

C. M. SPENCER.  
Magazine Fire-Arm.

No. 45,952.

Patented Jan. 17, 1865

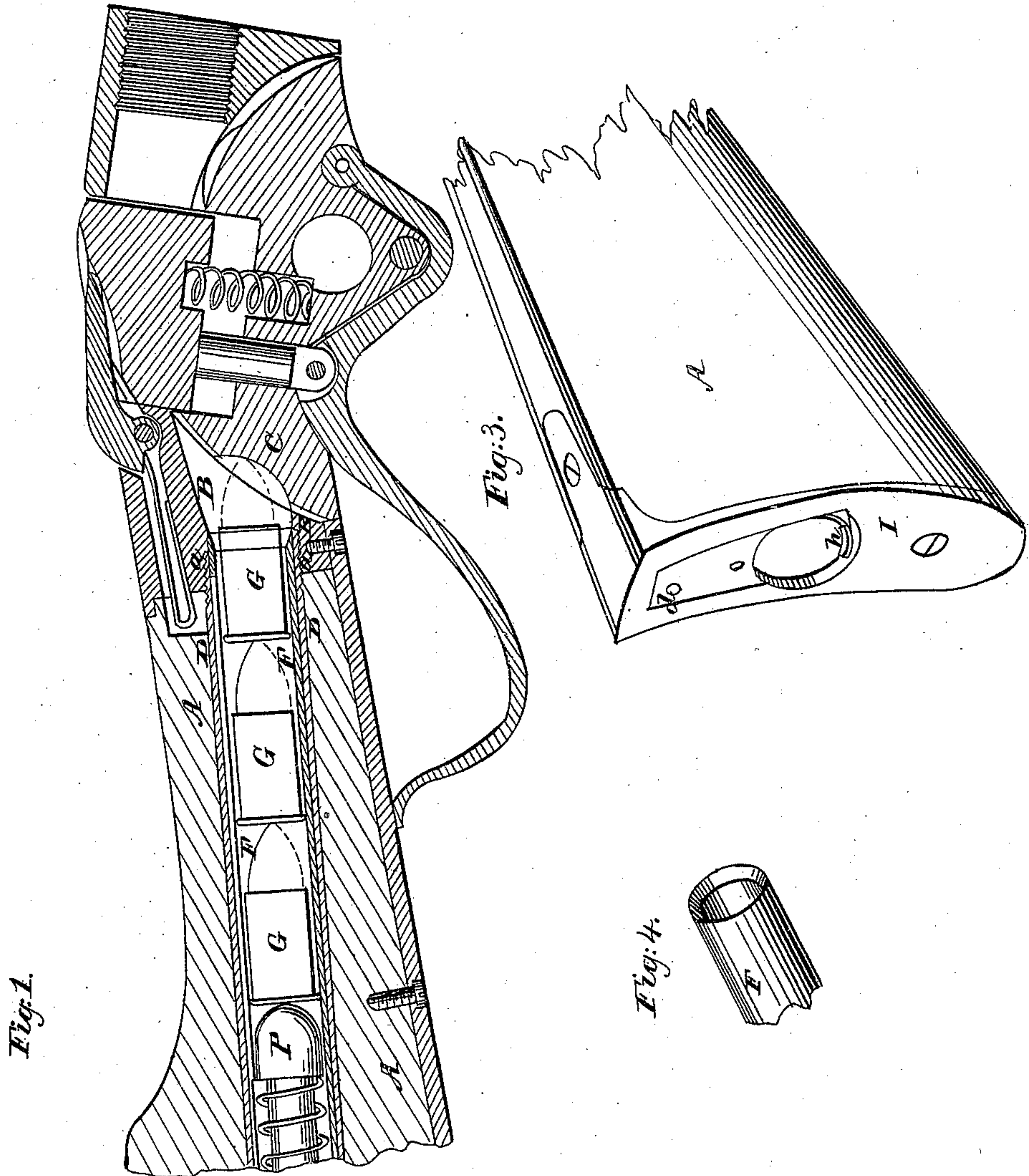


Fig. 1.

Fig. 3.

Fig. 4.

