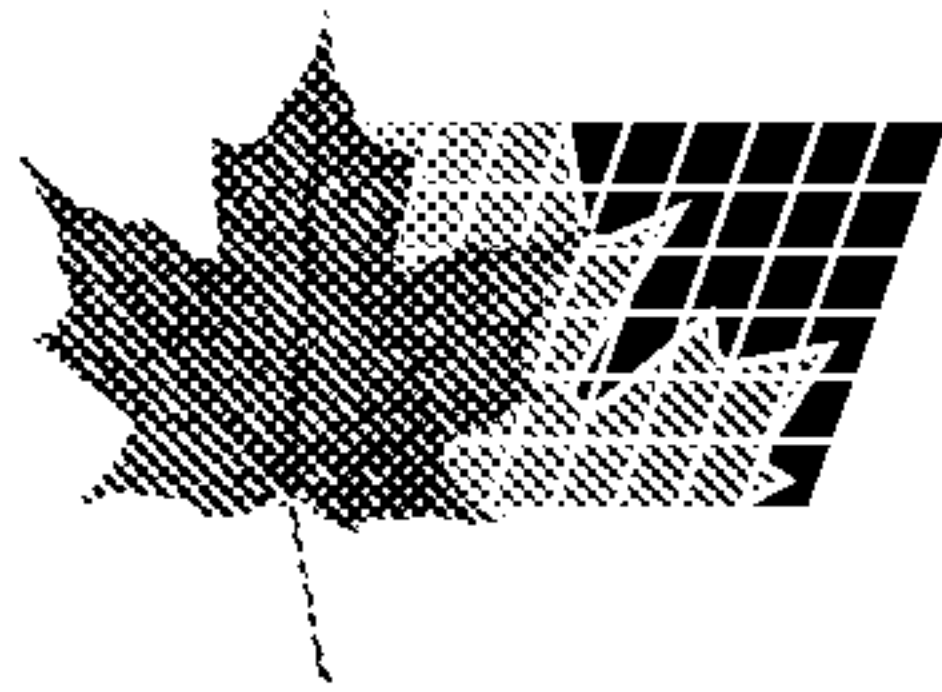




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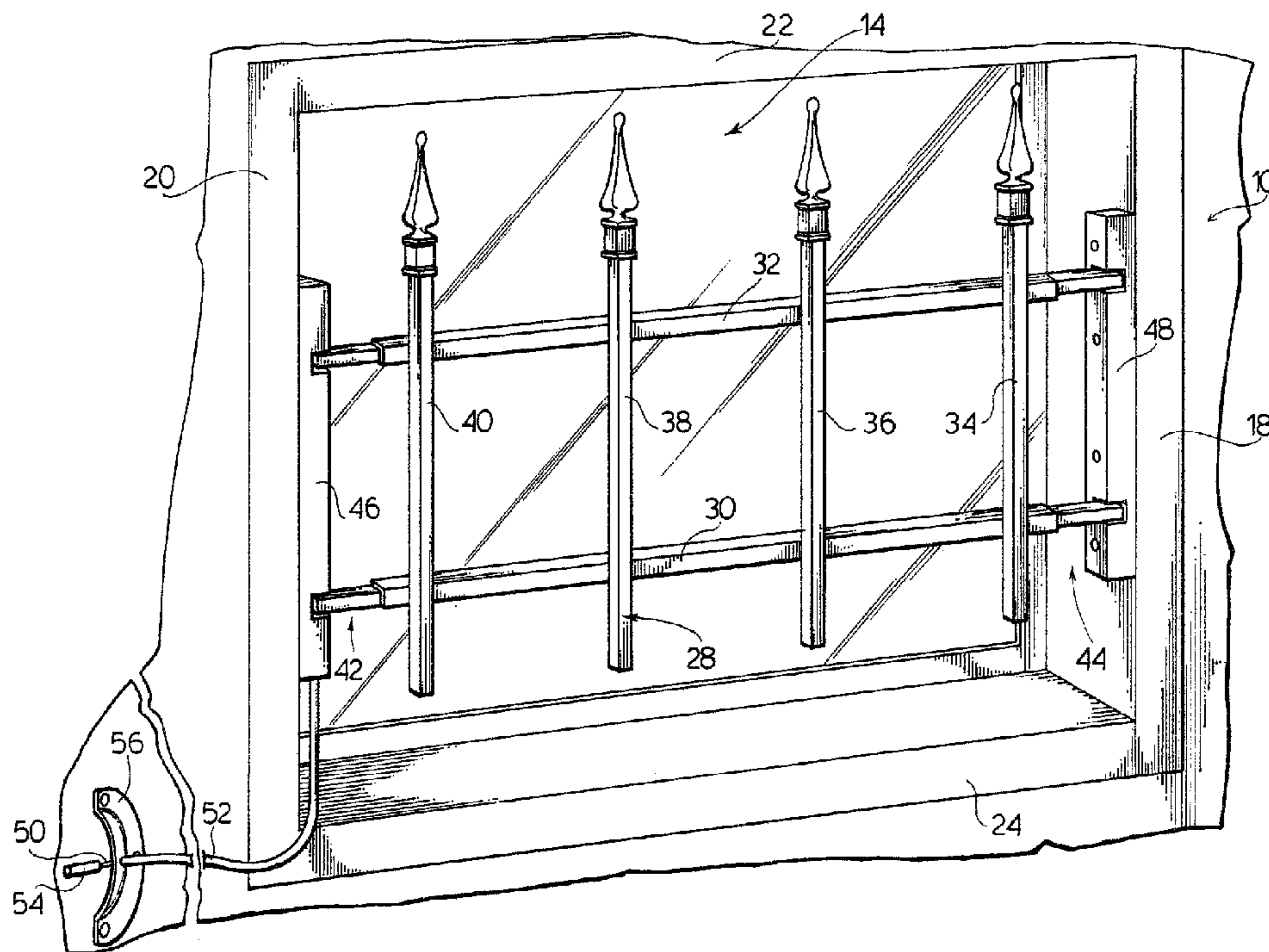
(72) Pickell, Cameron, CA

