

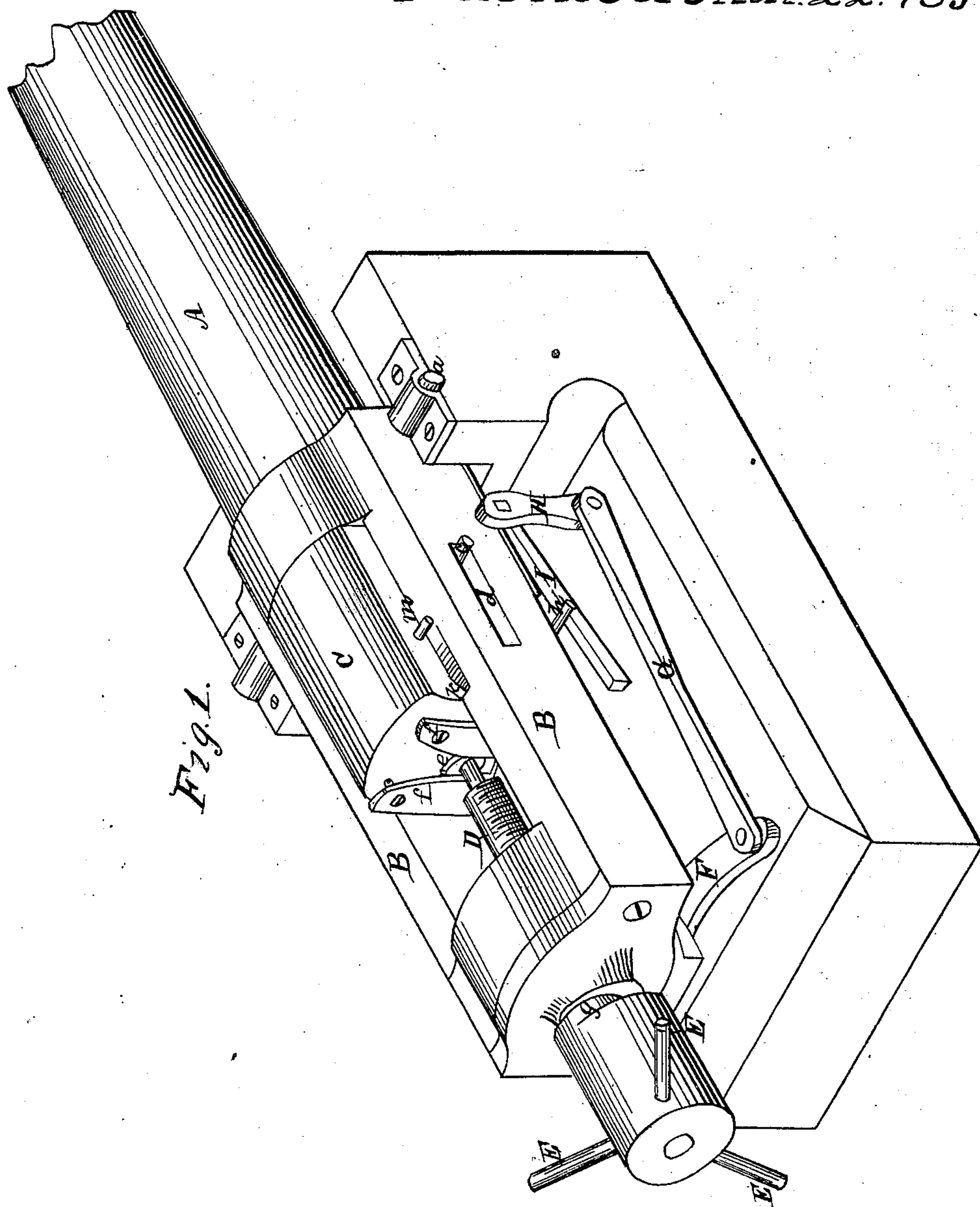
Sheet 1-2 Sheets.

J.H. Merrill

Breech-Loading Ordnance.

N^o 23306.

Patented Mar 22. 1859.



Witnesses.

