April 2, 1935. A. A. ROWLEY 1,996,124

TAKE-DOWN FIREARM

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Fig. 1.

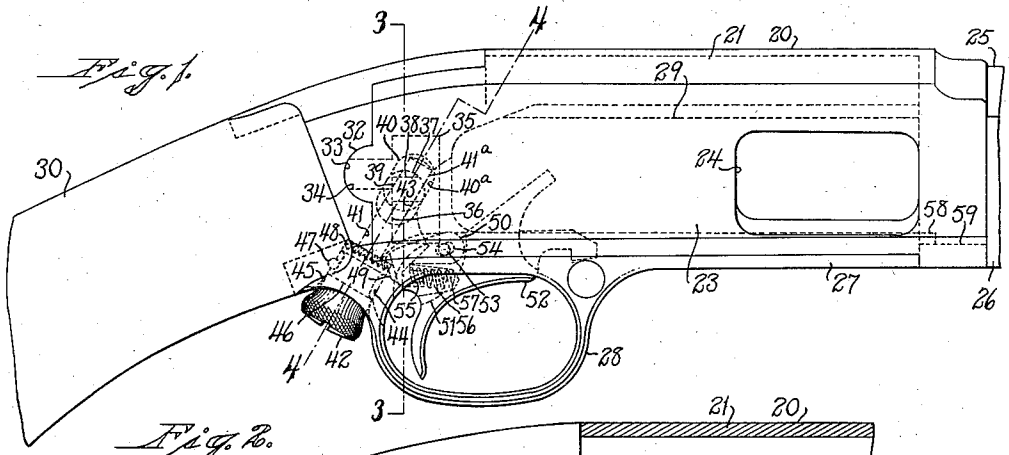


Fig. 2.

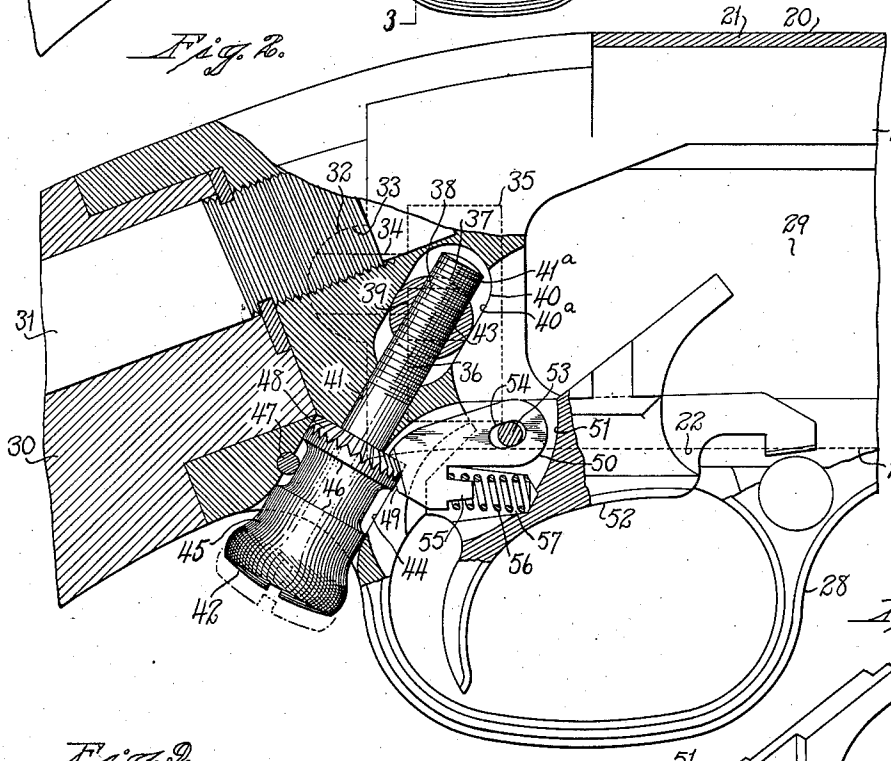


Fig. 10.

