

(No Model.)

S. PORTER.
TOY GUN.

No. 466,574.

Patented Jan. 5, 1892.

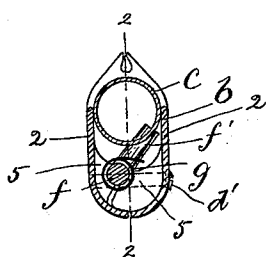
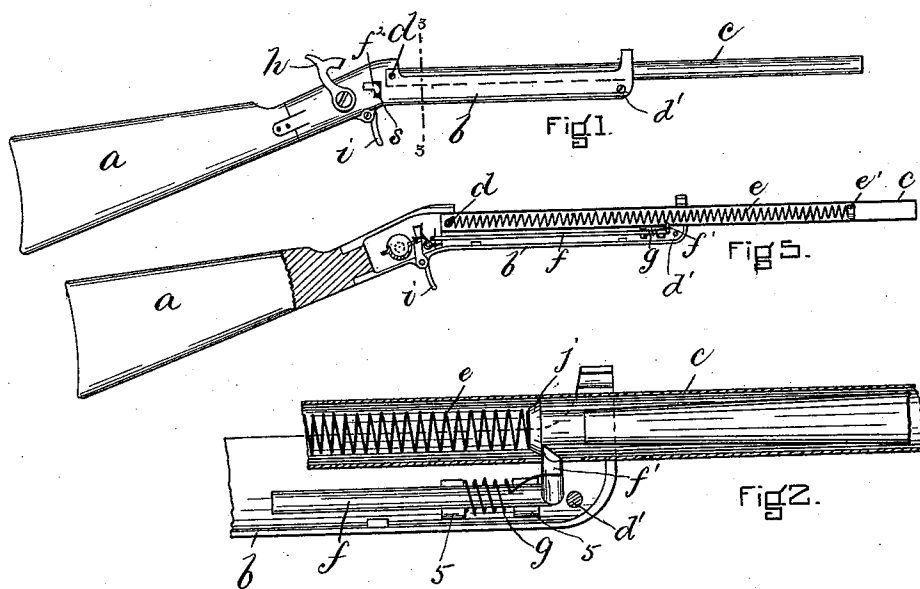


Fig. 4.

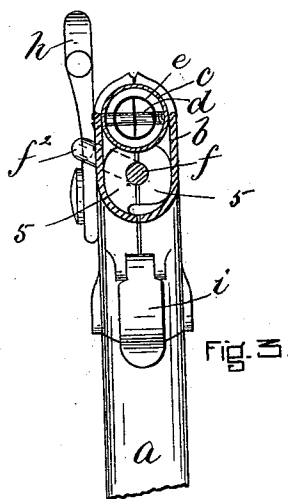


Fig. 5.

WITNESSES.

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Fig. 6

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UNITED STATES PATENT OFFICE.

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TOY GUN.

SPECIFICATION forming part of Letters Patent No. 466,574, dated January 5, 1892.

Application filed April 3, 1891. Serial No. 387,471. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN PORTER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Toy Guns, of which the following is a specification.

This invention has for its object to provide a toy gun actuated by a spring; and it consists of a toy gun having a helical spring in the interior of its barrel, said spring having one end fastened at the butt-end of said barrel; a catch for the said spring whereby the free end thereof is held after it has been compressed, said catch being an arm on the forward end of a rod or rock-shaft located in the forward part of the stock, said catch projecting through an orifice in the barrel at a point where it will be adapted to retain the spring in its most compressed position; an arm or operating-lever on the rear end of said rod projecting through a slot in the stock, and a hammer and releasing-trigger therefor, said hammer being adapted to fall upon the said operating arm or lever at the rear end of the said rod, thus displacing the arm or catch at the front end thereof and releasing the spring within the barrel, all of which I will now proceed to describe.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a toy gun embodying my improvements. Fig. 2 represents a longitudinal section of a portion of the same on the line 2 2, Fig. 4. Fig. 3 represents a section on line 3 3, Fig. 1, looking toward the left or toward the butt of the gun. Fig. 4 represents a section on line 4 4, Fig. 2, looking toward the right or toward the muzzle of the gun. Fig. 5 represents a longitudinal section of the gun, showing the spring uncompressed. Fig. 6 represents a top plan view of the rod or rock-shaft removed from its bearings.

