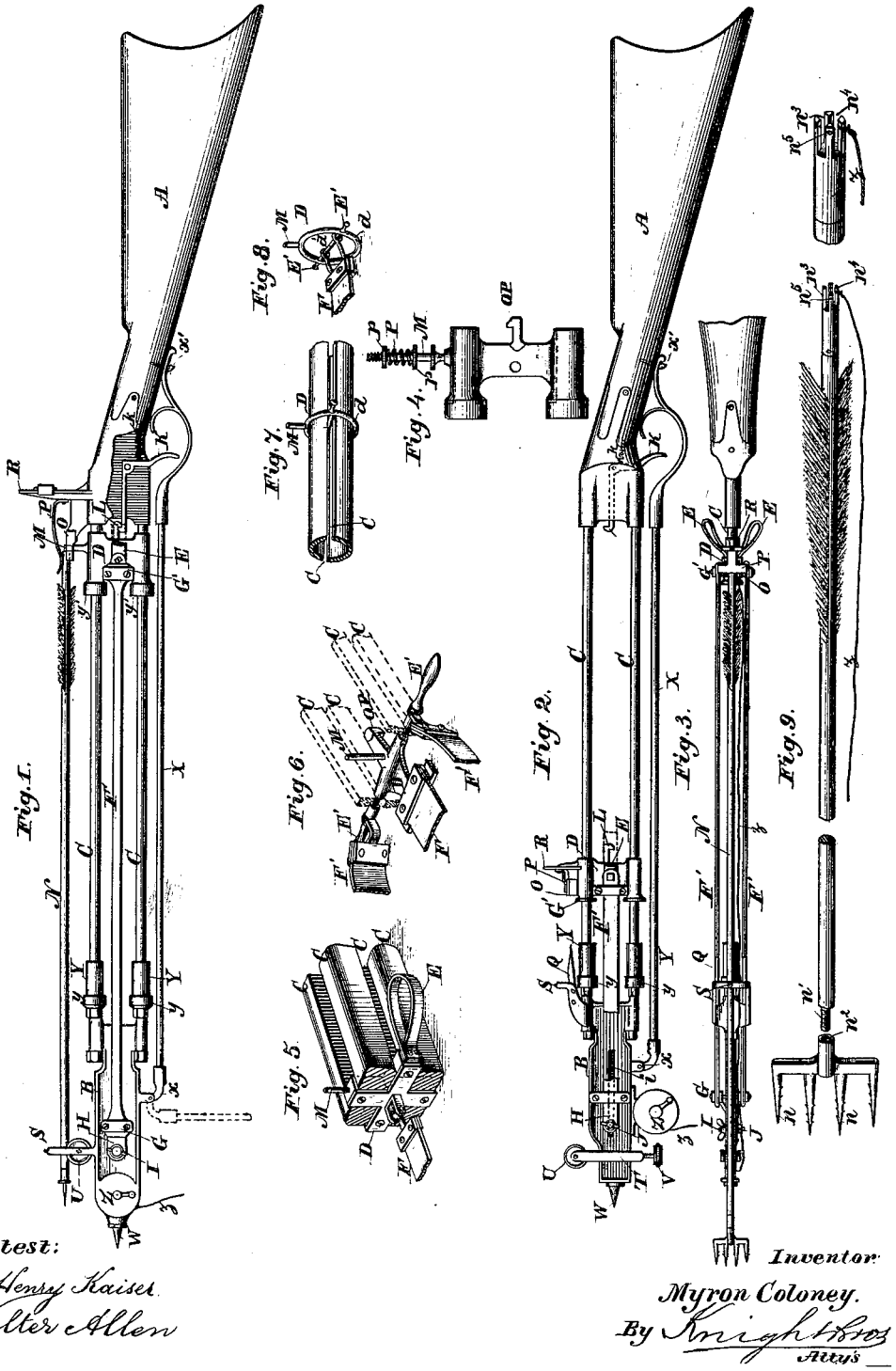
M. COLONEY.
Spring-Gun.

No. 213,976. Patented April 8, 1879.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SPRING-GUNS.

Specification forming part of Letters Patent No. **213,976**, dated April 8, 1879; application filed August 13, 1878.