(73) Petmark Home Security Products Inc., CA

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(54) **DISPOSITIF DE PROTECTION POUR FENETRES, A
BARREAUX, A DECLENCHEUR DE SECURITE**

(54) **WINDOW BAR GUARD WITH SECURITY RELEASE**



(57) A window bar guard with emergency spring loaded release. The bar guard comprises a rigid bar grillwork having a plurality of spaced apart first set of parallel bars and a plurality of interconnecting spaced apart second set of parallel bars. The bar grillwork is adapted to span a window opening to block human entry. The grillwork is mounted for pivotal movement at one end, and releasably secured at an opposite end for effecting emergency egress.

ABSTRACT

A window bar guard with emergency spring loaded
release. The bar guard comprises a rigid bar grillwork
having a plurality of spaced apart first set of parallel
5 bars and a plurality of interconnecting spaced apart
second set of parallel bars. The bar grillwork is
adapted to span a window opening to block human entry.
The grillwork is mounted for pivotal movement at one
end, and releasably secured at an opposite end for
10 effecting emergency egress.

WINDOW BAR GUARD WITH SECURITY RELEASEField Of The Invention

This invention relates to a window bar guard system for discouraging breaking and entry through window openings.

Background Of The Invention

Window bar guard systems have been used for some time in an effort to thwart or discourage breaking and entering into a house or other establishment through a window opening. A telescoping window bar guard system is disclosed in United States patent 3,738,062. The system includes two horizontal members having an extensible portion. One side of the grillwork is pivotally connected to the window frame. The extensible portion is extended and secured to the other side of the window frame by a lock arrangement. In the event of fire or the need to clean the window, the system may be unlocked and swung outwardly. The extensible portion is not secured to the horizontal members so that the extensible portion can be retracted in order to release the bar system. Due to the free telescopic nature of the bars of the window system, prying with a crowbar can weaken the connection of either side of the bar guard system to the window frame to allow illegal entry through the window.

A telescopic bar window system, which entails locking the relative positions of the telescoping bars, is disclosed in United States patent 4,437,265. Lock portions are used on at least two of the telescoping horizontal bar members to prevent relative movement therebetween. The ends of the bars are fastened to the opposite sides of the window frame. However, to remove the bar system from the window it is necessary to unlock the telescoped bars. The lock provided, in accordance with this patent, is a friction type lock which can be

readily tampered with to release and thereby allow illegal entry to a building through the window.

Fixed bar arrangements for window bar guard systems are disclosed in United States patents
5 2,999,682, 2,222,667, 4,019,281 and 4,358,912. Due to the fixed nature of the bars, various mounting systems are employed to permit outward withdrawal of the bar gratings by complete removal or pivotal action. Pivotal action for the bar systems is further demonstrated in
10 United States patent 3,953,939, where a lower segment of the bar system is pivoted upwardly when released.

United States Patent 4,817,334 (Badger et al) discloses a window barguard system having telescopic bars and which overcomes certain disadvantages in the
15 above-discussed prior art bar window systems.

Recent revisions in the Standard Building Codes of Canada and the United States stipulate the necessity for quick release window guards. More particularly, the 1989 Standard Building Code revisions for the United
20 States require that every sleeping room on the first and second story of group R (single and multiple) occupancies must have at least one operable window or exterior door approved for emergency egress or rescue. Furthermore, the Building Code revision require that the
25 window or exterior door must be operable from the inside to a full clear opening without the use of separate tools.