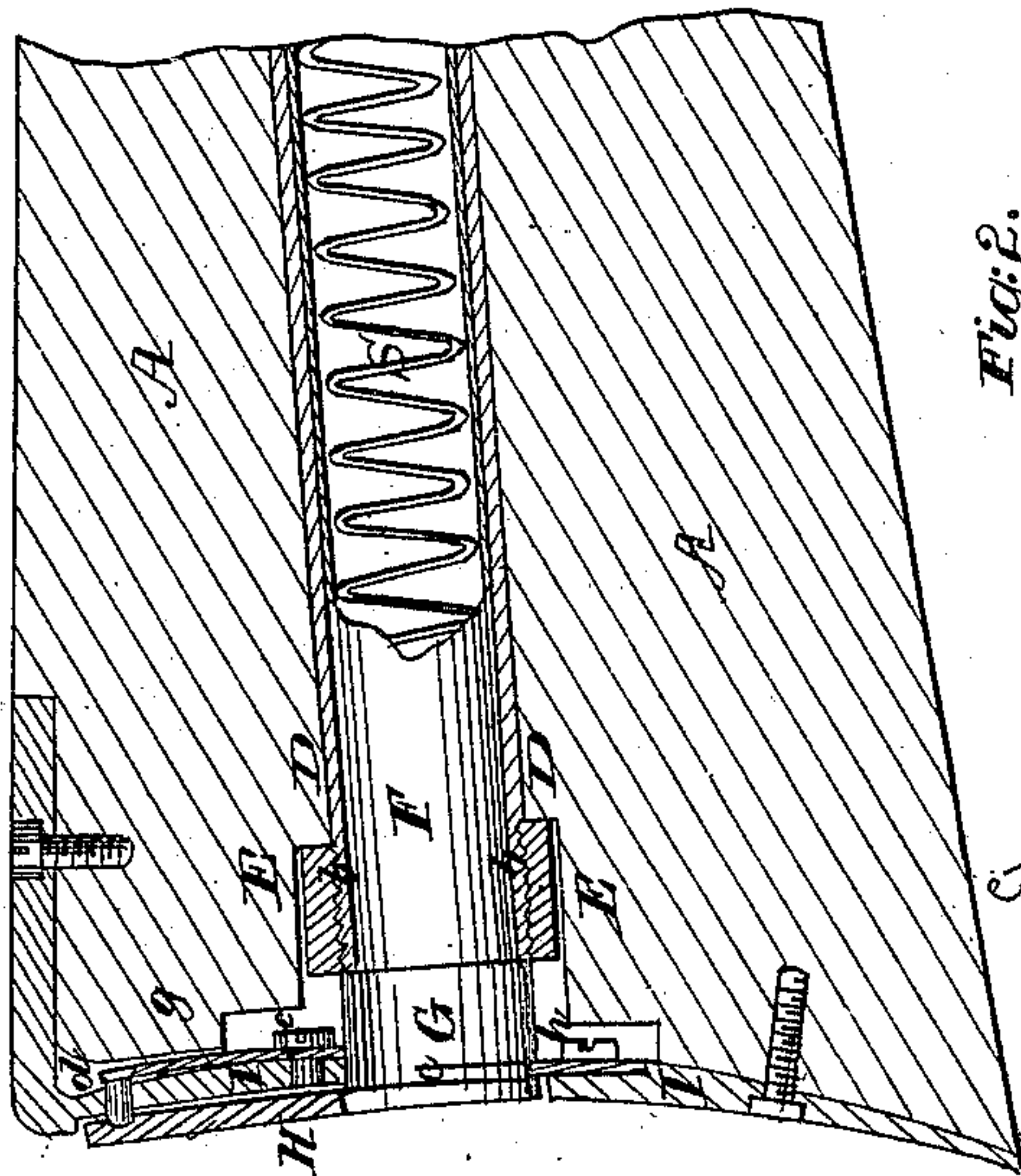
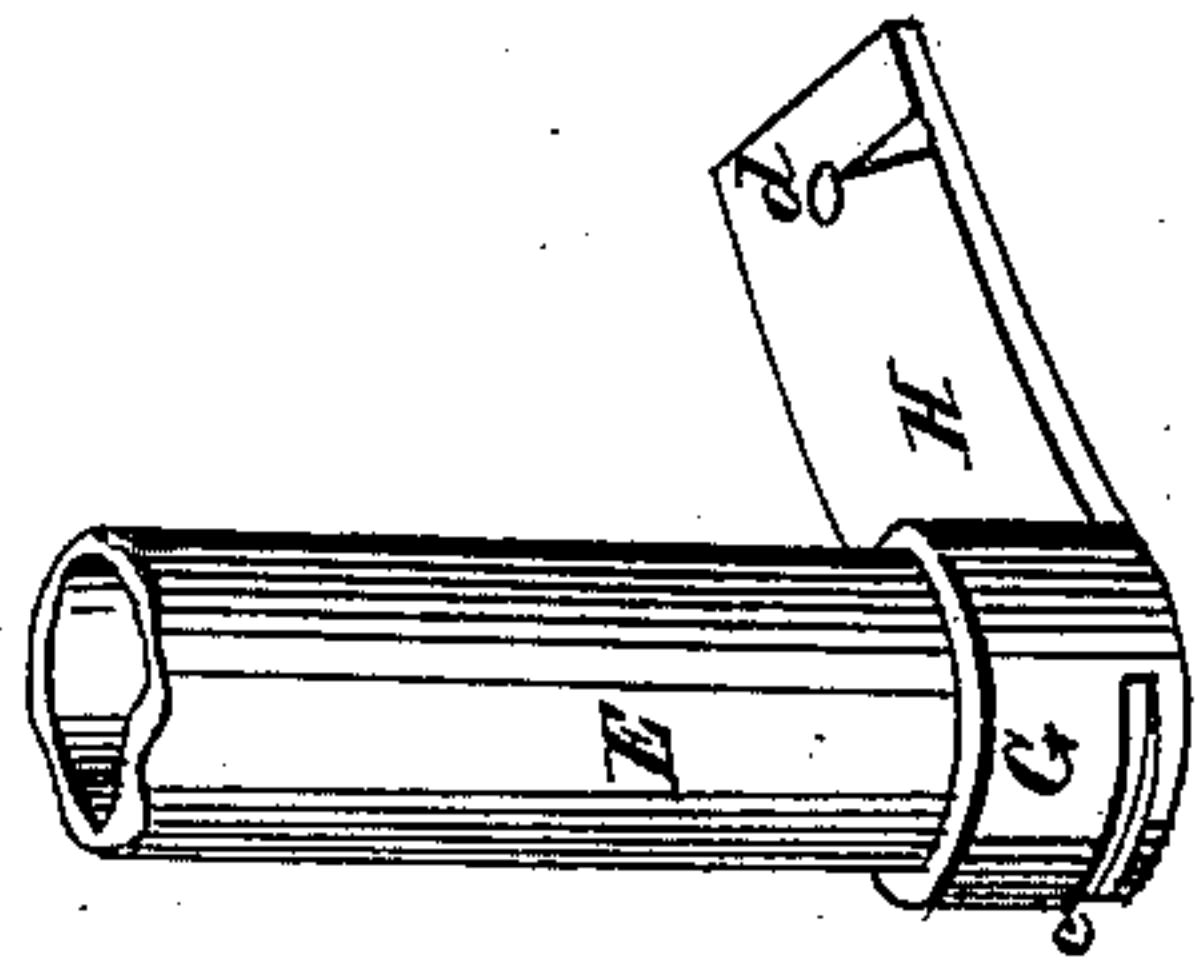
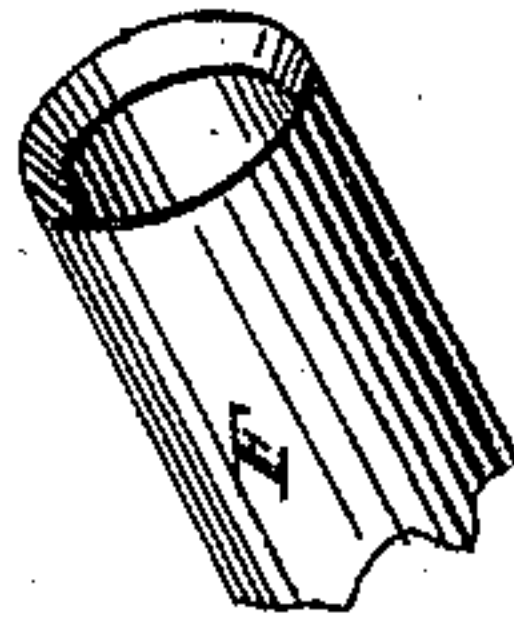


