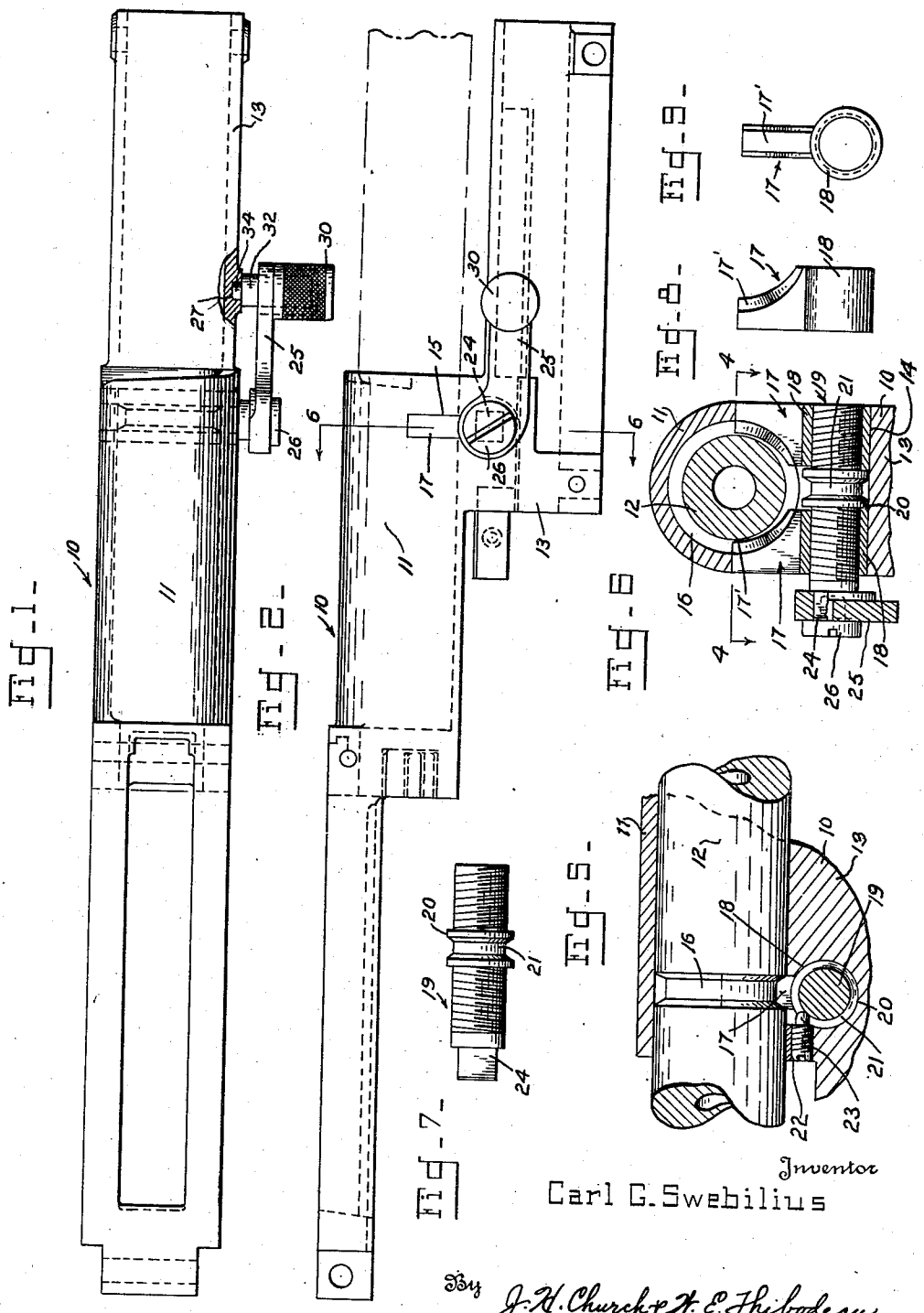
March 2, 1948. C. G. SWEBILIUS 2,437,137