Therefore, prior art systems such as disclosed in United States 4,817,334, which require the use of a
30 lock and key for opening of the bar guard, fail to meet the above-noted revisions in Standard Building Code.

The reason for such revisions is apparent. In the event of such an emergency (e.g. fire, etc.), it may be difficult to locate a key and operate the key within the
35 lock mechanism.

Summary of the Invention

5 In accordance with the present invention, a quick
release window bar guard is provided with a cable with a
graspable end inside of the window to be protected, and a
spring loaded arrangement for releasably locking the bar
grillwork into a closed position. Upon pulling the
cable, the grillwork disengages from the locking
10 mechanism and pivots to an open position.

According to one aspect of the present invention, a
window bar guard for discouraging breaking and entering
through a window, said bar guard comprising a rigid bar
guard comprising a rigid bar grillwork having a plurality
15 of spaced-apart first set of parallel bars and a
plurality of interconnecting spaced-apart second set of
parallel bars extending essentially perpendicular to said
first set, said bar grillwork spanning a window opening
to block human entry through the grillwork, means for
20 securing opposite ends of said first set of bars to
corresponding structural portions defining opposing edges
of a selected window opening, said means for securing
including at one of said opposing edges means for
effecting pivotal movement of said grillwork around
25 corresponding ends of said first set of bars, and spring-
loaded emergency release means connected to the other of
said opposing edges for releasably securing the other of
said opposite ends of said first set of bars, said
spring-loaded emergency release means having a sheathed
30 release cable extending away therefrom to a graspable end
portion,

said spring-loaded emergency release means having a
housing with a plurality of apertures thereon for
receiving distal ends of said other of said opposite ends
35 of said first set of bars, a slider mounted within said
housing and connected thereto for sliding movement

via a first spring, latch means formed within said slider for receiving and latching said distal ends of said first set of bars, said spring-loaded emergency release means effecting sliding movement of said slider between first and second positions such that in said first position said distal ends are disengaged from said latch means and in said second position said distal ends engage said latch means, wherein said slider is biased to said second position via said first spring,

said spring-loaded emergency release means further having a second spring mounted to said housing in a direction perpendicular to the direction of said sliding movement, said second spring being positioned so as to bear against a predetermined one of said distal ends when said slider is in said second position and for ejecting said predetermined distal end through the corresponding one of said plurality of apertures, whereby said grillwork springs to an open position for emergency egress.

In an embodiment, the spring-loaded emergency release means has a mounting bracket distal to said window.

In a further embodiment, each said distal ends of said first set of bars includes a further aperture, and said latch means comprises a plurality of slide pins for selectively extending through and thereby retaining said distal ends.

In yet another embodiment, said sheathed cable is a metal sheathed cable.

In a still further embodiment, there are means for securing the sheathed release cable in a position extending away from said spring-loaded emergency release means.

In another embodiment, the spring-loaded emergency release means having said sheathed release cable
5 extending away therefrom is adapted to thwart entry through said window.

Introduction to the Drawings

A preferred embodiment of the present invention will
10 be described in greater detail below with reference to the following drawings in which:

Figure 1 is a perspective view of the window bar guard system according to the preferred embodiment as mounted in a window;

Figure 2 is a perspective view of the window bar guard system of Figure 1 shown from outside of the window;

Figure 3 is a perspective view of the window bar guard system of Figure 1 in the open position;

Figure 4 is a detailed perspective view of a spring loaded emergency release device in accordance with the preferred embodiment; and

Figures 5A and 5B are sectional detailed views of the spring loaded emergency release device of Figure 4 in closed and open positions respectively.

Detailed Description of the Preferred Embodiments

Figures 1-3 illustrate the use of the window bar guard system, according to this invention, on a window commonly found in residential and commercial buildings. According to the preferred embodiment, the bar guard system is particularly adapted for use on basement windows in the building wall adjacent ground level. It is appreciated that a majority of the break-ins to residential and commercial buildings is through basement or ground level windows at the rear of the building. The window 14 is defined by structural portions 18, 20, 22 and 24 of the building. These structural portions may be concrete in which the window frame is set or they may be of wood which constitutes additional parts of the window frame.

