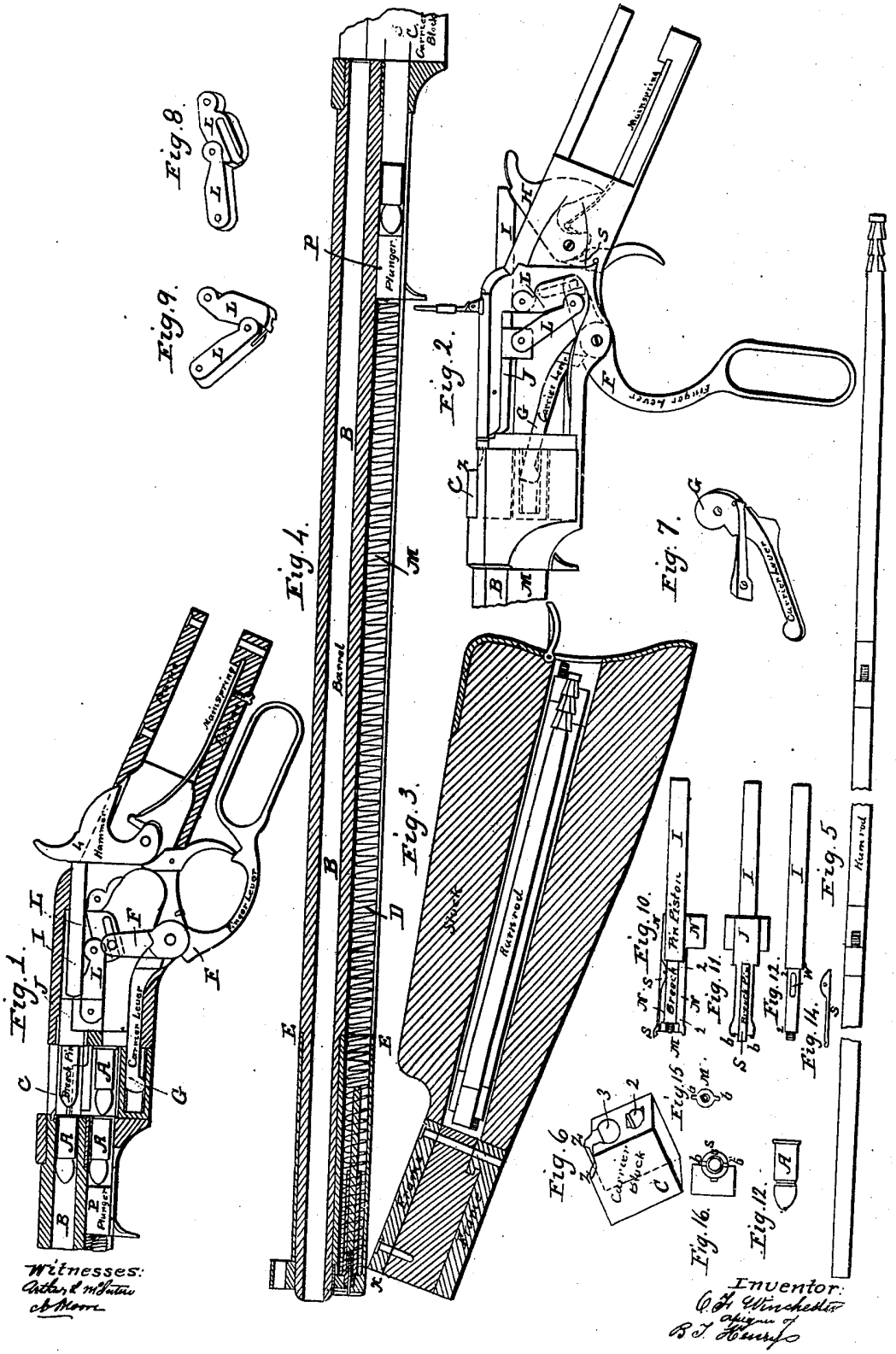
B. T. HENRY.

Magazine Fire Arm.

No. 30,446.

Patented Oct. 16, 1860.



UNITED STATES PATENT OFFICE.

B. TYLER HENRY, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO OLIVER F. WINCHESTER.

IMPROVEMENT IN MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. **30,446**, dated October 16 1860.

To all whom it may concern:

Be it known that I, B. TYLER HENRY, of New Haven, in the county of New Haven, State of Connecticut, have invented new and useful Improvements in Fire-Arms, of which the following is a full and exact description, reference being had to the annexed drawings, corresponding parts of which are marked with corresponding letters and figures, which are made a part of this specification.

My invention relates to improvements in a repeating breech-loading gun designed and arranged for the exclusive use of a hollow loaded ball with a primer inserted in the base.

My improvements are designed to remove the objections heretofore existing in this class of fire-arms by a change in the construction of the moving parts and the addition of new features, adapting the arm to the use of a solid ball inclosed in a metal cartridge, thus greatly increasing the power and certainty of fire of the arm.

For a more particular description of the arm as improved, I refer to the annexed full-sized drawing of a sporting-rifle, twenty-four-inch barrel, carrying fifteen charges.

Figure 1 shows a section through the lock-frame and part of the barrel B, representing the gun as loaded, ready to cock, and showing all the working parts, &c.

Fig. 2 represents the lock-frame with the side plate removed, and shows the position of the works after the first motion in loading.

Fig. 3 shows a section through the stock or breech of the gun and the arrangement for carrying a jointed ramrod for cleaning the gun.

Fig. 4 represents the barrel B with the magazine M, a tube under the barrel B to hold the ammunition, with a spiral spring, D, to feed the same to the carrier-block C, Figs. 1 and 6. This tube is made in two parts. The short part from E to X, Fig. 4, is made to turn on the barrel, so as to leave the end of the tube at E open to drop in the ammunition.

