No. 786,426. PATENTED APR. 4, 1905.

S. DANIELS.

AIR PISTOL.

APPLICATION FILED MAR. 9, 1904.

Fig. 1.

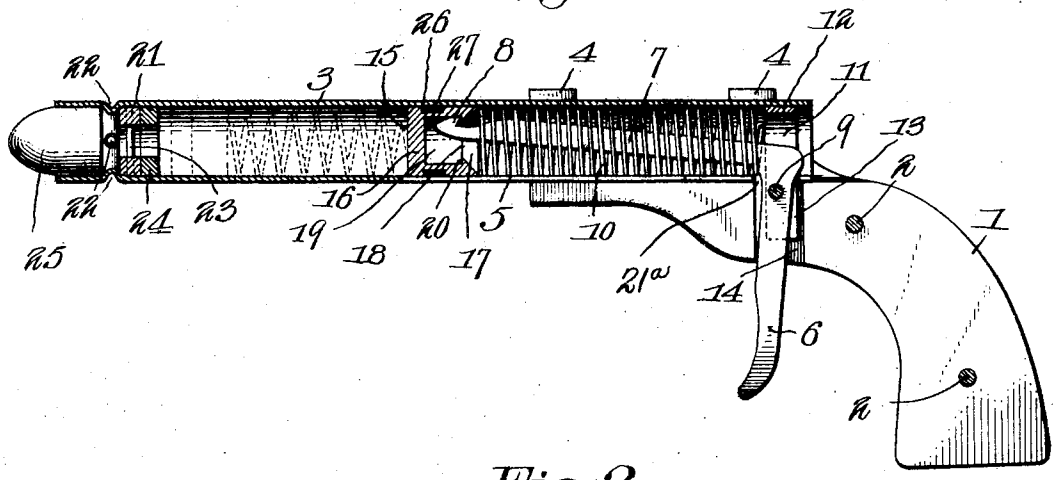


Fig. 2

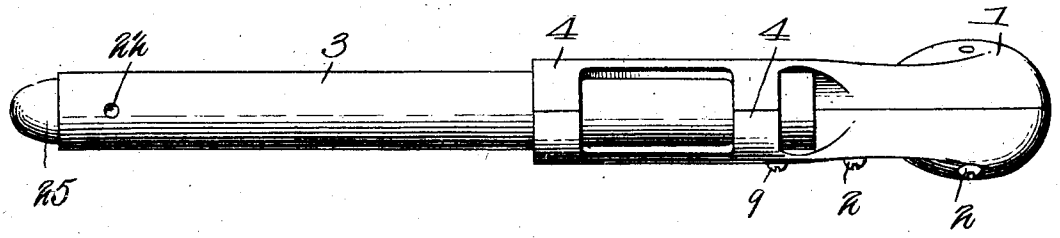


Fig. 3.

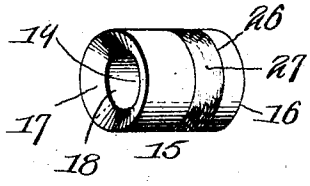


Fig. 4.

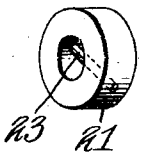


Fig. 5.

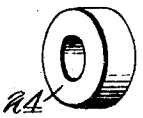
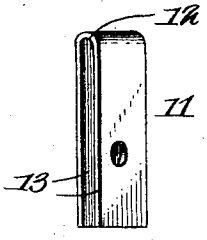


Fig. 6.



Witnesses:

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No. 786,426. Patented April 4, 1905.

UNITED STATES PATENT OFFICE.

SAMUEL DANIELS, OF HARVEY, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES C. REEDER, OF HARVEY, ILLINOIS.

AIR-PISTOL.

SPECIFICATION forming part of Letters Patent No. 786,426, dated April 4, 1905.

Application filed March 9, 1904. Serial No. 197,329.

To all whom it may concern:

Be it known that I, SAMUEL DANIELS, a citizen of the United States, residing at Harvey, in the county of Cook and State of Illinois, have invented a new and useful Air-Pistol, of which the following is a specification.

This invention relates to air-pistols.

The object of the invention is in a ready and thoroughly practical manner to eliminate the danger attending the use of such articles as at present constructed, thereby adapting the device for use within doors; furthermore, to simplify the construction and reduce the number of parts of the device to a minimum, thereby lessening the cost of its manufacture; furthermore, to render the device proof against the projection of dangerous projectiles, such as pointed slugs, tacks, nails, or the like; furthermore, to simplify and render the air-compressing mechanism more efficient and durable in use and to reduce the power requisite to set it.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of an air-pistol, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that various changes as to shape, proportion, and exact manner of assemblage may be made without departing from the spirit thereof.

In the drawings, Figure 1 is a view in vertical longitudinal section exhibiting the set or loaded position of the parts in full lines and their released positions in dotted lines. Fig. 2 is a view in top plan. Fig. 3 is a perspective detail view of the piston. Fig. 4 is a similar view of the stop for limiting the movement of the piston. Fig. 5 is a similar view of the buffer or cushion for receiving the jar between the piston and the stop. Fig. 6 is a similar view of the actuating-spring abutment.

