United States Patent [19]

Walters

[11] **3,917,071**

[45] **Nov. 4, 1975**

[54] **WEAPON SECURITY RACK**

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[22] Filed: **Jan. 23, 1974**

[21] Appl. No.: **435,942**

[52] **U.S. Cl.** **211/64;** 211/4; 248/203

[51] **Int. Cl.²** **A47F 7/00**

[58] **Field of Search** 211/4, 64; 248/203

[56] **References Cited**

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Attorney, Agent, or Firm—Allan Ratner

[57] **ABSTRACT**

A weapon security rack for securing a weapon from unauthorized removal which includes a butt housing for receiving the butt of the weapon. A barrel mount, displaced from the butt housing receives within a mount passage the barrel of the weapon around that section of the barrel having a lesser diameter. A bar lock is movable within the barrel mount for blocking the mount passage thereby to lockingly engage the lesser diameter barrel section. The barrel mount has a surface which is located a predetermined distance from the section of the barrel having the larger diameter. The predetermined distance is less than an interval dimension of the butt housing in order that the weapon be captured between the barrel mount and butt housing.

16 Claims, 8 Drawing Figures

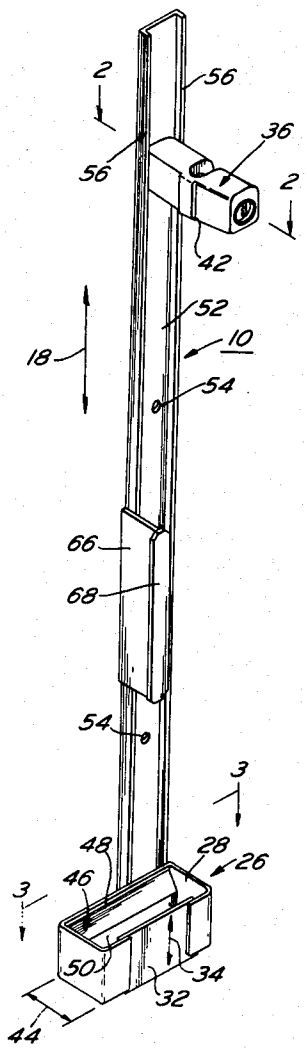


FIG. 1

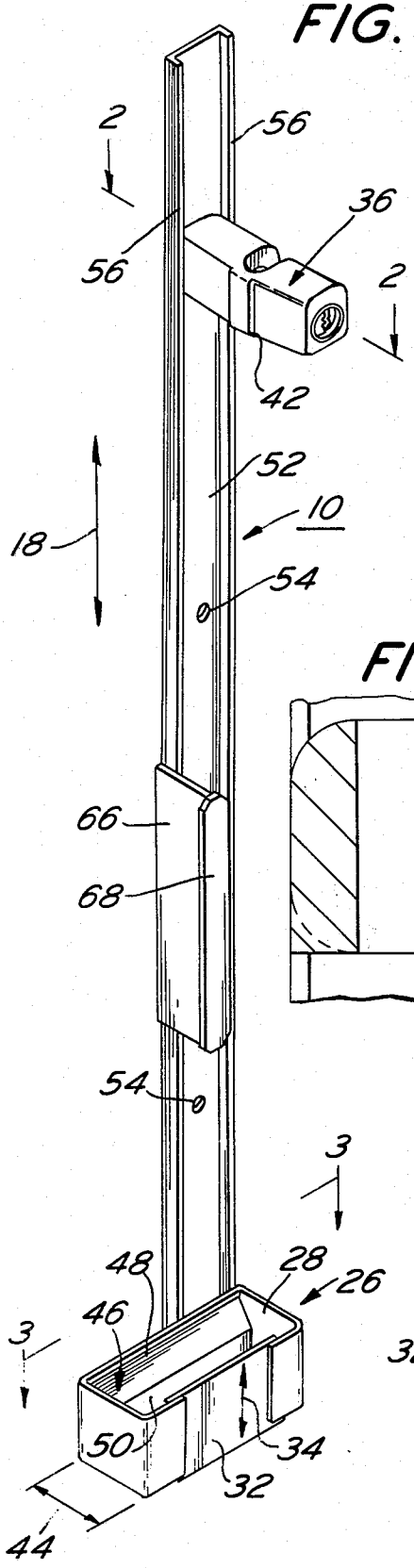


FIG. 2

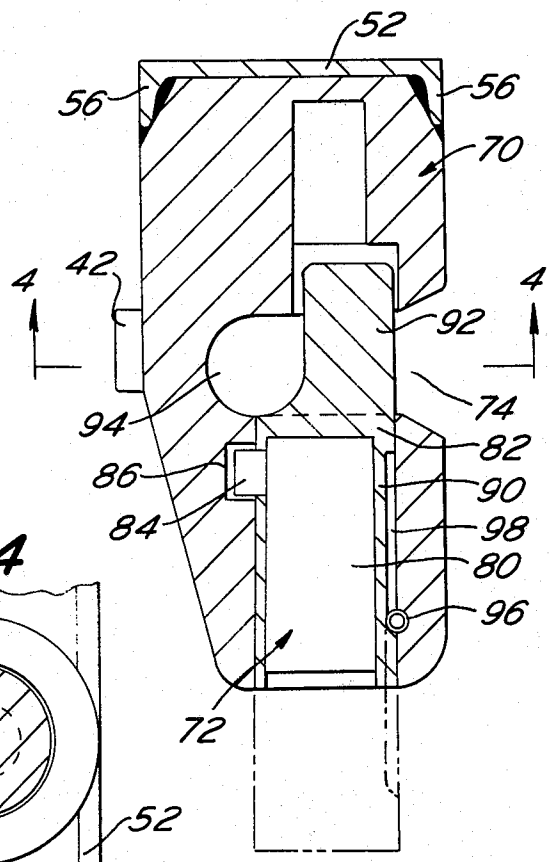
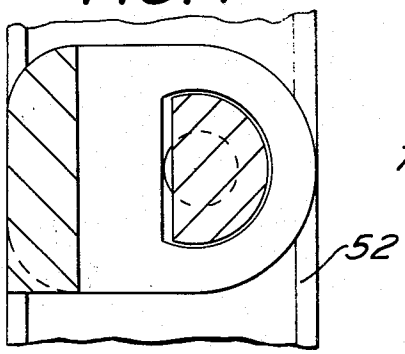