The same letters and figures of reference indicate the same parts in all the figures.

In the drawings, *a* represents the butt of the gun, which is preferably of wood or other light material, but may be of any suitable form.

b represents the main portion of the stock, preferably of metal and constructed in two sections, as shown in Figs. 2 and 3, said sec-

tions receiving between them the rear portion of the barrel *c*. The rear end of the barrel *c* is provided with two holes through which a screw *d* is adapted to pass, said screw passing through the holes in the barrel without engaging the same and being engaged with the two sections of the stock *b*, through which it also passes, said screw thus serving to bind said sections together at this point and to hold the barrel *c* in place.

e represents a helical spring which is placed in the barrel *c*. The rear end of the spring *e* has a loop or eye through which the pin or screw *d* passes, said pin thus serving to retain the said spring in the barrel. The convolutions of the spring *e* are of less diameter than the interior of the barrel, and the spring is therefore enabled to work easily in said barrel. I prefer to provide the outer or free end of the spring *e* with a cap *e'*, which may be a piece of thin metal bent or clamped over the last convolution of said spring. The object of this cap is to enable the spring to be compressed by a rod introduced into the muzzle of the barrel and to prevent the end of said rod from becoming jammed in the last convolutions of the spring, as might occur were the rod of smaller diameter than said spring. The provision of the cap *e'*, covering the end of the spring, enables a rod of any diameter that will enter the barrel to be used.

f represents a rod or rock-shaft which is journaled in the stock *b*. The forward end *f'* of said rod is bent at right angles to its length and projects upwardly through a slot or orifice in the barrel *c* at a point just in front of the point where the forward end of the spring *e* will rest when fully compressed, forming a catch adapted to retain said spring in its compressed position. The said catch *f'* of the rod is normally held in a position in which it projects into the barrel *c* by a spring *g*, one end of which bears on the catch *f'* and presses it upwardly into the barrel *c*, while the other end has a bearing on one of the lugs or bearings in which the rod *f* is journaled. The forward side of the catch *f'* is beveled for a purpose which will presently be explained. The rear end *f²* of the rod *f* is also bent at a right angle to its length and projects out through a slot in the stock *b*, forming an

operating arm or lever by which said rod f may be rocked or oscillated. Outside of said stock I prefer to again bend the arm f^2 at a right angle, its extreme end being in a line parallel with the length of the rod f , as shown in Fig. 1. The arm f^2 of the rod f is in such position that it will be operated by a hammer h . The hammer h is provided with any of the well-known suitable devices for allowing it to be "cocked" and then released by the trigger i . When the hammer is thus released, it will fall upon the arm f^2 of the rod f .

The operation of the gun is as follows: The hammer being cocked, the spring e is compressed by introducing into the barrel c any suitable rod and forcing said spring as far back in the barrel as it will go. The end or catch f' of the rod f will be held in its normal position projecting into the barrel; but the beveled forward edge of said catch f' permits the convolutions of the spring to ride over it. When the spring has been fully compressed, pressure on the rod introduced into the barrel may be relaxed, and the front end of the spring will be caught by the catch f' , the spring being thus held in its compressed position.

To discharge the gun it is now only necessary to pull the trigger i . The hammer h will fall on the rear arm f^2 of the rod f , and, causing the same to move downwardly in the slot in the stock b , through which it projects, will cause the rod f to make a partial rotation, thus bringing its forward end or catch f' out of the barrel c , leaving said barrel unobstructed and releasing the spring e . It will be observed that both of the arms f' and f^2 project from the same side of the rod f , so that when the arm f^2 is depressed by the hammer h the catch f' will also move downwardly. It will also be obvious that the spring operating the hammer h is of greater strength than the spring g , which holds the catch f' in its normal position projecting into the barrel c , the latter spring, indeed, being preferably one of very light tension.

When the cap e' is used on the spring e , a bullet or any equivalent missile may be used with this gun, said cap filling up substantially the entire diameter of the barrel and forcing out whatever may be in front of it when the spring e is released, as before described.

