

N. H. CLOUD, JR.
GUN.
APPLICATION FILED MAR. 5, 1912.

1,031,526.

Patented July 2, 1912.

Fig. 1.

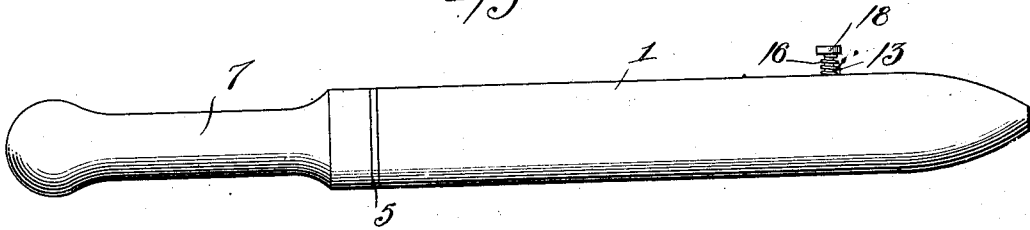


Fig. 2.

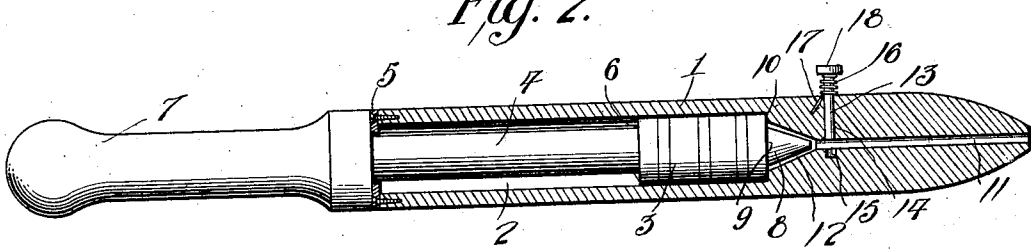
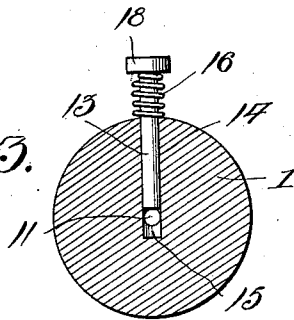


Fig. 3.



Inventor
Newton H. Cloud, Jr.

Witnesses
Carroll Bailey.
John J. McCarthy

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

NEWTON HESTON CLOUD, JR., OF WILMINGTON, DELAWARE.

GUN.

1,031,526.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed March 5, 1912. Serial No. 681,747.

To all whom it may concern:

Be it known that I, NEWTON H. CLOUD, JR., a citizen of the United States of America, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented new and useful Improvements in Guns, of which the following is a specification.

This invention relates to improvements in guns and has particular application to a fluid gun.

In carrying out the present invention, it is my purpose to provide a gun capable of discharging a quantity of fluid in order to project a missile from the gun, and wherein the fluid may be retained within the gun until such fluid has reached its highest point of compression, subsequent to which the fluid is released so that the missile may be projected.

It is also my purpose to provide a gun adapted to discharge a fluid and which shall be formed in such manner as to enable the fluid to be discharged from the gun at a relatively high velocity.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the appended claims.

In the drawing there has been disclosed one practical and preferred embodiment of my invention, and in this drawing: Figure 1 is a side elevation of a fluid gun constructed in accordance with the present invention. Fig. 2 is a central longitudinal sectional view of the same, and Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1.

Similar reference characters designate like parts throughout the several views.

Referring now to the accompanying drawing in detail, my improved fluid gun as shown embodies amongst other features a cylinder 1 provided with a piston chamber 2 adapted to contain a fluid, and a piston 3 mounted for reciprocation within the piston chamber of the cylinder to compress the fluid therein.

The numeral 4 designates the piston rod connected to one end of the piston 3 and of a diameter less than that of the piston and adapted to be withdrawn from the chamber 2 of the cylinder 1, this end of the cylinder being open for this purpose and equipped with a ring or collar 5 adapted to

abut a shoulder 6 formed on the piston at its juncture with the piston rod, such shoulder and ring serving to limit the outward movement of the piston, a handle 7 being connected to the free end of the piston rod to facilitate the movement of the piston within the piston chamber. The opposite end of the piston 3 terminates in a tapering frusto-conical shaped head 8, which head at its juncture with the main body of the piston forms an annular shoulder 9 adapted to engage a similar shoulder 10 formed at the opposite end of the cylinder 1 and within the piston chamber 2, to limit the inward movement of the piston.