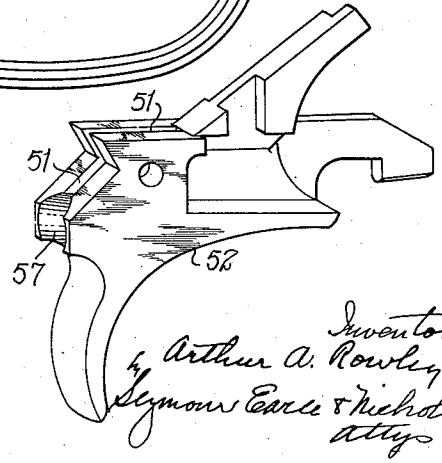
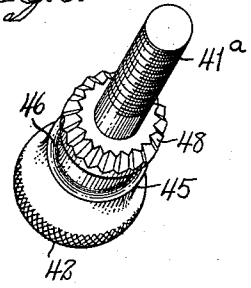


Fig. 9.



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Fig. 3.

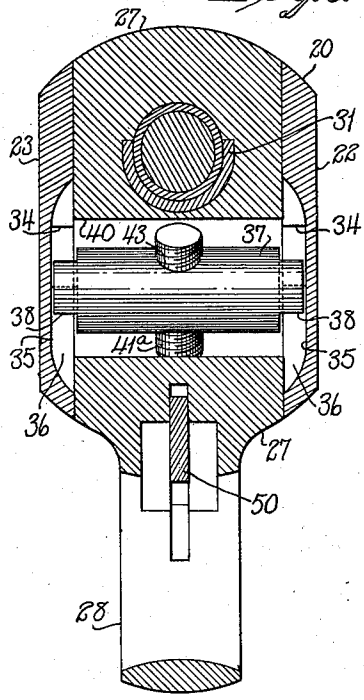


Fig. 4.

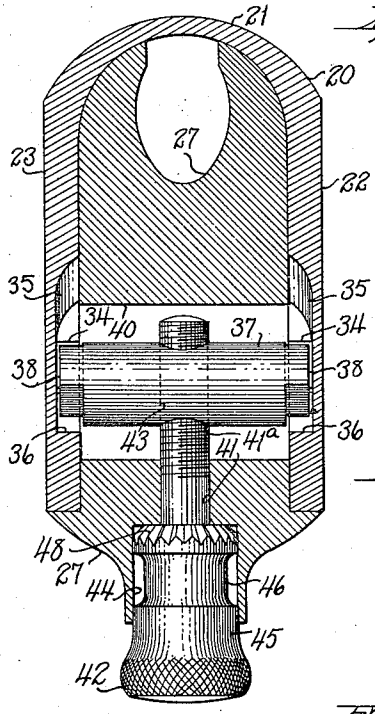


Fig. 7.

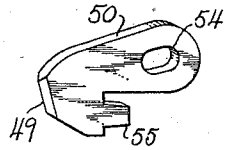


Fig. 8.

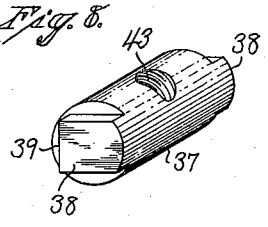


Fig. 5.

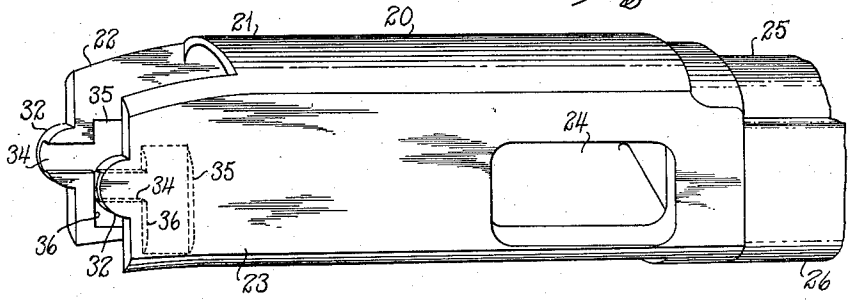
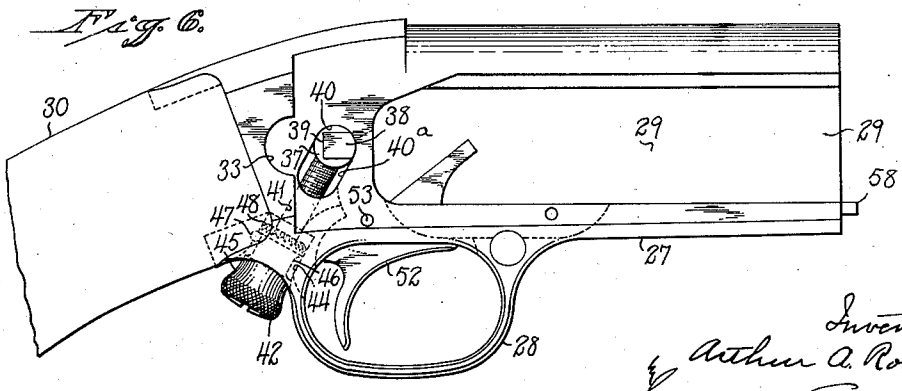