FIG. 4



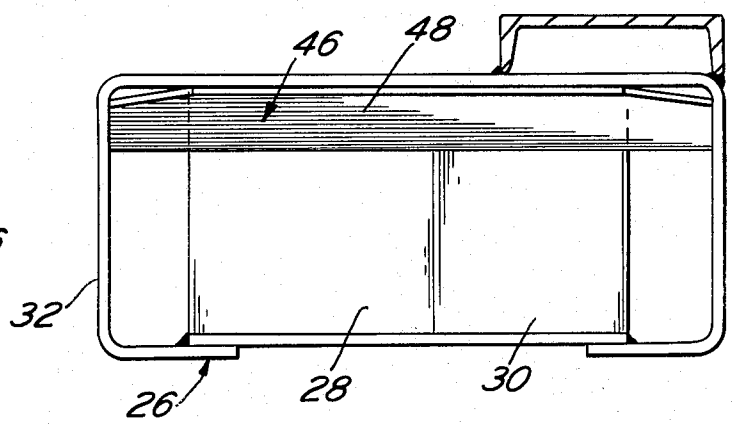


FIG. 3

FIG. 5

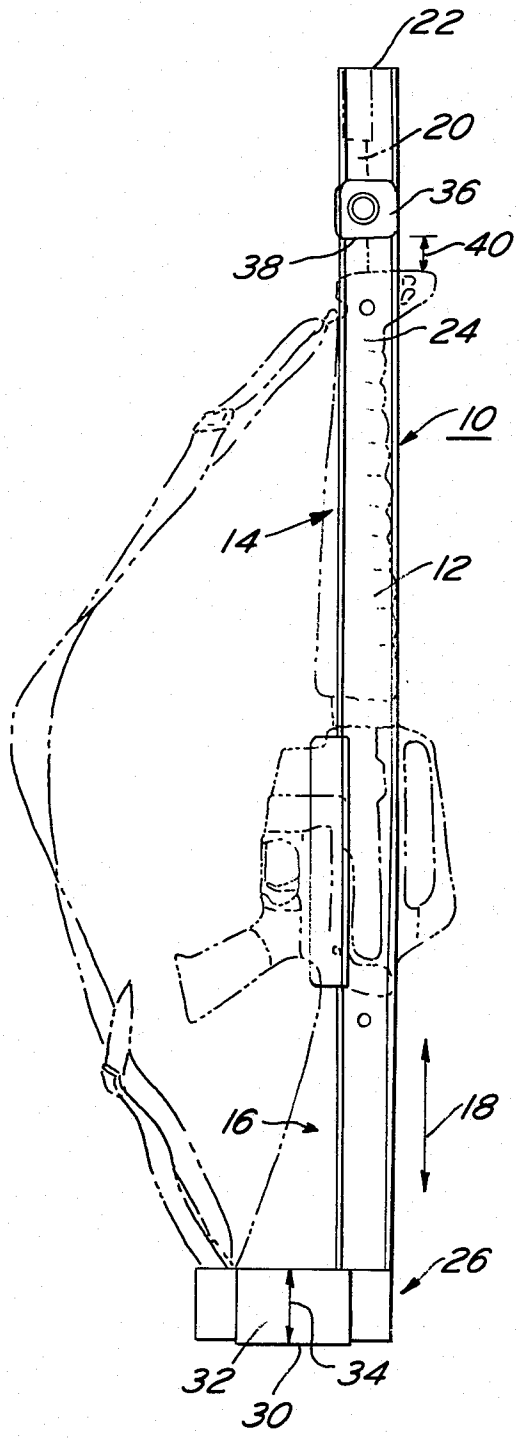
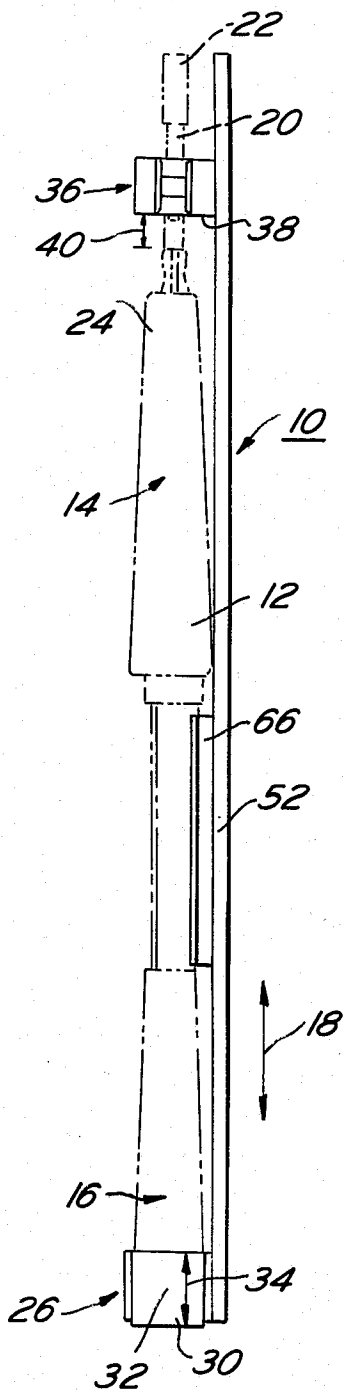