The end of the cylinder 1 beyond the piston 3, with respect to the ring 6, is provided with a relatively small discharge bore 11 which bore has communication with the piston chamber 2 by way of a tapering frusto-conical shaped passage 12, the relatively large end of which opens directly into the piston chamber. Thus, it will be seen that upon the compression of the fluid within the piston chamber 2 under the action of the piston 3, said fluid may be discharged from the cylinder by way of the passage 11 at a relatively high velocity, owing to the tapering passage 12 between the chamber 2 and bore 11, the head 8 of the piston entering the passage 12 upon the piston reaching its limit of inward movement.

In order to retain the fluid within the piston chamber 2 of the gun until such fluid has reached its maximum compression, I have provided means manually operable to close the discharge bore of the gun so that such compression may be attained. This means in the present instance, embodies a plunger 13 slidably mounted within a lateral bore 14 formed in the discharge end of the gun beyond the passage 12 and slidable within said bore to close the discharge passage 11 of the piston chamber, the plunger in its closed position entering a recess 15 formed in the wall of the bore 11 at a point diametrically opposite the bore 14. This plunger 13 is manually operable to closed position and is normally maintained out of the discharge bore 11 by means of a helical expansion spring 16 surrounding the upper end of the plunger 13 and having one end embedded in the cylinder as at 17 and its opposite end engaged in a groove formed in the plunger 13 immediately below the head 18 of such plunger.

In practice, a fluid, such as air or water, is drawn into the gun on the outward movement of the handle 7. Upon the piston chamber being filled with the fluid, the plunger is actuated to close the discharge bore 11 and the piston 3 operated to compress the fluid within the piston chamber. When such fluid has reached its maximum compression, the plunger is released thereby permitting the fluid to be discharged from the gun, a suitable missile being inserted in the discharge bore 11 previous to the release of the plunger.

From the foregoing description taken in connection with the accompanying drawing, it will be seen that I have provided a gun from which a missile may be discharged at a relatively high speed owing to the fluid being retained within the gun until the same has reached its highest point of compression, and furthermore it will be noted that the velocity of the fluid, in its passage from the piston chamber to the discharge bore 11, is increased owing to the formation and position of the passage 12, and while I have herein shown and described one preferred embodiment of my invention by way of illustration, it is to be understood that I do not limit myself to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the claims and without departing from the spirit of my invention.

I claim:

1. In a fluid gun, a cylinder provided with a discharge bore, a piston within said cylinder and movable therein to compress a fluid, a plunger carried by said cylinder and operable to obstruct the discharge bore thereof to retain the fluid within the gun until said fluid has reached its highest point of compression, and means normally maintaining

said plunger out of the discharge bore of the cylinder.

2. In a fluid gun, a cylinder provided with a discharge bore, a piston within said cylinder and movable therein to compress a fluid, a plunger carried by said cylinder and operable to obstruct the discharge bore thereof to retain the fluid within the gun until said fluid has reached its maximum point of compression, and a spring normally maintaining said plunger out of the discharge bore of the cylinder.

3. In a fluid gun, a cylinder provided with a discharge bore, a piston within said cylinder and movable therein to compress a fluid, a plunger carried by said cylinder at right angles to the discharge bore thereof and adapted to obstruct said bore to retain the fluid within the gun until said fluid has reached its highest point of compression, and means normally maintaining said plunger out of the discharge bore of the cylinder.

4. In a fluid gun, a cylinder provided with a discharge bore, a piston within said cylinder and movable therein to compress the fluid, a plunger carried by said cylinder at right angles to the discharge bore and operable to obstruct said bore to retain the fluid within the gun until such fluid has reached its highest point of compression and adapted to enter a recess formed in the wall of the bore of the cylinder when in closed position, and means normally maintaining said plunger out of the discharge bore of the cylinder.

In testimony whereof I affix my signature in presence of two witnesses.

NEWTON HESTON CLOUD, JUNIOR.

Witnesses:

NEWTON H. CLOUD,
ANNA M. CLOUD.