BULLET CASING COLLECTOR

Inventors: Michael Edward Goza, Everett, WA (US); Michael W. Walton, Mukilteo, WA (US)

Correspondence Address:
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101-2347 (US)

Filed: May 28, 2002

Publication Classification

Int. Cl. 7. F41A 15/00
U.S. Cl. 42/98

ABSTRACT

A bullet casing collector (20) is provided. The bullet casing collector includes a housing (22) having angled sidewalls (24) and (26), and a bottom surface (30). A collector plate (64) is disposed within the bottom surface, wherein the angled sidewalls are sloped to direct bullet casings into the collector plate.
Fig. 1.
BULLET CASING COLLECTOR

FIELD OF THE INVENTION

[0001] This application relates generally to ammunition and, more particularly, to collection apparatuses for spent bullet shell casings.

BACKGROUND OF THE INVENTION

[0002] Gun ranges are popular for recreational use, as well as target practice. Such gun ranges typically include a plurality of stalls located adjacent each other, such that shooters at a range are standing side by side firing at a target located downfield from the shooting area. As configured, when a shooter fires his weapon, the spent casing is ejected into a common area located near their feet. If there are multiple shooters at a gun range discharging weapons of either the same or different caliber, the spent casings of one shooter become mixed with the spent casings of the other shooters. Even if there is only one shooter at the range, spent casings are scattered throughout the common area. As it has become common practice for shooters to collect their spent casings for reloading, there is a need for a bullet casing collector that minimizes the risk of mixing the spent casings of various shooters, as well as providing a convenient apparatus for collecting such bullet casings. The embodiments of the present invention are generally directed to addressing such a need.

SUMMARY OF THE INVENTION

[0003] A bullet casing collector formed in accordance with one embodiment of the present invention includes a housing having angled side walls and a bottom surface. The bullet casing collector also includes a collector plate disposed within the bottom surface, wherein the angled side walls are sloped to direct bullet casings into the collector plate.

[0004] In accordance with certain aspects of this embodiment, the bottom surface is contoured to direct bullet casings into the collector plate. In another embodiment of the present invention, the housing includes a top surface contoured to direct bullet casings into the collector plate. In another embodiment, the bullet casing collector includes a support member extending from the housing to support the bullet casing collector on a surface.

[0005] In accordance with other aspects of this embodiment, the support member is adjustable to selectively adjust a length of the support member. In still yet another embodiment of the present invention, the collector plate is slidably disposed within the bottom surface to permit removal of the collector plate.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The foregoing aspects and many of the attendant advantages of this invention will become more readily appreciated by reference to the following detailed description, when taken in conjunction with the accompanying drawings, wherein:

[0007] FIG. 1 is a perspective view of a bullet casing collector formed in accordance with one embodiment of the present invention;

[0008] FIG. 2 is a perspective view of the bullet casing collector of FIG. 1, with a portion of the sidewalls and top surface removed for clarity and showing a collector plate removed from the bottom surface; and

[0009] FIG. 3 is a perspective view of a bullet casing collector formed in accordance with another embodiment of the present invention, and illustrating an adjustable height aspect of the collector.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0010] FIGS. 1 and 2 illustrate one embodiment of a bullet casing collector 20 constructed in accordance with the present invention. The bullet casing collector 20 includes a frame 22 forming first and second sidewalls 24 and 26, an upper surface 28, and a bottom surface 30. The frame 22 is suitably formed from a lightweight material, such as tubular aluminum, and includes first and second support members 32 and 34. In one embodiment, the first and second support members 32 and 34 are integrally formed with the frame 22 and depend a predetermined distance below the bottom surface 30, such that the support members 32 and 34 may be placed on a tabletop, countertop, or the like of a gun range. The first and second support members 32 and 34 may also include nonskid surfaces 36 and 38, such as foam.