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FIG. 6


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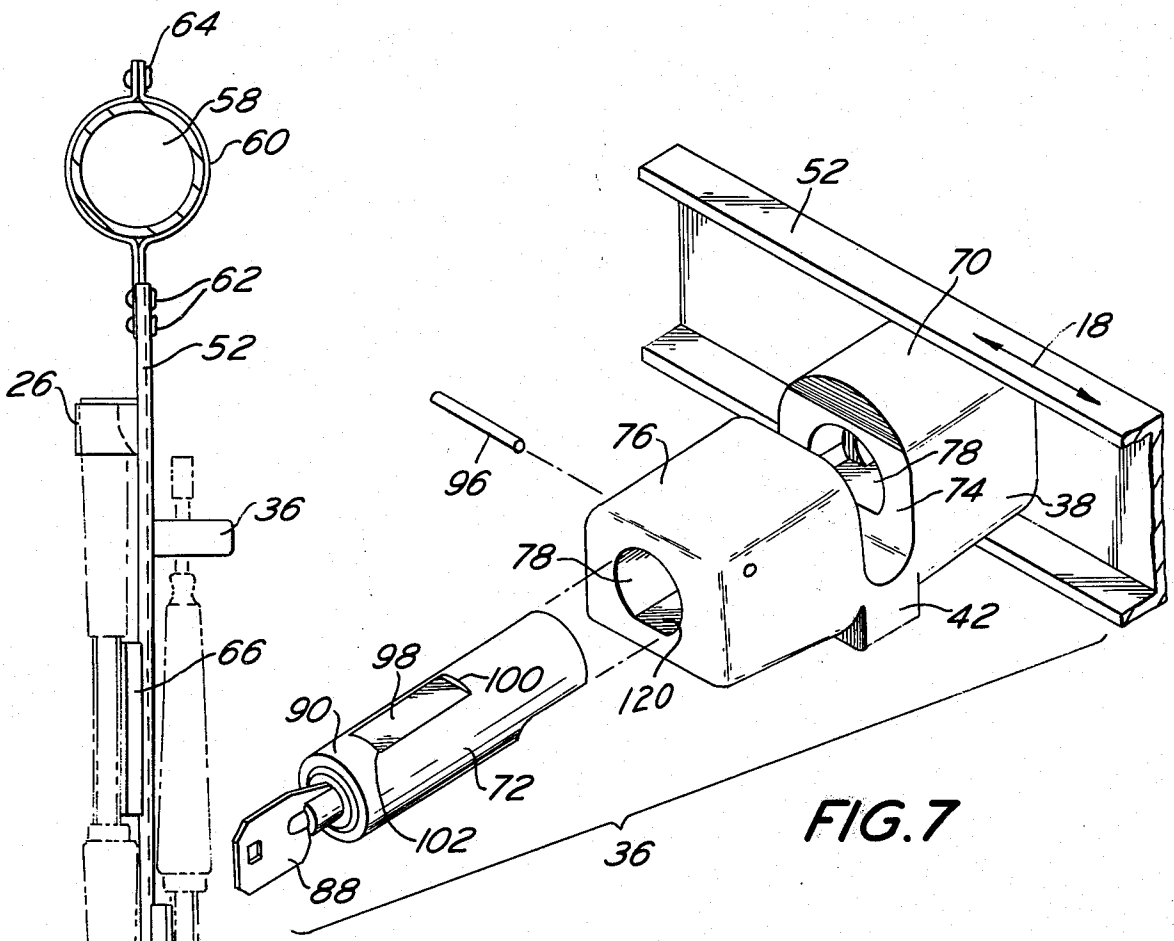

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120
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FIG. 7

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36
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62
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60
64

FIG. 8

WEAPON SECURITY RACK

BACKGROUND OF THE INVENTION

A. Field of the Invention

This invention relates to weapon racks and particularly for securing a weapon from unauthorized removal.

B. Prior Art

Weapon security racks for preventing unauthorized removal of a weapon are known in the art. However, some of such prior security racks are bulky in construction and cannot be utilized in confined spaces. Other prior security racks are complex in leading to high costs in manufacture and assembly resulting in a relatively expensive device.

In some other prior security racks, the weapons are secured through the use of a padlock which is removable from the rack. The padlock may be lost thus permitting removal of the weapon from the rack. Even in prior security racks, where a padlock is attached to the main body of the rack, the time required in opening and closing the lock may be excessive. This would be important where the weapon is immediately needed.

