(No Model.)

W. T. CHAMBERLAIN.

PNEUMATIC PROJECTILE.

No. 310,649. Patented Jan. 13, 1885.

Fig. 1.

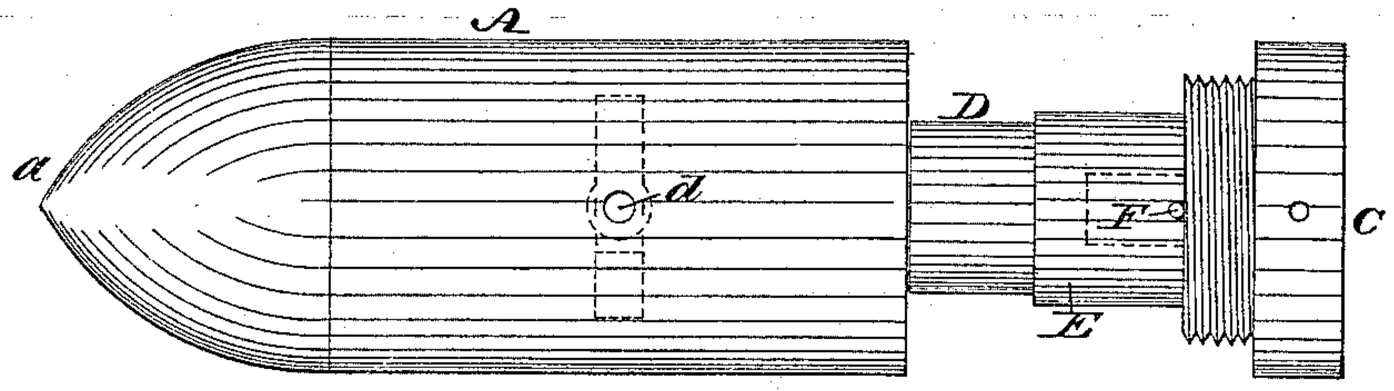


Fig. 2.

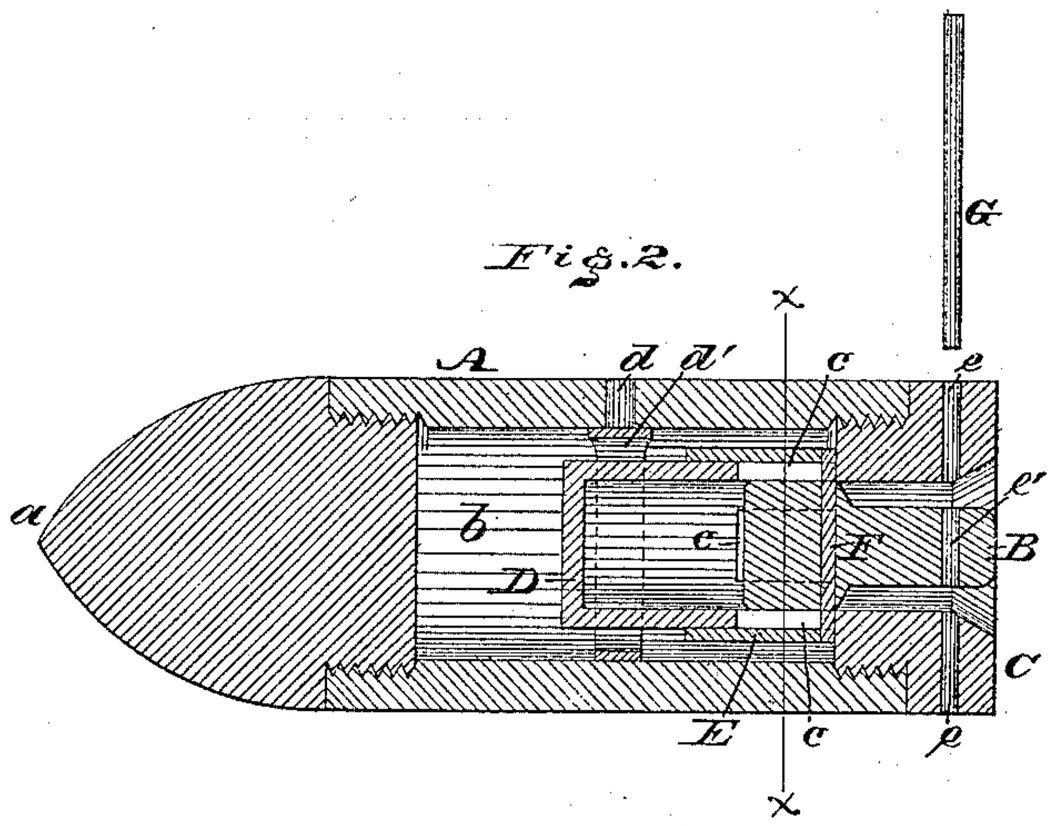
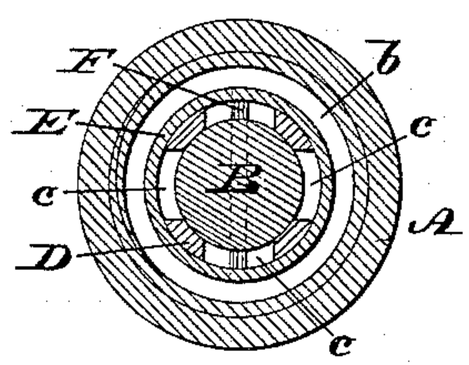


