

(No Model.)

F. H. WILKS.
BREECH LOADING ORDNANCE.

No. 446,496.

Patented Feb. 17, 1891.

Fig. 1.

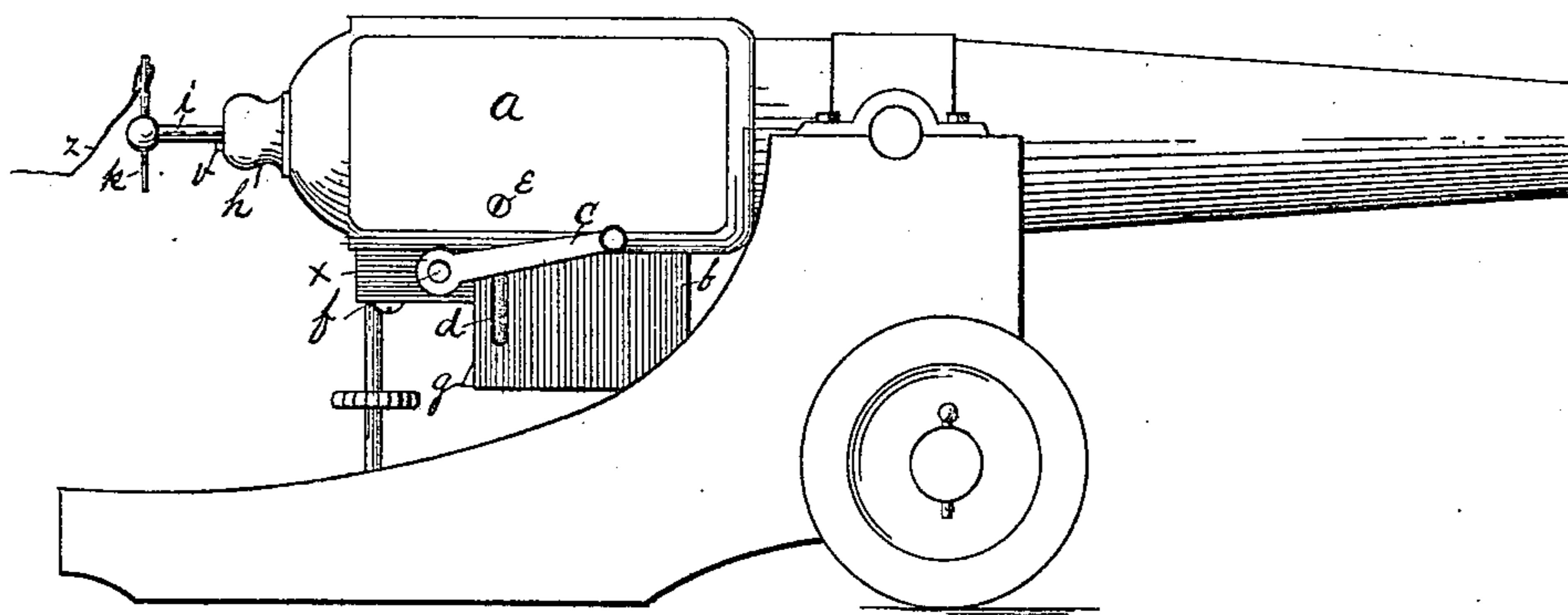


Fig. 2.