In other prior security devices it is sometimes difficult to check the status of the lock. Thus, it is difficult to see whether the rack is locked or unlocked during an inspection. Accordingly, unauthorized removal of the weapon may result when the rack has been wrongly left in an unlocked position.

SUMMARY OF THE INVENTION

A weapon security rack for securing only a single weapon which extends in a longitudinal direction and has a barrel and a butt portion. The barrel portion is formed of at least a first section having a predetermined diameter extending from a muzzle end to a second section having an increased diameter with respect to that of the first section. The rack comprises a butt housing for receiving internally the butt end of the weapon. The butt housing has a predetermined internal dimension in the longitudinal direction. A barrel mount is longitudinally displaced from the butt housing with a mount passage having a wall for supporting the first section. Bar lock means is movable within and lockingly secured to the barrel mount for blocking the passage thereby capturing and locking the first section between the mount passage and the bar lock means. The barrel mount has a surface located at a predetermined distance from the second section with the predetermined distance being less than the internal dimension of the butt housing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the weapon security rack showing the butt housing and the barrel mount;

FIG. 2 is a cross-section view of the barrel mount taken along the section line 2—2 of FIG. 1;

FIG. 3 is an elevational cross-section view of the butt housing taken along the section line 3—3 of FIG. 1;

FIG. 4 is a cross-sectional view of the barrel mount taken along the section line 4—4 of FIG. 2;

FIG. 5 is a front view of the weapon security rack with a weapon mounted therein;

FIG. 6 is a side view of the weapon security rack;

FIG. 7 is an exploded perspective view of the barrel mount; and,

FIG. 8 is a top view of an embodiment of the weapon security rack adapted to secure a pair of weapons.

DETAILED DESCRIPTION

Referring now to FIGS. 1–6, there is shown weapon security rack 10 for storing and securing weapon 12 against unauthorized removal. Rack 10 provides the user with ease of weapon insertion and locking engagement of weapon 12 therein. As will later be shown, the user, after insertion of weapon 12 in rack 10, lockingly engages weapon 12 within rack 10 in one linear motion thereby preventing removal of weapon 12 until needed. Rack 10 may be fastened to an external surface such as a wall, post, bulkhead, or other structural member of a ship, edifice or other relatively immovable member. In this manner, weapon 12 may be stored in a permanently fixed position until its use is required.

In general, rack 10 is utilized for fixedly securing weapons 12 which have a barrel portion 14 and a butt portion 16 as shown in FIGS. 5 and 6. Both security rack 10 and weapon 12 extend in a longitudinal direction as defined by directional arrow 18. Barrel portion 14, is formed of first section 20 having a predetermined diameter of dimension which extends from muzzle 22 to second section 24 having an increased diameter or dimension with respect to the diameter of first section 20. It is understood that first section 20 does not have to have a constant diameter throughout its extended length in longitudinal direction 18. The important aspect of dimensional size is that second section 24 defines an increased dimension in a direction substantially normal to longitudinal direction 18 over that of barrel first section 20.

In one type of weapon 12 such as M-16 rifle, second section 24 is initiated by sight line 102, shown in FIG. 5. Sight line 102 includes upper portion 104 used for sighting a target and a lower stop member 106. As shown, elements 104 and 106 in this type of weapon provides for the increased dimension of second section 24. As shown, this increased dimension in combination with the positional location of the component elements of rack 10 prevents removal of weapon 12 from rack 10 when it is in a locked position.

Butt housing 26 for internally receiving butt 16 of weapon 12. In construction, butt housing 26 as shown in FIGS. 2 and 3, forms open ended or open top chamber 28 for longitudinal insertion of a portion of butt 16. Thus, housing 26 forms a partial enclosure for butt 16 having housing bottom wall 30 joined to sidewalls 32 in a manner such that butt 16 may be inserted therein with a lowermost surface of butt 16 lying adjacent bottom wall 30.