The bar guard system 28, according to this invention, is installed in the window opening 14 to discourage breaking and entry through the window. The bar guard system 28 comprises a first set of spaced-apart parallel bars 30 and 32. In addition, a second set of spaced apart parallel bars 34, 36, 38 and 40 are provided. These bars extend in a direction essentially perpendicular to the direction of the first set of bars and are interconnected to form a grillwork or grid pattern. The spacing between the first and second set

of bars is such as to prevent human passage, between, over or under the bars and through the window opening 14. The end portions generally designated 42 and 44 of the first set of bars are secured to the building or window structure portions 18 and 20 by securing devices 5 46 and 48. The securing device 46 includes a latch which, when opened, releases end portion 42 of the grillwork. The other end portion 44 is pivotally mounted in securing device 48 so that with the latch 10 opened, the grillwork is caused to swing open to allow cleaning of the window or emergency egress. The construction of securing device 46 is of such type which is not easily pilfered, to thwart burglars attempting to pick the latch and gain entry.

15 Emergency release of security device 46 is effected by means of pulling on a cable 50 which is enveloped with a secure metal sheath 52 and connected to the security device 46 as discussed in greater detail below with reference to Figure 4. A graspable portion 54 is 20 attached to the end of the cable 50, and the cable 50 may be secured in place by means of a bracket 56, or other suitable apparatus.

The other end of cable 50 extends within security device 46 and the sheath 52 is threadably connected to 25 a bottom portion of the security device 46.

Upon pulling the cable 50, the bar guard system 28 springs into an open position as shown in Figure 3 to allow cleaning of the window or emergency egress, as discussed above.

30 The system, according to this invention, is devised in a manner to readily facilitate installation by the householder. The grillwork provided by the first set of bars 30, 32 and second set of bars 34-40 come in preassembled format, while telescoping portions 35 of the first set of bars 30, 32 may be adjusted to form an appropriate width of the bars for securing distal

ends thereof 42, 44 and the corresponding security devices 46 and 48.

Upon fixing the width of the bars 30, 32 by telescopic adjustment, as discussed above, the distal ends 44 of the first set of bars 30, 32 are pivotally connected to the securing device 48. The securing devices 46 and 48 may be located in a variety of orientations against varying slopes of the building structure 18, 20 defining opposing edges of the window opening 14.

The window bar guard system, according to this invention, may be readily installed by the householder without requiring elaborate tools.

Turning to Figures 4, 5A and 5B, the securing device is shown in greater detail comprising an enclosure of metal having outer wall 154, opposing side walls 156 and 158 and upper and lower end walls 160.

The securing devices 46 and 48 are mounted to the inner walls 18 and 22 of the window opening 14 by means of a plurality of screws, such as the screw 200 shown in Figure 4 for insertion through counter sunk hole 194, in a well known manner.

The method of installation discussed above is straight forward, and is completely discussed in the aforementioned United States Patent 4,817,334 (Badger et al).

As shown in Figure 5A, respective inner bars 68 and 70 of the end portion or distal end 42 of the bar guard system are inserted through apertures 188 and 190 (Figure 4) of the metal enclosure. A latch or slider 170 is mounted within the metal enclosure for movement between a first position (unlocked) as shown in Figure 5B, and second position (locked) as shown in Figure 5A, in the direction of arrows 172 (Figure 4).

The slider 170 is provided with slide pins 192 and 194 adapted to engage apertures 196 and 198 in the

respective end portions of the inner tubular bars 68 and 70 (Figures 3 and 5A). The slider 170 is biased toward the second (closed) position by means of a first spring 173 connected to the surface 160 of the enclosure. A further spring 174 is connected to side 156 and adapted to spring portion 42 outwardly of the security device 46 upon un-latching thereof.

In order to lock the system 28 in the closed position, the cable 50 is withdrawn by means of grasping and pulling the portion 54. As shown in Figures 4, 5A and 5B, the remote end of cable 50 is attached by spot welding at 171 to the slider 170.

Next, the cable 50 is released, such that the spring 173 urges slider 170 into the first (closed) position (Figure 5A). The pins 192 and 194 then pass through the apertures 198 and 196 respectively to lock the end portion 42 of the bar guard system in the retaining device 46. The bar guard system remains in the closed or locked position under the influence of spring 173 urging the slider 170 and respective pins 196 and 198 into locked engagement with the distal ends 42.

In order to effect quick release of the bar guard system, the handle 54 is pulled, thereby urging downward movement of the slider 170 against the influence of spring 173 until the locking pins 192 and 194 clear the respective apertures 196 and 198 of the inner bars 70 and 68, respectively, such that the additional spring 174 urges the inner bar out of the aperture 198.

