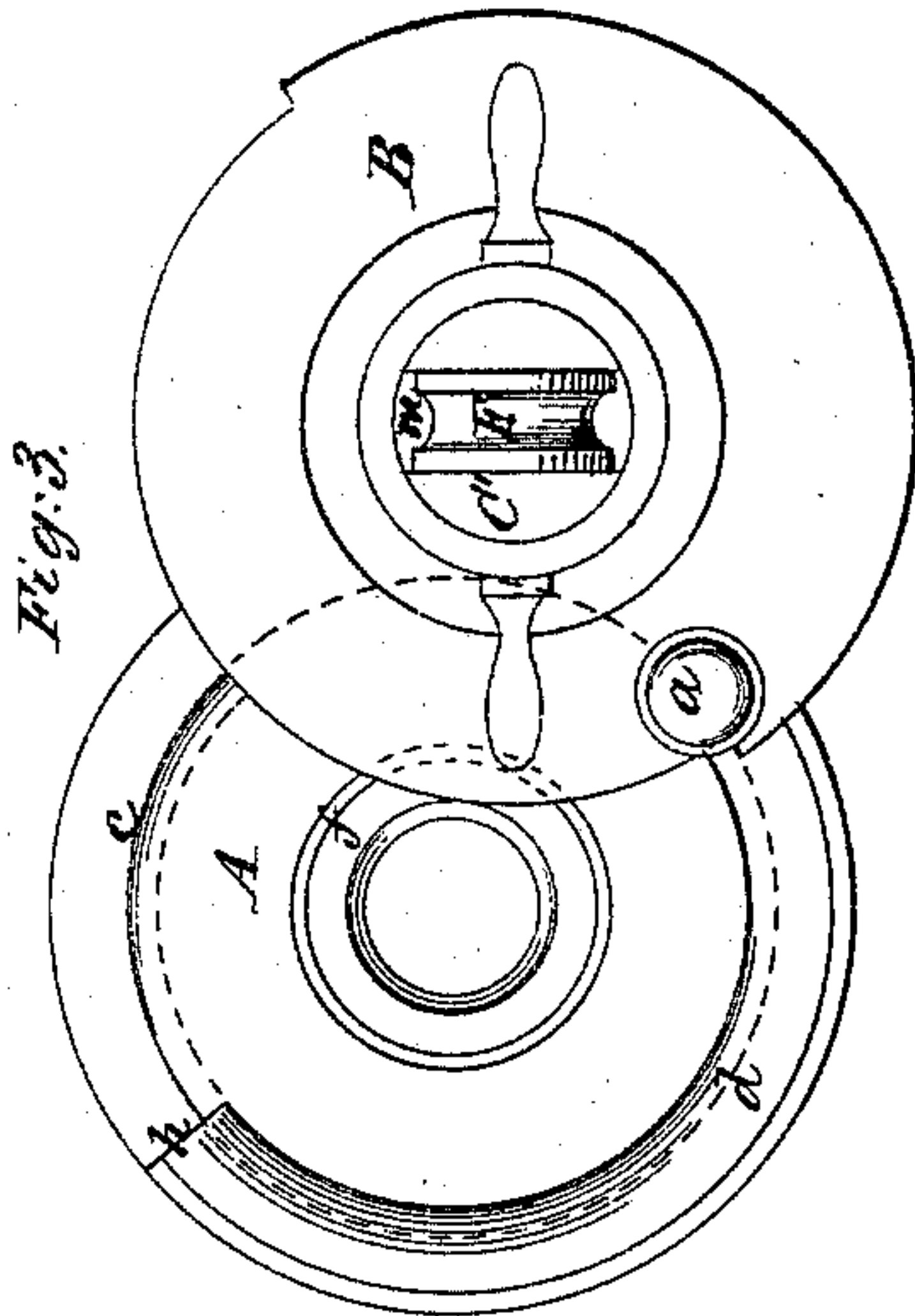
