

C. C. TERREL.

Machine Gun.

No. 14,215.

Patented Feb. 5, 1856.

Fig. 1.

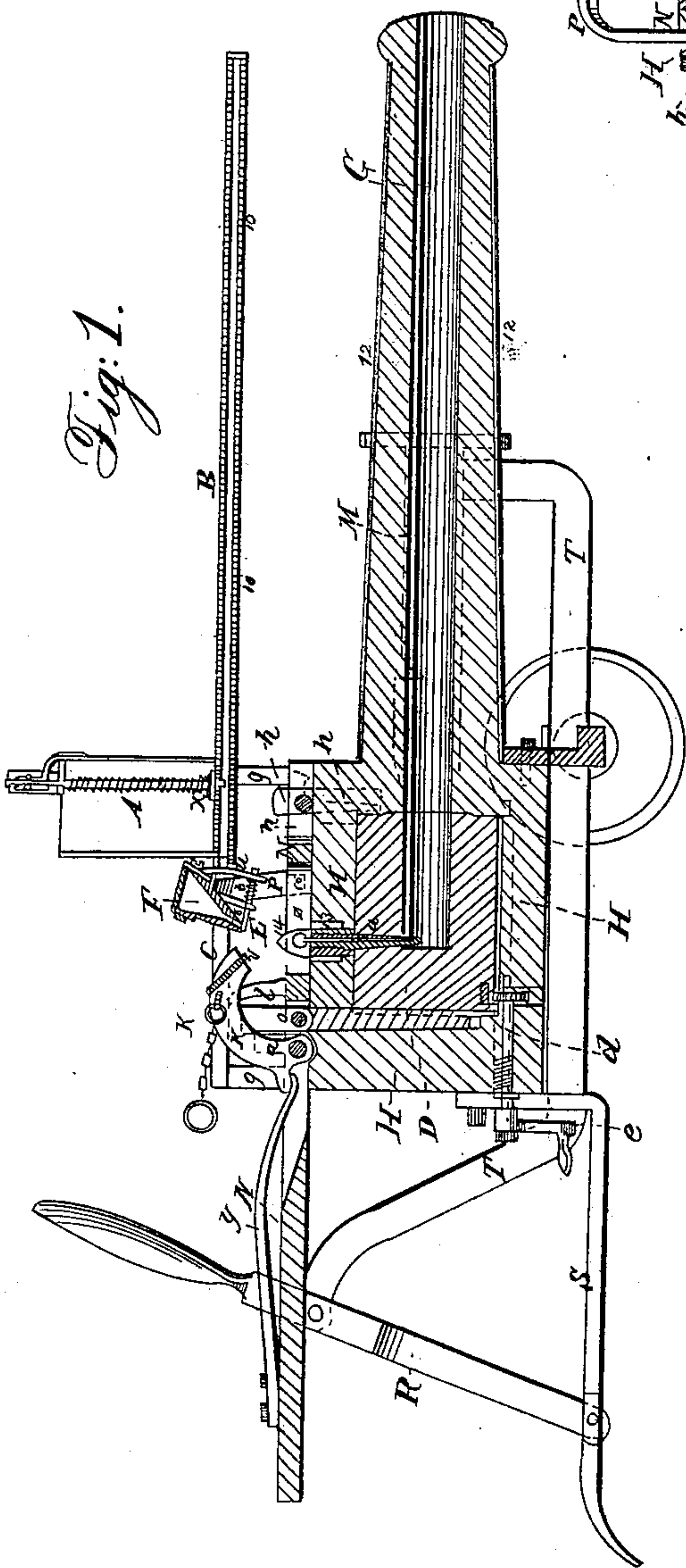


Fig. 2.

