(No Model.)

G. EGER.

CROSS BOW.

No. 272,418. Patented Feb. 20, 1883.

FIG. 5.

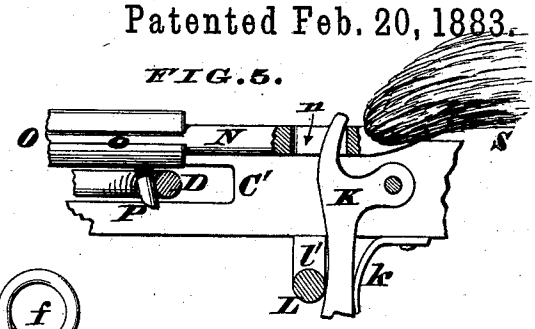


FIG. 1.

FIG. 2.

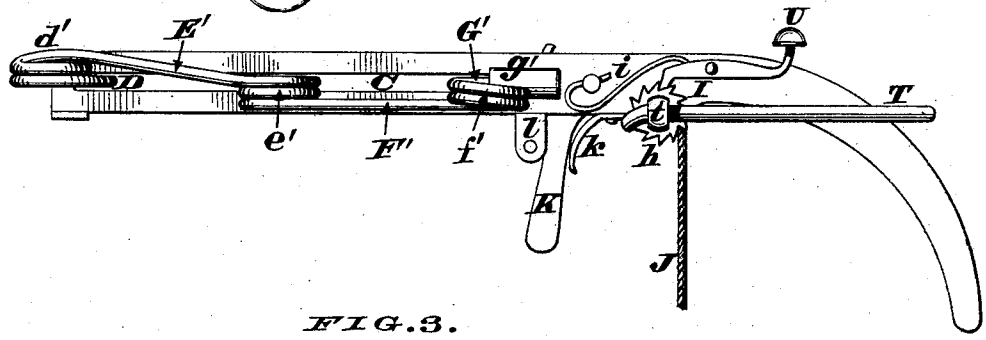


FIG. 3.

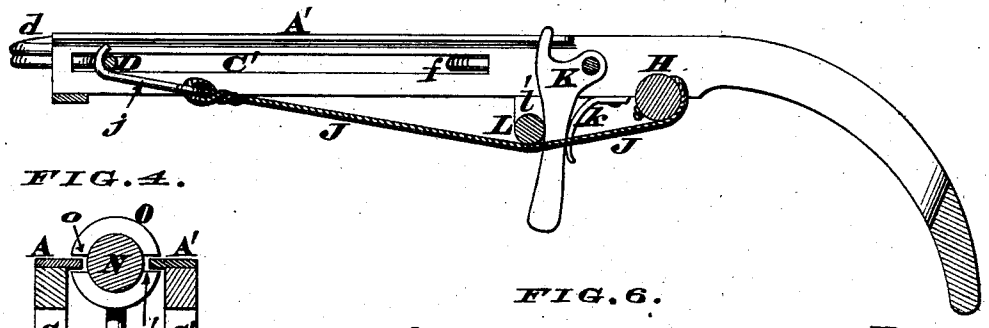
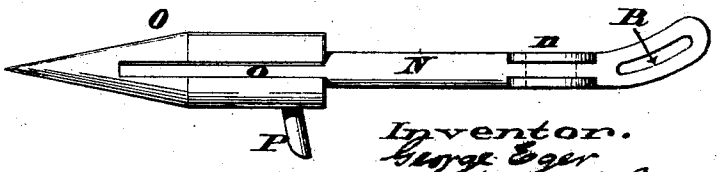


FIG. 4.

FIG. 6.



Attest.
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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE EGER, OF COVINGTON, KENTUCKY.

CROSS-BOW.

SPECIFICATION forming part of Letters Patent No. 272,418, dated February 20, 1883.

Application filed October 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE EGER, a citizen of Germany, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Arrow-Guns, of which the following is a specification.

My invention comprises a novel construction of spring-gun and arrow to be used therewith, the spring being composed of wire bent so as to afford six coils, four connecting-arms, and a bow, whereby a very great tension is produced when the spring is contracted and engaged with the arrow, which latter is held for the time being by a suitable trigger. Furthermore, the barrel of the gun is provided with two parallel and longitudinal tongues which fit within grooves in the opposite sides of the arrow, and thereby guide the latter in a proper path when the trigger is pulled, as hereinafter more fully described, and pointed out in the claims.

In the annexed drawings, Figure 1 is a plan of my improved gun, the spring of the same being shown in its normal position. Fig. 2 is a side elevation of the gun, a lever being shown applied to the winding-shaft of the same. Fig. 3 is a longitudinal section of the gun, the strap or thong of the winding-shaft being shown coupled to the bow of the spring. Fig. 4 is an enlarged transverse section of the gun-barrel, the arrow being shown applied thereto. Fig. 5 is an enlarged longitudinal section through the rear portion of the barrel, the arrow being shown engaged both with the spring and trigger. Fig. 6 is an enlarged side elevation of the arrow detached from the gun.