Fig. 6.



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UNITED STATES PATENT OFFICE

1,996,124

TAKE-DOWN FIREARM

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Application September 13, 1933, Serial No. 689,168

18 Claims. (Cl. 42—75)

This invention relates to firearms of the type commonly referred to as "take-down" or "take-apart" firearms, that is to say, firearms in which the rear portion or butt unit and the front portion or barrel unit are readily separable from one another to enable the firearm to be more conveniently packed and transported.

One of the objects of the present invention is to provide at a low cost for manufacture simple, reliable and convenient means for readily connecting and disconnecting the separable units of a take-down firearm.

A further object is to provide a take-down firearm of such design that the mode of connecting and disconnecting the separable units thereof is so simple, obvious and self-evident as not to require more than ordinary skill and practically no instruction for its proper use.

Another object is to provide attaching means of such character as will effectively and simultaneously bind the separable units of a firearm against displacement or looseness in both vertical and longitudinal directions.

A further object is to provide effective attaching means for the separable units of a take-down firearm, characterized by freedom from accidental loosening, especially under repeated shocks of recoil.

A still further object is to provide connecting-means for holding the separable units of a firearm together, of such character that a tight and rigid connection may be effected despite the wearing of the parts.

Another object is to provide a superior take-down firearm wherein a single spring serves both to press the trigger forward and to press a detent into engagement with a portion of the connecting-means for holding the two units of the firearm together.

Other objects and advantages will appear to those skilled in the art from the accompanying drawings considered in conjunction with the following specification and appended claims.

In the accompanying drawings:

Fig. 1 is a broken view in side elevation of the mid-portion of a take-down firearm embodying the present invention;

Fig. 2 is a view thereof partly in side elevation and partly in vertical central longitudinal section, but on a larger scale;

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1, but on a larger scale;

Fig. 4 is a similar view taken on the line 4—4 of Fig. 1;

Fig. 5 is a broken perspective view of the front portion or so-called "barrel unit" of the firearm;

Fig. 6 is a broken view in side elevation of the rear or butt unit of the arm, the body being stripped of the bolt and other parts not directly involved in the present invention;

Fig. 7 is a perspective view of the plate-like detent, detached;

Fig. 8 is a similar view of the locking-bar;

Fig. 9 is a similar view of the operating-screw; and

Fig. 10 is a perspective view of the trigger, detached.

The particular take-down firearm herein chosen for the illustration of the present invention includes what for convenience of description will be referred to as the "front portion" or "barrel unit" of the arm, comprising a body-cover 20 of inverted U-shaped form in cross-section, having a top-wall 21 and complementary spaced-apart side-walls 22, 23 depending therefrom. The side-wall 23, as shown, is provided with a usual ejection-opening 24, while to the forward end of the body-cover is attached a forwardly-extending barrel 25 and a fore-end 26, which latter is usually formed of wood and serves as an insulating hand-grip.

The body-cover 20 above described is adapted to set over and embrace, so to speak, a body 27 carrying an integral trigger-guard 28 and provided in one of its side faces with a longitudinal recess 29 in which a bolt unit (not shown) is adapted to reciprocate. Attached to the rear end of the body 27 is the usual butt-stock 30 secured in place thereto by a magazine-tube 31 which may be of any approved construction and requires no detailed description herein.