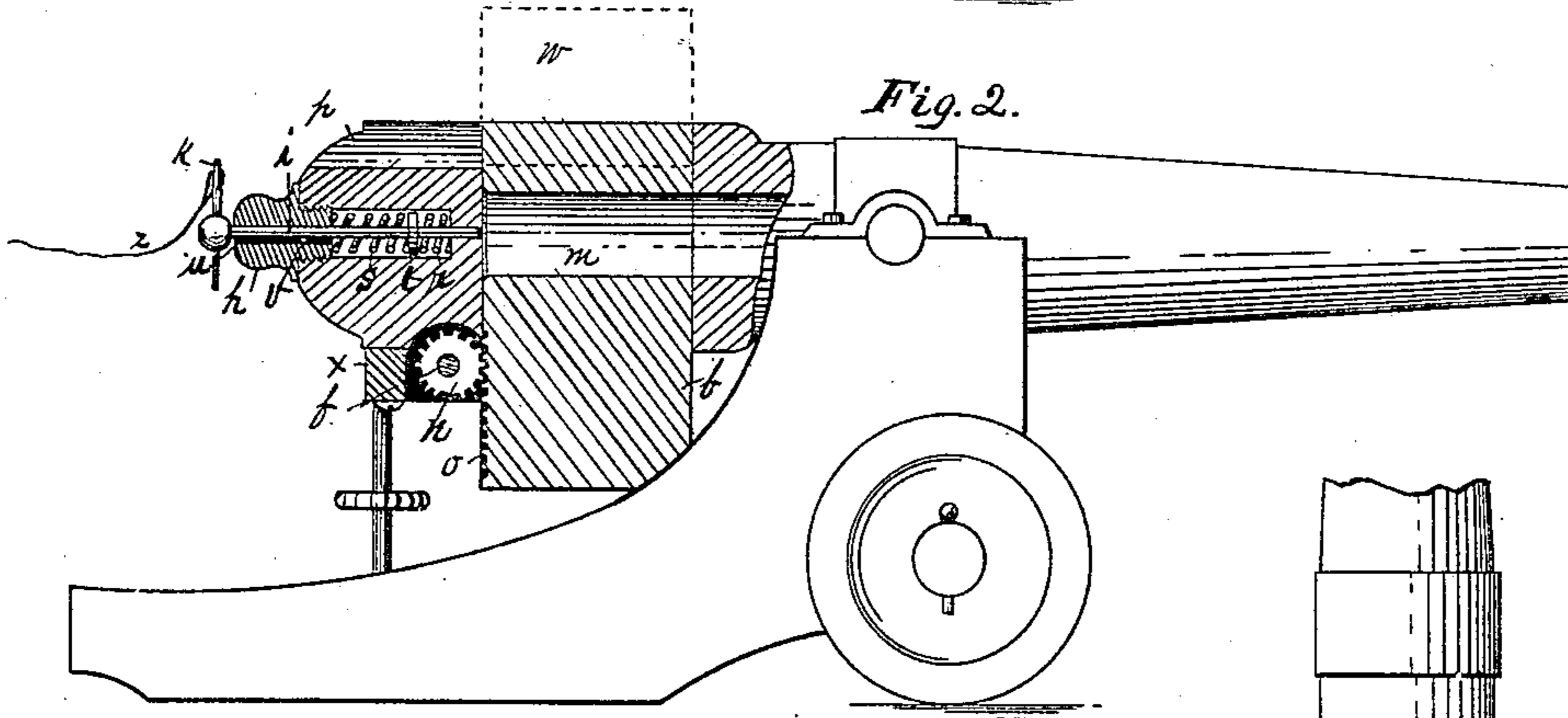


Fig. 4.

