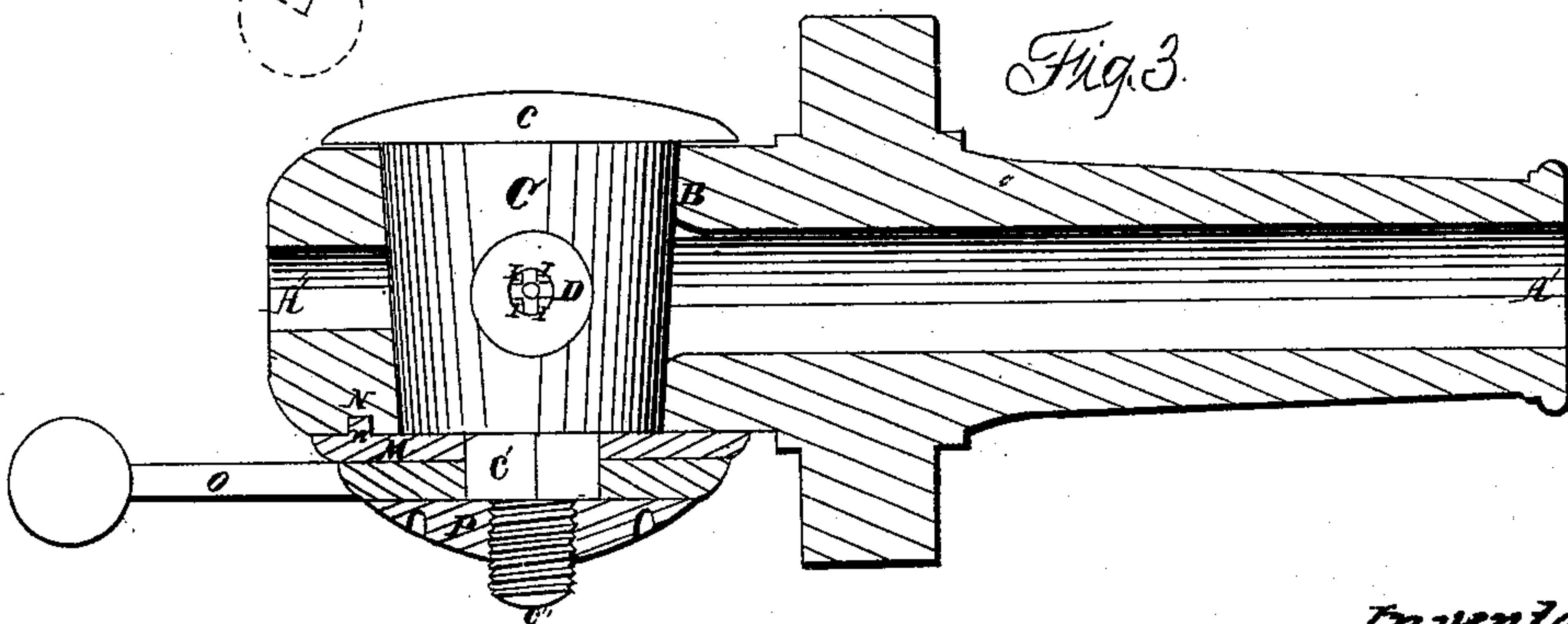
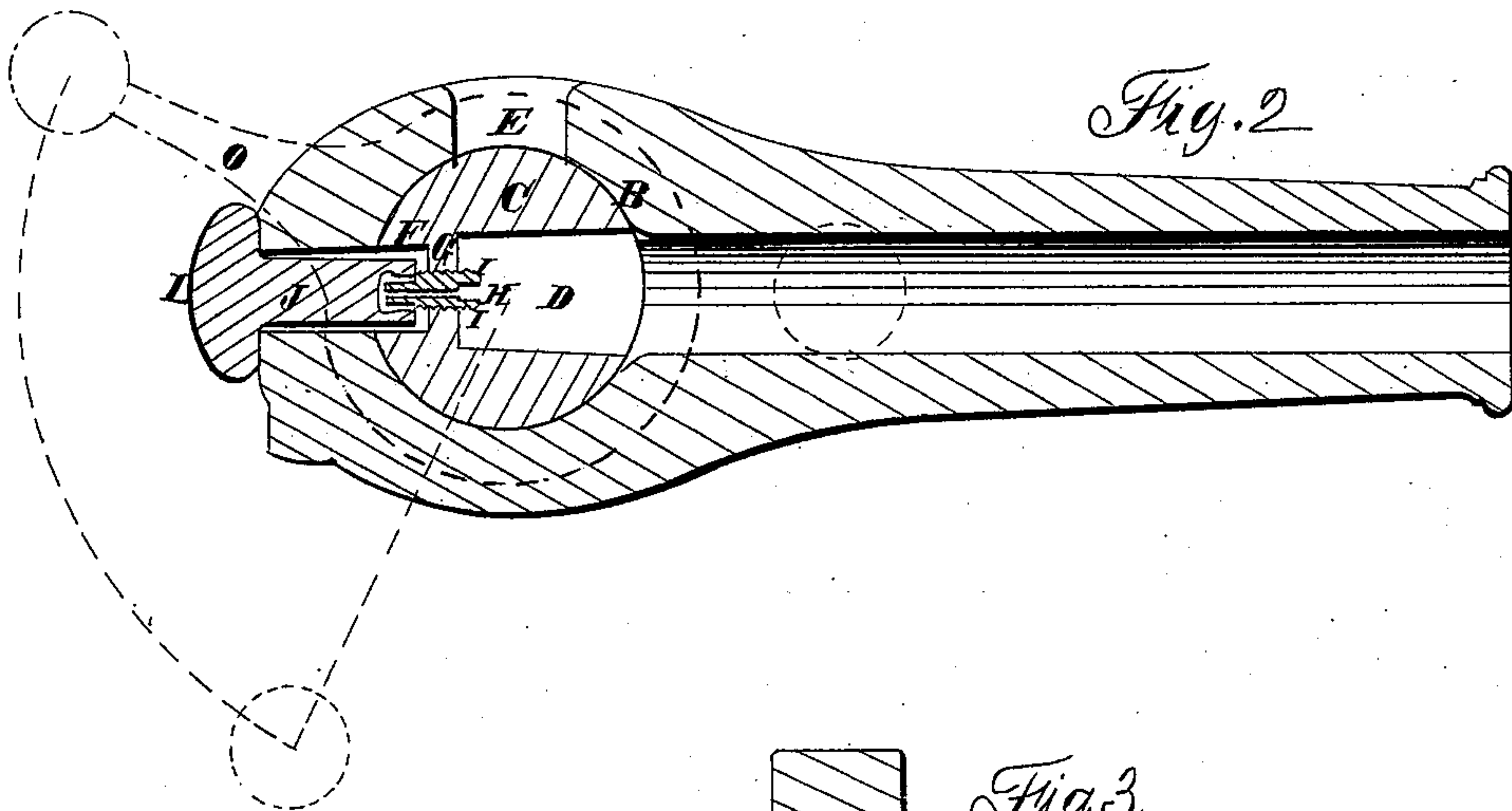
