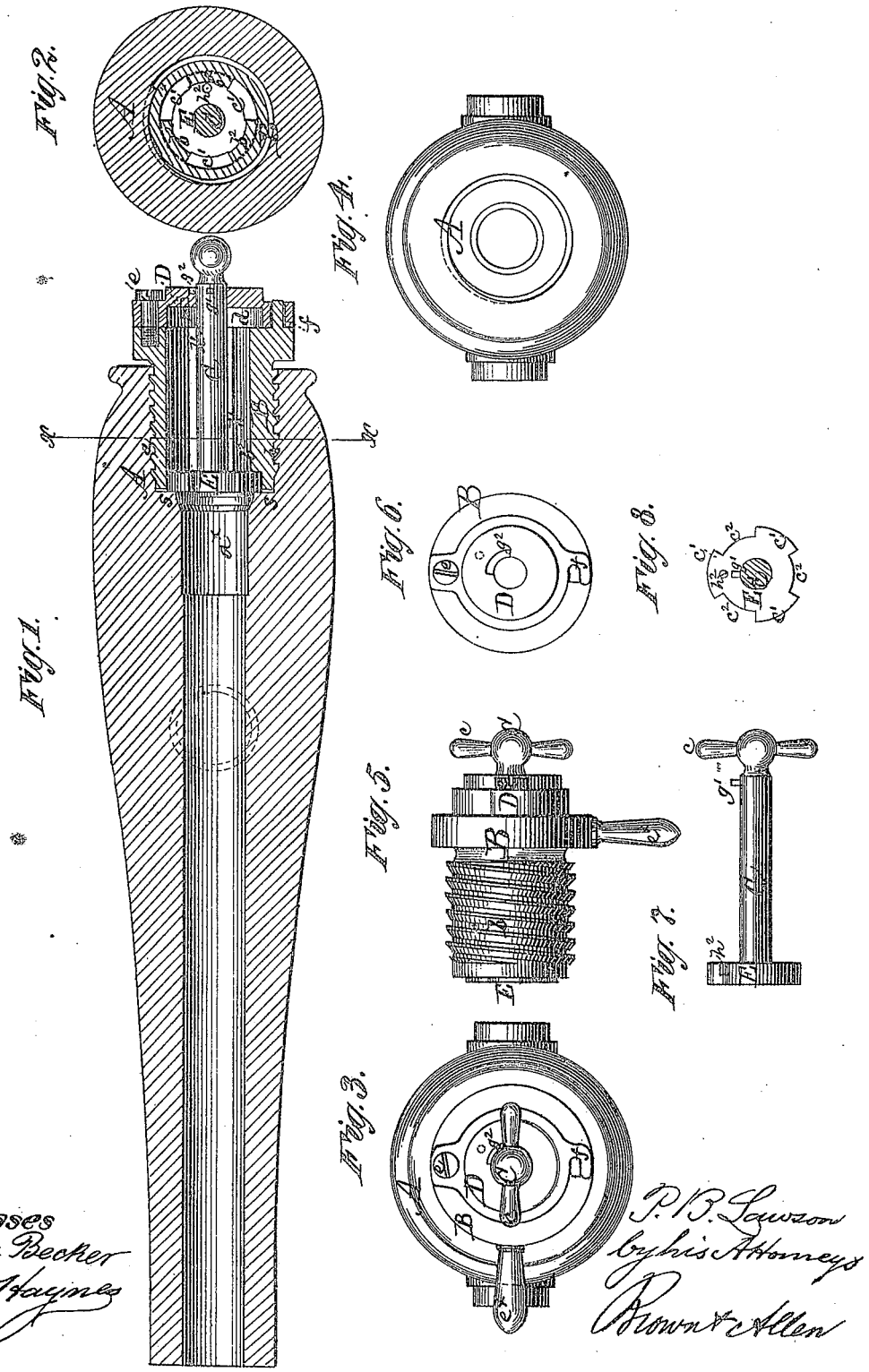
P. B. LAWSON.

Breech-Loading Ordnance.

No. 164,568. Patented June 15, 1875.



Witnesses
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UNITED STATES PATENT OFFICE.

PETER B. LAWSON, OF COLD SPRING, N. Y., ASSIGNOR TO GOUVERNEUR PAULDING, OF SAME PLACE.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. **164,568**, dated June 15, 1875; application filed March 4, 1875.

To all whom it may concern:

Be it known that I, PETER B. LAWSON, of Cold Spring, in the county of Putnam and State of New York, have invented certain new and useful Improvements in Breech-Loading Ordnance; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification.