Referring to the drawings, 1 designates the stock or handle of the pistol, the same being made of cast metal and in two parts and held assembled by screws 2, the latter being shown in Fig. 2. The barrel 3 is mounted for sliding movement between inward-curved guides or extensions 4, forming a part of the stock and preferably integral therewith. The barrel is provided near its rearward end and on its under side with a longitudinal slot 5, through which projects the finger-hold 6 of the trigger, the slot being provided to permit requisite longitudinal movement of the barrel to effect compressing or setting of the spring, as will presently appear. The trigger is provided with a dog 7, which normally occupies a plane approximately parallel with the inner walls of the barrel and is provided at its outer terminals with a barb or hook 8, the trigger being held combined with the handle through the medium of a pivot or screw 9. Housed within the barrel is an actuating-spring 10, the rear end of which bears against an abutment 11, which is provided for the purpose of supplying a firm bearing-surface for the spring. The abutment, as shown in detail in Fig. 6, is a yoke-like structure the crest 12 of which is preferably rounded to conform to the inner diameter of the barrel. The arms 13 of the yoke are disposed in grooves or recesses 14, formed in the inner faces of the stock members, and the yoke is held in operative position within the barrel through the medium of the trigger-pivot 9, as clearly shown in Fig. 1. Of course it will be understood that in order to permit the positioning of the abutment within the barrel the rear end of the slot 5 will have to be enlarged for this purpose, and as this will readily be understood detailed illustration thereof is deemed unnecessary.

One of the essential features of novelty of the present invention resides in the piston 15, the same being a hollow structure having its forward end 16 solid and its rear end dished or concaved at 17, the dish or concavity terminating in an orifice 18, which communicates with the chamber 19 of the piston, the latter being of greater diameter than the orifice 18,

presenting thereby a shoulder 20 to be engaged by the barb 8 of the trigger-dog. The barb has its terminal rounded or cone-shaped, and by this arrangement when it contacts with the dished concavity in the piston it will be depressed and guided into the chamber of the piston and will engage with the shoulder 20 and hold the piston from movement until released by the trigger. As it is a desideratum in devices of this class to reduce the number of parts to a minimum, it is one object of the present invention to dispense with the ordinary trigger-spring for holding the barb of the dog into coöperative relation with the shoulder of the piston, and this is secured by projecting the bend or inner angle 21^a of the trigger beyond the forward face of the abutment so that the said bend will be engaged by the end whirl of the spring 10, and this resilient contact between the spring and the trigger will cause the barb of the latter normally to occupy a position out of alinement and above the shoulder of the piston, so that when the piston is forced backward to set the device the barb of the dog will be caused to engage the shoulder of the piston in the manner already described.

As above stated, it is one of the objects of the present invention to render the device harmless in use by precluding possibility of dangerous missiles being inserted into the barrel, and this is effected by the employment of an annular stop 21, disposed near the muzzle of the barrel and held therein in any suitable manner, as by teats 22 formed in the barrel in advance of the stock, as by punching or by upsetting the metal thereof. The means for preventing insertion of missiles within the barrel consists of a pin or guard 23 passing through the stop, and while but one of these guards is herein shown it will be understood that, if desired, two may be employed to cross each other at right angles, or, if preferred, the stop may be provided with a plurality of small openings for the same purpose.

To cushion the piston upon release and to relieve the stop from undue jars and impact, a resilient annular buffer or cushion 24 is disposed back of the stop and with which the piston will contact when projected by the spring.

The projectile 25 used in connection with this pistol will be made of soft rubber and preferably bullet-shaped, and in its use all danger of injury to articles within a room or to persons therein will be positively eliminated.

To set the pistol, the barrel is pressed against a suitable object, and when the barb of the dog engages with the piston the spring 10 will be held under compression, and the barrel is then returned to its normal position and the projectile inserted in the muzzle. Upon release of the trigger the piston will be projected forward with great speed and power and will force the air in the barrel out through the orifice of the buffer and of the stop, and thus effect propulsion of the projectile. In order to cause an air-tight juncture between the piston and the inner walls of the barrel, the piston is provided with one or more circumferential grooves 26, in which is placed a suitable packing 27.

It will be seen from the foregoing description that although the air-pistol of this present invention is exceedingly simple in construction it combines in a ready and practical manner all the requisites necessary to the production of a thoroughly-efficient implement and, moreover, that the element of safety in use is positively established.

While the invention has been described as an "air-pistol," it will be obvious that the improvements are equally adaptable for use in connection with an air-gun, and as this will be understood illustration of its adaptation thereto is omitted.

Having thus described the invention, what is claimed is—

1. An air-pistol embodying a longitudinally-movable barrel, a spring housed therein, a piston against which one end of the spring bears, a yoke-shaped abutment against which the rear end of the spring bears, and a trigger pivoted between the yoke members and having a barbed dog to engage the piston to hold the spring under compression.

2. An air-pistol embodying a longitudinally-movable barrel, a spring housed therein, a piston mounted within the barrel, a trigger having a barbed dog to hold the piston against the spring when compressed, and a cushioned stop disposed near the end of the nozzle and provided with a guard to prevent insertion of projectiles within the barrel.

3. An air-pistol comprising a handle, a barrel mounted for movement thereon, a piston mounted in the barrel, a spring bearing at one end against the piston, a yoke-shaped abutment against which the other end of the spring bears, and a trigger pivoted between the yoke members and having a barb to engage the piston, the said spring being in engagement with the inner angle of the trigger to cause it to engage the piston.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL DANIELS.

Witnesses:
JOHN A. BASTAR,
GEORGE SUTTON