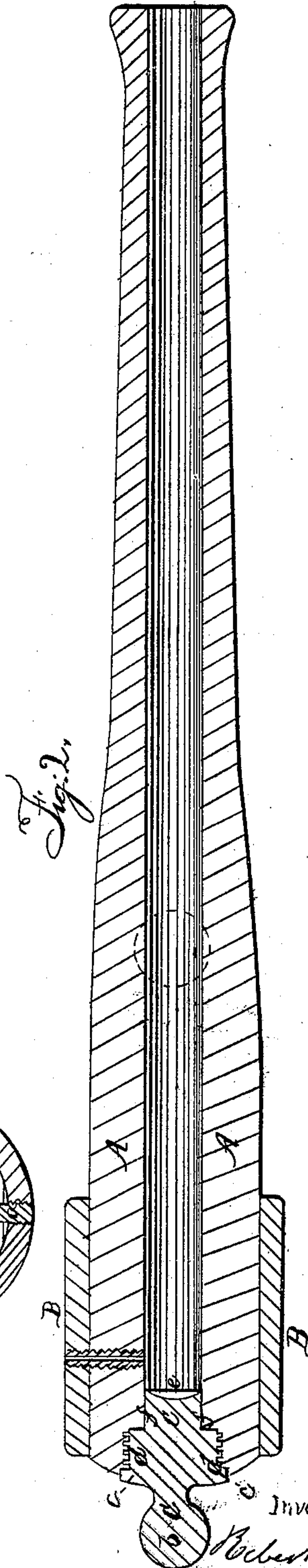
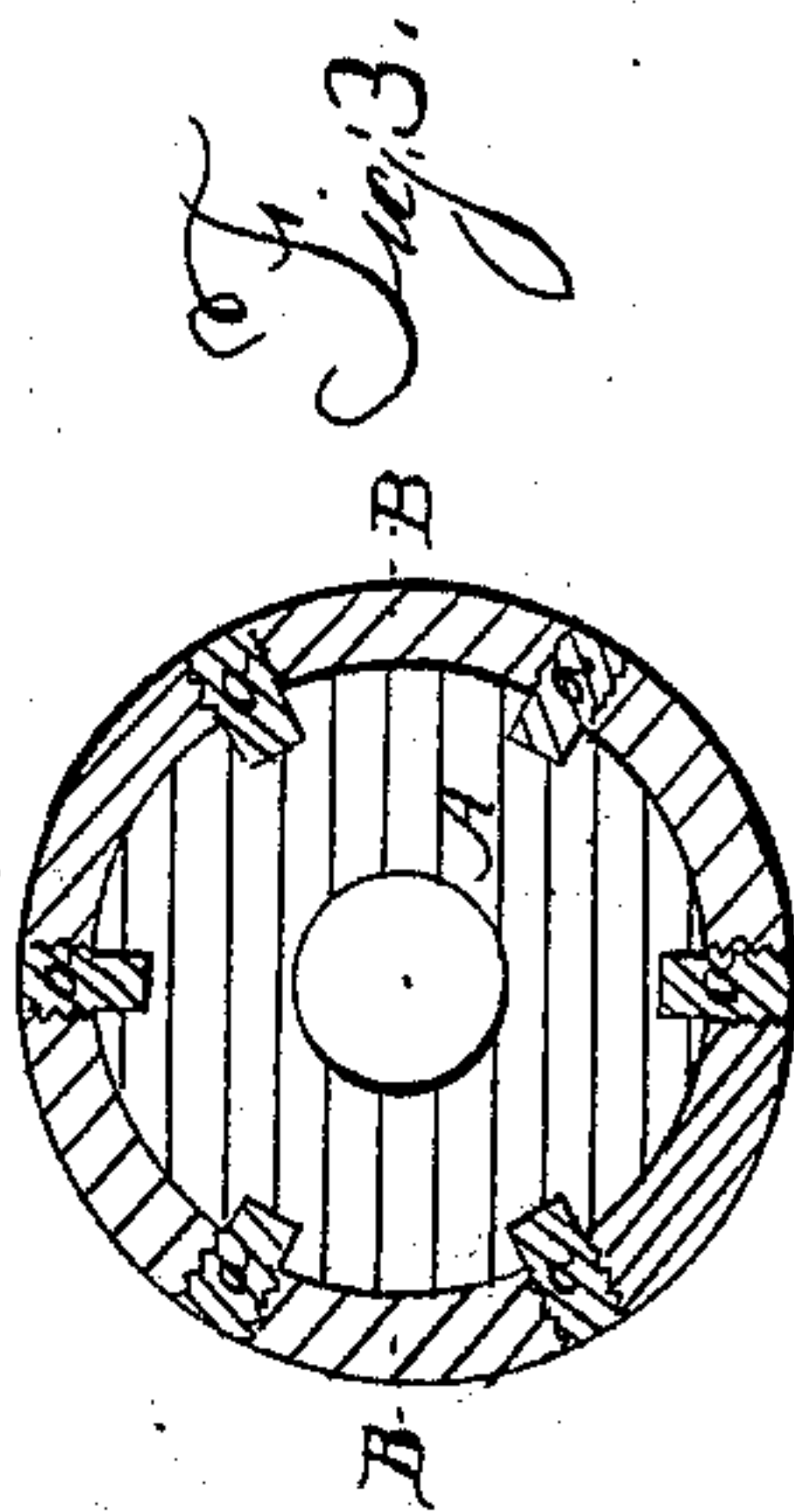
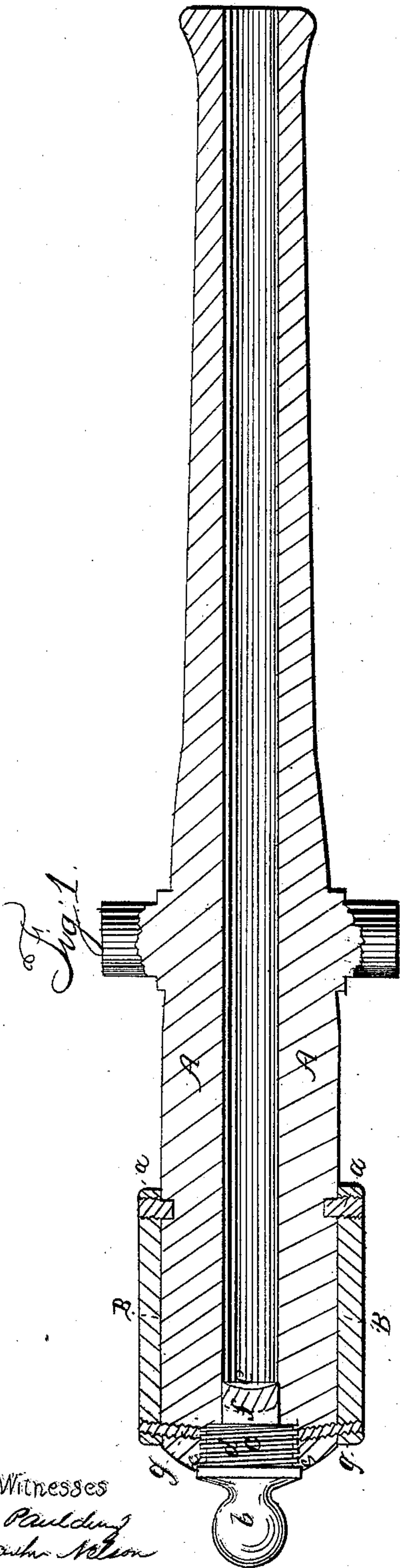