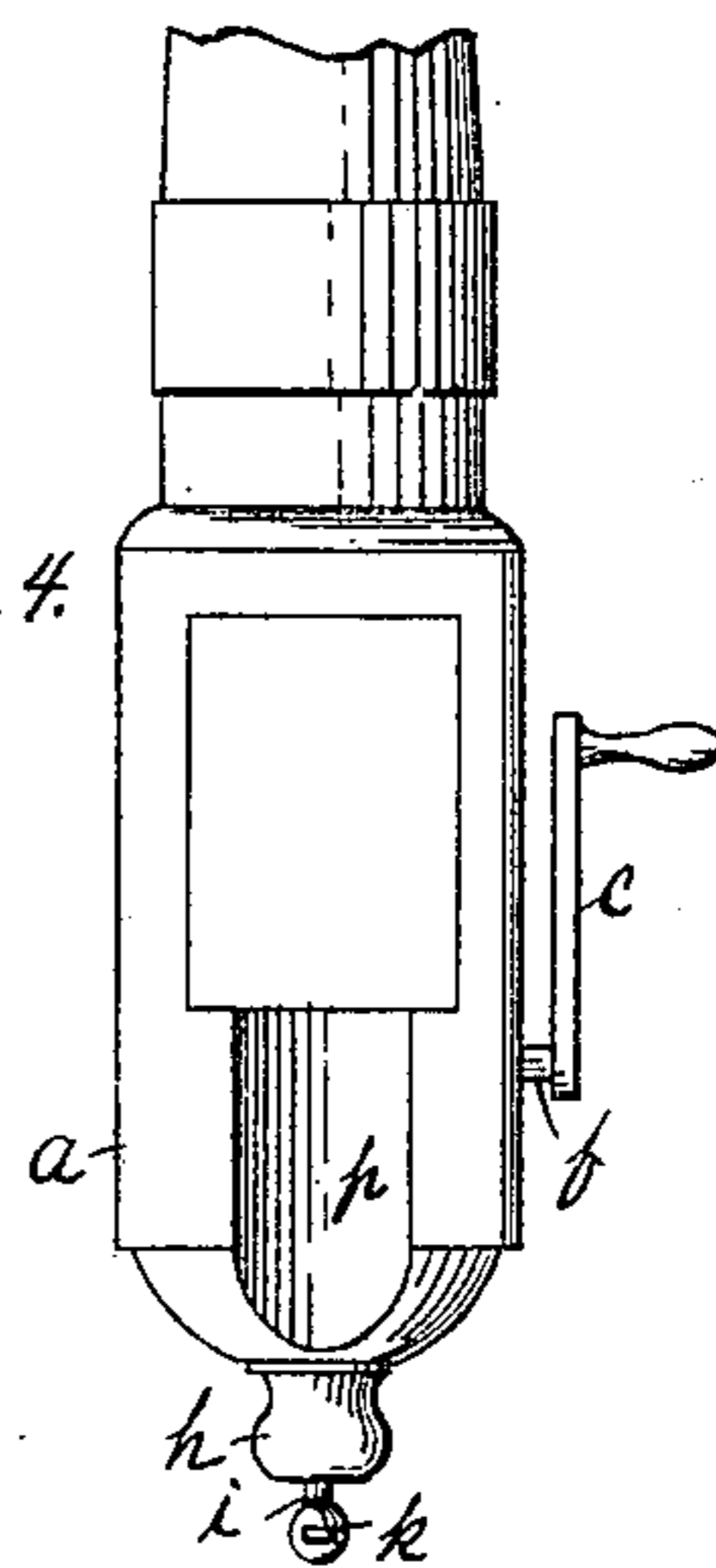


Fig. 3.