[0011] The frame 22 is suitably a box-like configuration and may be interconnected by well known hinges 40. Such hinges 40 allow the frame 22 to be folded into a substantially flat and rectangular configuration for ease of transportation. Although it is preferred for the bullet casing collector 20 to be collapsible, other configurations, such as a noncollapsible frame, are also within the scope of the present invention.

[0012] Still referring to FIGS. 1 and 2, the sidewalls 24 and 26, as well as the top surface 28, are contoured to direct bullet casings into the bottom surface 30. In one embodiment, the sidewalls 24 and 26 and top surface 28 are generally configured as a frustum of a square-based pyramid. In particular, both sidewalls 24 and 26, and top surface 28, suitably include four panels 42u-42d interconnected at one edge by a generally planar end panel 44. As configured, the sidewalls 24 and 26 and top surface 28 bow outwardly away from the interior of the frame 22. Although the current embodiment of the bullet casing collector 20 has been described as including sidewalls 24 and 26 and an upper surface 28 that are configured in a substantially identical manner, the invention is not intended to be so limited. In particular, any one of the sidewalls 24 and 26 or upper surface 28, or any combination thereof, may include more or less panels 42u-42d. As a nonlimiting example, any one of the foregoing surfaces may include two panels, each shaped as a triangle bowing outwardly away from the interior of the frame 22, such that the angled walls of the panel are positioned to deflect a bullet casing back into the interior of the frame 22. Thus, although the exact configuration of the sidewalls 24 and 26 and top surface 28 is not important for the purpose of the present invention, it is important that at least one of the sidewalls 24 and 26 and top surface 28 is contoured to direct bullet casings into the interior of the frame 22.

[0013] The frame 22 is suitably encased within a well known flexible mesh material 50. Although it is preferred that the mesh material 50 be flexible for energy absorption, any material suitable for encasing such a frame 22 is also within the scope of the present invention.
As may be best seen by referring to FIG. 2, the bottom surface 30 generally includes first and second side panels 60a and 60b and first and second end panels 62a and 62b. In one embodiment of the present invention, a collector plate 64 is optionally slidably disposed between opposing edges of the side panels 60a and 60b. Although it is preferred that a collector plate 64 be slidably disposed within the bottom surface 30, other embodiments, such as a bullet casing collector having an integrally formed collector plate, and a bullet casing collector that does not include a collector plate, are also within the scope of the present invention.

The side panels 60a and 60b, as well as the end panels 62a and 62b, are encased within a pliable mesh-like material adapted to absorb at least a portion of the kinetic energy associated with a bullet casing ejected from a firearm. Such material may be similar to that used to encase the sidewalls 24 and 26 and upper surface 28 (see FIG. 1).

Still referring to FIG. 2, the bullet casing collector 20 may include a deflector surface 66 formed with one end of the frame 22. The deflector shield 66 includes a mesh-like material similar to that used to encase the first and second sidewalls, upper surface, and the bottom surface, as described above. The deflector surface 66 extends from the edges of the frame 22 to frame a portion of the end surface. Although it is preferred that the bullet casing collector 20 includes a deflector surface 66, other configurations, such as one that does not include a deflector surface, are also within the scope of the present invention.

Operation of the bullet casing collector 20 may be best understood by referring to FIGS. 1 and 2. As noted above, gun ranges generally include partitions having waist-high table tops or shelves. A bullet casing collector 20 may be placed on top of such a table top, such that the open ends of the bullet casing collector 20 face downward toward a target. If the bullet casing collector 20 includes a deflector shield 66, the deflector shield 66 is suitably positioned near the shooter. As positioned, a shooter would extend his arm through one of the open ends of the bullet casing collector 20, such that the firearm is disposed within the bullet casing collector 20. Upon firing and discharge of a spent bullet casing from the firearm, the bullet casing impacts at least one of the first and second sidewalls 24 and 26, upper surface 28, or bottom surface 30. As each of the foregoing surfaces is contoured as described above, the kinetic energy associated with the discharged bullet casing is at least partially absorbed by the mesh-like material. Further, because such surfaces are contoured, the spent bullet casings are directed downwardly toward the collector plate 64. As spent bullet casings are collected within the collector plate 64, the collector plate 64 is slidably withdrawn from the bottom surface 30, where the shooter would then dispose of the spent bullet casings in either an appropriate disposal receptacle or within some other type of container. The collector plate 64 is then placed back into the bottom surface 30 for reuse.

