J. R. N. OWEN.

BREECH-LOADING ORDNANCE.

No. 176,884. Patented May 2, 1876.

Fig. 1.

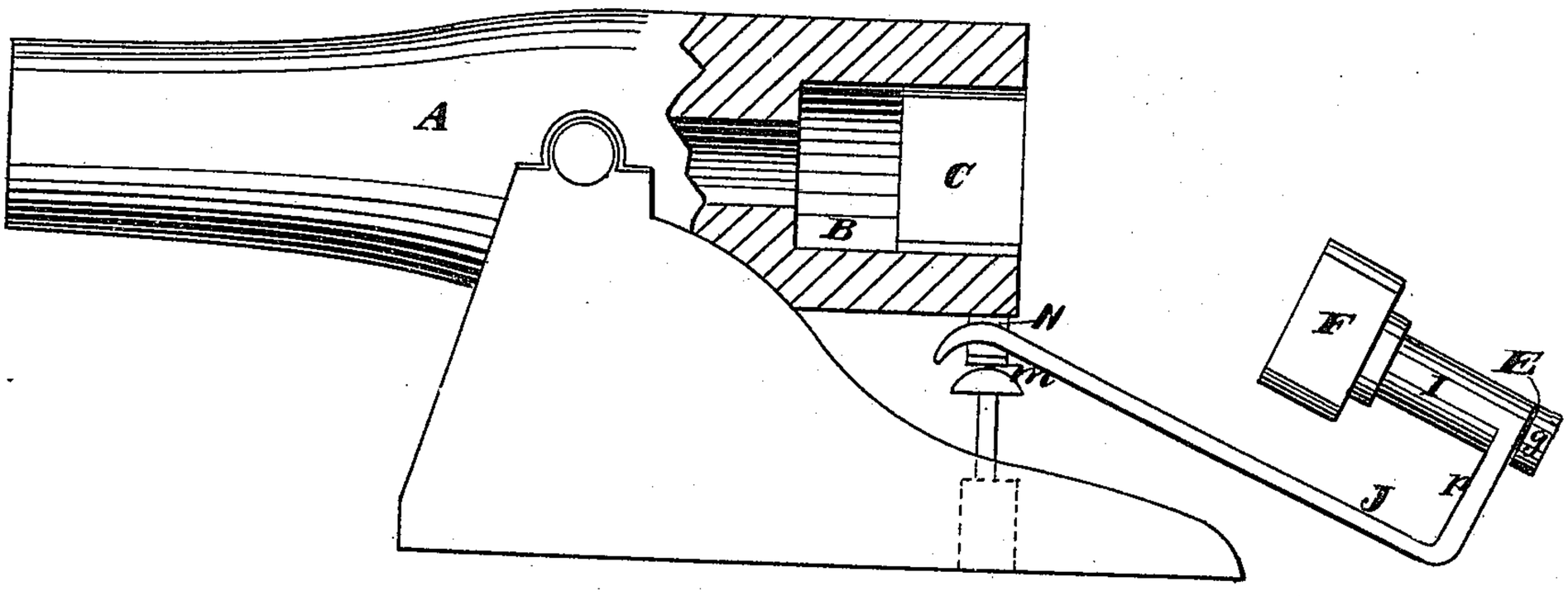


Fig. 2.