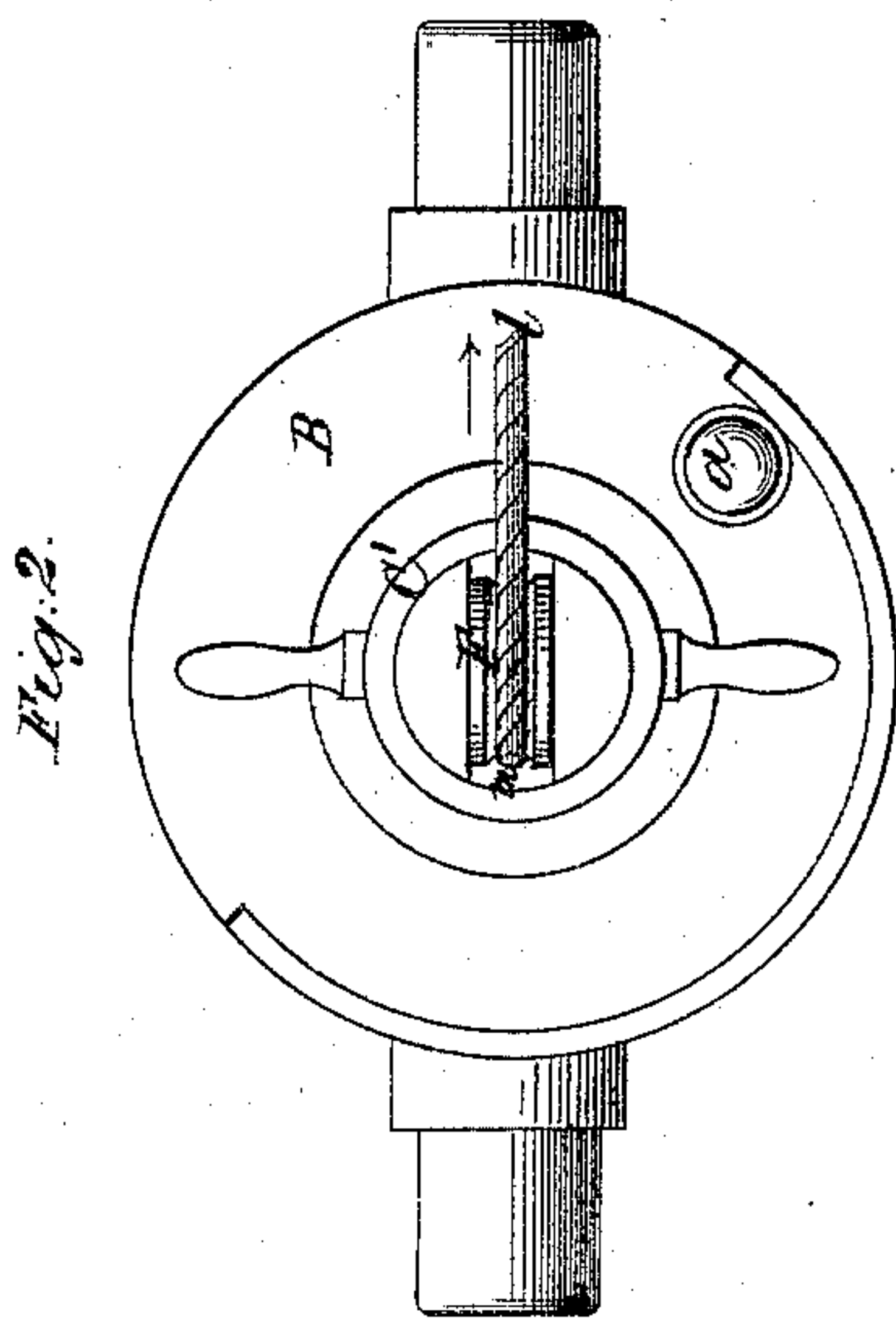