J. Merrill

John M. Friedrich

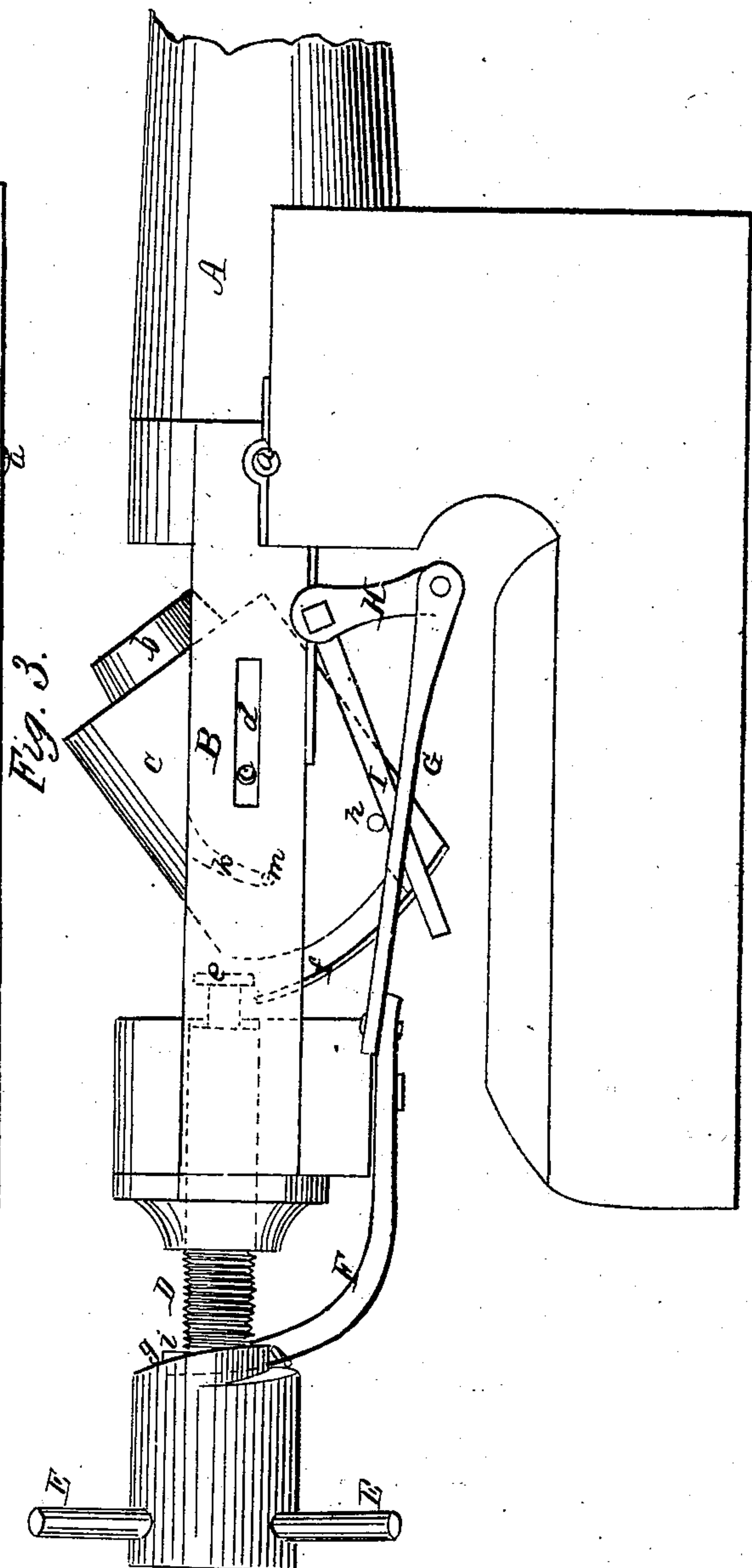
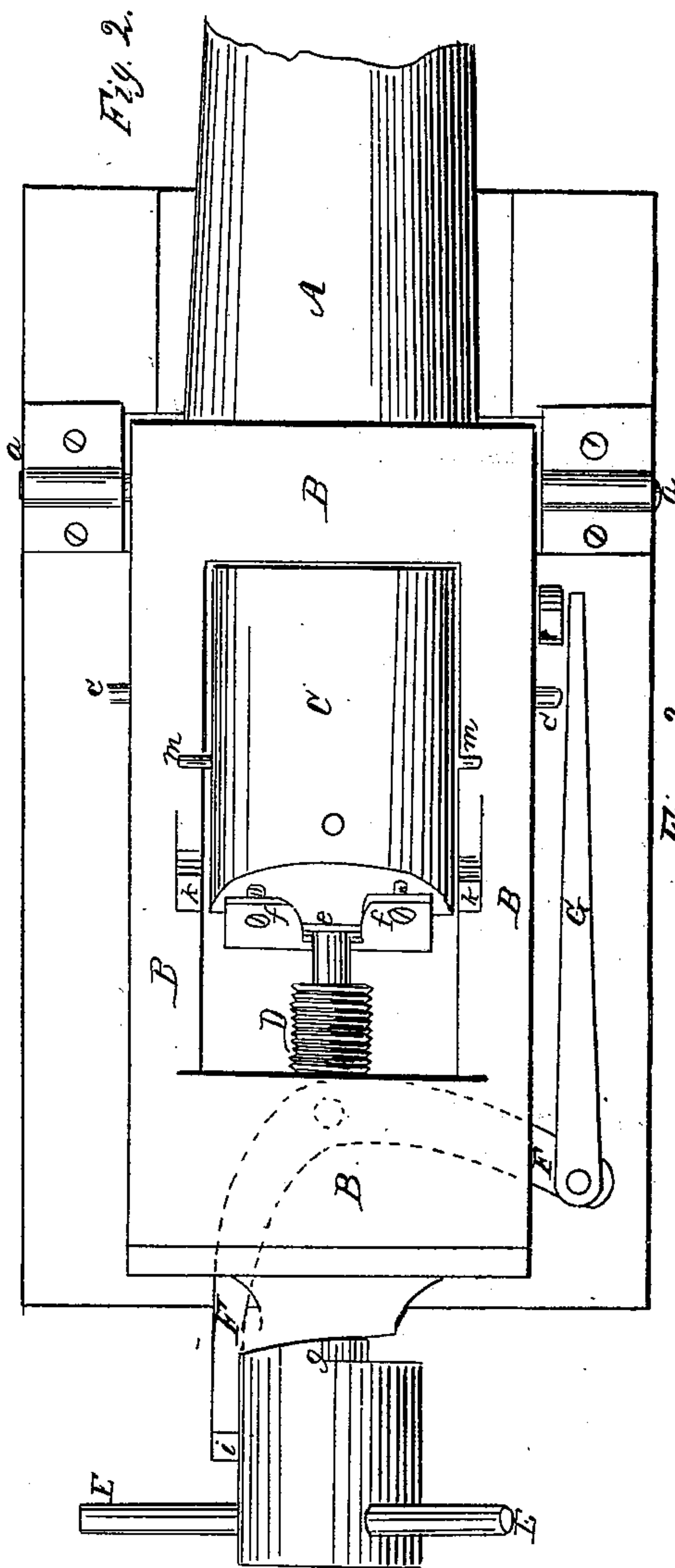
Intention

