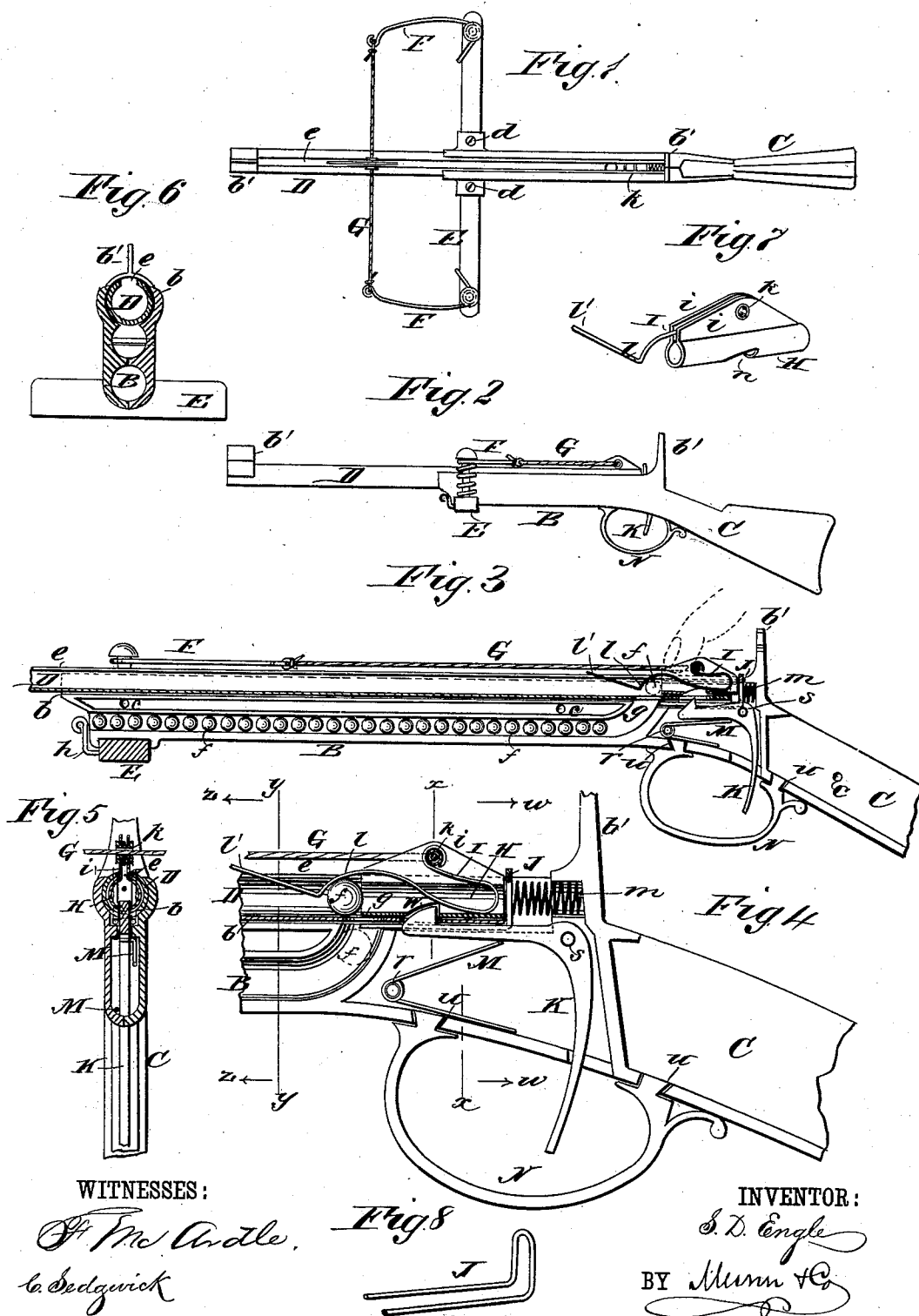


(Model.)

S. D. ENGLE.
MAGAZINE SPRING GUN.

No. 334,575.

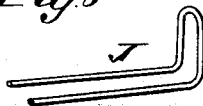
Patented Jan. 19, 1886.



