccessible to a burglar or the person seeking entry through the window. In addition, the building member 31 also is formed of case hardened steel or similar material that cannot be sawed with a hacksaw or the like, similarly as described hereinbefore with respect to the bars and cross pieces 27 and 29.

The guard element member 33 is suitably connected with the guard element formed by the bars 27 and the cross pieces 29 and matingly aligned with the building member 31 so as to be connectable therewith via the

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hinge shaft 35. Preferably, the guard element member 33 is welded to a cross piece 29, as well as to a bar 27 if immediately adjacent thereto. The guard element member 33, similarly as described with respect to the building member 31, is formed of case hardened steel or the like that cannot be sawed with a hacksaw or similar tool commonly carried by burglars or other persons seeking ingress into the house 19.

The hinge shaft 35 is disposed through mating apertures in the building member 31 and the guard element member 33 and serves as a fulcrum about which the guard element 21 can be pivoted to allow egress by a person inside the house 19. The hinge shaft 35 is irremovably positioned in the respective apertures (not shown). As illustrated, the hinged shaft 35 comprises a case hardened shaft that has a case hardened head on one end and is permanently and fixedly connected with a head on the other end. For example, the head can be enlarged by bradding or the like although this may be difficult with the case hardened steel. Preferably, a case hardened nut is screwed onto threads on the ends of a case hardened bolt and thereafter welded into place such that it cannot be removed or severed from the bolt.

In any event, the final hinged mounting means 23 is permanently affixed to the walls of the house 19 adjacent the window; for example, near the bottom, top or one side of the window; and allows pivotal movement of the guard element 21 to open and allow egress of a person from inside the window when the releasable fastening means 25 is released from the interior of the house 19.

The releasable fastening means 25 includes a guard element member 33A, similarly as described below with respect to the hinged mounting means; a double hinge 41; and an interiorly protruding fastener 43. The guard element member 33 is formed of the same case hardened steel or the like and is irremovably fastened to suitable bar 27, cross piece 29, or both; as by welding and similarly as described with respect to the hinged mounting means 23 hereinbefore.

The double hinge 41 comprises an intermediate member 45 and two hinge shafts 35A and 35B. The intermediate member 45 is a linear piece of case hardened steel or the like that cannot be sawed with a hacksaw or the like. The intermediate member 45 has apertures penetrating through each of its ends for affixing, respectively, via the hinge shafts 35A and 35B to the guard element member 33A, and the shaft 47 of the fastener 43. The respective hinge shafts 35A and 35B comprise case hardened steel shafts with irremovable enlarged heads at each end that are also case hardened so as to be resistant to being separated by a hacksaw or the like, similarly as described with respect to the hinge shaft 35 of the hinged mounting means 23. The double hinge 41 allows accommodating the desired alignment of the shaft 47 of the fastener 43 with a properly sized aperture 49 penetrating through the wall of the house 19; for example, through the stud 37. The apertures 49 are disposed opposite the building member 31, as will be described in more detail hereinafter.

The fastener 43 includes, in addition to the shaft 47, an interior latch piece 51 that is pivotally mounted via fulcrum shaft 53 to the shaft 47. Specifically, the shaft 47 has a milled section 55 about which bifurcated ends 57 of the latch piece 51 fit. An aperture penetrates laterally through both the bifurcated ends 57 and the milled section 55 and has the fulcrum shaft 53 disposed

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therethrough. The fulcrum shaft 53 has its respective heads recessed so that it will move easily through the aperture 49 when the latch piece 51 has its longitudinal axis aligned with the longitudinal axis of the shaft 47. As can be seen in FIG. 3, the shaft 47 may have bifurcated ends disposed about a milled section on the latch piece 51 with suitable fulcrum shaft 53 disposed through penetrating apertures if desired.

The latch piece 51 has a locking section 59 that extends upwardly above the aperture 49 when the longitudinal axis of the latch piece 51 is perpendicular to the longitudinal axis of the shaft 47, as in the latched position. In this way, the shaft 47 cannot be pulled outwardly through the aperture 49 because the locking section 59 catches against the top of the aperture 49 and the bottom portion of the latch piece 51 catches against the bottom of the aperture 49, effectively locking the shaft 47 into its latched position and preventing pulling open of the guard element 21. On the other hand, as can be seen, the longitudinal axis of the latch piece 51 may be brought into alignment by simply lifting the lower portion of the latch piece from its recess 61 and bringing it into alignment with the longitudinal axis of the shaft 47 to allow pushing the guard element 21 outwardly for emergency egress, or escape.

In operation, the respective bars 27 and cross pieces 29 are assembled by suitable means, as by having the bars penetrate through apertures in the cross pieces and being welded into place. The finished guard element is then connected with the respective guard element members 33 and 33A. The building members 31 are emplaced on suitable stud 37 and the mating apertures 47 are formed on the opposite side of the window or the like. The recess 61 is suitably formed to harmonize with interior decor or be hidden by drapes.