James H. Merrill

J. H. MERRILL.
Breech-Loading Ordnance.

No. 23,306

Patented Mar. 22, 1859



Witnesses.
J. H. Merrill
John H. Friedrich

Inventor
J. H. Merrill

UNITED STATES PATENT OFFICE.

JAS. H. MERRILL, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN BREECH-LOADING CANNON.

Specification forming part of Letters Patent No. 23,306, dated March 22, 1859.

To all whom it may concern:

Be it known that I, JAMES H. MERRILL, of the city and county of Baltimore, and State of Maryland, have invented certain new and useful Improvements in Breech-Loading Cannons; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of the gun with the breech run up to the barrel. Fig. 2 represents a top plan of the same, and Fig. 3 represents a side view with the breech run back and dropped for loading it.

Similar letters of reference, where they occur in the separate figures, denote like parts in all of them.

For cheapness of construction, as well as to have the requisite strength and lightness, I make the barrel and frame of the gun of cast-iron, and the breech of wrought-iron. This disposition of the two kinds of metal makes the gun strong where strength is essential, and so reduces the size of the breech as to keep the frame which surrounds it within reasonable limits, while it has the necessary strength to sustain the breech at all times.

A represents the barrel of the gun, and B the frame in rear of the barrel. These two parts, as well as the trunnions *a*, that support the gun on its carriage, are of cast-iron or other cast metal.

C is the breech. It is made of wrought-iron, so that it shall have strength to resist the discharge, and be small enough to come within a frame that will give symmetry to the gun. This breech is bored out to receive the charge, and has a projecting flange, *b*, at the mouth of the bore that slips into and snugly fits within the rear of the bore of the barrel A, to make a tight joint. On this breech are trunnions *c*, that rest in slots *d*, cut through the frame B, so that the breech can be run back and forth horizontally on said frame; but it is necessary, also, that when the breech C is run back to receive the charge its forward end should tip up, so that its chamber can be readily got at; and it must be as readily returned to its horizontal position to be again run up to the barrel before the piece is discharged. To effect these objects mechanically, I arrange as follows: Through the rear piece of the frame I pass a screw-shank, D,

which runs in a female thread in said rear piece. On the end of this shank D there is a button or flange, *e*, behind which the two arms *f f*, attached to the rear end of the breech-piece C, catch when it is raised up, said arms straddling the screw-shank. The rear end of the screw-shank D is furnished with hand-levers E, for working it, and a cam, *g*, is formed on the face of the screw-head, which works a bent lever, F, pivoted to the under side of the frame B. To one arm of this bent lever F is attached one end of a connecting-bar, G, the other end thereof being attached to an arm, H, which has connected to it a lever, I, that passes under a pin, *h*, near the rear end of the breech-piece C, so that when the point *i* of the bent lever F runs down upon the cam *g* toward the screw-shank it lets down the lever I and the breech-piece resting upon it by its pin *h*. When the screw-shank is reversed, the cam *g* runs the end of the bent lever outward, and, reversing the action of the lever I, raises up the rear of the breech-piece, and the end of the screw, pressing against it, forces it up tight against the barrel A of the gun. In dropping or raising the breech-piece, there is nothing more required than must be done to run said breech-piece forward and back. That the breech-piece may swing clear and work uniformly, there are curved grooves *k* cut in the two opposite inside faces of the frame B, into which, at the proper time, two guide-pins, *m*, in the breech-piece drop, and thus let it down. When the breech-piece is raised up and run forward, the pins *m* rise on top of the frame A and then hold it in a horizontal position.

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

1. The combination of the breech-piece and frame, so that the former may move back and forth, and have its bore raised up and lowered on the latter automatically, and fastened or locked, substantially as herein described.

2. In combination with the screw for running the breech-piece forward and back, the mechanism for lowering and raising the rear of said breech-piece, substantially as described.

JAMES H. MERRILL.

Witnesses:

THOS. H. UPPERMAN,
E. COHEN.