



## UNITED STATES PATENT OFFICE

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## PISTOL

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The present invention relates generally to weapons or pistols for discharging incapacitating fluid, such as tear gas. More particularly the invention relates to that type of gas discharging pistol which is in the form of a fountain pen and comprises a tubular stock, a barrel for retaining a gas cartridge, a spring pressed plunger which is slidably mounted in the stock and embodies a firing pin for engaging the percussion cap of the cartridge, and a stud which is adapted to be used to retract the plunger against the force of the spring and extends through a longitudinally extending slot in the stock.

In practice it has been found that pistols of the aforementioned type are sometimes discharged accidentally when they are inadvertently dropped or jarred by reason of the fact that the shock causes the plunger to be displaced or retracted from its inoperative position sufficiently to effect a firing of the cartridge upon its return by the spring. One object of the invention is to provide a pistol of the character under consideration, in which provision is made for releasably locking the plunger in its inoperative position in order to prevent an accidental firing of the cartridge when the pistol is dropped or jarred.

Another object of the invention is to provide a gas discharging pistol embodying means of an improved character for preventing cartridges containing bullets or projectiles from being inserted into the barrel.

A further object of the invention is to provide a pistol of the above described type, which is simple as far as construction is concerned, may be manufactured at a low and reasonable cost, and is an improvement upon that disclosed in United States Letters Patent No. 1,760,674 granted to me May 27, 1930.

Other objects of the invention and the various advantages and characteristics of the present construction will be manifest from a consideration of the following detailed description.

The invention consists in the several novel features hereinafter set forth and more par-

ticularly defined by the claims at the conclusion hereof.

In the drawing which accompanies and forms a part of this specification or disclosure and in which like numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a side elevation of a pistol embodying the invention;

Figure 2 is a longitudinal section taken on the line 2—2 of Figure 1;

Figure 3 is a view illustrating in detail the formation and construction of the means for releasably locking the plunger in its inoperative position in order to prevent accidental displacement thereof; and

Figure 4 is a longitudinal sectional view of the outer end of the stock and discloses the manner in which the cap operates to anchor in place the clip whereby the pistol may be secured in the user's pocket.

The pistol which forms the subject matter of the present invention is in the form of a fountain pen and is designed to discharge an incapacitating fluid, such as tear gas. It comprises an elongated cylindrical stock 5 which is adapted to be held in the hand when the pistol is used, and has formed therein a longitudinally extending bore 6. The latter is of uniform diameter throughout and extends from one end of the stock to the other. A plunger 7 is slidably mounted in the bore 6. The outer end of the stock is closed by a cap 8. This cap has a cylindrical portion 9 which extends into the bore 6 and is connected to the stock by a screw thread connection 10 so that the cap may be removed whenever desired. The inner end of the stock 5 is provided with an internal or female screw thread 11. A breech block 12 fits in the said inner end of the stock and is provided with an external or male screw thread 13 which engages the screw thread 11 and serves to hold the block in place. The female screw thread 11 is preferably of such length that the breech block, when screwed all the way into the stock, is retained in a position slightly inwardly of the extreme inner end of the stock. The block 12 has recesses 14 formed therein to receive a key or similar turning tool whereby it may be

rotated into and out of its operative position. It also has formed therein a central opening 15 through which a firing pin 16 on the inner end of the plunger 7 is adapted to pass.

In addition to the stock 5 and the plunger 7, the pistol comprises a barrel 17 which has its inner end provided with an external or male screw thread 18 for engagement with the female screw thread 11. Said barrel is shaped to receive a cartridge 19 containing material which, when fired, will produce and discharge an incapacitating fluid. The inner end of the barrel is adapted to engage the rim of the cartridge and operates, when screwed into its operative position, to hold securely the cartridge against the breech plug. To load the pistol, the barrel 17 is disconnected from the stock and the cartridge inserted into place. The barrel with the cartridge therein is then screwed into the stock until the rim of the cartridge is clamped between the breech block and the inner end of the barrel.