The apertures 188 and 190 are formed in the outer wall portion 154 and side wall portion 158 of the enclosure. The securing device 46 is attached to the building structural portion in such a manner to ensure that when the slider 170 is withdrawn to the open position of Figure 5B, the bar portion 68 and 70 are ejected outwardly of the enclosure by passing through the apertures 188 and 190 as the other end of the grill

work is pivoted about the other securing device 48. Due to the advantageous structure of pivotally mounting the securing devices 46 and 48 to the respective ends of the grillwork, the installer is assured of, in one way or
5 another, positioning the locking enclosure 46 in a manner to permit the grillwork and portions to be swung inwardly and outwardly of the enclosure.

Although preferred embodiments of the invention are described herein in detail, other modifications and
10 variations may be made thereto without departing from the sphere and scope of the invention as defined by the appended claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A window bar guard for discouraging breaking and
5 entering through a window, said bar guard comprising a
rigid bar guard comprising a rigid bar grillwork having a
plurality of spaced-apart first set of parallel bars and a
plurality of interconnecting spaced-apart second set of
10 parallel bars extending essentially perpendicular to said
first set, said bar grillwork spanning a window opening to
block human entry through the grillwork, means for
securing opposite ends of said first set of bars to
corresponding structural portions defining opposing edges
of a selected window opening, said means for securing
15 including at one of said opposing edges means for
effecting pivotal movement of said grillwork around
corresponding ends of said first set of bars, and spring-
loaded emergency release means connected to the other of
said opposing edges for releasably securing the other of
20 said opposite ends of said first set of bars, said spring-
loaded emergency release means having a sheathed release
cable extending away therefrom to a graspable end portion,
said spring-loaded emergency release means having a
housing with a plurality of apertures thereon for
25 receiving distal ends of said other of said opposite ends
of said first set of bars, a slider mounted within said
housing and connected thereto for sliding movement via a
first spring, latch means formed within said slider for
receiving and latching said distal ends of said first set
30 of bars,

said spring-loaded emergency release means effecting
sliding movement of said slider between first and second
positions such that in said first position said distal
ends are disengaged from said latch means and in said
35 second position said distal ends engage said latch means,

wherein said slider is biased to said second position via said first spring,

5 said spring-loaded emergency release means further having a second spring mounted to said housing in a direction perpendicular to the direction of said sliding movement, said second spring being positioned so as to bear against a predetermined one of said distal ends when said slider is in said second position and for ejecting said predetermined distal end through the corresponding one of said plurality of apertures, whereby said grill-
10 work springs to an open position for emergency egress.

2. The bar guard of Claim 1 in which the spring-loaded emergency release means has a mounting bracket distal to
15 said window.

3. The bar guard of Claim 1 or Claim 2, wherein each said distal ends of said first set of bars includes a further aperture, and said latch means comprises a
20 plurality of slide pins for selectively extending through and thereby retaining said distal ends.

4. The bar guard of any one of Claim 1-3, wherein said sheathed cable is a metal sheathed cable.

25

5. The bar guard of any one of Claims 1-4 in which there are means for securing the sheathed release cable in a position extending away from said spring-loaded emergency release means.

30

6. The bar guard of any one of Claims 1-5 in which the spring-loaded emergency release means having said sheathed release cable extending away therefrom is adapted to thwart entry through said window.