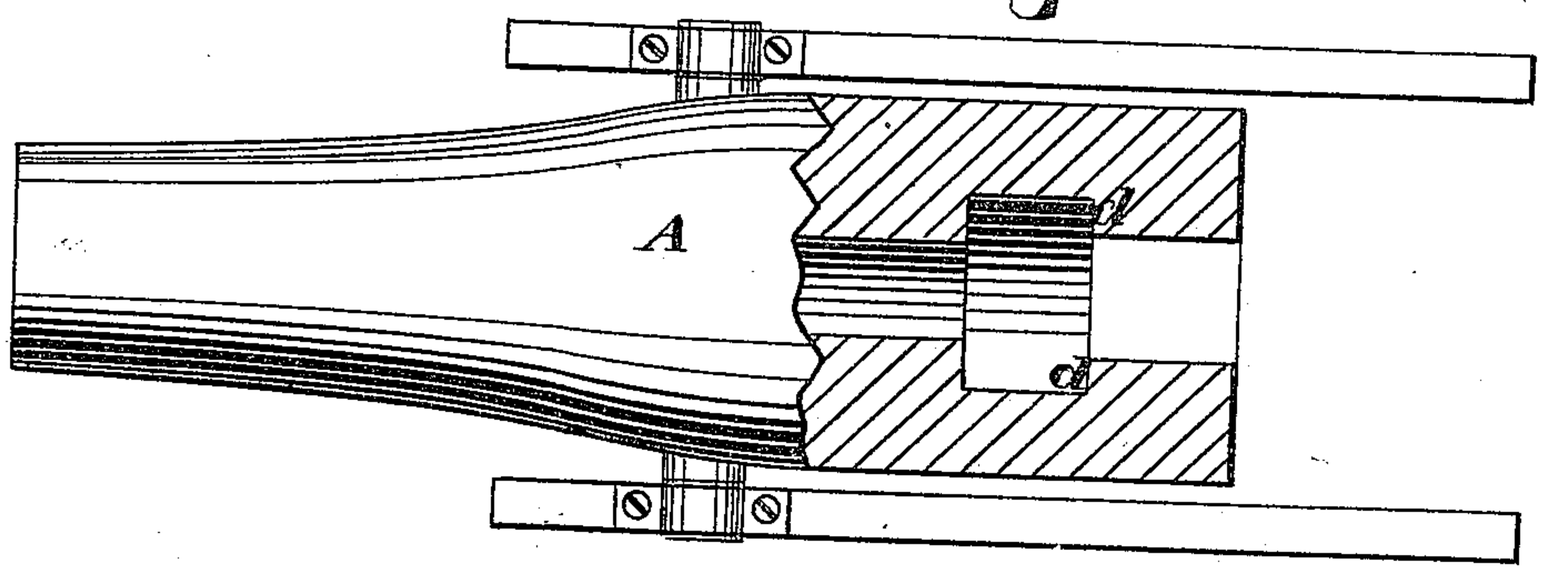
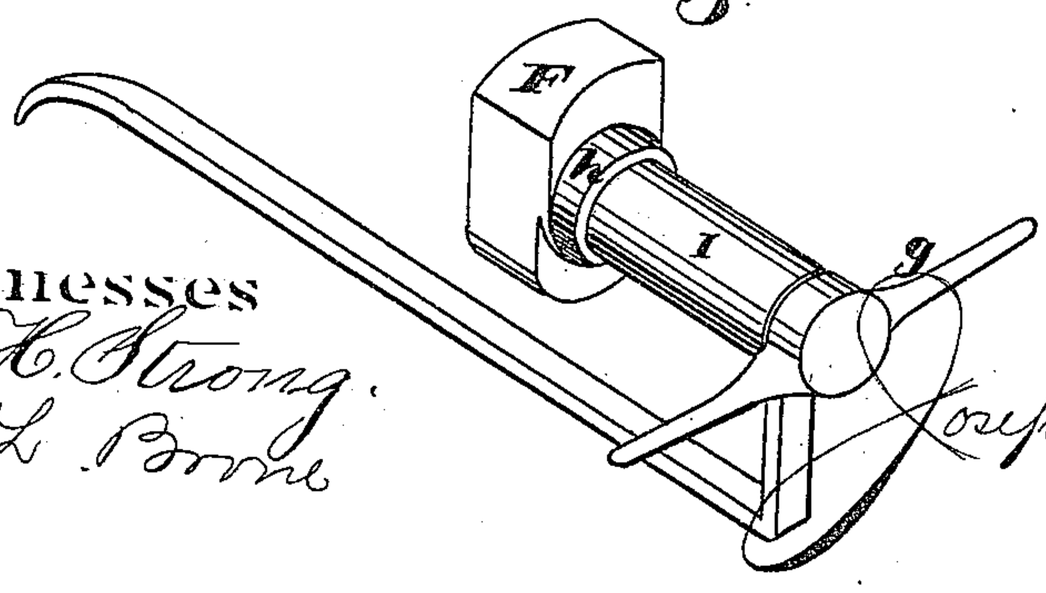


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH R. N. OWEN, OF HAMILTON, NEVADA.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. 176,884, dated May 2, 1876; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, JOSEPH R. N. OWEN, of Hamilton, White Pine county, State of Nevada, have invented an Improved Breech-Loading Cannon; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

This invention relates to an improved arrangement or device for loading cannon of all kinds through the breech; and it consists of a peculiar interior configuration of the breech of the gun, together with a breech-key, so shaped as to enter the breech by a direct movement from the rear, and then by a quarter-turn close and lock the same securely.