The plunger 7 is elongated so that it slides freely in the bore 6. It is operated to fire the cartridge by a coil spring 20. One end of this spring is retained in a cylindrical socket 21 which is formed in the outer end of the plunger 7. The other end of the spring is held in a cylindrical socket 22 which is formed in the portion 9 of the cap 8.

The plunger 7, together with the firing pin 16, is retracted against the force of the spring 20 by a stud 23. The latter comprises a shank 23<sup>a</sup>, one end of which extends transversely through and is screw threaded to the central portion of the plunger. The other end of the shank projects through a straight longitudinally extending slot 24 in the stock and is provided with a head 23<sup>b</sup>. The slot 24 operates to permit the plunger to be retracted against the force of the spring a sufficient distance to result in the firing of the cartridge when said plunger is released.

In order to prevent an accidental discharge of the cartridge when the pistol is dropped or jarred, a recess 25 is formed in the stock at one side of the slot 24. This recess is preferably circular in conformation and embodies a restricted mouth 26 which communicates with the inner end of the slot 24. When the plunger 7 is in its inoperative or unretracted position, the distal or outer end of the shank 23<sup>a</sup> may be shifted into the recess so as to lock releasably the plunger in place. The recess 25 is so positioned that when the shank of the stud is disposed therein the plunger is held a slight distance away from the breech block 12 and the firing pin is spaced from the percussion cap of the cartridge. Locking of the plunger 7 is effected by shifting the stem of the stud laterally into the recess. Said recess exemplifies simple means whereby the plunger may be releasably locked in its inoperative position.

To prevent a cartridge having a bullet or projectile therein from being inserted into the barrel and fired by the pistol, a blade 27 is provided. This blade extends across the bore of the barrel and has the ends thereof mounted in a pair of elongated longitudinally extending openings 28 which are formed in diametrically opposite parts of the barrel. In the assembly operation, the blade is inserted into place through the openings 28 and the ends thereof are beaded or riveted over as at 29 to effect an interlocking connection whereby the blade is rigidly held in place. Said blade is so positioned with respect to the inner end of the barrel that it is impossible to insert into the inner end of the bore of the barrel or fire from the barrel a cartridge containing a bullet or projectile. The inner edge of the blade is provided with a sharp edge 30 to sever the wad which is associated with the gas cartridge and operates to retain in the cartridge the material that produces the gas or incapacitating fluid. By mounting the blade in the manner set forth the cost of production is reduced to a minimum.

The outer end of the bore of the barrel is flared outwardly as at 31 to cause the gas to spread in a flared column.

The pistol is adapted to be carried in the user's pocket and is provided with a clip 32 whereby it may be securely held in place. This clip comprises an arm 33 which extends longitudinally of the stock and is provided at its inner end with a ball 34 for gripping a portion of the pocket. The other or outer end of the arm 33 extends inwardly through a transverse slot 35 in the stock and then outwardly in engagement with the bore 6. The inner end of the portion 9 of the cap is of a reduced size and fits against the part of the arm that engages the bore of the stock in order to anchor the clip in place. By anchoring the clip to the stock in this manner, the clip may be removed, whenever desired, simply by unscrewing the cap 8 and then withdrawing the bent or angled end of the arm 33 from the stock.

In loading the pistol, the barrel 17 is disconnected from the stock, as previously mentioned, so that the gas cartridge 19 may be inserted into the inner end thereof. After the cartridge has been inserted into place, the barrel is screwed into the stock 5 until the rim of the cartridge is confined between the breech plug 13 and the inner end of the barrel. To fire the pistol, the user will pull the head 23<sup>b</sup> of the stud 23 in the direction of the cap 8 for the purpose of retracting the plunger 7 against the force of the spring 20. Upon release of the head 23<sup>b</sup>, the spring operates to impel the plunger in the direction of the breech plug with sufficient force to cause the firing pin 17 to explode the percussion cap of the cartridge. To prevent the cartridge 19 from being discharged accidentally, the user

of the pistol will lock the plunger by shifting the outer end of the shank 23<sup>a</sup> into the recess 25. When the shank of the stud is confined in this recess the plunger is positively locked so that it can not be accidentally displaced.