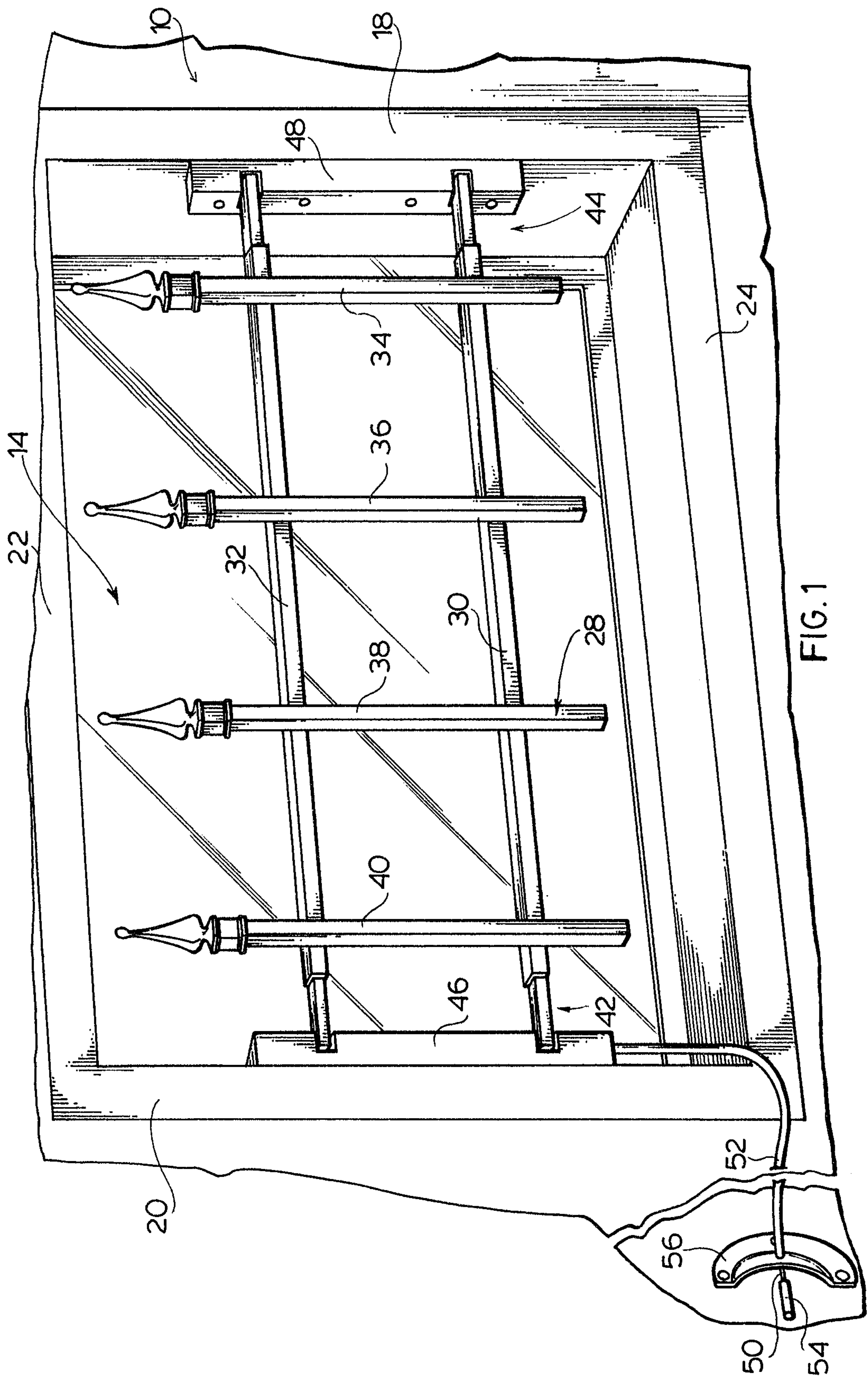


FIG. 1