The overall width 44 of butt housing 26 is somewhat in excess of butt portion 16 of weapon 12. This provides ease of insertion into chamber 28 as well as permitting a wide variety of weapons 12 to be inserted therein. However, where width 44 is too great, excess movement of butt 16 may be found when weapon 12 is mounted in housing 26. This may occur when rack 10 is mounted to an external surface which is movable such as a moving ship, truck or other vehicle. In order to maintain ease of insertion while eliminating movement of butt portion 16, inner wall 46 is formed into a funnel member as shown in FIGS. 1 and 3. Inner wall 46 includes a first inclined portion 48 and a vertically directed portion 50. Thus, weapon 12 may be easily inserted at the upper portion of housing 26 defining the

largest width dimension, the slide down inclined wall 48 into a relatively constrained position between wall 50 and sidewall 32.

Weapon security rack 10 further includes barrel mount 36, shown in FIGS. 1, 2, 4, and 5–7 for receiving and lockingly engaging barrel portion 14. Mount 36 is longitudinally displaced from butt housing 26 in a manner such that mount lower surface 38 is positioned adjacent to and at a predetermined distance 40 from barrel second section 24. Surface 38 faces second section 24 of weapon 12 to provide a restraint when weapon 12 is moved in longitudinal direction 18. Distance 40, as shown in FIGS. 5 and 6 is less than longitudinally directed internal butt housing dimension 34. In this manner, when weapon 12 is inserted in rack 10 and locked, longitudinal movement will be dictated by distance 40 where barrel second section 24 would abut against mount lower surface 38. When distance 40 is less than internal butt housing dimension 34, it is clear that when section 24 abuts against surface 38, a portion of butt 16 will still be maintained internal to chamber 28 of housing 26. Thus, weapon 12 could not be removed from rack 10. An important criteria in construction results from the fact that the maximum distance 40 between lower surface 38 and second section 24 be less than butt housing internal dimension 34.

In overall concept, distance 40 between lower surface 38 and sight line 102 is generally minimized in order to constrain motion of weapon 12 when mounted in security rack 10. Thus, if rack 10 is mounted within a ship, longitudinal ship roll will not cause weapon 12 to move within rack 10. Further, when distance 40 is kept to a minimum, prying of mount 36 from sight line 104 is made more difficult and provides more security for the mounted weapon 12.

Lug or extension member 42 may be formed on mount 36 as a part of lower surface 38 as shown in FIG. 7. Lug 42 includes a flat lower surface to receive stop 106 on sight line 102. Thus, stop 106 bears on a flat surface rather than a rounded surface when weapon 12 is moved in longitudinal direction 18. Additionally, lug 42 provides increased structural integrity for barrel mount 36 at a section where the barrel mount sidewall is relatively thin.

In overall construction, barrel mount 36 and butt housing 26 are fixedly secured to structural member 52 in fixed relation as is shown in FIG. 1. Structural member 52 is then mounted or fastened to an external surface. Mount 36 and housing 26 may be fastened to member 52 through welding, bolting or some like technique not important to the inventive concept as herein described. Similarly, structural member 52 is fixedly secured to an external surface by bolts 54 or some like means. Member 54 may be of channel beam construction as shown in FIGS. 1 and 2 where barrel mount 36 is secured between opposing tracks 56.

As shown in FIG. 8, rack 10 may include a pair of butt housings 26 and a pair of barrel mounts 36 fixedly secured to structural member 52 on opposing surfaces thereof. In this manner, a pair of weapons 12 may be mounted on one security rack 10 as is shown. In this embodiment, member 52 may be composed of a pair of channel beams mounted back to back or may in simplest form be a beam having opposing parallel surfaces. In order to mount rack 10 between columns or other external surfaces 58, a pair of clamps 60 are provided as shown. Member 52 may be fastened to clamps 60 through rivets 62. Clamps 60 in turn are then secured to columns 58 by rivets 64 as shown.