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM T. CHAMBERLAIN, OF NORWICH, CONNECTICUT, ASSIGNOR OF TWO-THIRDS TO BENJAMIN M. PRINCE, OF SAME PLACE, AND WILLIAM CROSSLEY, OF RANDOLPH, MASSACHUSETTS.

PNEUMATIC PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 310,649, dated January 13, 1885.

Application filed May 27, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. CHAMBERLAIN, a citizen of the United States, residing at Norwich, in the county of New London, State of Connecticut, have invented a new and useful Improvement in Projectiles, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of a projectile embodying my invention, the parts being separated. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a projectile having a chamber for compressed air, and an inlet and an outlet for the same, a sliding valve, and a movable plug, said valve primarily preventing the escape of the compressed air, and the plug moving said valve from its seat to permit the discharge of said air, whereby the projectile is impelled, as will be hereinafter fully set forth.

Referring to the drawings, A represents a hollow projectile, which is formed with a suitable point, *a*, a chamber, *b*, and a tubular base, C, the latter having passed through it a plug, B, whose inner end is fitted within a tubular guide, D, which projects from the plug B into the projectile, and has slots or openings *c*, whereby the guide is in communication with the projectile, it being noticed that the diameter of the rear end of the plug is less than that of the opening in the base C, whereby an air-passage is formed in said base, the same being in communication with the guide D, and consequently with the interior of the projectile.

E represents a sleeve or valve, of cylindrical form, which is fitted on the guide D and abuts against the neck or shoulder of the base C, covering the slots *c*, thus closing the communication between the chamber *b* and guide D.

F represents a pin, which is connected with the plug B, and has its ends passed through the slots *c* and engaging with the valve E. In the wall of the chamber *b* is an opening or air-inlet, *d*, which is covered by an inwardly-opening valve, *d'*, which is properly secured within the chamber. Air is forced into the chamber A through the inlet *d* in any desirable manner, the valve *d'* opening to permit the same, it being noticed that the slots *c* are closed by the valve E, and when the projectile is charged with the compressed air the valve *d'* closes, and the projectile is introduced into a gun or other suitable fire-arm similar to a cartridge, said arm having a firing-pin adapted to strike the plug B. When the plug B is struck, the pin F moves the valve E and uncovers the slots *c*, thus liberating the compressed air, the reaction whereof in the bore of the arm forcibly impels the projectile from the arm, the result being accomplished without the smell, smoke, heat, and fouling tendency of powder-charged projectiles, another advantage of the invention being that by its use the danger incident to the transportation and handling of explosives is avoided. The valve E is hermetically sealed or cemented on its seat on the guide, so as to prevent escape of air from the chamber *b* prior to the discharge of the projectile, the sealing medium readily breaking when the plug B is operated.

In order to prevent movement of the plug prior to use of the projectile, I employ a pin, G, and form in the wall of the base C and the plug B openings *e e'*, through which said pin is passed, thus controlling the plug, said pin being removed when the projectile is inserted in the fire-arm.

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

1. A projectile having a chamber for compressed air, an inlet for the same, a valve for closing said inlet, a movable plug in the base, a sliding valve attached to said plug, and a tubular guide attached to the base, said guide having slots or openings in communication with the air-chamber and the discharge-passage of the projectile, and said sliding valve covering the slots of the guide and made removable when the plug is struck, substantially as and for the purpose set forth.

2. In an air-charged projectile, a tubular guide in the air-chamber, with slots or openings in communication with said chamber and the discharge-passage of the projectile, in combination with a hermetically-sealed sliding valve fitted on said guide over the slots and movable by the action of a plug with which it is connected, substantially as and for the purpose set forth.

WILLIAM T. CHAMBERLAIN.

Witnesses:
JOHN A. WIEDERSHEIM,
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