WITNESSES:

S. D. Engle,
W. Sedgwick

Fig. 8



INVENTOR:

S. D. Engle

BY *Munn & Co.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

STEPHEN D. ENGLE, OF HAZLETON, PENNSYLVANIA.

MAGAZINE SPRING-GUN.

SPECIFICATION forming part of Letters Patent No. 334,575, dated January 19, 1886.

Application filed September 3, 1885. Serial No. 176,081. (Model.)

To all whom it may concern:

Be it known that I, STEPHEN D. ENGLE, of Hazleton, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Magazine Spring-Guns, of which the following is a full, clear, and exact description.

This invention is mainly designed as an improvement upon the magazine spring-gun for which Letters Patent No. 320,643 were issued to me June 23, 1885, and which mainly consisted of a barrel having an upper longitudinal slot in it, a notched follower provided with a vertical arm projecting up through the slot and having an aperture, a cross-bar, a spring or springs carried by said cross-bar, a cord passing through the aperture in the vertical arm of the follower and secured at its ends to the springs, a trigger constructed to engage the notched follower, and a magazine below the barrel, in communication by a passage with the barrel, and special means for controlling the passage of the shot or projectile from the magazine to the barrel, for preventing its return to the magazine, and for holding it in front of the follower till discharged.

The invention consists in special constructions, arrangements, and combinations of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a plan view of a magazine spring-gun embodying my invention with the parts in their normal position; Fig. 2, a side view of the same with the parts in position after the follower has been drawn back and engaged with the trigger of the gun. Figs. 3 and 4 are longitudinal sectional views, upon larger scales, of the gun in part with certain of its working parts in different positions. Fig. 5 is a vertical transverse section upon the irregular line *xx* in Fig. 4, looking in direction of the arrows *ww*; Fig. 6, a similar section upon the line *yy* in Fig. 4, looking in direction of the arrows *zz*. Fig. 7 is a view in perspective of the sliding follower with an attached spring, and Fig. 8 a perspective view of another detail.

The frame of the gun, including its barrel-seat *b*, magazine *B*, and stock *C*, is constructed in two vertical longitudinal sections or halves, of metal or any other suitable material, preferably of soft gray iron, screws passing through holes *c* in the frame and stock serving to hold the whole firmly together and to secure the barrel *D* with a vise-like grip, and additional screws *d d* serving to secure the whole to the cross-arm *E* of the gun. The barrel *D* is made of steel or any other suitable metal, with a longitudinal slot, *e*, in it. This construction of the frame and barrel contributes both to the cheapness and durability of the gun, the frame being hollowed out between the barrel and magazine to save metal and to reduce weight.

The magazine *B*, which holds shot or projectiles *f* beneath the rear end portion of the barrel, communicates at its back end by an opening, *g*, with the barrel, to allow of one shot at a time passing into the barrel. Said magazine is charged with the small balls or shot *f* through its forward end, and after being charged a wire catch, *h*, carried by the cross-bar *E*, is suitably turned to hold the balls in the magazine. The balls *f* are rolled or passed, one at a time, into the barrel *D* by suitably elevating the muzzle of the gun.

The cross arm or bar *E*, which is secured to the forward end of the under side of the magazine, carries the springs *F F*, that give the propelling-power to the projectile. *G* is the cord by which said springs are connected with the follower *H*, that, when liberated, acts upon the ball in the barrel to discharge it. The follower *H* is made of a simple steel split tube with upturned separated longitudinal lips or flanges *i*, connected by an eyelet, *k*, through which the cord *G* passes, said lips or flanges passing up through the longitudinal opening *e* in the barrel. The eyelet *k* also serves for the attachment, between the lips *i* of the follower, of a wire spring, *I*, projecting in front of the follower, where it is formed with a downward bend or hook, *l*.

Back of or in the rear end of the barrel is a spiral spring, *m*, arranged to press at its forward end against the back upturned end of a forked-wire cut-off, *J*, that is fitted to slide backward over the aperture *g*, and that serves to receive through it the upper forward hook-

ing end of the trigger K, which end of the trigger engages with a notched portion, *n*, of the follower.