Structural member 52 may further include at least one stop 66 as shown in FIG. 1. Stop 66 is formed on member 52 and extends in longitudinal direction 18 as well as passing transversely from an external side of one of tracks 56. Stop 66 transversely terminates at bearing surface 68 which is predeterminedly positioned to bear against a particular portion of weapon 12 when it is mounted within rack 10. In some weapons 12, various sections are secured, each to the other, by pin members. Removal of the pins results in weapon 12 being dismantled. Bearing surface 68 is thus formed on member 52 in a manner so as to lie contiguous to dismantling pins and form a restraining surface such that the pins cannot be removed. In this manner, weapon 12 may not be dismantled while mounted in security rack 10.

In detailed construction, barrel mount 36 includes barrel frame 70 secured to structural member 52 and bar lock device 72 movably actuated within frame 70 as shown in FIGS. 2 and 7. Barrel mount frame 70 includes trough shaped passage 74 extending in longitudinal direction 18 throughout the longitudinal extension of frame 70. Further trough 74 extends from side surface 76 through a portion of frame 70 in a direction substantially normal to longitudinal direction 18. The width of trough 74 is greater than the diameter of barrel first section 20 to permit insertion of section 20 within trough 74. Bar lock device 72 is insertable within opening 78 which is partially formed through barrel frame 70 in a direction substantially normal to longitudinal direction 18 as shown in FIG. 7. Opening 78 includes flattened wall section 120 which mates with a flat formed on locking tube 82 in order to prevent torque from being applied to latch bolt 84 when inserted into recess 86.

Bar lock device 72 includes a standard lock cylinder 80 within locking tube 82. Latch bolt 84 of lock cylinder 80 is passed through an opening in locking tube 82 into recess 86, as shown in FIG. 2, to provide a locked position. When cylinder lock key 88 is rotated, latch bolt 84 is removed from recess 86 and locking tube 82 may be removed from intersecting trough passage 74. Thus, weapon 12 may be removed from barrel frame 70 and consequently from rack 10.

Locking tube 82 includes tube first section 90 within which lock cylinder 80 is located and tube second section 92 which intersects trough passage 74. As seen in FIG. 2, tube second section 92 is contoured to provide barrel opening 94 sufficient in diameter to permit insertion therein of barrel first section 20. Thus, when bar lock device 72 is in a locked position, section 20 of weapon 12 is captured between locking tube 82 and on inner wall of trough 74 with that inner wall providing the sole support for weapon barrel 14 as shown in FIGS. 5 and 6. In this manner, barrel portion 14 of weapon 12 is restrained from being removed through trough passage 74.

Bar lock device 72 may be movably displaced within barrel frame 70, but not removed therefrom. Roll pin 96 is maintained within barrel frame 70 and contacts tube recess 98. Pin 96 is fastened to frame 70 and extends in longitudinal direction 18. Recess forward wall 100 and recess back wall 102 define the movable stroke length of bar lock device 72 within barrel mount frame 70. When bar lock 72 is pulled from opening 78,

pin **96** bears against forward wall **100** and prevents complete escapement of device **72** from frame **70.**

As seen in FIG. **2,** as shown by the phantom line drawing, lock cylinder **80** extends from barrel frame **70** when in an unlocked position. When in a locked position lock cylinder **80** is located completely internal to frame **70.** Thus, by casual inspection, it is possible to determine whether security rack **10** is in a locked or unlocked position.

In operation, when weapon **12** is to be locked within rack **10,** butt portion **16** in inserted within funnel shaped chamber **28** and barrel first section **20** is inserted through passage **74** into barrel opening **94.** Locking tube **82** is pushed forward to block passage **74** as shown in FIG. **2.** Latch bolt **84** automatically spring ejects into frame recess **86,** thereby locking weapon **12** within rack **10.** When latch bolt **84** is within recess **86,** it is seen that removal of roll pin **96** from frame **70** in direction **18** does not release bar device **72** from a locked position. Thus, when rack **10** is locked, key **88** must still be used in bar lock **72** in order to release weapon **12.**

In order to release weapon **12,** key **88** is inserted within lock cylinder **80** and rotated. Latch bolt **84** is retracted from recess **86** into a sidewall of locking tube **82.** Locking tube **82** is pulled back, thereby removing section **92** from passage **74.** Rack **10** is then unlocked and weapon **12** may be removed from butt housing **26** and barrel mount **36.**