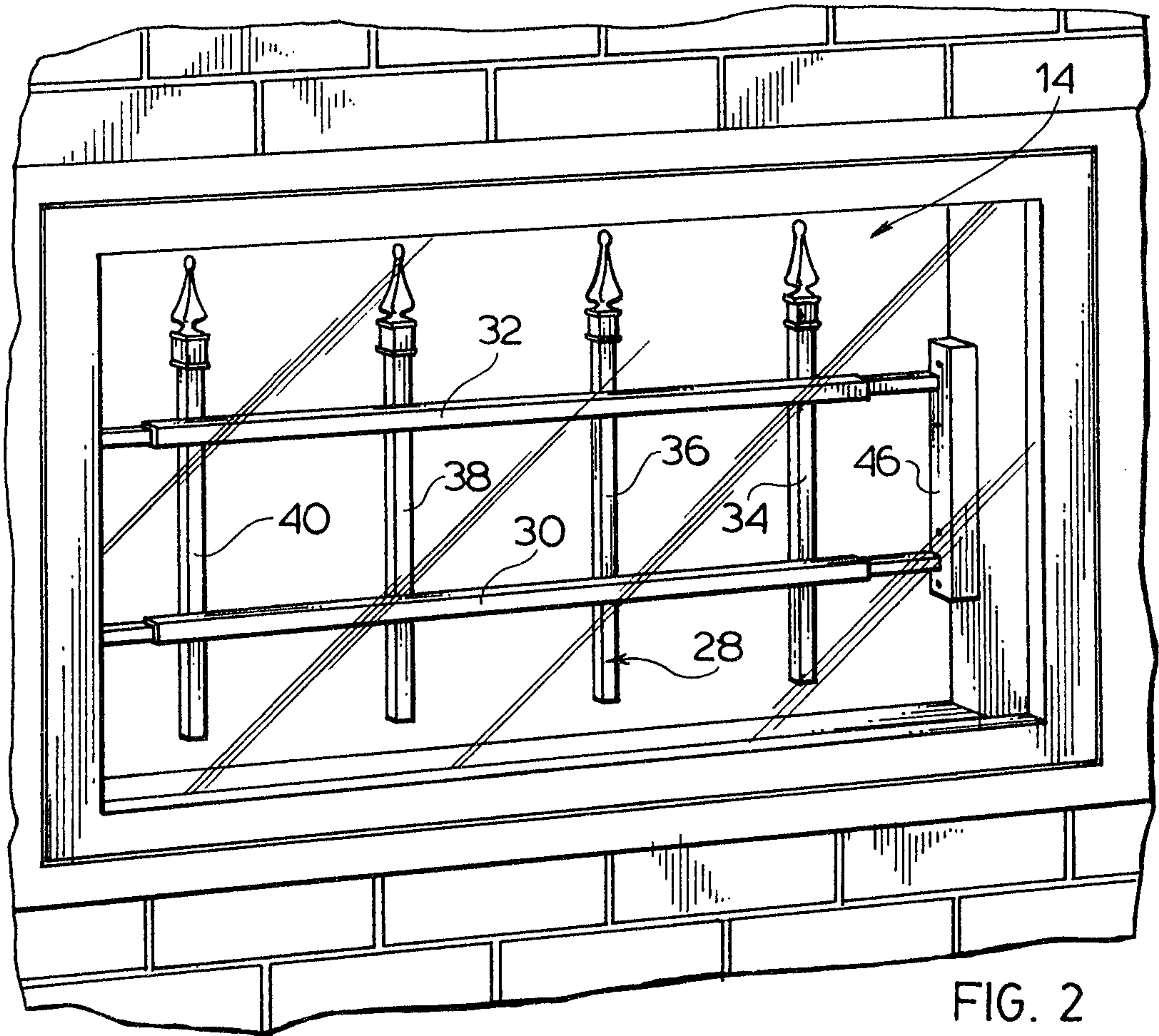


FIG. 2

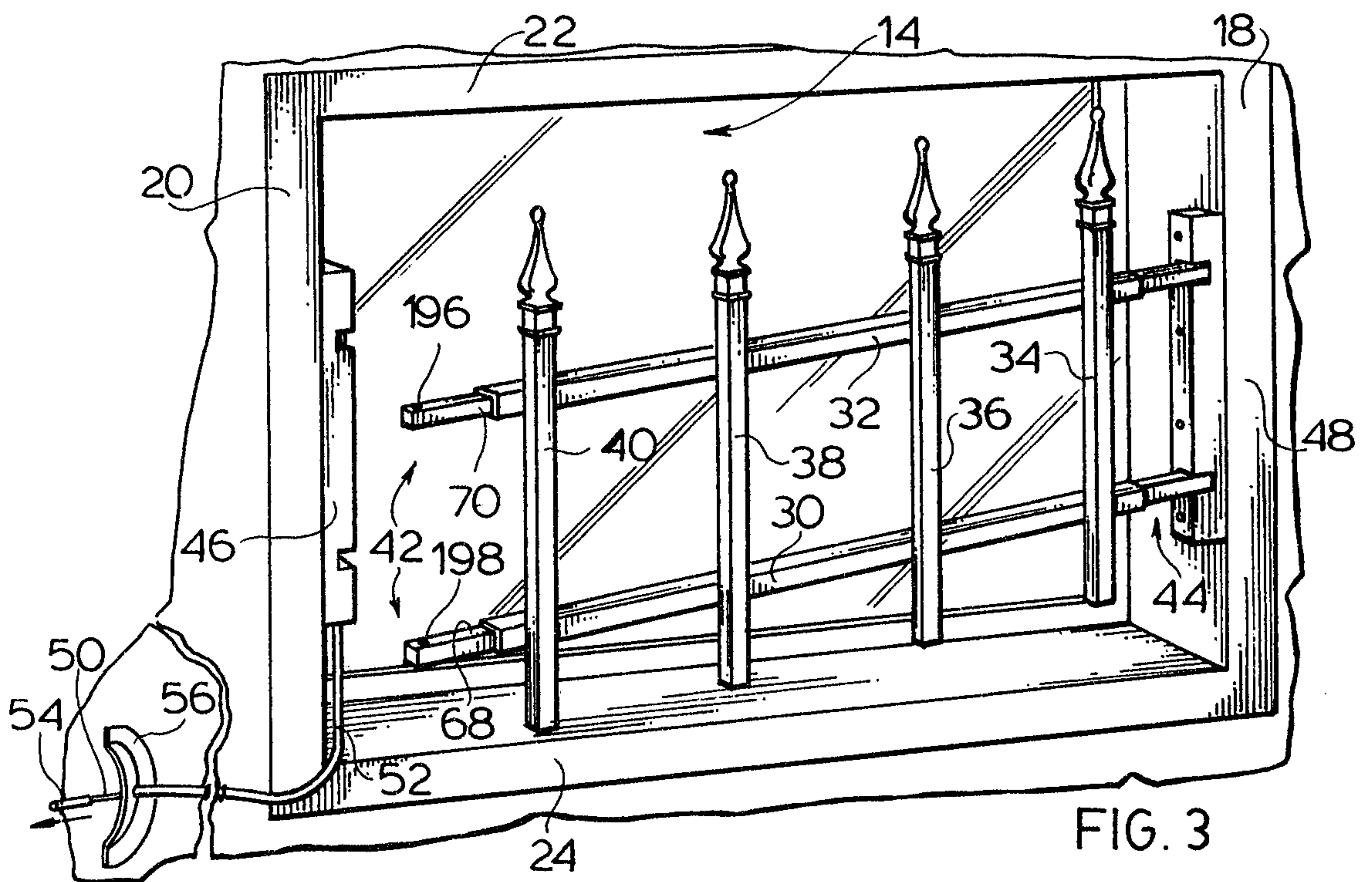