The barrel of my gun, pistol, or cross-bow is so constructed as to have at top two parallel guides or tongues, A A′, on opposite sides of a race, B, which latter is open at the muzzle. Furthermore, the sides of this barrel are slotted at C C′ to permit free play of the bowed portion D of the impelling-spring. One end of this bow merges into a coil, *d*, which latter develops into an arm, E, having a coil, *e*, joining an arm, F, provided with a coil, *f*, whose termination G is immovably secured in a pocket, *g*, near the rear end of the gun-barrel. The other end of bow D merges into a coil, *d′*, having arms E′ F′, coils *e′ f′*, and a termination, G′, which latter is fastened in a pocket, *g′*, it being understood that all the coils and arms of the spring are made of a single piece of wire.

Journaled transversely in the gun is a shaft, H, having at one end a ratchet, *h*, with which latter is engaged a detent or pawl, I. *i* is a spring that maintains said pawl in gear with the ratchet.

Adapted to be wound upon the shaft H is a flexible thong, strap, or thick cord, J, having at its free end a hook, *j*, capable of being hitched to the bow D, as seen in Fig. 3.

K is the trigger, maintained in its normal position by a spring, *k*.

Depending from the barrel are two lugs, *l l′*, that support a small roller, L, against which plays the thong J when the spring is being bent. Furthermore, this roller or bar serves as a stop for the trigger.

The arrow to be used in connection with my gun consists of a shaft, N, having a head, O, grooved on its opposite sides, at *o o′*, which grooves are adapted to slide freely on the guides A A′, as seen in Fig. 4. Projecting downwardly from the arrow is a stump, P, adapted to sustain the pressure or stress of the bow D when the impelling-spring is bent, as seen in Fig. 5. The arrow-shaft has near its rear end an eye, *n*, and a slot, R, which latter serves as a means for attaching a feather or tuft or other poise, S.

T is a detachable lever, inserted in the eye *t* of shaft H preparatory to coiling the strap J around said shaft.

Owing to the provision of the six coils *d d′ e e′ f f′* and four arms, E E′ F F′, the gun-spring is so stiff as to render it impossible to bend it by hand; but by hitching the hook *j* to bow D, and then inserting the lever T in the eye *t* of shaft H, the strap J can be wound around said shaft, thereby drawing said bow back almost to the rear ends of slots C C′, the pawl I *i* and ratchet *h* serving to hold the spring in this position until the arrow is fitted in the gun. This act is accomplished by sliding the arrow back in the race B and causing the tongues A A′ of the barrel to traverse the grooves *o o′*, the eye *n* of said arrow being engaged with the trigger K, and the stump P sustaining the pressure of bow D, as seen in Fig. 5. Button U, on the rear end of pawl I,

is now depressed, thereby disengaging the latter from ratchet *h* and allowing shaft H to be turned in such a manner as to uncoil strap J therefrom and disconnect its hook *j* from the bow D of the impelling-spring. It is evident the tension of the spring is now resisted by the stump P of arrow N, which latter is held in check by the trigger K. Hence the instant this trigger is pulled the full force of the spring is suddenly exerted against the arrow. Consequently the arrow is discharged from the gun with great force and with the utmost accuracy of flight, the flanges or tongues A A′ serving to guide said arrow unerringly to any object the gun may be aimed at. Finally, the weapon may be made in the shape of a gun, pistol, or cross-bow, and when designed for shooting very long and heavy arrows a chain or wire cord may be substituted for the strap J.

I claim as my invention—

1. A gun having a spring composed of the bow D, coils *d d′ e e′ f f′*, arms E E′ F F′, and terminations G G′, all made of one piece of wire and applied to the slotted barrel A A′ B C C′, as herein described, in order that an arrow may be discharged from the race B by engaging a stump of the arrow with said bow D, which latter traverses the side slots, C C′, as stated.

2. In combination with a gun-barrel having side slots, C C′, traversed by the spring-bow D, that engages with and discharges the arrow N P from the race B of said barrel, as herein described, the winding-shaft H, ratchet *h*, detent I, spring *i*, strap J, hook *j*, and trigger K *k*, for the purpose stated.

3. The combination, in an arrow-gun, of a barrel having at top guides A A′ and at its opposite sides slots C C′, said slots being traversed by the spring-bow D, that engages with and discharges the arrow N from the race B of said barrel, as herein described, the barrel being provided with a longitudinal recess for the arrow-stump P, as set forth.

4. The arrow N, having a longitudinally-grooved head, O *o o′*, stump P, eye *n*, and poise S, in combination with a gun-barrel provided at top with guides A A′ and at its opposite sides with slots C C′, which slots are traversed by the spring-bow D, that engages with said stump P preparatory to discharging said arrow from the barrel-race B, as herein described.

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

GEORGE EGER.

Witnesses:
JAMES H. LAYMAN,
JOHN A. PENN.