To all whom it may concern:

Be it known that I, MYRON COLONEY, of St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Spring-Guns and Arrows therefor, of which the following is a specification:

The subject of my invention is a spring-gun adapted for shooting arrows. It is constructed with an arrow-driver, actuated by tension-springs, preferably of rubber, and provided either with loops or rigid handles for drawing it back, and with an upwardly-projecting pin or stud to engage with the notched heel of the arrow. The driver is held in its retracted or firing position by a trigger of simple and effective construction, and is received at the end of its stroke by rubber or other cushions, the extremities of said cushions being inclosed in flanged seats or cups, which prevent the ends from spreading. The rubber springs by which the arrow-driver is actuated are held by clamps, one of which is adjustable in position to adapt it to receive springs of any length, thus affording facilities for the reattachment of a worn and broken spring. The arrow is guided in front by a grooved wheel, adjustable in height for elevation or range.

For the special purpose of shooting fish or other things in or about the water, or in other places not readily approachable, I employ an arrow constructed after the manner of a fish-spear—that is to say, with a plurality of barbed points arranged in a plane—and I form the heel of the arrow with crossed grooves or notches, so that the point may be held in either a horizontal or vertical plane, as desired, by setting either notch on the vertical pin of the arrow-driver. I also combine with such arrow a line wound upon a reel on the gun, and attached to an eye in the heel of the arrow for the purpose of reeling in the arrow with its game.

The gun is provided with a stud or spur in front to hold it firmly against a tree or any other stationary object when the driver is to be drawn back.

I have also devised a combined guard and rest, hinged near the forward end, and extending underneath the stock so far back as to cover the trigger, its rear end being held by a spring or other catch. This guard enables the sportsman to rest his gun on his hand or on a fence or other stationary object out of the path of the arrow-driver, or by turning the said guard down in a vertical position it will be made to constitute a rest of itself.

In order that my invention may be more fully understood, I will proceed to describe the same, with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a gun illustrating my invention, constructed with the arrow-holder and rear sight stationary, and showing the gun in readiness for firing. Fig. 2 is a side elevation, showing the gun discharged. This illustration shows, as an immaterial modification, the arrow-holder and rear sight attached to the arrow-driver. Fig. 3 is a plan or top view of the gun illustrated in Fig. 2, representing the parts in position for firing, and showing the form of arrow used for shooting fish and other game, which must be recovered by means of the arrow and a reel-line attached thereto. Fig. 4 is a side view of the arrow-driver, on a larger scale, showing a modification in the construction of the arrow-holder. Figs. 5, 6, and 7 are perspective views of modified forms of arrow-holders, showing also the forms of guides in which they work. Fig. 8 is a perspective view of the arrow-driver shown in Fig. 7. Fig. 9 is a perspective view of the two ends of my new fishing-arrow.

The stock of the gun consists of a butt, A, of ordinary form, and a tip or end piece, B, rigidly connected by guides C C, which may be of various forms, according to the character or construction of the arrow-driver D.

In Figs. 1, 2, and 3 I have shown guides C, consisting of round rods placed one above the other, and an arrow-driver, D, fitted to slide thereon.

In Fig. 5 I have shown a cruciform arrow-driver, D, working between four guides, C C C C. Fig. 6 shows a flat driver, D, prolonged by lugs, which work between the guides C C C C, and terminate in handles E′ E′. These handles or the loops E E, (shown in Figs. 1, 2, 3, and 5,) or any other preferred form of device for drawing back the driver, may be applied optionally to either form of driver.

In Figs. 7 and 8 I have shown a driver, D, consisting of a ring, *d*, and a cross-bar, *d'*, working in guides C C, forming two concentric arcs of a cylinder, which is encircled by the ring *d*, and traversed by the cross-bar *d'*, the latter being extended to form the handles E' E'. The driver is actuated by one or more springs, F F', which I prefer to make of gum-elastic, on account of its cheapness and its readiness of application, adjustment, and renewal without the aid of a mechanician. These springs are held at their ends by clamps G G', applied to the end piece B and driver D, respectively. The clamps G G' admit of being opened and tightened again by the user of the gun, so that he can readily place the springs in position, or when a spring is worn out so that its extremity becomes detached the remaining part is easily secured again.

The clamps G G on each side of the end piece B are attached adjustably by brackets H H, fastened by a clamp-screw, I, and nut J, said screw passing through a longitudinal slot, *i*, in the end piece B, so as to admit of setting the clamps G G nearer to or farther from the clamps G' G' to suit springs of different lengths. A part of the side spring, F', is omitted in Fig. 2, in order to show the slot *i*.

The driver is held in its retracted position by a trigger, K, pressed up by a spring, *k*, and engaging with a hook, L, projecting from the back of the driver D. The driver is provided with a vertical stud, M, to throw the arrow. An arrow, N, is shown in position for firing in Figs. 1 and 3.

