T. C. RICE.

Breech-Loading Ordnance.

No. 34,266. Patented Jan 28, 1862.

Fig: 1.

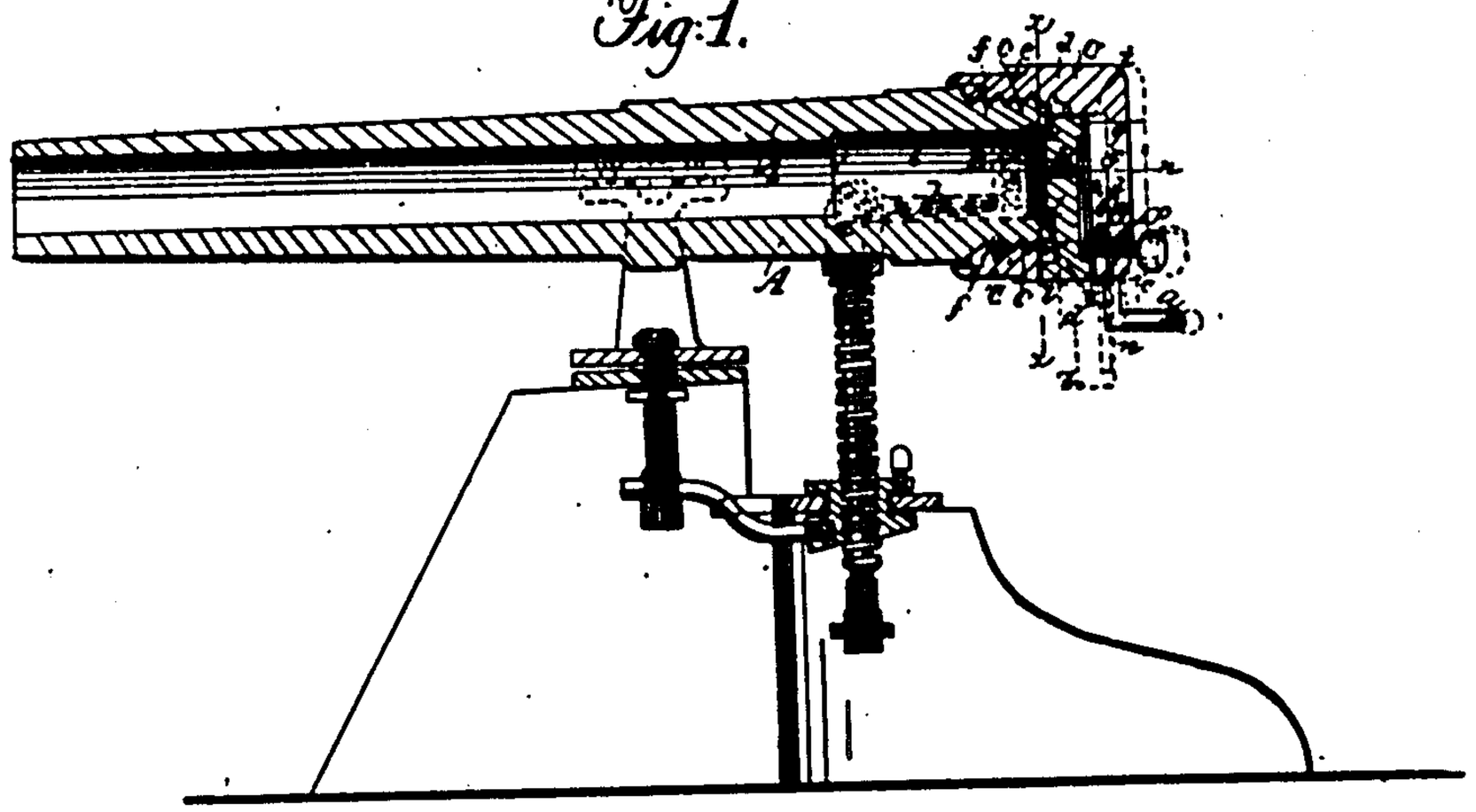
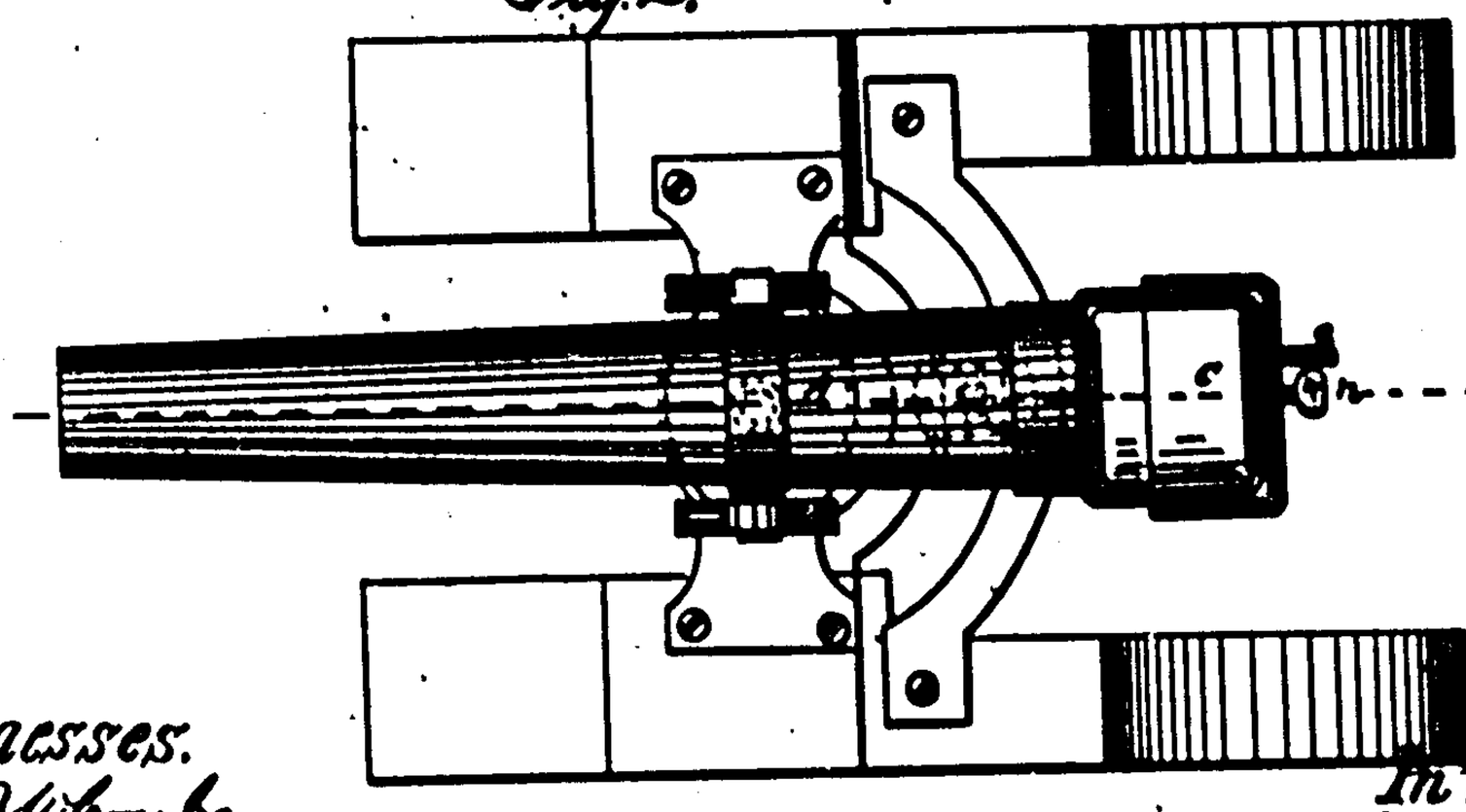


