Title: COLLAPSIBLE BALLISTIC RESISTANT DEFENSE UNIT

Abstract: A collapsible ballistic resistant unit generally comprising an armored front panel, a ballistic resistant window slidably mounted to the front panel for selective movement between fully extended and fully retracted positions, first and second side panels hingedly mounted to opposing sides of the front panel, each movable between extended and retracted positions, and first and second casters mounted to the unit to provide rolling mobility thereto.
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Collapsible Ballistic Resistant Defense Unit

Claim of Priority


Background of the Invention

[0002] The present invention relates to ballistic resistant units behind which a human is intended to stand and be protected from gun fire and related ballistics, and more particularly to such units that are collapsible and easily portable.

[0003] There are many instances where official and military personnel must place themselves in harm's way. In high security facilities such as military bases, government buildings such as embassies, and other government, military and paramilitary outposts, as well as less secure facilities such as airports, marine ports, and the like have been the target of terrorist shootings, among other unexpected and dangerous events. Those individuals that stand on the front line of these locations, such as the guardsman who prevent unauthorized persons from entering a secure establishment, may become the target of a gunmen who desires to gain access to the establishment. Because such personnel are necessarily exposed to others, the risk of serious injury or death from gunfire is elevated.

[0004] Applicant's U.S. Patent 6,907,811 discloses a portable ballistic resistant unit behind which a person may stand for protection from gunfire. The unit is large and comprises a sheet of ballistic resistant glazing in concert with an armored front and side walls, thereby offering three sides of ballistics protection while not inhibiting the person's line of sight. In
addition, caster assemblies are used to provide mobility to the unit. The unit disclosed in the '81 patent is effective at providing the necessary protection, but does suffer a drawback in that it is somewhat cumbersome to store and is sometimes difficult to maneuver depending on the terrain due to its size.

[0005] It is therefore a principal object and advantage of the present invention to provide a ballistic resistant unit that collapses for ease of storage, shipment, and maneuverability.

[0006] Other objects and advantages of the present invention will in part be obvious and in part appear hereinafter.

Summary of the Invention

[0007] In accordance with the foregoing objects and advantages, the present invention provides a collapsible ballistic resistant unit generally comprising an armored front panel, a ballistic resistant glazing window slidably mounted to the front panel for selective movement between fully extended and fully retracted positions, first and second side panels hingedly mounted to opposing sides of the front panel, each movable between extended and retracted positions, and first and second casters mounted to the unit to provide rolling mobility thereto. Although not mandatory, a transparent ballistic resistant armor could also be slidably attached to the side panels.

Brief Description of the Drawings

[0008] The present invention will be more fully understood and appreciated by reading the following Detailed Description in conjunction with the accompanying drawings, in which:

[0009] Figure 1 is a front perspective view of the present invention with the window in its raised position.

[0010] Figure 2 is a rear perspective view of the present invention with the window in its raised position.
Figure 3 is a rear perspective view of the present invention with the window in its lowered position.

Figure 4 is a front perspective view of the present invention in its fully collapsed position.

Figure 5 is a rear perspective view of the present invention in its fully collapsed position.

Figure 6 is a bottom plan view of the present invention in its fully collapsed position.

Figures 7 and 8 are enlarged perspective views of the window locking pin of the present invention.

Figure 9 is a rear perspective view of the present invention with the window in its raised position and a window control cord being illustrated.

Figure 10 is an enlarged perspective view of a side panel and hinge assembly of the present invention.

**Detailed Description**

Referring now to the drawings in which like reference numerals refer to like parts throughout, there is seen in Figures 1 - 3 a ballistic resistant unit, designated generally by reference numeral 10, comprising a front, armored panel 12, a ballistic resistant window 14 slidably mounted to front panel 12 for movement between extended (see Figures 1 and 2) and retracted/stored (see Figure 3) positions, opposing side panels 16, 18 hingedly connected to front panel 12, and caster assemblies 20, 22, mounted to side panels 16, 18, respectively. Side panels 16, 18 may be armored if desired, but do not necessarily have to be armored. When unit 10 is in its operational mode (i.e., window 14 and panels 16, 18 in their fully extended positions), as shown in Figures 1 - 3, it provides a ballistic resistant shield behind which a person may stand to remain safe from gunfire, among other ballistics. When side panels 16, 18 are retracted, as will be more fully described hereinafter, and window 14 is also
retracted, although it not does not necessarily have to be retracted, unit 10 collapses to a thin profile, as shown most clearly in Figures 4 - 6, making moving, storage, and shipment of unit 10 easier than if the unit remained un-collapsed.