In the accompanying drawings, A represents a cannon having any desired construction of barrel and bore. The breech arrangement consists of a key-chamber, B, at the base of the bore and key-slot C. The key-chamber is a cylindrical space formed within the breech of the gun immediately behind the powder-chamber, with its axis coincident with that of the bore. Its transverse diameter is much greater than that of the bore, and its axial depth should be sufficient to accommodate a block of metal capable of resisting effectually the rearward impact of the charge when the gun is fired. The angular recesses within this chamber should be rounded in slightly for obtaining greater strength along those lines. The key-slot C is an oblong opening leading directly through the cascabel at the rear end of the gun along its axis into the key-chamber. Its length or greater diameter, which, for obvious reasons, should be placed vertically, is precisely equal to the diameter of the key-chamber, while its width or lesser diameter is considerably less, though still a little greater than that of the bore. Its axial depth should be a little more than that of the key-chamber, about three times the diameter of the bore being deemed a fair and full allowance for the united depth of both chamber and slot. Where this slot enters the key-chamber two stout shoulders, *d d*, of solid metal are left, one on each side of the slot, with their faces looking forward into the chamber. These faces are finished by giving to each a true spiral inclination of a low degree of pitch around the axis of the chamber. The breech-key consists of a stout stem, E, carrying upon its front end an oblong solid head-block, F, which is fixed upon it transversely, while upon the other end is fastened transversely to the block a lever-handle, *g*, by which the key is moved and turned. For the sake of greater strength the stem and head-block should be wrought together in one solid piece of metal, preferably of steel, but the handle need only be keyed upon the stem. The head-block of the key is shaped to fit and fill the key-slot somewhat loosely, so as to pass easily through it, either into or out of the key-chamber.

The front face of the head-block is made plain and level; but its rearward face has a circular projection, *h*, rising from its central portion equal in diameter to the width of the block, from the center of which projection the stem E of the key rises. The surfaces of this face, nearer the ends of the block, are finished in true spiral inclines to correspond with the inclined faces of the shoulders in the breech, upon which they are made to glide and bind when the block is turned toward a transverse position in the key-chamber. These spiral inclines run out upon the sides of the central projection of this face without jogging or interfering with each other.

For a gas-check, where metal shells for the powder are not used, the bottom of the bore should be turned out so as to receive a ring of suitable metal, and the rearward edge of this ring should project very slightly into the key-chamber, so as to bear the impact of the front face of the head-block when the breech is strongly locked, but where metal shells are used each shell is made to serve that purpose. The thickness of the head-block in the axial direction is made to correspond with the axial depth of the key-chamber, so that when it is pushed home, and a quarter turn given to it, the inclined surfaces on its posterior face gliding upon those of the shoulders of the breech cause it to bind firmly in a fore and aft direction within the key-chamber, thus securely closing and locking the breech of the gun.

A guide or carrying frame is also herein illustrated, which is probably the most con-

venient and simple device for the purpose on guns of ordinary weight and caliber; but for very heavy guns a radical modification of this arrangement has been devised, and might be substituted with advantage.

This carrying frame consists of, first, a collar or a swivel-barrel, I, which embraces the stem E of the key over its whole length, from the head-block to the handle, so as to hold the key steadily while it turns freely on its axis in the collar; second, a slide or guiding stem, J, which is somewhat longer than the collar I, and which moves freely in and out under the gun on a friction-roller, *m*, which is secured in a bracket, N, fastened to the under side of the breech; and, third, an upright part, *p*, which connects the two preceding parts, and holds them firmly in position parallel with each other. The extreme front end of the slide E is curved downward like a claw, and should be so shaped as to catch upon the friction-roller when the slide is drawn backward to its full length, and prevent its complete separation from the bracket, while it allows the rear end, with the key, to drop down and rest upon the ground or hang upon the roller. In this position the gun is ready for loading, which may be accomplished very conveniently by means of a tray, with a very thick bottom, and a movable handle held loosely in a collar at its rear end. Upon this tray the charge is introduced into the breech through the key-slot, and then by means of the tray-handle, used as a rammer, pushed forward out of the tray and into the bore of the gun. The tray is then removed and the key lifted and pushed home, where by a quarter turn upon its axis it locks the breech, and the gun is ready for firing.

The firing may be effected by means of a percussion-needle through the axis of the key, as represented in the present instance, or by any other means that may be preferred.

In this application for Letters Patent I do not claim to embody any special device for carrying or handling the key, nor any method of preparing the charge or firing the gun; but

What I do claim, and desire to secure by Letters Patent, is—

1. The cannon A, provided with the key-chamber B at the base of its bore or powder-chamber, and having the key-slot or passage C leading from said chamber through the cascabel of the gun, in combination with the breech-block F, with its stem E and lever-handle *g*, all constructed, combined, and arranged to operate substantially as and for the purpose above described.

2. The cannon A, provided with the key-chamber B and key-slot or passage C, when the rear faces *d d* of the key-chamber are constructed on a spiral or incline, in combination with the breech or head-block F, with its corresponding spirally arranged or inclined rear faces, substantially as and for the purpose described.

JOSEPH R. N. OWEN.

Witnesses:

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CHARLES WRAY.