

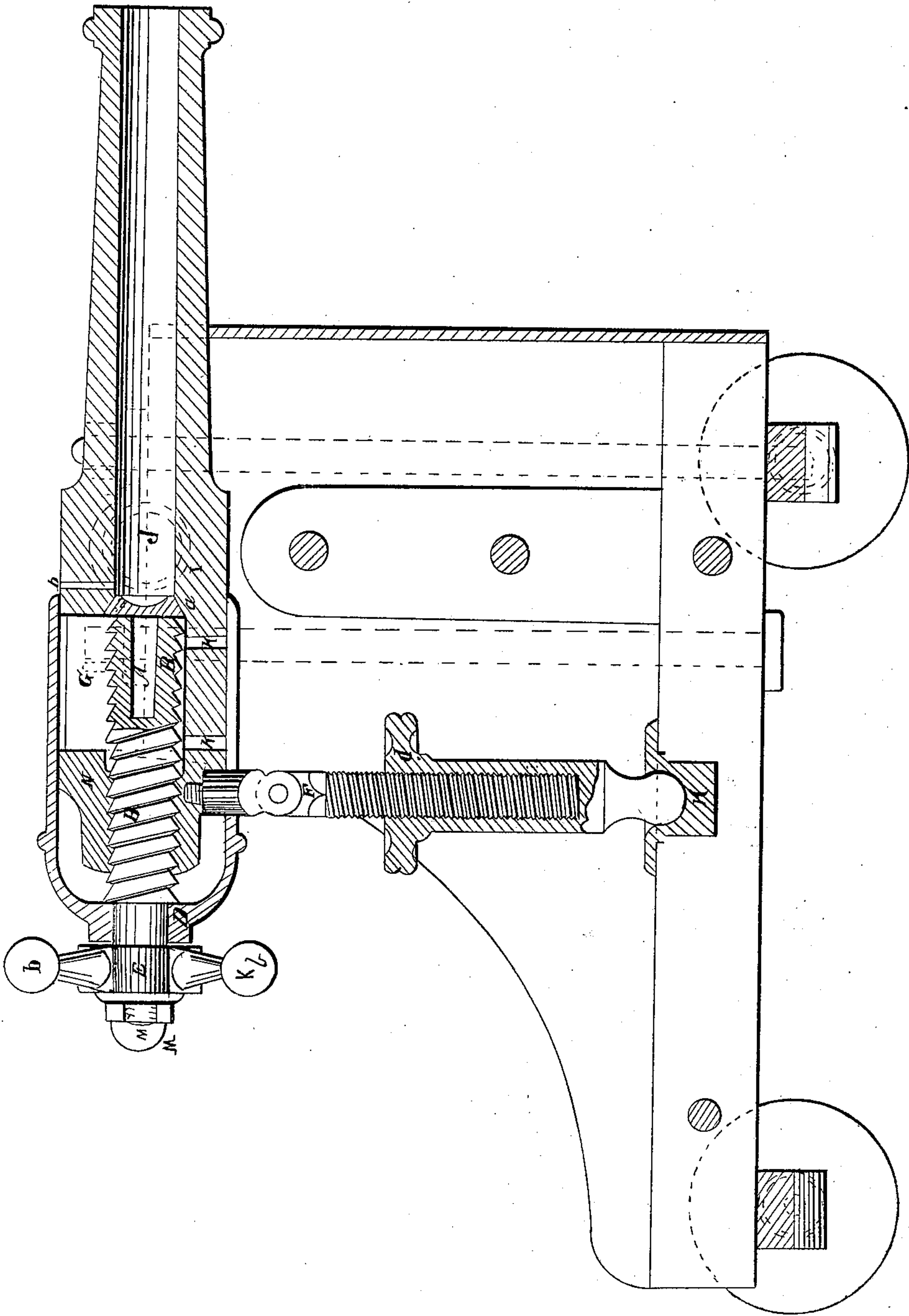
2 Sheets—Sheet 1.

J. H. MERRILL.

Breech-Loading Ordnance.

No. 20,608.

Patented June 15, 1858.



UNITED STATES PATENT OFFICE.

J. H. MURRILL, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF, JAMES FLYNN, AND PETER EMRICH, OF SAME PLACE.

IMPROVEMENT IN BREECH-LOADING CANNON.