This gun may also be used with the form of vacuum-tipped arrow shown in Letters Patent of the United States No. 397,950, granted to Frank White February 19, 1889, and when this is the case the cap e' is not necessary, as the end of the arrow-shank is provided with a beveled flange j , which will ride over the catch f' and which the said catch engages, thus holding the arrow in the barrel and at the same time holding the spring e in its compressed position, as shown in Fig. 2. When the catch f' is moved to release the spring, as already described, the arrow will be discharged, as will be readily

seen. It will be obvious that when the said arrow is used no other rod is used to compress the spring e , the arrow itself being used for that purpose. The head or cap e' may also be a small block of wood, which may be affixed to the front end of the spring e .

It will be obvious that the rod or rock-shaft f , instead of being bent up at its ends to form the catch f' , and the operating-lever f^2 may be provided with two arms affixed to said rod in any suitable way, said arms constituting the catch f' and operating arm or lever f^2 .

Although I prefer to provide my improved toy gun with a hammer adapted to strike the operating-lever f^2 , as already described, it will be seen that the hammer may be omitted and the operating-lever f^2 moved by hand or otherwise to rock the rod f and move the catch f' to release the spring e .

The stock b is here shown as made in two sections 2 2, which are connected by the screws d d' , so that they may be readily separated to permit the removal of the barrel, which is secured by the rear screw d passing through holes in the rear end of the barrel. When the sections are assembled and connected by said screws, they clamp the barrel between their inner sides. Said inner sides are provided below the barrel with inwardly-projecting ears or lugs 5 5, which constitute the bearings of the rod f . The rod is adapted to turn freely in said bearings and is prevented from moving endwise therein by the projection of the arm f^2 at its rear end through the slot s in the stock, the said slot confining the arm f^2 , so that the rod f can rock, but cannot move endwise.

I claim—

1. In a toy spring-gun, the rod or rock-shaft journaled in suitable bearings, having a spring-retaining arm or catch on its forward end and an operating arm or lever on its rear end, whereby said rod may be rocked or oscillated in its bearings and caused to withdraw its catch and release the spring, as set forth.

2. In a toy spring-gun, the rod or rock-shaft journaled in suitable bearings, having a spring-retaining arm or catch on its forward end and an operating arm or lever on its rear end, whereby said rod may be rocked or oscillated in its bearings and caused to withdraw its catch and release the spring, and a spring adapted to normally hold the said catch in its spring-retaining position, as set forth.

3. The improved toy gun comprising a stock, a barrel set thereon, a spring in said barrel, and a rod under the barrel, having its forward end bent up and projecting through an orifice in the barrel, forming a catch for the forward end of the spring when compressed, the rear end of said rod being also bent and adapted to be moved to bring the forward end or catch above mentioned out of the barrel, thus releasing the spring, as set forth,

4. In a toy gun, the combination, with a stock, a barrel set thereon, a spring in said barrel, a spring-operated hammer, and a releasing-trigger therefor, of a rod journaled in the stock below the barrel, having its forward end bent up at substantially a right angle to the length of the rod and projecting into the barrel through an orifice therein and forming a catch for the forward end of the spring when compressed, the rear end of said rod being also bent substantially at right angles to the length of the rod and projecting through a slot in the stock at a point where it will be struck by the hammer when the same descends, the two projecting ends of said rod being so arranged that when the rear end is depressed by the hammer the front end or catch will be moved downwardly out of the barrel, releasing the spring, and a spring *e*, adapted normally to hold the said catch in position in the barrel, as set forth.

5. In a toy gun, the combination, with the barrel, the spring therein, and a stock provided with a side slot *s*, of the rod or rock-shaft extending lengthwise of the barrel and mounted to rock or oscillate in the stock, said rod having at one end an arm arranged to serve as a catch or detent for the outer end of the spring when the latter is compressed and at the other end an arm projecting through the slot *s*, said slot permitting the rocking motion of the rod and preventing endwise movement thereof, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of March, A. D. 1891.

STEPHEN PORTER.

Witnesses:

C. F. BROWN,
EWING W. HAMLEN.