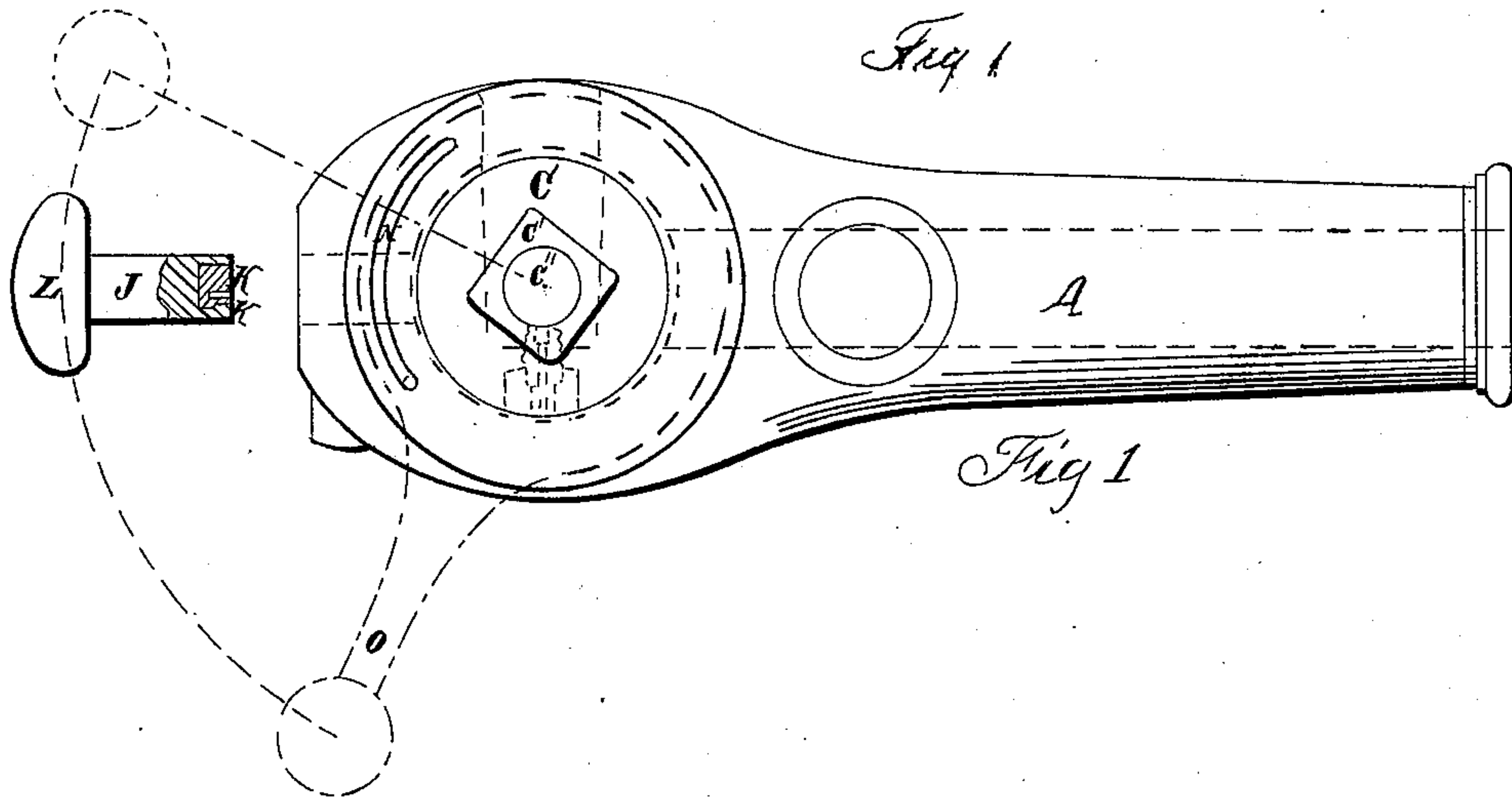