[0019] In part to provide the necessary structure that permits unit 10 to collapse down to a thin profile by retracting window 14 and panels 16, 18, U-shaped channels 24, 26 are mounted to opposite side edges of front panel 12 with the open channels facing one another (i.e., the open channels are turned inwardly), and extend the majority of the distance along the edges. Each channel 16 and 18 includes a pair of vertically spaced openings 28, 30 (only one set shown - those formed through channel 24) formed towards the upper part of the channels, with the openings in the opposed channels being aligned along an essentially straight axes A-A, B-B, that extend perpendicular to the elongated axis X-X of the channels themselves (see Figure 4).

[0020] Side panels 16, 18 are attached to the outer surface of channels 24, 26, by elongated hinges 32, 34, respectively, that permit panels 16, 18 to hinge essentially 90 degrees between fully extended (where the panels extend out at about a 90 degree angle relative to front panel 12 and in laterally spaced, parallel relation to one another), and fully retracted (i.e., where the panels extend behind front panel 12 and in overlapping relation to one another) positions.

[0021] Window 14, which may be formed of transparent armor, includes a pair of opposed interior channel members 36, 38 that are fixed to the window's glazing along the opposed side edges thereof. Interior channel members 36, 38 are adapted for selective, sliding movement within channels 24, 26, respectively, which in turn, causes window 14 to selectively move in sliding relation to channels 24, 26. More particularly, channel members 36, 28 extend the entire length of window 14 and further extend a predetermined distance beyond the bottom edge of window 14. A pair of spring loaded pin assemblies 40, 42 extend through the extended portion of channels 36, 38, respectively, and are axially aligned with
one another (either along axis A-A or B-B, as will be described hereinafter). Each pin assembly 40, 42 includes the pins 44, 46 themselves, that extend through channels 36, 38, as well as a mounting bracket 48, 50, respectively, that fixes the pins in interconnected relation to channel members 36, 38 (i.e., the pins do not disconnect from channels 36, 38 even though they can be moved relative thereto.) Each pin 44, 46 also includes a ring 52, 54 on the head thereof that serves as an anchor for a cord 56 that extends between pins 52 and 54, for purposes to be explained hereinafter.

[0022] Although not shown, pins 40, 42 are spring biased and naturally extend through openings (28 or 30, for instance) formed through channels 16 and 18, unless forcibly pulled outwardly therefrom. When pins 40, 42 are engaged with one of the openings 28 or 30 (and the counterpart opening formed through channel 18), window 14 is retained in the relative position to front panel 12 as defined by the opening 28 or 30 (upper or lower). If pins 40, 42 are in the upper opening (30, for instance), then window 14 will extend above the upper edge of front panel 12, creating a ballistic resistant window through which a person can stand behind while maintaining his or her line of sight. If pins 40, 42 are inserted into the lower openings (28, for instance), then window 14 will be retracted and fully positioned behind front panel 12.

[0023] To move window 14 between its fully raised (extended and lowered (retracted) positions, one would pull pins 40, 42 out of engagement with the openings formed through channels 16, 18, thereby freeing window 14 and channels 36, 38 to slide within channels 16, 18, respectively until pins 40, 42 reengage into the other of the openings formed through channels 16, 18. While this can be done by an individual pulling out each pin 40, 42 individually, and slightly moving window 14 up or down to prevent reengagement of pins 40, 42 back into the opening from which it was previously disengaged, cord 56 eases this process. An individual could pull on cord 56, thereby disengaging both pins 40, 42 at the
same time, while holding window 14 with his or her other hand and moving the window to
the desired location.

[0024] As illustrated in Figure 4, when side panels 16, 18 and window 14 are fully retracted,
unit 10 forms a thin profile with mobility offered by casters 20, 22, thereby making storage,
shipment, and movement of unit 10 convenient.
What is claimed is:

1. A collapsible, ballistic resistant unit, comprising:
   a. an armored front panel having opposing side edges and an upper edge,
   b. a ballistic resistant window slidably mounted to said front panel for selective movement between extended and fully retracted positions; and
   c. first and second side panels hingedly mounted to opposing sides of said front panel, each movable between extended and retracted positions.

2. The unit according to claim 1, further comprising first and second outer channels respectively attached to said opposing side edges of said front panel.

3. The unit according to claim 2, further comprising first and second interior channels attached to said window and positioned for sliding movement within said first and second exterior channels, respectively.

4. The unit according to claim 3, further comprising first and second pin assemblies attached to said first and second interior channels, respectively.

5. The unit according to claim 4, wherein said first and second pin assemblies comprise first and second pins and first and second mounting brackets, respectively.

6. The unit according to claim 5, further comprising first and second rings attached to said first and second pins, respectively.

7. The unit according to claim 6 further comprising a cord connected to and extending between said first and second rings.

8. The unit according to claim 1, further comprising first and second casters mounted to the unit to provide rolling mobility thereto.