The complementary side-walls 22, 23 of the body-cover 20, before referred to, are respectively formed with rearwardly-extending locating-lugs 32—32 adapted to fit, when the arm is assembled, in similarly-shaped locating-notches 33 formed in the body 27. Formed in the inner face of each of the side-walls 22 and 23 of the body-cover 20 and leading forwardly from the locating-lugs 32 is a longitudinal entry-groove 34 intersecting a vertical locking-groove 35, the lower portion of the rear wall of each of which constitutes a vertical forwardly-facing locking-abutment 36 for the purpose as will hereinafter appear. The intersecting grooves 34 and 35 together form what might be termed a T-shaped groove or cut in each of the side-walls 22 and 23. From the foregoing, it will be understood that the inner face of each

of the side-walls 22 and 23 of the body-cover 20 is provided with the features 34, 35 and 36.

For the purpose of interlocking the forward unit (comprising the body-cover 20, the barrel 25 and fore-end 26, etc.) with the rear portion or unit (including the body 27 and butt-stock 30, etc.), a transverse locking-bar 37 is employed which is of general cylindrical form save that it has its respective opposite ends milled off into substantially-rectangular form to provide each thereof with an axially-extending locking-lug 38. One face 39 of each of the said lugs provides a locking-abutment engageable with its complementary locking-abutment 36 in the body-cover 20, as especially clearly indicated in Fig. 2 of the drawings.

The locking-bar 37 is mounted in and adapted to reciprocate in a guide-slot 40 extending transversely through the rear portion of the body 27 and inclined slightly off the vertical so as to extend downwardly and rearwardly with respect to the longitudinal axis of the arm. The forward wall 40a of the said guide-slot constitutes a cam-surface or locking-abutment complementing the locking-abutment 36 of the body-cover 20 and obliquely disposed with respect thereto.

Intersecting the lower end of the guide-slot 40 and correspondingly angularly disposed is a clearance-passage 41 freely receiving the threaded stem 41a of an operating-screw 42 extending through and having threaded engagement with a threaded bore 43 extending transversely through the locking-bar 37, before referred to.

The lower end of the clearance-passage 41, above referred to, is enlarged as at 44 to receive the knurled head-portion 45 of the operating-screw 42, which head-portion extends diagonally downward beyond the under surface of the body 27 so as to be conveniently available for manual operation.

For the purpose of limiting the axial movement of the operating-screw 42, the head-portion 45 of the same is provided with an annular peripheral groove 46 into which extends a stop-pin 47 mounted in the body 27. The upper face of the head-portion 45 of the operating-screw is beveled as shown and cut to provide an annular series of sloping detent-notches 48 engageable on occasion by the beveled rear end or nose 49 of a plate-like detent 50.

The plate-like detent 50, above referred to, is located in a rearwardly-opening slot 51 formed in the rear portion of a trigger 52 and is mounted with capacity for both reciprocating movement and slight rocking movement on a pin 53 extending transversely through the body 27 and serving, also, as a pivot-pin for the trigger 52. The forward end of the detent 50 is provided as shown with a longitudinal slot 54 receiving the pin 53 to permit the reciprocating movement of the detent, as above referred to.

The detent 50 is also formed adjacent its under edge with a forwardly-extending spring-retaining finger 55 over which is set the rear end of a helical trigger-spring 56 which is seated at its forward end against the forward wall of a spring-pocket or recess 57 formed in the trigger 52 in position to open rearwardly therefrom and is intersected by the slot 51 therein.

From the foregoing, it will be seen that the spring 56 as thus constructed and arranged serves to not only urge the trigger 52 forwardly, but also serves to urge the detent 50 rearwardly, so as to engage its beveled edge 49 with the detent-notches 48 of the operating-screw 42 when the said screw is threaded into substantially its home position.