GUN BARREL LOCK

Filed Aug. 31, 1945 2 Sheets-Sheet 1



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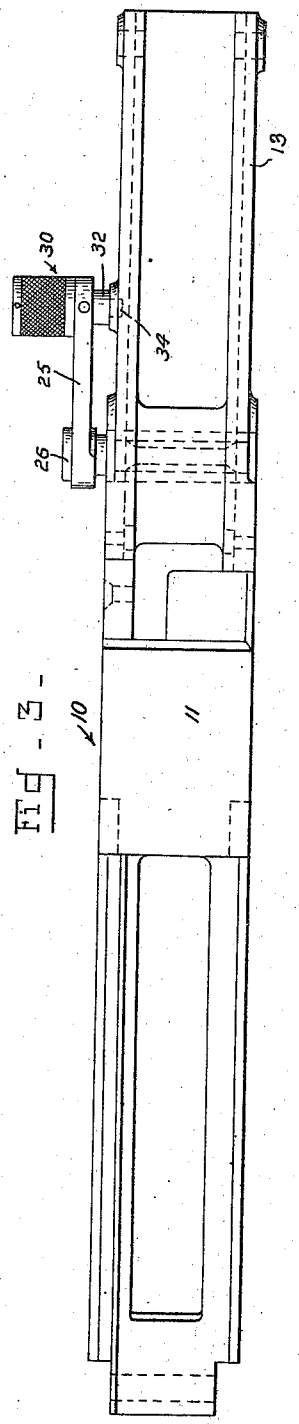


Fig. 3.

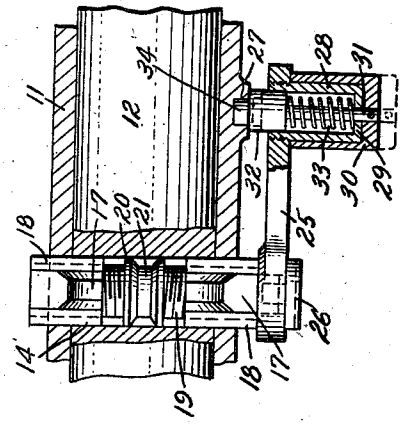


Fig. 4.

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GUN-BARREL LOCK

Carl G. Swebilius, Hamden, Conn.

Application August 31, 1945, Serial No. 613,868

1 Claim. (Cl. 42—75)

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The invention relates to quick change mountings for barrels of small arms and especially machine guns, and has for an object to present one of extremely simple construction and light weight, rugged, and easily manipulated.

Such mountings are found necessary due to the current practice of maintaining machine guns in nearly continuous operation under sustained attack without water cooling or other mechanical cooling systems. The quick change mounting provides for the removal of a barrel, after a critical temperature has been reached therein, and its replacement by a cold barrel.

It is particularly an aim of the invention to present a barrel lock which will be liable in a minimum degree to impairment incident to the rough usage to which such weapons are subjected in field service, and which will also be unaffected materially by long use and wear of its parts.

Additional objects, advantages and features of the invention reside in the construction of parts involved in the embodiment of the invention, as will be apparent from the disclosure herein or may be understood from the following description and accompanying drawings wherein:

Figure 1 is a top view of a receiver in which my invention is incorporated, the barrel omitted;

Figure 2 is a side elevation of the receiver of a gun in which my invention is incorporated;

Figure 3 is a bottom view thereof;

Figure 4 is a horizontal section at the lock (with jaws retracted), on the line 4—4 of Fig. 6;

Figure 5 is a vertical longitudinal section, at the lock;

Figure 6 is a cross section on the line 6—6 of Figure 2;

Figure 7 is a detail view of the screw, and

Figures 8 and 9 are detail elevations of one of the jaws.

Referring to the drawings more in detail, there is illustrated a receiver 10 having a barrel receiving sleeve 11 bored to receive slidably a conventional barrel 12.

The sleeve 11 is formed integrally on a lower receiver base portion 13 and projects rearwardly therefrom a distance in the specific instance shown. In its portion directly over the base part 13, and formed partly in the base, a transverse cylindrical bore 14 is formed, from which slots 15 are extended upwardly at each side in the sleeve, and stopping at a horizontal plane coincident with the axis of the barrel. The bore 14 is located entirely below the barrel, as shown. The barrel has a circumscribing groove 16 slightly narrower at its bottom than at the periphery

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of the barrel, this groove being aligned with the slots 15 when the barrel is in operative position in the receiver. The upper portion of the receiver is semicircular in form and covers this groove. Opposed clamp jaws 17 are set in the slots 15, these jaws having circular base enlargements 18 fitted snugly and slidably in the bore 14 and forming guides for sliding inward and outward movement of the jaws. These bases are bored and interiorly threaded with right and left hand threads, and a tandem right and left thread screw 19 has correspondingly threaded end portions engaged in the respective jaws so that rotation of the screw will move the jaws in opposite directions. Midway of its length, the screw is formed with a concentric enlargement 20 (of the same diameter as the bore 14) in which a circumscribing groove 21 is formed having a bottom semicircular in section, as shown in Figures 4, 5, 6, and 7.