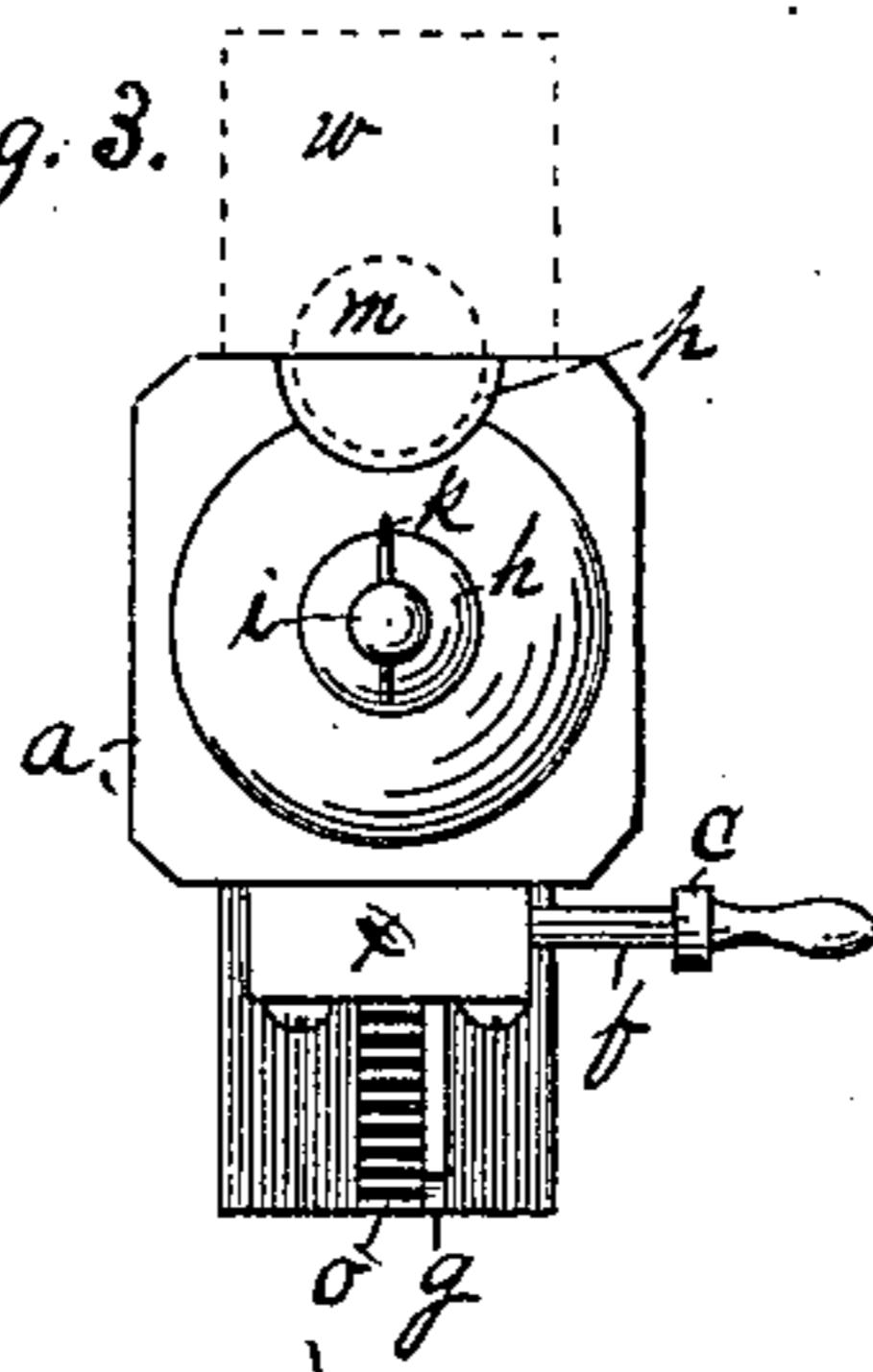
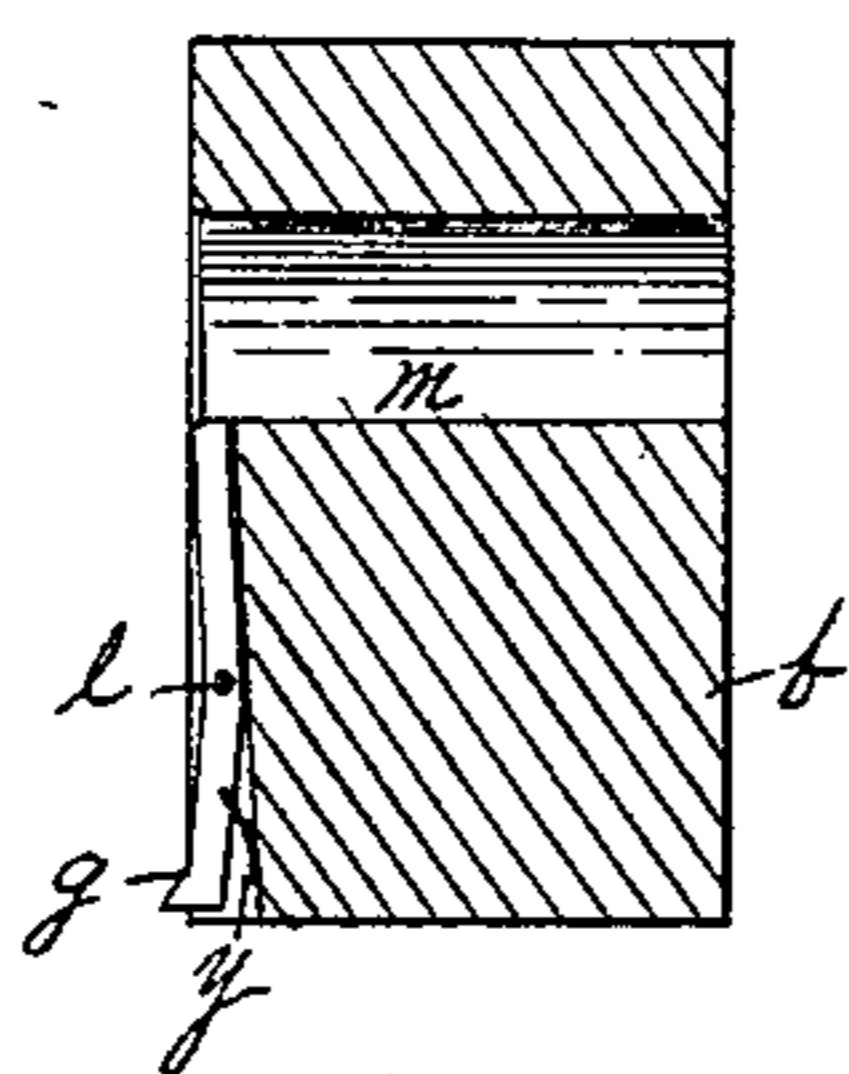


Fig. 5.



Witnesses
Fred A. Mason
C. O. Mason

Inventor
Frank H. Wilks
By J. M. Mason
att'y.

UNITED STATES PATENT OFFICE.

FRANK HENRY WILKS, OF NEWPORT, RHODE ISLAND.

BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 446,496, dated February 17, 1891.