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SELF-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 45,952, dated January 17, 1865.

*To all whom it may concern:*

Be it known that I, CHRISTOPHER M. SPENCER, of the city of Boston, in the State of Massachusetts, have invented a new and Improved Magazine for Repeating Fire-Arms; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the stock and receiver, showing the magazine in place and in its relation to the breech mechanism. Fig. 2 is a perspective view of the rear portion of the inner tube of the magazine, showing the locking-plate and groove. Fig. 3 is a perspective view of the rear end of the stock, showing the hole in which the inner tube of the magazine is introduced and the arrangement for locking it in place when inserted. Fig. 4 is a perspective view of the forward end of the inner tube of the magazine.

The same part is marked by the same letter wherever it occurs.

The nature of my invention consists in the use, in the stock of a repeating fire-arm, of a magazine for fulminating cartridges, and also in improvements in the construction of the magazine, the mode of the insertion and locking of its inner tube, its attachments, its operation, and the peculiar construction and operation of its plug or plunger P, all as hereinafter more particularly set forth.

The great desideratum in a repeating fire-arm has been so to locate the magazine that the reserve cartridges should be protected against all danger of explosion. This end is accomplished in the construction of my magazine, herein described, in an effectual manner. The cartridges have a double sheathing of metal strongly incased in wood, presenting as formidable an obstacle against external force as does the barrel itself. They are believed to be even less liable to premature explosion from accidental causes than is the single paper cartridge in the chamber of an ordinary gun, although the fulminating or exploding cartridges which I use are more liable to accidental explosion than such paper cartridges.

To enable others skilled in the art to make and use my improved magazine, I will pro-

ceed to describe its construction and operation, referring to the drawings, on which—

A marks the stock of the gun; B, the receiver, or that portion of the frame in which the breech operates; C, the compound breech, constructed after the manner described in the specification of my patent of the 29th of July, 1862, (reissued April 12, 1864.) D marks the outer tube of the compound magazine, which has a screw-thread, *a*, at its forward end and a similar thread, *b*, at its rear end. This tube, which I prefer to make of brass, passes longitudinally through the stock, as shown in Fig. 1, but is not inserted on the central line of the stock, but on a line slightly inclined to the left, and enters the receiver on that side, so as to leave ample room on the right of its forward end for the insertion of the lock of the piece.

The forward end of tube D is screwed into the rear end of the receiver, and its rear end receives a nut, E, which, screwing down upon a shoulder in a recess made in the rear end of the stock, makes the tube D serve as a very efficient means of strengthening the stock, and also of securing it firmly to the breech portion of the gun.

The forward end of tube D opens into a recess in the piece C of the breech, against which the points of the cartridges G G in succession rest on their way to the chamber of the gun.

F marks the inner tube of the magazine, which is made of steel, and of such size as to slip easily into the outer tube, D. The forward and open end of this tube F is beveled or chamfered on its inner side, in the manner shown in Fig. 4 in view and in section in Fig. 1. A long slot, *k*, is cut in the side of this tube, into which a pin or button from the plug P projects, by means of which the plug can be retracted and held back at pleasure.

The plug P is impelled forward by the force of the spiral spring S, whose fixed end is attached in the rear or closed end of tube F. This tube has on its rear end a cap, G, which has an arm, H, which serves, in connection with other devices, as a means of locking the tube to the stock when in place.

A portion of the cap G (not shown in the drawings) is cut away to allow it to pass the



catch *c*, so that the tube F may be completely inserted before the arm H is turned to lock the tube in place.

A channel, *c*, is cut in the periphery of the cap G of tube F, as seen in Figs. 1 and 2, and this channel in certain positions of tube F engages with a pin or catch, *h*, Figs. 1 and 3, which holds the tube F securely in the stock.

