R. P. Parrott.

Manufacture of Ordnance.

No. 33,401. Patented Oct. 1. 1861.

Fig. 1.

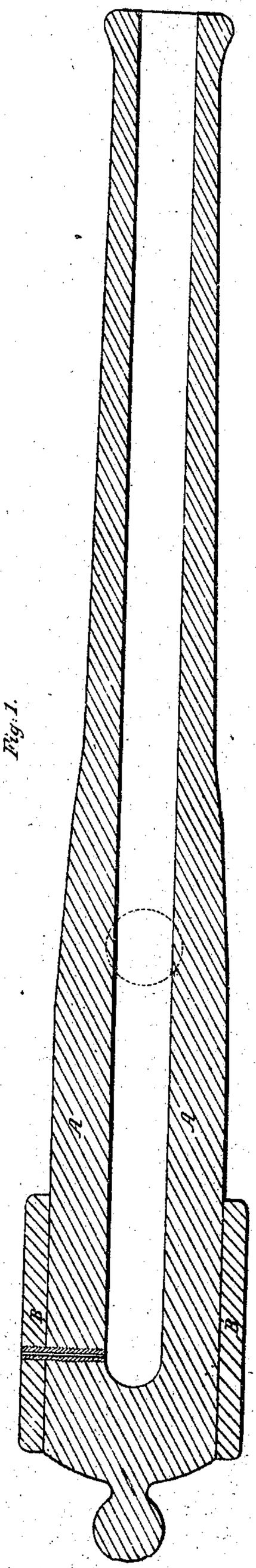
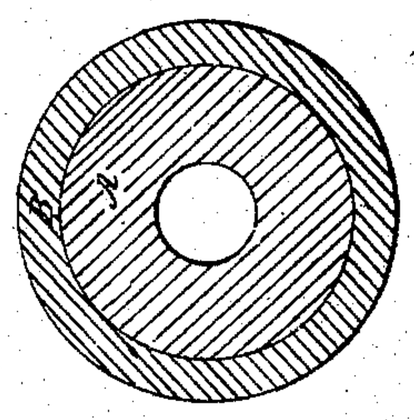


Fig. 2.



Witnesses.
G. P. Goulding
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UNITED STATES PATENT OFFICE.

ROBERT P. PARROTT, OF COLD SPRING, NEW YORK.

IMPROVEMENT IN THE MANUFACTURE OF ORDNANCE.

Specification forming part of Letters Patent No. **33,401**, dated October 1, 1861.

To all whom it may concern:

Be it known that I, ROBERT P. PARROTT, of Cold Spring, in the county of Putnam and State of New York, have invented a new and useful Improvement in the Manufacture of Ordnance; 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, forming part of this specification, in which—

Figure 1 is a central longitudinal section of a cannon, and Fig. 2 a transverse section of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to the application of a wrought-iron re-enforce to a gun having its body or main portion of cast-iron; and it consists in a peculiar mode of shrinking the re-enforce on the body, whereby the heating and expansion of the body in a very high degree by heat communicated to it from the re-enforce is prevented and the re-enforce is caused to be drawn equally close all around the body.

To enable others skilled in the art to apply my invention to practice, I will proceed to explain the manner in which it is performed.

The cast-iron main portion or body A is or may be made like any cast-iron gun, either with its breech a part of the same casting, like a gun of the ordinary kind, or with a breech made of a separate piece or pieces of metal either permanently secured to the body for loading at the muzzle or movable to provide for loading at the breech; or what I have called the "body," to distinguish it from the re-enforce, may be a cast-iron gun which has been already finished for use, but requires strengthening to enable it to carry heavier projectiles than those for which it was originally intended; or a cast-iron gun which, not having been originally intended for a rifled gun, has been weakened by rifling.

The wrought-iron re-enforce B may be made in various ways; but that which I consider the best is to take a bar of square iron of proper dimensions, coil it spirally upon a mandrel, then heat it to a welding heat and place it in a strong cast-iron cylinder and hammer it endwise till the coils are welded together and a sound hollow wrought-iron cylinder is formed. The cylinder thus forged is to be bored and turned in a lathe to the proper size and thickness.

The body A, having been previously bored, has that portion of its exterior which is to receive the re-enforce turned to a cylindrical form and of a diameter about one-sixteenth of an inch to the foot larger than the diameter which the interior of the re-enforce has in a cold state. It is then placed in a horizontal or nearly-horizontal position upon suitable supports or bearings, which permit it to be rotated on its axis or rolled and which will permit the re-enforce to be put on when sufficiently expanded by heating it, and a pipe is introduced through the muzzle for the purpose of conveying a constant and copious stream of cold water to the bottom of the bore. When the re-enforce has been properly heated and so expanded as to enable it to pass loosely onto the body, it is placed in its proper position thereon and cold water is introduced into the bore by the aforesaid pipe and the body is rotated on its axis. By this rotary movement the re-enforce, while hanging loosely on the body, is prevented from remaining in contact therewith at one part, and so prevented from cooling first at one part, which would be the case if I let it remain hanging with one part only in contact with the body and which would set the re-enforce at that part and prevent it from being drawn equally close at all points around the body. By the introduction of the stream of water, which runs out at the muzzle of the gun, the heat imparted to the body from the re-enforce is carried off and the body prevented from being thereby materially expanded, and so lessening the pinch or force with which the re-enforce binds finally upon it. As soon as the re-enforce is found to bind upon the body I cover it with sand or other material which is a good non-conductor of heat, continuing the flow of water through the body until the entire gun is cold. The object of so covering up the re-enforce is to prevent the outer portion from cooling and contracting quicker than the inner portion and to cause it to be

cooled from the interior, by which it is made to bind more firmly on the body.

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

The within-described mode of shrinking the wrought-iron re-enforce upon the cast-iron body of a piece of ordnance—that is to say, by rotating the body while water is introduced into the bore.

ROBERT P. PARROTT.

Witnesses:

G. PAULDING,

ELISHA NELSON.