Referring now to FIG. 3, a bullet casing collector 120 formed in accordance with another embodiment of the present invention will now be described in greater detail. The bullet casing collector 120 of the present embodiment is identical in materials, configuration, and operation to the preferred embodiment described above, with one exception. In that regard, the support members 132 and 134 include adjustable lower portions 170a and 170b. In one embodiment, the lower portions 170a and 170b are telescopically connected to the frame 122 in a manner well known in the art. Although it is preferred that the lower portions 170a and 170b be telescopically connected to the support members 132 and 134, other types of extendable connections are also within the scope of the present invention. As configured, the lower portions 170a and 170b allow vertical adjustment of the height of the bullet casing collector 120 to accommodate differing heights of shooters, or may be adjusted such that the bullet casing collector 120 is a freestanding unit.

While the preferred embodiment of the invention has been illustrated and described, it will be appreciated that various changes can be made therein without departing from the spirit and scope of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A bullet casing collector, comprising:

   (a) a housing having angled sidewalls and a bottom surface; and

   (b) a collector plate disposed within the bottom surface, wherein the angled sidewalls are sloped to direct bullet casings into the collector plate.

2. The bullet casing collector of claim 1, wherein the bottom surface is contoured to direct bullet casings into the collector plate.

3. The bullet casing collector of claim 2, wherein the housing includes a top surface contoured to direct bullet casings into the collector plate.

4. The bullet casing collector of claim 3, further comprising a support member extending from the housing to support the bullet casing collector on a surface.

5. The bullet casing collector of claim 4, wherein the support member is adjustable to selectively adjust a length of the support member.

6. The bullet casing collector of claim 1, further comprising a support member extending from the housing to support the bullet casing collector on a surface.

7. The bullet casing collector of claim 4, wherein the collector plate is slidably disposed within the bottom surface to permit removal of the collector plate.

8. A bullet casing collector, comprising:

   (a) a housing having first and second sidewalls, a top surface, a bottom surface, and support members; and

   (b) a collector plate disposed within the bottom surface, wherein at least the first and second sidewalls are contoured to direct bullet casings into the collector plate.

9. The bullet casing collector of claim 8, wherein the top surface is contoured to direct bullet casings into the collector plate.

10. The bullet casing collector of claim 9, wherein the bottom surface is contoured to direct bullet casings into the collector plate.

11. The bullet casing collector of claim 10, wherein the first and second sidewalls, top and bottom surfaces are tapered from a center toward the collector plate.

12. The bullet casing collector of claim 11, wherein the collector plate is slidably disposed within the bottom surface.
13. The bullet casing collector of claim 12, further comprising a support member extending from the housing.

14. The bullet casing collector of claim 12, wherein the support member is adjustable to permit selective adjustment of a height of the support member.

15. A bullet casing collector, comprising:

(a) a frame;

(b) a skin coupled to the frame and forming first and second sidewalls, a top surface, and a bottom surface;

(c) a collector disposed within the bottom surface, wherein the skin is contoured to direct bullet casings into the collector; and

(d) support means coupled to the frame for supporting the bullet casing collector.

16. The bullet casing collector of claim 15, wherein the first and second sidewalls are tapered from a center toward the collector.

17. The bullet casing collector of claim 16, wherein the top surface is tapered from a center toward the collector.

18. The bullet casing collector of claim 15, wherein the top surface is tapered from a center toward the collector.

19. The bullet casing collector of claim 17, wherein the collector is slidably disposed with the bottom surface.

20. The bullet casing collector of claim 19, wherein the bottom surface is tapered toward the collector.

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