The sleeve 11 stops abruptly at its forward end over the lower portion 13 of the receiver, forming a shoulder 22 extending a distance below the barrel clearance in the sleeve, so that a portion of the shoulder extends below the barrel in a vertical plane. In this part of the shoulder 22 a threaded hole is formed extending forward in line with the groove 21 of the screw 19 and engaged in this hole there is a retaining screw 23 having a rounded tenon at its inner forward extremity which fits the groove 21 when the screw 23 is fully engaged, but permitting free rotation of the screw 19. In the present instance the axis of the screw 23 engages the bottom of the groove at the upper side of the screw 19. One end of the screw 19 is flush with the left side of the receiver, and the other, in the present instance is extended and formed with a square shank 24 upon which is set a crank arm 25 held by means of a headed screw 26 engaged axially in the shank 24 and against the crank arm. Forwardly of the sleeve 11 a socket 27 is formed in the right side of the receiver, the arm 25 having a radius sufficient to lie over this socket at one position. The end of the arm 25 is tapped and threaded to receive a guide sleeve 28 which is screwed thereinto at right angles from the outer side. The sleeve is open through the arm 25 at the inner side, and at its outer end is flanged to form a spring seat 29. A knob 30 is cylindrically bored to fit slidably around the sleeve 28 and against the arm 25, and has the reduced stem 31 of a plunger 32 pinned in its outer end, the plunger fitting slidably in the sleeve, while the stem is of smaller diameter, a compression spring 33 being confined between the plunger 32 and spring seat 29. The spring

thus forces the plunger toward the receiver until the end of the knob is checked against the seat 29 of the sleeve 28. At this time the plunger 32 is partly engaged in the sleeve 28. It is formed with a coaxial tenon 34 at the extremity adapted to engage in the recess 27 at one angular position of the crank.

The slots 15 have a width the same as the top width of the groove 16, and the jaws 17 have a maximum thickness and planiform parallel faces to fit snugly and slidably in the slots 15, while their sides are shaped at the inner parts to correspond to the form of the groove 16. Their extreme inner lock faces 17' however, are curved eccentrically to the barrel, extending divergently downward from a point of minimum radius, as may be seen in Figures 6, 8, and 9. In this way, when the initial tightening engagement of the jaws occurs, their upper edge portions bind in the groove 16. The top faces of the jaws are planiform and form a sharp angle at their junctions with the inner faces of the jaws, so that these angular portions engage the surfaces of the barrel movement effectively to prevent rotation of the latter.

The crank arm 25 is preferably adjusted on the shank 24 in such a position that when the screw is rotated to a position at which the jaws are adequately pressed and clamped against the barrel, the tenon 34 of the plunger will be aligned with the recess 27 and may be engaged in the recess to hold the device in clamping relation to the barrel.

I have disclosed my invention with particularity in the best form in which it has been constructed, or perfected by me, but it will be understood that this is purely exemplary and that various changes in structure and arrangement, substitution of materials and equivalents, mechanical or otherwise, may be made without departing from the spirit of the invention particularly set forth in the appended claim wherein

I claim:

In a firearm, the combination of a receiver having an opening extending longitudinally of the same and a bore at right angles thereto, a barrel slidably received within said receiver opening and having within said opening a circumscribing groove, slots extending from the ends of said bore into said receiver opening, screw means rotatably mounted in said bore, clamp jaws slidable in said slots and threaded on said screw means whereby rotation of the same will move said jaws in opposite directions in said slots relative to said barrel circumscribing groove, said jaws having curved locking portions eccentric to the receiver opening axis whereby said portions engage said groove in the barrel to lock the same, means in said receiver and intermediate the ends of said screw means rotatably holding the same against movement axially of said bore, crank means secured to said screw means for rotating the same, and means releasably locking said crank means against rotation relative to said receiver.

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