When the user desires to fire the pistol, the head 23<sup>b</sup> is shifted laterally to withdraw the shank 23<sup>a</sup> from the recess 25. Upon withdrawal of the stem from the recess, the plunger is free so that it may be retracted into its operative or firing position. During use of the pistol, the blade 27 serves to cut the wad that is fired from the cartridge and prevents the user from inserting into the barrel a cartridge containing a projectile or bullet.

The pistol herein disclosed may be manufactured at a comparatively low cost and is an improvement upon the type of pistol disclosed in the aforementioned patent application by virtue of the fact that it embodies means for releasably locking the plunger in its inoperative or unretracted position.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a pistol of the character described, the combination of an elongated tubular stock provided with a closure for one end thereof and having a longitudinally extending slot formed therein, a barrel for a cartridge, removably secured to the other end of the stock, a plunger slidably mounted in the stock and provided with a firing pin, a spring between the plunger and the closure, a stud for use in retracting the plunger into an operative position against the force of the spring, said stud being secured to the plunger and extending through the slot, and means cooperating with the stud for releasably locking the plunger in its inoperative or unretracted position to prevent accidental displacement thereof.

2. In a pistol of the character described, the combination of an elongated tubular stock provided with a closure for the outer end thereof and having a longitudinally extending slot formed therein, a barrel for a cartridge, removably secured to the inner end of the stock, a plunger slidably mounted in said stock and provided with a firing pin, a spring between the plunger and the closure, and a stud projecting laterally from the plunger through the slot and adapted for use in retracting the plunger into an operative position against the force of the spring, said stock having formed therein adjacent to and communicating with the inner end of the slot a recess into which the stud may be shifted when it is desired to lock the

plunger in its inoperative or unretracted position for the purpose of preventing accidental displacement of said plunger.

3. In a pistol for discharging incapacitating gas, the combination of an elongated tubular stock, a spring pressed firing plunger slidably mounted in the stock, a barrel for a gas cartridge removably secured to one end of the stock, said barrel having formed therein a pair of diametrically opposite openings, and a member extending across the bore of the barrel and through the openings, said openings being formed in the barrel in close proximity to the outer end of the shell of the gas cartridge and adapted to hold the member in a position wherein it operates to prevent either the insertion into the barrel of a cartridge with a bullet or the firing from the barrel of such a cartridge in the barrel.

4. In a pistol for discharging incapacitating gas, the combination of an elongated tubular stock, a spring pressed firing plunger slidably mounted in the stock, a barrel for a gas cartridge removably secured to one end of the stock, said barrel having formed therein a pair of diametrically opposite openings, and a blade member extending across the bore of the barrel and through the opening and operative to prevent the firing or insertion of a cartridge with a bullet in the barrel, the ends of said blade member being beaded over so as to form interlocking connections whereby the blade member is held in place against displacement.

5. In a pistol of the character described, the combination of an elongated tubular stock provided with a closure for the outer end thereof and having a longitudinally extending slot formed therein, a barrel for a cartridge removably secured to the inner end of the stock, a plunger slidably mounted in said stock and provided with a firing pin, a spring between the plunger and the closure, and a stud projecting laterally from the plunger through the slot and adapted for use in retracting the plunger into an operative position against the force of the spring, the stock having formed therein a recess with a restricted entrance in communication with the inner end of the slot, said recess being adapted to have the stud shifted therein and operating when said stud is so shifted to lock the plunger in its inoperative or unretracted position for the purpose of preventing accidental displacement of said plunger.

Signed at Chicago, Illinois this 6th day of September, 1929.

PETER VON FRANTZIUS.