Specification forming part of Letters Patent No. 20,608, dated June 15, 1858.

To all whom it may concern:

Be it known that I, JAMES H. MURRILL, of the city and county of Baltimore, and State of Maryland, have invented certain new and useful Improvements in Breech-Loading Cannons, the same being applicable to small-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, making a part of this specification.

The nature of my improvement consists in the construction of the breech portion of the gun, in which a slot or pocket is formed, (for the reception of the charge,) combined with devices by which the breech is more perfectly closed than heretofore, so that all escape of gas on firing is prevented, while fouling of the gun is obviated, and the charge inserted with great facility by mechanism of so simple a character as not liable to be out of order.

In the construction of the gun it is rendered more free from liability of bursting by unequal expansion of metal at the breech, as will be explained hereinafter.

To enable others skilled in the art to construct and use my improvements, they may be thus described.

Plate 1 represents an elevation in section of the gun as mounted, while Plate 2 gives a top view with a portion of the breech removed.

I I is the body or barrel of the gun, cast with a heavy weight of metal at the breech.

L is the touch-hole, and J the bore of the gun. The breech is elongated, so that a slot or pocket, G, may be formed therein. This pocket is a receptacle of the charge preparatory to its introduction into the bore or barrel J. The top view exhibits the form, while the elevation shows the depth of the slot.

N forms the posterior portion of the gun. It is bored and tapped with a female screw, fitting the screw B, which works in and passes through N. The screw B is provided with turning-arms E, carrying balls *b b* thereon. Its front end is bored out for the reception of the stem A of the metallic packing employed in closing the bore at the breech. A represents this packing, which is made to fit its seat in the manner of a valve. From its being separated in part from the screw actuating it, a degree

of accommodation is allowed for more perfectly closing the breech when forced up by the screw B.

K K are channels passing into the pocket, for discharging any foreign matter therefrom.

D is a shield, which is collared on the stem of the screw B. The office of the shield is to close or cover the pocket by sliding over it when the screw is forced in, and also to give additional strength to the elongated portion of the gun in the manner of a band or hoop.

M is a screw-nut uniting the shield and arms E with the screw B.

F and C form an elevating screw stepped in the seat H. In the carriage there is no peculiarity.

One of the advantages gained in this gun, viz.—less liability of bursting—will be apparent if it is considered that in rapid firing of a gun constructed with a solid breech that the metal forming the barrel expands in a greater degree than the solid breech portion, and consequently disintegration of the parts ensue. In my gun, if such an expansion should take place, it would simply be an enlargement, as of a ring. All undue heating of the gun is prevented by the entrance and passing through the bore of air the moment the packing *a* is withdrawn. In the introduction of the charge the bag serves as a wiper and forces before it all fouling of the chamber from previous firing, thus assisting in keeping the gun cool.

The mode of working the gun is exceedingly simple, and as follows: The gunner, standing at the butt, turns the handle and balls toward the left, thus withdraws the screw B, and with it the cone-shaped packing *a*. Having given a sufficient number of turns to the screw, the packing is brought against the opposite end of the pocket G to that shown in the drawings. The movement of the screw also slides back the shield and uncovers the pocket or slot. The charge is then dropped in said pocket, and on the turning of the screw to the right the packing serves the purpose of a rammer in forcing the charge into the bore J, by the one operation charging the gun and closing the breech. By giving a sufficient velocity to the balls *b b* the packing *a* is made to enter closely into its seat at the

end of the bore J. Priming is then introduced at L and the gun is ready for a discharge. Should the packing require regrinding, it may be readily detached by withdrawal of the stem A from the screw in backing it and lifting it out of the pocket.

Having described my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The employment of the slot G, serving as a pocket for the reception of the charge in a proper position for entering the bore J, when arranged in combination with a packing, *a*,

operated in the manner and for the purposes as set forth.

2. The employment of the screw B, in combination with the packing *a*, operating in the manner as described, for the purpose of closing the chamber and ramming the charge at the same operation, substantially as set forth.

In testimony whereof I have signed my name before two subscribing witnesses.

JAMES H. MURRILL.

Witnesses:

JOHN F. CLARK,
EDM. F. BROWN.