My invention consists of a hollow plug having external screw-threads and internal longitudinal grooves, a breech-pin having a winged head adapted to said grooves, and a carrier for the breech-pin, having a cavity for the reception of the head of the breech-pin, whereby a novel breech-loading system and a very secure closing of the breech is obtained, and convenience is afforded for firing and loading, and which is applicable without difficulty to the conversion of old muzzle-loading guns.

In the accompanying drawing, Figure 1 is a central longitudinal section of a breech-loading cannon, constructed according to my invention. Fig. 2 is a transverse section, taken in the line $x\ x$ of Fig. 1. Fig. 3 is a rear end view. Fig. 4 is a similar view with the breech-closer removed. Fig. 5 is a side view of the breech-closer. Fig. 6 is a rear end view of the same, with the pin removed. Fig. 7 is a side view of the breech-pin. Fig. 8 is a section of the same.

The breech of the gun is bored through in line with the regular bore, and in rear of the chamber $a^{\times}$ the bore of the breech is enlarged concentric with the regular bore, and has a female screw cut in it for the reception of the male thread b on the exterior of the hollow screw-plug B, to which all the parts of the parts of the breech system are attached. In front of the female screw-thread a there is a broad shoulder, s, surrounding the rear of the chamber $a^{\times}$. The device for closing the breech consists of a breech-pin, C, having a winged head, E, at its inner end. Inside the screw-plug there are provided equidistant longitudinal grooves b^1 and intervening lands b^2, the said lands terminating at a distance from the front end of the said screw-plug slightly less than the thickness of the winged head E of the breech-pin. This winged head fits easily to the grooved interior of the screw-plug, so as to be capable of sliding freely therein, its wings c^1 fitting the grooves b^1 of the screw-plug, and its depressions c^2, between the wings, fitting the lands b^2, and the wings are capable of turning within the space provided in the interior of the screw-plug in front of the lands b^2. D is a breech-pin carrier, attached to the rear end of the screw-plug by a pin, e, on which it swings in a direction perpendicular to the bore of the gun, and provided with a catch, f, for holding it in place when closed. On its inner side is a circular recess, d, of a depth equal to the thickness of the head E, and in its center is a opening, through which the breech-pin C works. The rotary motion of the pin is limited by the engagement of a stud, g^1, on the pin and a groove, g^2, in the outer side of the carrier when the breech is closed, and is prevented by the engagement of a stud, h^1, in the recess d and a hole, h^2, in the outer or rear side of the head E, when the breech is open for loading. The head E works in the hollow screw-plug after the manner of a piston in a cylinder, the pin C working through the carrier like a piston-rod through a cylinder-head. When the plug B is in place in the breech, with the pin in the position shown in Figs. 1 and 5, the front face of the head E comes up against the shoulder $s\ s$ at the rear of the chamber $a^{\times}$. In order to make a tight joint and prevent the backward escape of gas when the gun is fired, a gas-ring of suitable construction may be provided between the face of the breech-pin and the shoulder s.

The parts being in the position shown in Fig. 1, to open the breech for the purpose of loading the gun the screw B is loosened by slightly turning the handle $e^{\times}$. The breech-pin C is then turned by means of its handle c, so as to bring the wings c^1 in line with the grooves b^1, and is then drawn out until the head E enters the recess d and the stud h^1 enters the hole h^2. The carrier D is then swung around on its pivot so as to expose the interior of the hollow screw and allow the charge to be inserted through it into the chamber. The

carrier D is then swung back to its place, so as to cover the open rear end of the screw; the breech-pin is pushed in, with the wings engaging with the grooves, until the charge is in place in the chamber $a^{\times}$ and the head E has reached the ends of the lands b^2, when the pin C is turned so as to bring the wings c^1 between the inner ends of the lands and the rear end of the bore. The screw B is then tightened by turning the handle $c^{\times}$ in the proper direction, and the gun is ready for firing.

By the provision of the screw-plug, which carries the operating parts of my invention, it will be observed that it can be removed with ease, and there is no obstruction to the proper cleansing of the gun and the plug, and, moreover, should such plug become injured, it can readily be replaced with a new one.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, in breech-loading ordnance, of the hollow plug B, provided with the external screw-thread b and the internal longitudinal grooves b^1, with the wing-headed breech-pin C, and the carrier D, having a cavity for the reception of the head of the breech-pin, substantially as described, for the purpose specified.

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Witnesses:
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