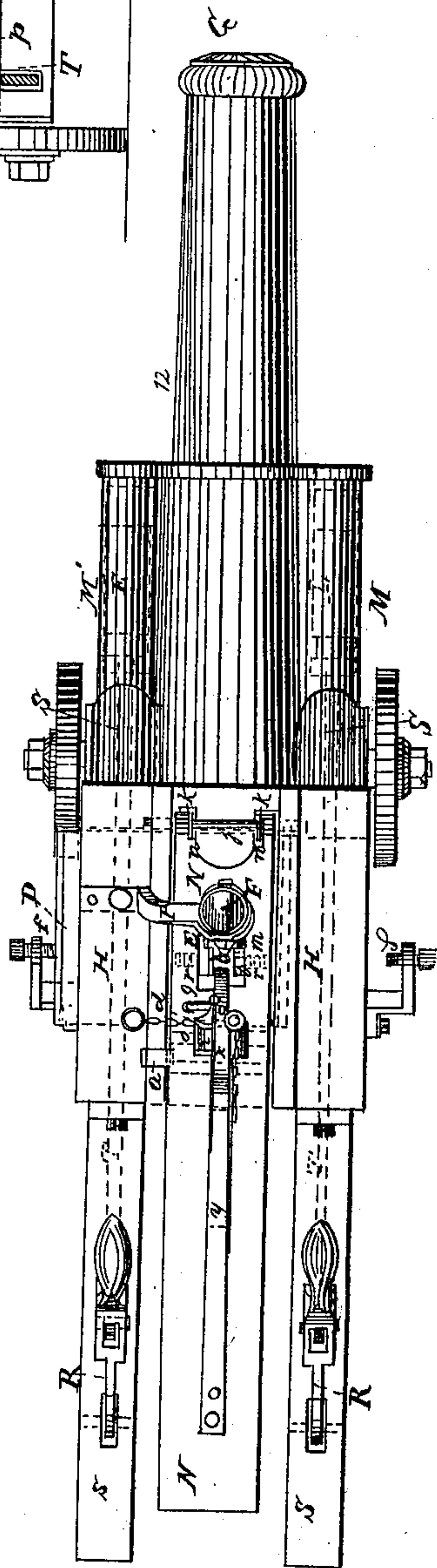
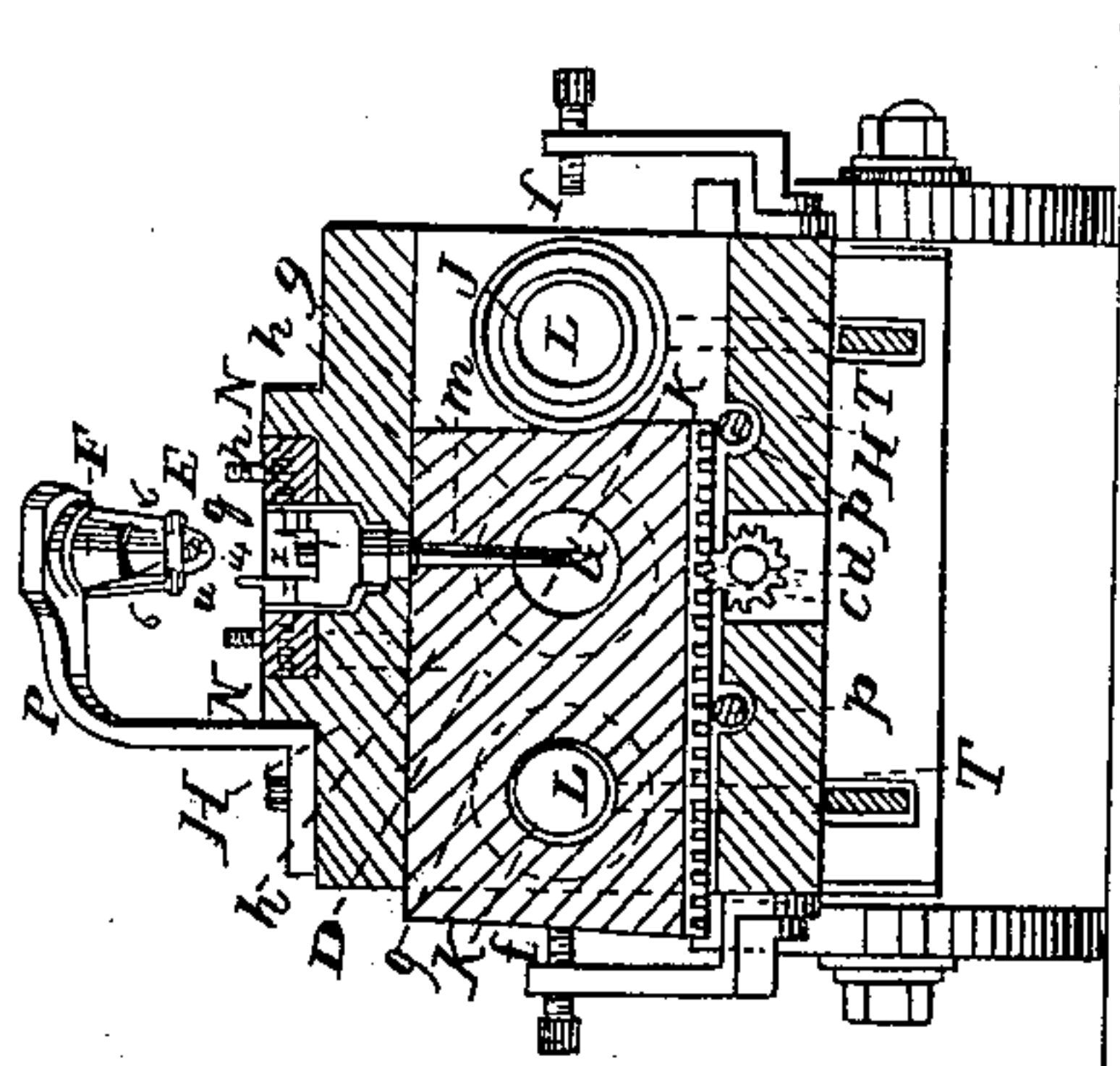