It is to be understood that rack **10** may be coated with a standard nylon type coating or other corrosion resistant layer in order to inhibit contamination of rack **10** as well as to prevent unwanted marking of weapon **12.**

What is claimed is:

1. A weapon security rack for securing only a single weapon extending in a longitudinal direction having a front and a butt portion, said front portion being formed of a first section having a predetermined diameter and a second section having an increased diameter with respect to that of said first section, comprising:

a butt housing for receiving internally said butt end of said single weapon, said housing having a predetermined dimension in said longitudinal direction; and,

a mount longitudinally displaced from said butt housing and including a mount passage having a wall for supporting said first section, bar lock means movable within and lockingly secured to said mount for blocking said passage thereby capturing and locking said first section between said passage and said bar lock means, said mount having a surface located a predetermined distance from said second section, said predetermined distance being less than said dimension of said butt housing.

2. The weapon security rack as recited in claim **1** in which said mount passage wall provides the sole support for said weapon first section, said bar lock means displaced from said mount passage wall and movable in said mount in a direction normal to said longitudinal direction and locking means integral with said bar lock means operable by a key whereby said bar lock means may be simply unlocked with said key and moved to an open position unblocking said passage thereby providing quick access to said single weapon.

3. The weapon security rack of claim **2** in which said locking means of bar lock means includes latch bolt means whereby without use of said key said bar lock means may be moved from an open position to a weapon locking position with said latch bolt self locking said bar lock means.

4. The weapon security rack as recited in claim **2** in which said front portion is a barrel portion of said weapon, said mount is a barrel mount said first section extends substantially from a muzzle end of said weapon and said dimension is measured internally of said butt housing.

5. The weapon security rack as recited in claim **4** where said surface of said barrel mount faces said second section of said barrel portion for providing a restraint when said weapon is moved in said longitudinal direction.

6. The weapon security rack as recited in claim **4** where said barrel mount includes a substantially flat surface facing said second section of said weapon when said butt end of said weapon is received internal to said butt housing.

7. The weapon security rack as recited in claim **4** where said surface of said barrel mount is located in predetermined maximum distance from said second section when said weapon is mounted within said butt housing and said barrel mount.

8. The weapon security rack as recited in claim **5** where said butt housing forms an open ended chamber for longitudinal insertion of said butt portion of said weapon.

9. The weapon security rack as recited in claim **8** where said butt housing includes an inclined inner wall to form a funnel member for insertion of said butt portion of said weapon.

10. The weapon security rack as recited in claim **4** where said butt housing and said barrel mount are fixedly secured to a structural member extending in said longitudinal direction, said structural member being adapted to be mounted to an external surface.

11. The weapon security rack as recited in claim **10** including at least one stop secured to said structural member, said stop being positioned adjacent a predetermined portion of said weapon when said weapon is mounted within said butt housing and said barrel mount for preventing removal of pin members within said predetermined portion of said weapon.

12. The weapon security rack as recited in claim **10** including a pair of butt housings and barrel mounts fixedly secured to said structural member on opposing surfaces thereof for securing a pair of weapons to said security rack.

13. The weapon security rack as recited in claim **4** where said barrel mount includes a barrel frame having said mount passage in the form of a trough shaped passage extending in said longitudinal direction for insertion of said barrel portion of said weapon, said barrel frame having an opening passing in a direction normal to said longitudinal direction and intersecting said trough shaped passage.

14. The weapon security rack as recited in claim **13** where said bar lock means is movably secured to said barrel frame within said opening for lockingly engaging said barrel portion of said weapon.

15. The weapon security rack as recited in claim **14** where said bar lock means includes locking tube means having a predetermined contour for capturing said barrel of said weapon between said locking tube means and said wall of said trough shaped mount passage

when said bar lock means is inserted within said opening formed within said barrel frame, said locking tube having a portion extending out of said opening when said bar lock means is unlocked and pulled to an open position.

16. The weapon security rack as recited in claim **15** in which there is provide stop means for preventing said bar lock means from being removed from said barrel frame when in the open position.

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