The arm H of the tube F has the cavity *d* and groove *e* on its inner face. The groove receives the rounded end of a pin, *d'*, which projects through the metal strap I on the back of the stock, and is attached to and impelled outward by a spring, *g*, attached to that strap by screw *f*, in the manner shown in Fig. 1. The groove guides the pin *d'* into the recess *d*, where it holds the arm H and prevents it from moving laterally while locked.

The plug P, which drives the cartridges forward, is rounded on its front end, as shown, so that it comes in contact only with the central part of the rear end or base of the cartridge. The points of the balls also act on the same point of the cartridges against which they are held.

The operation is as follows: When the magazine is to be loaded the inner tube is unlocked and withdrawn from the stock. The cartridges are then dropped into the tube D, with the points toward the receiver, until the requisite number is introduced. The inner tube, F, is then inserted, and, by reason of the chamfer on the inner side, passes readily over the cartridges, the plug P being pressed back by them till it occupies the extreme rear of tube F. Tube F is then locked by turning the arm H until the groove *c* engages with catch *h* and the pin *d'* passes into recess *d*, when the arm is ready for use.

There are various advantages resulting from my method of construction which are not secured, so far as I am aware, in any other breech-loading repeating-arm. Some of these I will now proceed to point out:

First. But for the chamfer on the inner side of tube F it would not pass over the cartridges in tube D, and the magazine would have to be loaded by retracting the plug and dropping the cartridges into tube F, and then inserting that tube into the stock—a very inconvenient method, as by the slipping of the plug from the finger the cartridges are liable to be scattered and lost, or thrown into the outer tube prematurely, when they would have to be taken out for a repetition of the operation.

Second. It has been objected to the use of self-exploding cartridges that there was great danger of their accidental explosion; but it will be observed that the fulminate or explosive composition being placed in the periphery of the flange of the cartridge, and not in the center, by the rounded form of the plug P, it can only touch in the center of the base of the cartridge, as shown in Fig. 1, and thus all danger of explosion by blows upon the butt is avoided. The plug, also, being constantly

pressed up against the cartridges by the spring S, all jarring or jolting, which might cause explosion, is prevented.

Third. The security of the cartridge from accidental discharge by blows from without the magazine—such as the striking of a ball, &c.—is obtained, first, from the wood of the stock surrounding the magazine, and, second, from the double thickness of metal provided by the tubes D and F, the former of which may be as thick as may be thought desirable.

Fourth. In arms which have the magazine under the barrel the weight supported by the hand is continually changing as the cartridges are discharged, and the aim is consequently liable to be disturbed, owing to the length of the leverage at which the changing weight operates. In the arm herein described this disadvantage is almost entirely obviated by reason of the nearness of the weight to the shoulder.

Fifth. In arms of the former class, when they are carried by cavalry with the muzzle downward, the cartridges rest upon the spring, and by the jolting resulting from the movements of the horse are liable to be destroyed. In my arm, on the contrary, when carried in the same position, the cartridges rest upon a solid support, and the spring presses them down upon it, and no such liability exists.

Sixth. The reserve cartridges are much more effectually cut off from the danger of being ignited by the flash of the discharged cartridge, in case there should be any leakage of gas, inasmuch as they are separated from the chamber of the gun where the discharge occurs by the entire thickness of the compound breech and by the length of the ball. They are also free from any danger arising from the heating of the barrel by repeated rapid discharges.

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

1. The compound magazine inserted in the stock of the piece, and consisting of two metallic tubes, constructed and operating substantially in the manner described.

2. In a double-tube magazine, chamfering the inner side of the forward end of the inner tube, F, in the manner and for the purpose described.

3. The arrangement of the groove *c* and catch *h* for conjoint operation, as specified.

4. The combination and arrangement of the cap G, arm H, recess *d*, and pin *d'*, substantially in the manner described.

5. The combination of the receiver B, tube D, nut E, and stock A, in the manner and for the purpose set forth.

The above specification of my said invention signed and witnessed at Boston this 27th day of April, A. D. 1864.

CHRISTOPHER M. SPENCER.

Witnesses:

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