The peculiar construction of "fishing-arrow," which I claim as new, is shown in Fig. 3, and will be hereinafter described. The heel of the arrow is steadied by a holder consisting of a seat, O, and a spring, P. This holder O P may be fixed to the stationary stock, as shown in Fig. 1, or to the driver D, as shown in Figs. 2, 3, and 4.

When using a spring, P, of the form shown in Figs. 2 and 3 I employ a pair of wedge-shaped trips, Q, on the end piece B, to automatically raise the said spring and release the heel of the arrow when the driver reaches the end of its stroke.

The rear sight, R, may be attached to the stock, as in Fig. 1, or to the driver D, as in Figs. 2 and 3.

The front sight, S, is shown in Figs. 2 and 3 applied to the same bracket which supports the trips Q.

In Fig. 1 the front sight, S, projects upward from a divided standard, in which is mounted a grooved wheel, U, supporting the forward end of the arrow.

In Fig. 2 the supporting-wheel U is shown mounted on a standard, T, adjustable for elevation by means of a temper-screw, V.

Figs. 5, 6, 7, and 8 show drivers D, with studs M, adapted for use with a stationary holder, O P, such as shown in Fig. 1. In Fig. 4 the holder O P is shown applied to the throwing-stud M, the spring P acting upon a disk or washer, *p*, and being held down by a thumb-nut, *p'*, to regulate its pressure.

The springs F F' may be combined, as shown in Fig. 6, or central spring, F, may be used alone, as in Figs. 5 and 8, or side springs, F' F', as in Figs. 1, 2, and 3, without the central spring.

A sharp stud or spur, W, projects from the extremity of the stock, for the purpose of holding it firmly against a tree or other fixed objects while drawing back the driver D.

X represents a trigger-guard, hinged at *x*, and held in position by a spring-catch, *x'*. The said rest, when in this position, serves to support the gun on the hand or on any horizontal object, and keep said hand or support clear of the driver D. By lowering the said rest, as illustrated in dotted lines in Fig. 1, it is made to serve as a ground-rest.

Y Y are rubber cushions surrounding the guide-rods C C, for the purpose of receiving the concussion of the arrow-driver. In order to prevent the spreading and destruction of the ends of these cushions, they are seated at one end in stationary cups *y y*, and similar cups or annular flanges *y' y'* are provided on the driver D, where the impact is received, so as to inclose the extremities of the springs when they receive the blow.

Z is a reel carrying a line, *z*, to be attached to the fishing-arrow.

The construction of this fishing-arrow is shown in Figs. 3 and 9. It is provided with a head constructed after the manner of a fish-spear, with a number of barbed points, *n n*, disposed in a plane. In practice I form the arrow-shaft with a projecting screw-stud, n^1, and the head with a threaded socket, n^2, to fit thereon, so that heads of different kinds may be applied optionally to the same shaft. The heel of the arrow is formed with crossed notches n^3 n^4, either of which may be set to the throwing-stud M, so as to hold and throw the arrow with its head in either a horizontal or a vertical plane, as desired. It has also one or more eyes, n^5, for the attachment of the cord *z*.

It is manifest that the gun is adapted for use with arrows other than the peculiar one herein described.

I have used a great variety of arrows with my improved gun, some of them of common construction, and some of novel construction and of my own invention, for which it is my purpose to apply for Letters Patent.

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

1. The arrow-driver D, constructed with an upwardly-projecting stud, M, for throwing the arrow, in combination with the guides C C and one or more tension-springs, F F', as and for the purposes set forth.

2. The combination, with the stock A B C and driver D, of the arrow-guide or front support, consisting of a grooved wheel, U, substantially as described.

3. The combination, with the gun A B C D, of the grooved roller U and a temper-screw, V, for setting it up or down to regulate the elevation of the arrow, as described.

4. The combination, with the tension-springs F′ F′ and driver D, of the clamps G G and G′ G′, the former adjustable substantially in the manner described, for the purpose of setting them forward or backward, to adapt them to longer or shorter springs.

5. The combination of the driver D, cushions Y Y, and cup-formed seats or abutments $y\ y'$, to confine the ends of the cushions at the time of impact, as explained.

6. The combination, with the stock A B C, driver D, and one or more springs, F F′, of the hinged bar X, applied, substantially as herein set forth, at a sufficient distance below the stock to protect the hand from the driver in its flight, and adapted to serve as a ground-rest when turned down.

7. An arrow constructed with a flat or laterally-elongated head, and with a heel having crossed notches or slots $n^3\ n^4$ for holding it with said head in either a vertical or horizontal plane, as desired.

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Witnesses:

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WALTER ALLEN.