Fig. 3.

Fig: 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

T. C. RICE, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. **34,266**, dated January 28, 1862.

To all whom it may concern:

Be it known that I, T. C. RICE, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading Ordnance and Fire-Arms; 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 longitudinal central section of a cannon with my improvement, representing also part of the carriage and the traverse and elevating mechanism. Fig. 2 is a plan of the same. Fig. 3 is a transverse section of the cannon in the plane indicated by the line *x x* in Fig. 1.

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

A is the body or barrel of the gun, bored throughout, and counterbored from the rear as far as *a*, Fig. 1, to receive the metal cartridge *b*, both the powder and the projectile, and counterbored again still larger for a short distance, as shown at *c* in Fig. 1, for the reception of the flange provided round the rear of the cartridge-case, and the circular boss *d*, which projects from the face of the slide B, and which is made to fit to the said counterbore *c*.

C is the ring or open cap, having in the front part of its interior a female-screw, *e*, to screw onto a male screw, *f*, cut on the exterior of the rear portion of its body. The opening *g*, provided in the cap C, in rear of the female screw *e*, is much smaller than the interior of the said screw, being only just large enough for the flange of the cartridge to pass easily through it. The said cap has cut in it, from one side right across the opening *g*, the mortise *i*, for the reception of the slide B. This mortise is parallel-sided, and is sufficiently wider than the opening *g*, and extends sufficiently beyond the said opening, to form all round the said opening a good shoulder, *j*, to support the slide against the force of the explosion of the charge, acting in a rearward direction, and it is finished on the opposite side of the opening *g* to that at which it enters the cap in a circular form, as shown in Fig. 3, in which the form of the said mortise is shown in dotted outline; and in the front of the said mortise, on that side of the cap at which the slide enters, there is a parallel-sided recess, *h*, (through which the section, Fig. 3, is taken,) wide enough and deep enough for the boss *d* of the slide B to pass through. The slide B is made to fit the said mortise. Its face has projecting from it, beside the boss *d*, a piece, *l*, (see Figs. 1 and 3,) of suitable form to close the recess *h*, for the purpose of excluding dirt and moisture when the slide is closed. Its back is perfectly flat, with the exception of its having a shallow longitudinal groove, *m*, extending nearly its whole length, for the reception of the point of a small screw or pin, *p*, which is inserted through the rear of the cap, to prevent the slide from dropping entirely out of the cap when the latter is unscrewed far enough on the screw *f* to allow the slide to work freely in the mortise *i*. The vent *n* is drilled through the slide in the center of its boss *d*. The cap is furnished with a handle, *q*, by which to turn it upon the screw *f*.

The operation of the breech for loading is as follows: The slide B has three movements—viz., a circular movement, and a movement back and forth with the cap C, and a longitudinal movement in the mortise of the cap. A half-turn of the cap backward upon the screw *f* draws the boss *d* from the counterbore *c* of the body, and another half-turn brings the entrance of the mortise to the lower side of the breech, and permits the slide to drop out of the mortise (as shown in red outline) as far as permitted by the length of the groove *s*, the inner end of which comes in contact with the stop-pin *p*, and this is far enough to permit the cartridge to be inserted through the opening *g* of the cap into the counterbored chamber *a*. A half-turn of the cap in a forward direction brings the entrance of the mortise to the top of the breech and permits the slide to drop back again into the mortise in front of the opening *g*, and with its boss *d* opposite the counterbore *c*, and another half-turn of the cap carries the slide forward with it and forces the boss *d* into the said counterbore and closes the breech tightly, the flange of the metal cartridge-case forming a packing and preventing the escape of gas. When the gun has been fired and the breech opened, the cartridge-case can be withdrawn by a suitable instrument and the gun may be reloaded. The

firing may be effected by a common friction-tube, the string being inserted through a hole, *r*, provided for it in one side of the cap C.

The same construction of the breech may be adapted to breech-loading rifles as well as to ordnance. For heavy ordnance the cap C may be turned by any suitable simple machinery. The slide may be worked by hand or by suitable mechanism, instead of being made to drop into and from its place, as described, and the breech may be made to open and close with less than a whole turn of the cap.

I will remark that I consider this combination of the slide with the ring or cap, screwing onto the exterior of the body of the gun possesses the advantage over the slide and hollow male screw used in Armstrong's breech-loading gun of making a much stronger breech and being less likely to get out of order.

I disclaim the invention of the screw-ferrule or sleeve described in Patent No. 23,378, for closing the joint between the breech and barrel.

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

The combination of the slide B with the screw-cap C and barrel A, substantially in the manner herein shown and described.

T. C. RICE.

Witnesses:

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ALFRED M. GIBBONS.