Application filed April 28, 1890. Serial No. 349,762. (No model.)

To all whom it may concern:

Be it known that I, FRANK HENRY WILKS, a citizen of the United States, residing at Newport, in the county of Newport and State of Rhode Island, have invented a new and useful Improvement in Breech-Loading Ordnance, of which the following is a specification.

The object of my invention is to produce breech-loading ordnance capable of rapid firing; and it consists in the peculiar arrangement and operation of the breech-block and firing device.

The accompanying drawings illustrate my invention, in which—

Figure 1 represents a side view of a piece of ordnance constructed in accordance with my invention as it appears when ready for firing. Fig. 2 represents a side view in vertical section of the working parts of the same. Fig. 3 represents a rear view of the breech of the gun. Fig. 4 represents a top view of the same; and Fig. 5 represents a view in vertical section of the breech-block, showing the retracting device.

Similar letters refer to similar parts throughout the several views.

a represents the breech of the gun, and *b* represents the breech-block, adapted to move vertically in the same, and which is provided with the groove *d*, which receives the end of the screw *e*, which limits the movement up and down of the breech-block. The rear face of the breech-block *b* in the lower half of its length is provided with the rack *o*, Fig. 2, the teeth of which engage with the teeth of the pinion *n* on the shaft *f*, which shaft has its bearings in the block *x* and is provided with the crank *c*.

The breech-block is provided with an opening *m* for the reception of the cartridge, which when the breech-block is at its lowest position (as in Figs. 1 and 2) coincides with the bore of the gun.

Alongside of the rack *o* and reaching from the bottom of the breech-block to the bore of the same is a groove in which is pivoted at *l* the bar *g*, provided with spring *y*, and having an inclined face at its lower end, as shown in Fig. 5.

The construction and operation of the firing device are illustrated in Fig. 2. *i* is the firing-pin, provided with the collar *t*, the stud *v*,

which travels in the groove *u* of the screw-plug *h*, and the lever *k*. Between the collar *t* and the screw-plug *h* is interposed the spiral spring *s*, and between the collar *t* and the front of the bore for the firing device is interposed the spiral spring *r*. The front end of the firing-pin *i* is exactly opposite to the cap in the cartridge-shell, and to explode said cap and fire the cartridge the firing-pin *i* is drawn to the rear by means of the lever *k* until the stud *v* is out of the groove *u*, when it is turned slightly to one side, so that the stud *v* rests on the end of the plug *h*. By means of the lanyard *z*, which is made fast to the lever *k*, the firing-pin is turned so that the stud *v* will again enter the groove *h*, when the expansive force of the spring *s* causes the front end of the firing-pin to strike the cap in the cartridge with sufficient force to explode it. The spring *r* is of sufficient tension to slightly retract the end of the firing-pin from the cap after it is exploded.

To load the gun the breech-block is raised by means of the crank *c* to its highest limit, as shown by the dotted lines *w* in Figs. 2 and 3. The opening *m* in the breech-block then coincides with the groove *p*. The cartridge is then placed in the groove *p* and pushed forward into the bore *m* in the breech-block, and by means of the crank *c* the breech-block is then lowered to its position and the gun fired.

To reload the gun the breech-block is raised as before, which action causes the inclined face of the bar *g* to strike on the lower edge of the breech of the gun and presses the lower end of said lever to the front. This action causes the upper end of the bar *g*, which rests under the rim of the cartridge-shell, to move to the rear and carry the cartridge-shell along with it, thus loosening and starting the shell from its seat, when it is removed and a cartridge substituted therefor.

I claim—

In breech-loading ordnance, the combination of a gun having an opening through its breech at right angles with the bore, a breech-block provided with an opening adapted to receive and contain the cartridge while it is fired and having a rack in one of its sides adapted to engage with the teeth of a pinion which is journaled on the gun, whereby the breech-block is moved sufficiently to receive a cartridge, and having a depression in one of

its sides adapted to receive the end of a pin projecting from the inside of the opening in the breech of the gun, whereby the movement of the breech-block in said opening is limited,
5 and provided in its rear face with a groove reaching from the bore of said breech-block to the bottom of the same, a bar pivoted in said groove, its upper end adapted to lie under the rim of the cartridge and its lower end
10 provided with an incline adapted to strike

the rear face of the opening in the breech of the gun when the breech-block is moved to insert a cartridge and thus retract the cartridge-shell, and means to explode the cartridge, all as set forth.

FRANK HENRY WILKS.

Witnesses:

H. T. GREENE,
A. F. BALL.