FIG. 3

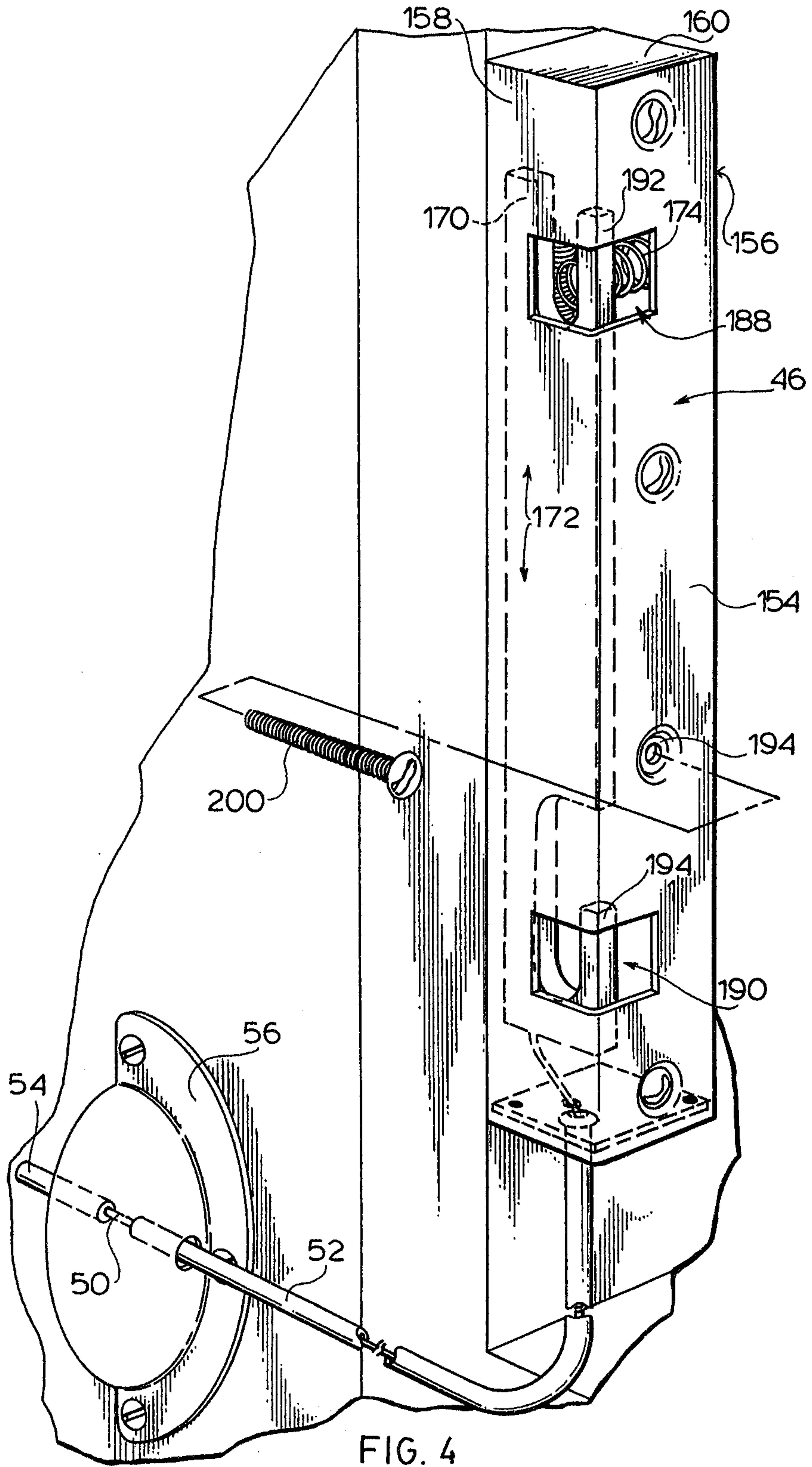


FIG. 4