The present invention is, as before noted, mainly concerned with the take-down feature and associated parts of the firearm, so that details of the arm other than those before referred to require no detailed showing or description herein, other than to say that the body 27 is provided with a forwardly-extending locking-finger or lug 58 which, when the firearm is assembled, overlies a locking-ledge 59 on the body-cover 20 and serves at this point to prevent the vertical separation of the units.

With the barrel-unit and the butt-unit of the firearm assembled together as shown, for instance, in Figs. 1 and 2, the operating-screw 42 is sufficiently tightened to draw the locking-bar 37 firmly downward so as to engage the rearwardly-facing locking-abutments 39 at its respective opposite ends with the complementary forwardly-facing locking-abutments 36 on the inner faces of the side-walls 22 and 23 of the body-cover 20.

Now, owing to the angular path in which the said locking-bar travels in the guide-slot 40, the surfaces 36, 39 and 40a will engage with a cam-like or wedging action to concurrently draw the body-cover 20 (together with the parts associated therewith) rearwardly and downwardly with respect to the body 27 (and the parts associated therewith) and firmly hold the said members together against all looseness. When the operating-screw 42 is in its "home" position, so to speak, as above described, it will be prevented from being accidentally loosened, as for instance by repeated shocks of recoil, by the engagement of the beveled edge 49 of the detent 50 with the detent-notches 48 in the said screw.

Now, should it be desired to "take down" the firearm, the operating-screw 42 is threaded outwardly until the upper edge of the annular groove 46 therein engages with the stop-pin 47, after which the continued turning of the screw will forcibly lift the locking-bar 37 upwardly to the upper end of the guide-slot 40, at which time the locking-abutments 39, at its respective opposite ends, will be clear of the locking-abutments 36 of the body-cover and the locking-lugs 38 on which the said abutments 39 are formed will be brought into longitudinal alignment with the entry-grooves 34 in the inner faces of the respective opposite side-walls 22 and 23 of the body-cover.

It may be here explained that the initial loosening of the operating-screw 42 serves to withdraw its detent-teeth 48 from the beveled edge or nose 49 of the detent 50, so that the turning movement of the screw thereafter is free of restraint of such detent and also free of the clicking noise occasioned by the engagement of the said parts.

With the locking-bar 37 elevated to the top of the guide-slot 40 in the body 27, as above described, the barrel-unit, comprising the body-cover 20, barrel 25, fore-end 26, etc., is free to be longitudinally separated from the butt-unit, during which operation the locking-lugs 38 at the respective opposite ends of the locking-bar 37 will pass through the entry-grooves 34 and the lug 58 will be disengaged from the ledge 59.

When it is desired to reassemble the firearm, the butt-unit and the barrel-unit are slipped longitudinally together, so as to enter the locking-lugs 32 in the body-cover into the locking-notches 33 in the body 27 and at the same time

cause the locking-lugs **38** of the locking-bar **37** to reenter the interior of the said body-cover **20** through the entry-grooves **34**. Concurrently with the operation just described, the lug **58** and the ledge **59** will also be reengaged.

Now, upon the operating-screw **42** being rotated, so as to thread its stem **41a** into the threaded bore **43** in the locking-bar **37**, the said locking-bar will be drawn downwardly to engage, with a cam-like action, its rearwardly-facing locking-abutments **39** with the forwardly-facing locking-abutments **36** of the body-cover **20**. When the parts **36** and **39** just referred to are seated, the further turning of the operating-screw **42** will serve to move the same upwardly on its inclined path until the upper face of its head-portion **45** seats against the under-face of the enlarged lower end **44** of the passage **41**. As the operating-screw **42** rises, as just described, its detent-notches **48** will be, in the latter part of the said movement, reengaged with the beveled nose **49** of the detent **50**, to thus be securely held against accidental displacement, but capable of being forcibly rotated when desired.

From the foregoing, it will be seen that the two units of the firearm are firmly secured together in a manner which prevents looseness, despite slight variations in manufacture, or despite the wearing of the engaging parts, such, for instance, as the abutment-surfaces **36** and **39**.