The double hinge 41 is formed by suitably described emplacement of the hinge shafts 35A and 35B, and fulcrum shaft 53 is emplaced to fix the releasable locking means to the guard element 21.

Thereafter, the hinge shaft 35 is emplaced in the apertures through the guard element member 33 and the building member 31 such that the guard element 21 is hingedly mounted to the house 19. The latch piece 51 and the shaft 47 are aligned and pushed inwardly through the aperture 49. The latch piece 51 falls downwardly into the locked position. The latch piece 51 is inaccessible to a person on the outside of the house 19 but can be easily lifted up by a person interiorly of the house 19 to allow pushing the shaft 47 outwardly through the aperture 49 and opening of the guard element 21 to allow escape.

Another embodiment is illustrated in FIG. 4. Therein, the shaft 47 comprises a tubular shaft that penetrates through the aperture 49.

Referring to FIGS. 4-6, the tubular shaft 47 has a plurality, such as a pair, of dogs 71 for holding the shaft 47 in the aperture 49 when in the locked position as illustrated in FIG. 4. The dogs 71 are held in place by a pin shaft 73 extending laterally through an aperture in the tubular shaft 47. The dogs 71 are biased outwardly into their locked position by way of suitable biasing means, such as spring 75. In the locked position, the interior shoulder 77 encounters a mating shoulder on the aperture 79 of the tubular shaft 47 and stops movement exteriorly. To allow egress, a push button 81 is provided that is accessible to a person on the interior of the house 19. The push button 81 is biased toward the interior of the house 19 by way of a suitable biasing means,

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such as spring 83, bearing against the pin shaft 73 at its other end. Thus, the spring 83 is compressed when the push button 81 is pushed inwardly. The spring 83 is a very weak spring that can be readily compressed so the push button 81 can be readily pushed inwardly, even by a child. The push button 81 has an outwardly depending skirt 85 that rides down suitable arms 87 supporting the dogs 71, as illustrated in FIGS. 5 and 6 also. If desired, the skirt 85 may have an illustrated lip 89 and member 91 for locking the push button 81 and skirt 85 in the released position. The lip 89 rides down the member 91 traversing longitudinally of the arms 87. When the lip 89 reaches the end of the member 91, the lip 89 slips over the end and lockingly holds the push button 81 depressed with the spring 83 compressed and the dogs 71 retracted so as to be movable outwardly through the aperture 49, as shown in FIG. 6. The skirt 85 is released by pushing the dogs 71 inwardly against the spring 75 to release the lip 89 from the outermost end of the member 91. Thereafter, the spring 83 pushes the push button 81 interiorly such that the tubular shaft 47 can be pushed interiorly through the aperture 49 for re-latching. When the dogs have been pushed completely clear of the aperture 49, they will spring outwardly under the force of biasing by spring 75 and latch the guard element 21 in place, as illustrated in FIG. 4.

While the guard element 21 has been illustrated as hinged at the bottom and fastened at the top for maximum security for adults, the arrangement is readily varied. For example, it may be hinged at the top to allow easy access to the releasable fastening means 25 by small children. On the other hand, it may be hinged and latched on the sides so as to be more easily maintained in the open position for egress by a handicapped person.

From the foregoing, it can be seen that this invention effects the objects delineated hereinbefore and obviates the disadvantages of the prior art structure.

Although this invention has been described with a certain degree of particularity, it is understood that the present disclosure is made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of this invention.

What is claimed is:

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1. A guard for a window in a building or the like comprising:

- a. a guard element traversing the length and width of said window and being adapted to prevent entry into said window from the exterior of said building;
- b. hinged mounting means hingedly mounting said guard element adjacent one of its edges onto a wall adjacent said window for pivotal movement of said guard element outwardly to provide emergency egress through said window; and
- c. releasable fastening means connected with said guard element at another of its edges and protruding interiorly of said building so as to be releasable from the inside of said building; said releasable fastening means being inaccessible from the outside of said building and being operable by even a child without tools from inside said building; said releasable fastening means including an interiorly protruding shaft and an interiorly releasable latch; said latch comprising locking dogs that are biased outwardly to block egress of said interiorly protruding shaft when in the normal latched position and an interiorly accessible release member that is adapted to effect retraction of said dogs for release for emergency egress; said locking dogs being pivotally mounted from a pin shaft by suitable arms and said releasable latch including a push button with a depending skirt that rides outwardly on said arms and about said pin shaft and effects retraction of said dogs when pushed outwardly by a person inside said building.

2. The guard of claim 1 wherein locking means are provided for holding said push button in the released position with said dogs retracted; said locking means comprising a lip adjacent the outermost end of said skirt and a member traversing longitudinally with and connected to said arms pivotally mounting said locking dogs such that when said push button is depressed said lip will engage the outward end of said member and lock said push button and said dogs into the release position.

3. The guard of claim 1 wherein locking means is provided for holding said dogs retracted once they are retracted and started to move outwardly for said emergency egress.

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