Fig. 3.



UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MANY-CHAMBERED BREECH-LOADING CANNONS.

Specification forming part of Letters Patent No. 14,215, dated February 5, 1856.

To all whom it may concern:

Be it known that I, CHARLES C. TERREL, of Shullsburg, in the county of La Fayette and State of Wisconsin, have invented certain new and useful Improvements in Repeating Ordnance; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of a cannon constructed according to my invention. Fig. 2 is a plan of the same, having the cooling-reservoir A and pipes B C shown in Fig. 1 taken away to leave other parts exposed to view. Fig. 3 is a transverse vertical section of the same through the two-chambered sliding breech D. Fig. 4 is a plan of the sliding valve E of the priming-magazine F.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in certain means of supplying the priming from a magazine.

It further consists in a certain method of applying the hammer, trigger, and mainspring, in connection with the means of effecting the connection and disconnection of the breech and the barrel.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

G is a single barrel, which is cast with, or otherwise firmly attached to, a strong frame, H, which has an opening transversely through it to receive the two-chambered sliding breech D, and which has an opening, J, (see Fig. 3,) on each side of the barrel, through which to load one of the two chambers K K' of the breech, while the other chamber is in line with the barrel in condition for firing, the loading to be effected either by hand or by rammers L L', working in cylindrical magazines M M', arranged in front of the breech-frame H, one on each side of and parallel with the barrel, the charge being in a cartridge. A transverse movement of the breech D brings each chamber alternately in line with the barrel, and the other one at the same time in line with one of the magazines M M'.

In order to prevent an inconvenient degree of friction, rollers *p p* are arranged in the bot-

tom part of the breech-frame to support the breech.

The transverse movement of the breech may be effected in the manner shown in the drawings—that is to say, by a rack, *b*, attached to the bottom of the breech, and a pinion, *c*, on a shaft, *d*, which works in suitable bearings in the bottom of the breech-frame, and is provided with a hand-crank, *e*, (see Fig. 1,) by which to turn it; or the said movement may be effected by a brake-lever arranged over the breech-frame H, and having arms to connect with or bear against opposite sides of the breech; or it may be effected by other mechanical appliances, the length of the said movement being in all cases controlled by stop-screws *f f'*, or their equivalents, to stop either of the two chambers exactly in line with the barrel.

Besides the above transverse movement, the breech has a slight movement backward and forward from and to the barrel, on account of its being provided with projecting faces *g g* around the front of each chamber, whose edges are beveled, as shown in Fig. 1, to form short conical plugs to drive tightly into a recess of corresponding form around the rear opening of the barrel for the purpose of making a perfectly tight connection between the chamber and the barrel, the backward movement being necessary after each discharge to admit of the transverse movement which removes the discharged chamber away from and brings the newly-charged chamber in line with the barrel, and the forward movement being necessary to bring the chamber up tight before the discharge.