When the follower is pulled back as far as it will go, it pushes back the forked cut-off from over the opening *g*, and allows a ball; on raising the muzzle end of the gun, to roll into the barrel, after which, as the follower moves forward to the trigger-catch or engaging end thereof with the follower, said forked cut-off will also move forward, by the action of its spring *m*, and prevent the next ball from unduly rolling out of the magazine after a shot has been discharged. The forward movement of the follower up to the catch of the trigger, as from the position shown in Fig. 3 to that shown in Fig. 4, will also so close the opening *g* as to prevent the ball in the barrel from returning to the magazine. The metal spring *I*, being inside of the follower, is not exposed to being interfered with or injured. This spring, by its bend or crook *l*, that projects over the ball in front of the follower, retains said ball from rolling out of the barrel, and when the ball leaves the follower, after the follower has been projected forward by the tension of the springs *F*, on releasing the trigger from its hold on the follower, leaving the forked cut-off *K* over the orifice *g*, the hook *l* of said spring will readily lift or yield to allow said ball to pass.

The trigger-spring *M*, which is a simple piece of bent wire formed into a coil intermediate of its length, is secured by slipping it at its coiled end over a pin, *r*, cast on one-half of the longitudinally-divided frame of the gun; and the pin *s*, on which the trigger works, is also cast on the half-frame. The trigger-guard *N*, too, is secured to its place by hooking or engaging it with locking notches *uu* in the one-half of the gun-frame. This construction provides for a very simple and cheap attachment of the trigger, its spring, and guard.

Sight-pieces *b'* are erected on the forward and rear ends of the gun.

The propelling-springs *F F*, which are constructed to form elongated arms with coils at their inner ends, have a long range of action, and after being drawn back by pulling on the string, the two forefingers being placed on either side of the follower and afterward released by suitably manipulating the trigger, give an extended and powerful throw of the ball. The same construction of propelling-springs is shown in my patent hereinbefore referred to.

The spring *I*, attached to the follower *H*, has only herein been previously described as provided with a front downward crook or bend, *l*, for the purpose of retaining the ball from rolling out of the barrel; but it is proposed to construct it with an upturned extension, *l'*, of its front end, to admit of the gun being loaded from its muzzle end with a ball, arrow, or

other projectile dropped into the muzzle, the projectile, if a ball, lifting by its weight the spring *H* and passing into or back of the holding crooked portion *l*; or, if the projectile be an arrow, it will, on being forced inward from the muzzle end of the gun, lift the spring *I*, which then will press on top of the arrow to hold it in place. The upturned extension *l'* of the front end of the spring *I* should be made to project through the slot *e* in the barrel, so that it can be lifted by the finger-nail in case it should be required to let the ball roll out.

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

1. In a magazine spring-gun having a longitudinally-slotted barrel and a follower fitted to work within and through the barrel, subject to control by a trigger and the propelling-spring of the gun, the within-described split tubular follower *H*, having a notch, *n*, in its under side, and provided with upturned separated lips or flanges *i* and an eyelet, *k*, uniting said flanges, substantially as shown and described.

2. In a magazine spring-gun having a longitudinally-slotted barrel, the combination, with the split and notched tubular follower *H*, having upturned lips or flanges *i*, united by an eyelet, *k*, of the spring *I*, attached to said eyelet, and having a downward crook or hook, *l*, arranged to project in front of the follower, substantially as and for the purpose herein described.

3. In a magazine spring-gun, the follower *H*, having an attached spring, *I*, formed with a downward crook or hook, *l*, extended to present an upward and forward extension, *l'*, essentially as and for the purposes herein set forth.

4. In a magazine spring-gun, the combination of the tubular follower *H*, having an attached spring, *I*, formed with a downward crook or hook, *l*, arranged to project in front of the follower, the cord *G*, the propelling-springs *F*, and the cross-bar *E*, the whole being arranged for operation in relation with the barrel and magazine of the gun essentially as shown and described.

5. In a magazine spring-gun, the combination of the notched tubular follower *H*, having the spring *I*, which controls the retention of the projectile in the barrel till discharged, and which is constructed with a forward crook or hook, *l*, attached to it, the forked sliding cut-off *J*, and spring *m*, the barrel *D*, and magazine *B* in communication with it, the trigger *K*, and the propelling-springs *F F*, and the cord *G*, connecting said springs with the follower, substantially as shown and described.

STEPHEN D. ENGLE.

Witnesses:

JOHN A. BARTON,
C. BACHMAN.