N. THOMPSON.

Improvement in Breech-Loading Ordnance.

No. 130,673.

Patented Aug 20, 1872.



WITNESSES:

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INVENTOR:

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Fig. 1.

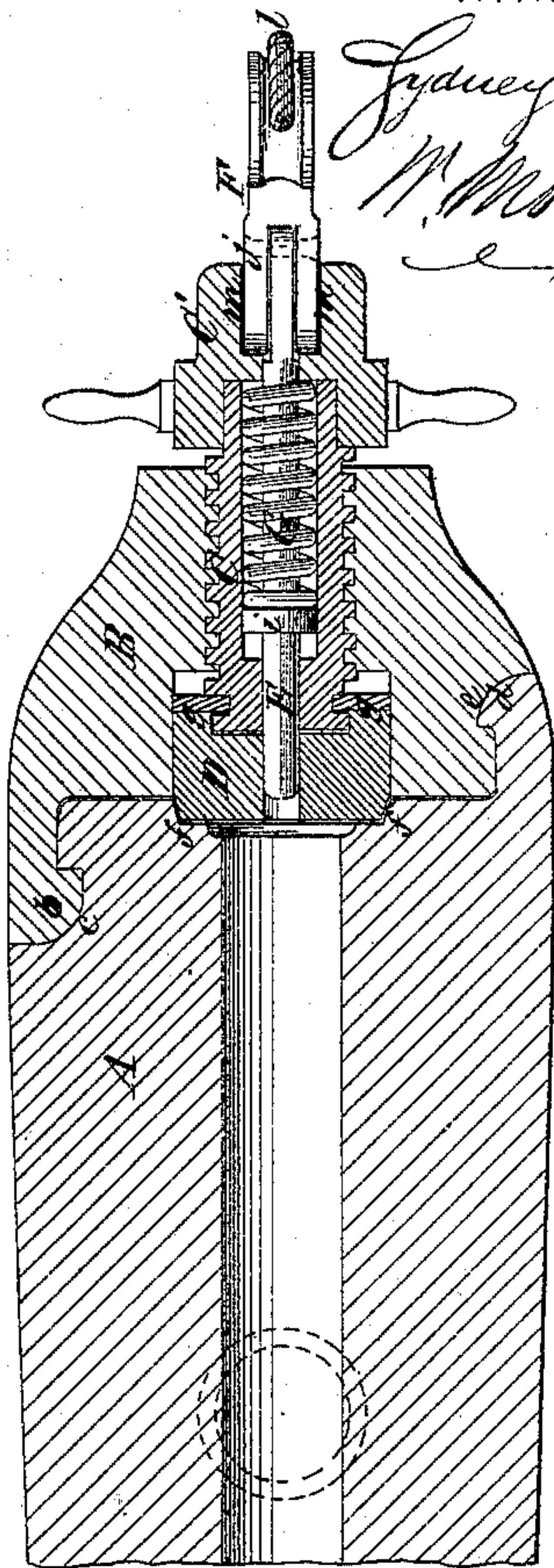
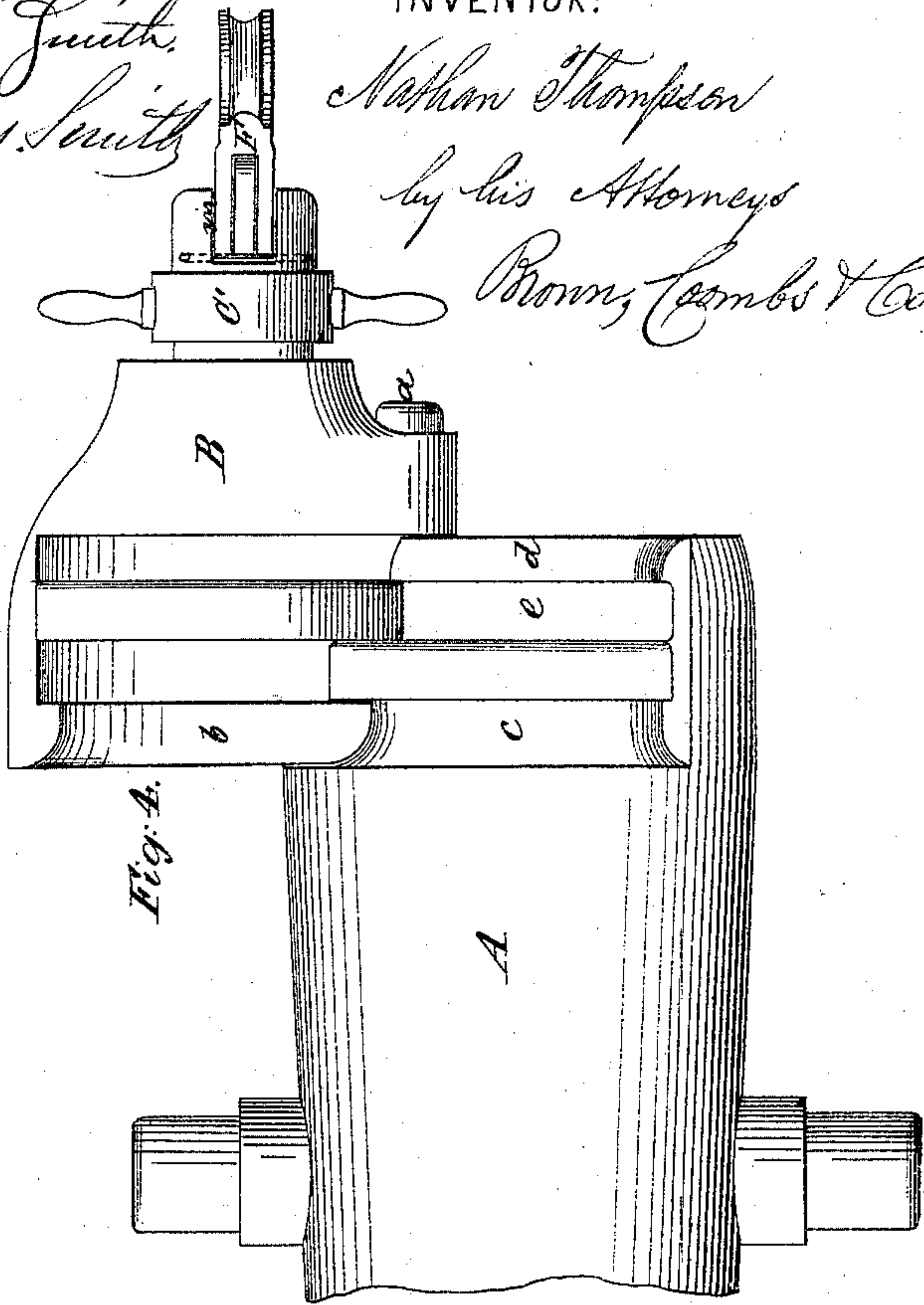