The backward and forward movements are effected, the former by two toes, *h h*, working through openings in the top of the breech-frame, and the latter by a wedge, *i*, all connected with a long lever, N, which I will term the "lock-lever," which is arranged to work up and down above the breech-frame on a fulcrum-pin, *j*, which connects it with the breech-frame. To this lever are also attached the hammer *k*, the trigger *l*, and what I term the "priming-tube" *m*. The priming-tube passes down through the vent of either chamber and right into the middle of the charge; and as this tube requires to be drawn up before the toes *h h* come into action on the breech high enough to

prevent its interference with the backward movement of the breech, the toes are not secured rigidly to the lever N, but are hung independently on the fulcrum-pin *j*, so as to allow the rear end of the breech to be raised up from the top of the breech-frame, where the lever rests when the piece is in condition to be fired, high enough to withdraw the priming-tube sufficiently before moving the toes, and after the partial withdrawal of the priming-tube two shoulders, *n n*, on the lever come in contact with portions of the toes above the fulcrum, and the continued upward movement of the lever causes the lower parts of the toes to be thrown back against the breech to drive it back. The wedge *i* hangs on a pivot, *o*, from the lever, and works between the rear of the breech and back of the breech-frame H, from whence it is drawn out as the lever is thrown upward, being forced back again when the lever is pulled down after the transverse movement of the breech, and driving the breech hard up to the rear of the barrel. The lever N, when pulled down, is secured by a spring-catch, *a*, on the top of the breech-frame.

The lever is intended to be held up by one of the necessary attendants during the time the transverse movement of the breech is performed by another or others, and the toes at that time form a guide to the said transverse movement.

The priming-tube, of which that part entering the breech is made of conical form, is screwed into a stirrup, *q*, which is suspended by two pivots, *r r*, from within an opening, *z*, in the lever N, and on one side of this stirrup is an inclined projection, 14, which, when the lever N is raised, comes in contact with the part *s* (see Fig. 4) of the sliding valve E of the priming-magazine F, and with a wedge-like action forces forward the said valve and allows of the escape of one of a number of detonating pills from the said magazine into the cup formed in the mouth of the priming-tube, which by the time the valve is open is close under the mouth of the magazine.

The stirrup is held steady during the opening of the magazine by the lower part of the priming-tube remaining within the opening 13 in the breech-frame, through which it works. As the lever is lowered the slide-valve is closed to prevent the escape of more than one pill by a spring, *t*, coiled around its stem.

The form of the slide-valve is best shown in Fig. 4, in which figure two slots, 5 5, are shown, which work on two guide-rods, 6 6, (see Fig. 3,) which are secured in the standard P which supports the magazine. Another guide, *u*, in which the stem of the valve works, is secured to the front of the magazine.

The detonating pill is exploded at the proper time, after the lever N has been brought down to its lowest position and locked by a spring-catch, *x*, by the hammer *k*, which is pivoted to the lever N, said hammer being provided with a pin, *v*, to strike right into the pill.

The hammer is held up by means of the spring-trigger *l*, which is attached to the lever and works laterally to the hammer, and it is actuated to explode the pill by a mainspring, *y*, secured to the lever.

The rammers L L' are operated by means of levers R R', which work on fulcrum 7 7, secured in the trails S S of the piece, and are connected by means of curved rods T T with the rammers, the said rods passing through slots provided for them in the bottom of the magazines. These rammers may have swabs attached to clean out the chambers. The cartridges are inserted in the magazines, one or more at a time, at openings 8 8, just in front of the breech-frame, at such period of time as the pistons shall be in the forward parts of the magazines. A cartridge is transferred from one of the magazines to its respective chamber by simply drawing back the lever R or R', according to the position of the breech relatively to the magazines.

As the mounting of ordnance on my plan needs not to be in any essential feature different from that in common use, no particular description of it is necessary.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Though I do not claim the invention of the wedge to force a movable chambered breech into connection with the barrel, I claim the combination of lock-lever N, the wedge *i*, and the toes *h h*, in any manner, substantially as described, for the purpose of forcing up and drawing back the breech to and from the barrel.

2. The priming-tube *m*, combined with the stationary priming-magazine F, to take a new priming therefrom every time the position of the breech is changed, by attaching it to the lock-lever N, and furnishing it with a wedge or inclined projection, 14, to open the valve of the magazine when the lever is raised to unlock the breech, substantially as herein directed.

3. The combination and arrangement of the hammer, trigger, and mainspring with a lock-lever, N, which is employed to lock and unlock the breech to and from the barrel, substantially as herein set forth.

C. C. TERREL.

Witnesses:

J. Y. BUCKLEY,
WM. TUSCH.