It will be further noted that the detent-teeth **48** are engaged with the beveled nose **49** of the detent **50** only when the operating-screw **42** is at substantially its "home" position. Thus, upon the unscrewing of the operating-screw **42**, the same very quickly recedes from the detent, which no longer imposes restraint thereon, nor does it occasion objectionable clicking during the entire operation of the said screw. Conversely, upon the operating-screw **42** being threaded "home," this action is almost entirely completed before the detent-notches **48** are reengaged with the nose **49** of the detent **50**.

The invention may be carried out in other specific ways than that herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiment is therefore to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. A take-down firearm including a barrel-unit and a butt-unit separable one from the other and each provided with a locking-abutment obliquely disposed with respect to the complementary locking-abutment of the other unit, the two said locking-abutments extending in a direction mainly vertical; and a movable locking-member engaging with a wedge-like action the said relatively obliquely-disposed locking-abutments of the respective units to draw the said units longitudinally together.

2. A take-down firearm including a barrel-unit and a butt-unit separable one from the other and each provided with a locking-abutment obliquely disposed with respect to the complementary locking-abutment of the other unit, the two said locking-abutments extending in a direction mainly vertical; and a locking-member movably organized with one of the said units and engaging with a wedge-like action the said relatively obliquely-disposed locking-abutments of both of the said units to draw the same longitudinally together.

3. A take-down firearm including a barrel-unit and a butt-unit separable one from the other and each provided with a locking-abutment obliquely disposed with respect to the complementary locking-abutment of the other unit, the two said locking-abutments extending in a direction mainly vertical; a locking-member movably organized with one of the said units and engaging the said relatively obliquely-disposed locking abutments of both of the said units to draw the same together; and an operating-screw organized with the unit with which the said locking-member is organized and having threaded engagement with the said locking-member for forcibly moving the same into its locking position.

4. In a take-down firearm, the combination with a barrel-unit provided with a forwardly-facing locking-abutment; of a butt-unit separable from the said barrel-unit and provided with a rearwardly-facing locking-abutment obliquely disposed with respect to the locking-abutment of the said barrel-unit; and a movable locking-member engaging the said relatively obliquely-disposed locking-abutments of the respective units to draw the said units together.

5. In a take-down firearm, the combination with a barrel-unit having two spaced-apart forwardly-facing locking-abutments; of a butt-unit separable from the said barrel-unit and provided with a rearwardly-facing locking-abutment interposed laterally of the firearm between the two said locking-abutments of the said barrel-unit and obliquely disposed with respect thereto; and a movable locking-member engaging all three of the said locking-abutments to draw the said units together.

6. In a take-down firearm, the combination with a barrel-unit provided with a forwardly-facing locking-abutment; of a butt-unit separable from the said barrel-unit and provided with a rearwardly-facing locking-abutment obliquely disposed with respect to the locking-abutment of the said barrel-unit; a locking-member movably organized with the said butt-unit and engageable with the said relatively obliquely-disposed locking-abutments of the said units to draw the same together; and an operating-screw organized with the said butt-unit and engaging with the said locking-member to force the same into its locking position.

7. In a take-down firearm, the combination with a barrel-unit having two spaced-apart forwardly-facing locking-abutments; of a butt-unit separable from the said barrel-unit and provided with a rearwardly-facing locking-abutment interposed laterally of the firearm between the two said locking-abutments of the said barrel-unit and obliquely disposed with respect thereto; a locking-member movably organized with the said butt-unit and engageable with all three of the said locking-abutments to draw the said units together; and an operating-screw organized with the said butt-unit and engaging with the said locking-member to force the same into its locking position.

8. In a take-down firearm, the combination with a barrel-unit including a body-cover having complementary side-walls, each provided with a locking-abutment; of a butt-unit including a body having a locking-abutment obliquely disposed with respect to the locking-abutments of the said body-cover; and a movable locking-member engaging the said relatively obliquely-disposed

locking-abutments to draw the said units together.

9. In a take-down firearm, the combination with a barrel-unit including a body-cover having complementary side-walls, each provided with a locking-abutment; of a butt-unit including a body having a locking-abutment obliquely disposed with respect to the locking-abutments of the said body-cover; a locking-member engaging all three of the said abutments to draw the said units together; and an operating-screw engaging with the said locking-member for forcibly moving the same into its locking position.