SHERWIN, McFARLAND & THIEME.

Breech-Loading Ordnance.

No. { 2,752, }
 { 33,756. }

Patented Nov. 19, 1861.



Witnesses
 J. T. Melcher
 J. F. Perry

Inventors
 W. G. Sherwin
 J. McFarland
 C. Thieme
 by Knight Bros

UNITED STATES PATENT OFFICE.

W. G. SHERWIN, JAS. McFARLAND, AND CHARLES THIEME, OF CINCINNATI, OHIO.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. 33,756, dated November 19, 1861.

To all whom it may concern:

Be it known that we, WALTER G. SHERWIN, JAS. McFARLAND, and CHARLES THIEME, all of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Breech-Loading Ordnance; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification.

Our invention is intended to correct some of the more serious defects incident to breech-loading fire-arms, especially those of the larger class, and comprehends a provision for loading perpendicularly from the upper side of the piece; a provision for discharging by means of a common percussion-cap at the center of the rear wall of the cartridge-chamber; a mode of adjusting the moving parts to compensate for heating, fouling, &c., during action; a means of ventilating and cooling the passages; provisions to insure the charging of the nipple, and an automatic "thumbing" arrangement.

Figure 1 is a side elevation of a cannon embodying our invention, the nut, lever, and washer being removed. Figs. 2 and 3 are respectively vertical and horizontal longitudinal sections of the cannon.

The barrel A is, near its rear portion, traversed by a horizontal circular aperture, B, which tapers slightly from left to right, a sufficient thickness of metal being secured by swelling the barrel at this part. The aperture B communicates with the upper side of the piece by means of a vertical opening, E. The barrel is bored from end to end, the portion A' of the bore behind the aperture B being of somewhat less diameter than the bore proper, A'. The aperture B is closed by a carefully-fitted plug, C, in form of a truncated cone. The large end of the plug C has a head, c, and its small end a bolt, c' c'', consisting of a square neck, c', and a screw, c''.