Fig. 5 shows the ramrod screwed together.

Fig. 6 gives a perspective view of the carrier-block C, showing the chamber 3, in which the ammunition is received from the magazine and carried up to the breech of the gun. 2 shows the chamber in which the lever G plays in raising and lowering the carrier-block C. Z shows the construction or form of the top of the carrier-block by which, in raising, it is made to strike the cartridge A when withdrawn or retracted from the gun-barrel, and by giving it a tripping motion throws it out of the lock-frame.

Fig. 7 shows the carrier-lever G for raising the carrier-block C.

Figs. 8 and 9 are the links L, or toggle-joints, used in connection with the finger-lever F to give the forward and backward motion to the breech-pin J, and to serve as an abutment or brace to hold the breech-pin J firmly to its place, and thus to resist the backward force of the discharge, as in the position shown in Fig. 1.

Fig. 12 represents the ammunition used—a conical or round ball inserted in a metal cartridge, A, having a hollow flange round the base, containing a priming of fulminating-powder.

Fig. 10 represents a longitudinal section of the breech-pin, taken through the center from top to bottom, and shows all its parts. This is used, first, to carry forward and place the cartridge in its place in the barrel, as in J, Fig. 1; second, to convey the concussion from the hammer to the charge through the center of the breech-pin by means of the piston I; third, to retract or withdraw the cartridge A after firing, or the charge entire in case of missing fire, by means of the spring-catch S, which takes a firm hold of the flange of the cartridge when pressing it into the barrel, and which cannot be detached without withdrawing the charge or metal case; and, fourth, to press back the hammer and cock the gun. (See H, Fig. 2.) It consists of four parts—viz., the cylinder N, in which the piston I plays, having a slight projection at O on the under side, which passes under and supports the end of the cartridge; second, the piston I, (shown separately in Fig. 12,) which is used to convey the blow of the hammer through the breech-pin J to the end of the primer; third, the head of the piston or auxiliary hammer M, Figs. 10 and 15, which is screwed to the end of the pis-

ton when in its place, as at M, Fig. 10, and has two fillets, *b b*, Fig. 15, one on each side of the breech-pin, which project slightly beyond the piston I, as at *b b*, Fig. 11. These press against the flange of the cartridge, as at A, Fig. 1, and as the piston I has a play back and forth in the cylinder N between the shoulders 2 2, Fig. 10, the force of the blow of the hammer is conveyed by the piston to these fillets, producing a concussion on the primer sufficient to explode it with great certainty. The fourth part is the spring-catch S S, which is also shown separately in Fig. 14. This is placed on top of the breech-pin J, and is of sufficient depth at the point where secured by a pin to the breech-pin to pass through the cylinder and set into a slot, *w*, Fig. 12, to prevent the piston from turning.

Fig. 16 represents an end view of the breech-pin, in which *s* is the end of the catch-spring; *b b*, the two fillets each side of the breech-pin, for exploding the charge; O, the projection to support the end of the cartridge, and projecting beyond the end on the under side, as at *o*, Fig. 10.

Fig. 11 is a top view of breech-pin J, showing the projecting fillets or points *b b* on the end and the spring-catch S on top.

Having thus described the construction and arrangement of the different parts of the gun, I will now endeavor to give the method of operating it.

Having filled the magazine by sliding the plunger P, Fig. 4, toward the muzzle till it passes the point marked E and compresses the spring into the charge-cap, between the points E and X, the cap is to be turned upon the barrel so as to open the end of the magazine at E. The ammunition is to be dropped in until full, when the charge-cap is returned to its place and the plunger left resting upon the top of the line of balls. The arm is now ready to be loaded, which is done with two motions of the finger-lever F, assuming the arm to be in the position represented in Fig. 1, without the charge, as represented in the barrel. The finger-lever is to be moved forward quickly. The first motion brings all the parts into the position shown in Fig. 2—viz., the hammer H thrown back, (or the gun cocked,) the breech-pin J thrown back, and the carrier-block C raised, so as to bring a charge up in line with the bore of the gun. The finger-lever F is now thrown quickly back, bringing all the parts back into the position shown in Fig. 1, (except the hammer H, which remains cocked,) with the cartridge A in its place in the barrel, the links L in a parallel line with the breech-pin J, and held firmly in their place by the finger-lever F, forming a strong brace to resist the backward pressure or force of the explosion, and spring S on the end of the breech-pin, with a strong hold of the flange of the cartridge, by which it is withdrawn or retracted after the discharge of the gun, on the repetition of the first motion, and thrown out of the lock-frame by the carrier-block as it rises with the next charge, the top of the carrier-block having a peculiar construction, as shown in the drawings, adapted to effect this object, being curved out on the top near the rear end, as shown at *z z*, so as to strike the cartridge forward of the center, and thus raising the forward end, while the rear end is held down by the spring-catch, tripping it over, freeing it from the spring, and ejecting it with considerable force.

Having thus fully described my invention, what I claim therein is—

1. In combination with the hollow breech-pin N and the piston I, working through and with it, the giving of said piston additional end motion for the purpose of exploding the fulminate, substantially as described.

2. In combination with the hollow breech-pin and the piston working through it, the spring-catch and rest on the breech-pin, and the fillets on the piston, substantially as and for the purpose set forth.

3. In combination with the carrier-block C and the spring S, placed on top of the breech-pin J, the so forming of the top of said carrier-block near the rear end, as shown at *z z*, as to strike the cartridge forward of the center, and thus raising the forward end of the cartridge while the rear end is held down by the spring-catch, tripping it over and freeing it from the spring and ejecting it from gun, substantially as described.

B. TYLER HENRY.

In presence of—
JAMES N. BATES,
JAMES H. CONKLIN.