10. In a take-down firearm, the combination with a barrel-unit including a body-cover having complementary side-walls, each provided with a forwardly-facing locking-abutment; of a butt-unit including a body having a rearwardly-facing locking-abutment obliquely disposed with respect to the locking-abutments of the said body-cover; and a movable locking-member engaging the said relatively obliquely-disposed oppositely-facing locking-abutments of the respective units to draw the said units together.

11. In a take-down firearm, the combination with a barrel-unit including a body-cover having complementary side-walls, each provided with a forwardly-facing locking-abutment; of a butt-unit including a body having a rearwardly-facing locking-abutment obliquely disposed with respect to the locking-abutment of the said body-cover; a bar-like locking-member engaging the said oppositely-facing locking-abutments of the respective units to draw the said units together; and a rotatable operating-member effecting the movement of the said locking-member for forcibly moving the same into engagement with the said obliquely-disposed locking-abutments.

12. In a take-down firearm, the combination with a barrel-unit including a body-cover having complementary side-walls, the inner face of each of which latter being provided with a locking-abutment; of a butt-unit including a body having a locking-abutment obliquely disposed with respect to the locking-abutments of the said body-cover; and a movable locking-member engaging the said relatively obliquely-disposed locking-abutments of the respective units to draw the said units together.

13. In a take-down firearm, the combination with a barrel-unit including a body-cover having complementary side-walls, the inner face of each of which latter being provided with a locking-abutment; of a butt-unit including a body having a locking-abutment obliquely disposed with respect to the locking-abutments of the said body-cover; a movable bar-like locking-member organized with the said butt-unit and engageable with the said locking-abutments; and an operating-screw also organized with the said butt-unit and having threaded engagement with the said locking-member intermediate the ends thereof to forcibly move the same into engagement with the said locking-abutments.

14. A take-down firearm including a barrel-unit and a butt-unit separable one from the other and each provided with a locking-abutment obliquely disposed with respect to the complementary locking-abutment of the other unit; a movable locking-member organized with one of the said units; a rotatable operating-member organized with the unit with which the said locking-member is organized and effecting the movement of the said locking-member for forcibly moving the same into its locking position; and restraining-means including a yielding detent and an annular series of detent-notches interengaging with the said detent to releasably hold the said operating-member against accidental displacement.

15. A take-down fire-arm including a barrel-unit and a butt-unit separable one from the other and each provided with a locking-abutment obliquely disposed with respect to the complementary locking-abutment of the other unit; a movable locking-member organized with one of the said units; a rotatable operating-member provided with an annular series of detent-notches and effecting the movement of the said locking-member for forcibly moving the same into engagement with the said abutments; and a spring-pressed detent engageable with the detent-notches of the said operating-screw for releasably holding the same against accidental displacement.

16. In a take-down firearm, the combination with a barrel-unit and a butt-unit separable one from the other; manually-operable locking-means for drawing the said units together; a trigger organized with one of the said units; a detent for releasably holding the said locking-means against accidental displacement; and a spring concurrently urging the said trigger into its forward position and the said detent into position to hold the said locking-means against accidental displacement.

17. In a take-down firearm, the combination with a barrel-unit and a butt-unit separable one from the other; a movable locking-member for drawing said units together; a rotary operating-member effecting the movement of the said locking-member; a trigger organized with one of the said units; a detent for yieldingly holding the said operating-member against accidental rotation; and a spring constructed and arranged to concurrently urge the said trigger forwardly and to urge the said detent into position to hold the said operating-member against accidental rotation.

18. In a take-down firearm, the combination with a barrel-unit and a butt-unit separable one from the other; of a movable locking-member for drawing the said units together; a rotary operating-member effecting the movement of the said locking-member and provided with an annular series of detent-notches; a trigger pivotally mounted in the said butt-unit and provided with a detent-receiving recess; a detent extending into the detent-receiving recess in the said trigger and engageable with the detent-notches in the said operating-member; a pivot-member extending through both the said trigger and the said detent; and a spring constructed and arranged to concurrently urge the said trigger forwardly and to urge the said detent into engagement with the detent-notches of the said operating-member.

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