M is a washer, having a square eye to fit the neck c'. A pin, m, on the washer, occupying a segmental slot, N, on the side of the barrel, limits the play of the plug to a precise quarter-circle. A lever, O, whose square eye also fits the neck c', enables the plug to be vibrated by the gunner. A nut, P, secures these several

parts to their places, and affords a means of adjusting the plug longitudinally, so as to either ease or close the joint, to prevent either the binding or the heating of the parts from changes of temperature or other causes, and thus insure a practically gas-tight joint with sufficient freedom of movement. The plug C has, in opposite sides of it, two cavities, D and F, of unequal depth and diameter, separated by a septum, G, through which is screwed a nipple, H, which projects some distance into both cavities D and F, and has two or more sharp points or pricks, I, for rupturing the rear end or butt of the cartridge in the act of loading, and this by the mere weight of the descending cartridge. The parts C c c' c'' D F G H M m N O P, collectively, we call "the breech" C. The cavities D and F we call, respectively, the "loading" (or "cartridge") and "priming chambers."

J is a steel pin, having at one end a recessed and slotted cavity, K k, and at the other end a knob, L. This pin J, called the "cock," serves four essential purposes, as follows: first, to prime; second, to fire; third, to uncap the nipple; and during these several movements it also acts to hold the breech to its exact position for firing, so that the piece cannot go off unless the chamber D precisely faces the bore A', and therefore it is impossible that the gun can be exploded by a pent charge. The cavity K is slightly widest at bottom, to permit the cap to expand in going off, and thus to be retained and withdrawn by the cock. A slot, k, enables the insertion of a pick to remove the spent cap.

Operation: Loading is effected very easily by first placing the lever O in position indicated by red lines in Fig. 1, so as to present the cartridge-chamber D in a vertical position and with its mouth directly under the aperture E, through which the cartridge, being dropped butt downward, falls into the chamber D, and, meeting the sharp points I, becomes ruptured by its own weight, and acts to charge the nipple, which, in this position of the breech, is in an inverted position at the bottom of the cartridge-chamber D. In this position, also, it will be seen that the nipple is effectually "thumbed" by the metallic surface of the aperture B. The breech is then vibrated for-

ward to the position indicated in Fig. 2. This movement places the mouth of the chamber D in line with the bore proper, A', and that of the chamber F in line with the rear bore, A". Priming is performed by simply depositing a cap, inverted, into the cavity K in the cock J, which is then passed through the bore A" into the chamber F, so as to cap the nipple. In this position it will be seen that the cock performs the office of a detent or catch to retain the chamber D exactly coincident with the bore A until and in the act of firing. The discharge of the piece is effected by simply striking the knob L with a hammer.

The invention may be applied to various descriptions of fire-arms.

This form of gun exhibits several decided advantages over the common cannon—for example, a gain in rapidity of firing; a gain in the time required for cooling when hot, the cartridge-chamber having a free upward vent after each discharge, and admitting even the use of cold water, if necessary; a saving of the number of cannoneers and others required to work the guns; a saving in the expense of artillery, as there is only the cost of men and equipage for one gun that does the work of several; an increased efficiency, as it is that much easier to maneuver on the field with one gun than it is to maneuver with several; and

a certain and automatic charging of the touch-hole in the act of loading, avoiding the necessity of thumbing, the vent of the touch-hole being automatically closed in the loading position.

We claim as new and of our invention—

1. The arrangement of a nipple, H I, at the bottom of a cartridge-chamber when in position for loading, so that the vent will be automatically closed, substantially as set forth.

2. In combination with a faucet-breech which requires the charge in a vertical position, as herein explained, the projecting point or points I of the nipple, for the purpose of opening the cartridge by its own weight in the act of loading.

3. The cock or capper J, adapted to perform the several offices of capping, firing, and uncapping the nipple, together with that of holding the vibratory breech rigidly and exactly to its place while discharging, substantially as set forth.

In testimony of which invention we hereunto set our hands.;

W. G. SHERWIN.
JAMES McFARLAND.
CHARLES THIEME.

Witnesses:

GEO. H. KNIGHT,
C. H. HUNTER.