Fig. 4.





# UNITED STATES PATENT OFFICE.

NATHAN THOMPSON, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. **130,673**, dated August 20, 1872.

Specification of Improvements in Breech-Loading Ordnance, invented by NATHAN THOMPSON, of the city of Brooklyn, in the county of Kings and State of New York.

The first part of this invention relates to breech-loading ordnance, in which the movable breech-piece swings transversely to the bore of the gun on a pin eccentric to the bore; and it consists in the arrangement of such eccentric pin in such a position below the axis of the bore that the weight of the breech-piece is more nearly balanced than when the said pin is arranged directly on one side of or nearly in the same horizontal plane with the axis of the bore, and the power required to produce the opening and closing movements of the breech-piece is greatly reduced. The second part of the invention relates to the employment, in connection with such a swinging breech-piece, of a plug screwing through the said breech-piece with its axis in line or parallel with the bore of the gun, for the purpose of more effectually closing its chamber; and it consists in the arrangement of the thread of the said screw in a direction left or right handed to screw up the plug by turning in the direction in which the breech-piece closes, and to unscrew it by turning in the direction in which the breech-piece opens, whereby the power applied to the screw to screw up the plug is in direction to hold the breech-piece closed, and the power applied to unscrew it is in direction to open the breech-piece.

In the accompanying drawing, which forms part of this specification, Figure 1 is a central longitudinal vertical section of the breech and rear portion of a gun with my improvements, showing the breech-piece closed. Fig. 2 is a rear view corresponding with Fig. 1. Fig. 3 is similar view with the breech-piece open. Fig. 4 is a top view with the breech-piece open.

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

A is the body or barrel of the gun, and B is the swinging breech-piece. The body or barrel of the gun is bored throughout. The breech-piece, which corresponds in form externally with the breech or rear end of a muzzle-loading gun, is attached to the barrel or body by means of a pin, *a*, which is arranged eccentrically to the bore within the external circumferences of the breech-piece and barrel, and

a locking-flange, *b*, is provided half way round the circumference of the breech-piece to lock into a corresponding groove, *c*, extending half way round the circumference of the barrel, and a locking-flange, *d*, is provided on the other half of the barrel to lock into a groove, *e*, extending round the corresponding half of the circumference of the breech-piece. The breech-piece when closed stops against a shoulder, *h*, on the barrel. The pin is arranged in a plane intersecting the axis of the bore of the gun at an angle of about forty or forty-five degrees to a vertical plane parallel with the bore. By this arrangement the breech, which requires to move little more than a quarter circle, never has its center of gravity at a great distance from the center of the pin *a*, and hence requires little power to move it compared with what it would require were the pin directly at one side of the bore. C is a screw screwing through the center of the breech-piece in a line parallel with the bore of the gun, and having loosely attached to its front end by a collar, *g*, the plug D, which is concentric with it, and which fits like a valve into a seat, *f*, provided for its reception around the rear opening of the bore of the gun, for the purpose of making a tight joint between the bore and the breech-piece. This screw is made with a left-hand thread, because in the gun represented the pin *a* is on the right side of the bore, and the breech opens with a turning movement to the right and closes with a movement turning to the left. By this arrangement of the screw-thread the unscrewing movement of the screw to withdraw the plug G preparatory to opening the breech-piece B requires to be made by turning it to the right, so that after the plug has been withdrawn from its seat in the barrel sufficiently to permit the breech-piece to open the continued application to the screw of the power used to unscrew it is in the direction to open the breech-piece, and thereby assists the power applied directly to the latter by the lever provided for that purpose; and the force applied to the screw to turn it to the left for the purpose of screwing up the plug after the breech-piece has been closed is in direction to hold it against the stop-shoulder *h* on the barrel and keep it closed. If the pin *a* were on the left side of the bore the screw C would require a



right-hand thread to operate in the same way. It is preferable, however, as a matter of convenience, to arrange the pin *a* to the right of the bore and use a left-hand screw.

*Claims.*

1. In breech-loading ordnance, having a movable breech-piece constructed and arranged to swing on a pin eccentric to the bore, the arrangement of said pin within the periphery of said breech at an angle of about forty-five degrees from the horizontal plane of the bore, as herein described, whereby the center of gravity of the breech-piece is thrown equally, or nearly so, on opposite sides of said pin when opened or closed.

2. In a breech-loading gun having its movable breech-piece constructed and arranged to swing substantially as described, and fitted with a central plug operated by a screw, as set forth, the arrangement of the thread of the screw to unscrew in a direction corresponding with that of the opening movement of the breech-piece, and to screw up in a direction corresponding with the closing movement of the breech-piece.

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