R. P. PARROTT.
Muzzle-Loading Ordnance.

No. 35,171.

Patented May 6, 1862.



UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN HOOPED ORDNANCE.

Specification forming part of Letters Patent No. **35,171**, dated May 6, 1862; antedated November 6, 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 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—

Figures 1 and 2 are central longitudinal sections, at right angles to each other, of a cannon constructed according to my invention; and Fig. 3, a transverse section of the same through the re-enforce.

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

This invention is more particularly designed for guns with rifled bore, the object being to obtain great strength and safety with simplicity of manufacture and at moderate cost.

It consists in providing a gun having a cast-iron body with a re-enforce of wrought-iron proportioned as and occupying a position hereinafter set forth; and it further consists in permanently closing the rear of a so re-enforced gun for muzzle-loading with a solid screw-plug of larger diameter than the bore, screwed into the rear of the body, the body having had the bore continued through the rear and having been counterbored, and a female screw having been cut in the counterbore for the reception of the said plug.

To enable others skilled in the art to construct guns according to my invention, I will proceed to describe it with reference to the drawings.

A is the cast-iron body of the gun, B the wrought-iron re-enforce, and C the screw-plug of wrought or cast iron.

The body A, except that its bore is continued through the rear, and that it is counterbored and has the female screw-thread cut in its rear, as will be presently described, does not differ, essentially, from cast-iron guns of ordinary manufacture. I make the thickness of the walls in the part which is to receive the re-enforce of a thickness about equal to the caliber of the gun. The wrought-iron re-enforce consists simply of a hollow cylinder formed by coiling a square bar of suitable thickness upon a mandrel and welding together the several turns of the coil. I make the thickness

of this re-enforce, when finished, by boring the interior and turning the exterior about equal to from four-tenths to five-tenths of the caliber of the gun, and its length sufficient to cover the usual charge of powder, and make it extend a distance about equal to one caliber in rear of the bottom of the bore—that is to say, the inner face of the breech, and a distance about equal to one caliber in front of the charge of powder. I turn that portion of the exterior to receive the re-enforce of cylindrical form, concentric with the bore, and of a diameter about one-sixteenth of an inch per foot larger than the inner diameter which the re-enforce has when cold.

To apply the re-enforce I heat it to such a degree as to expand it sufficiently to enable it to go on that portion of the body which is to receive it, and place it on the body A while the latter is in a horizontal position, or nearly so, and then rotate the body slowly about its axis, and at the same time introduce cold water into it by a suitable pipe to cool it, the object of the rotary motion being to prevent the re-enforce remaining in contact with any portion of the body until it has shrunk sufficiently to be in contact with the entire circumference, and as soon as the re-enforce is observed to bind upon the body I cover it with sand or other non-conducting material, continuing the flow of water into the bore until the entire gun is cold. When the gun is cold, the re-enforce may be further secured by a number of pins, *a a*, screwed through tapped holes in the re-enforce and entering smaller holes provided for them in the body, as shown in Figs. 2 and 3.

By the application of the wrought-iron re-enforce, proportioned as and occupying the position on the body as above described, I obtain, without making the gun unnecessarily cumbersome, a sufficient strength to meet the direct strain upon the cylinder of the bore.

The wrought-iron re-enforce so proportioned and arranged may be applied with great advantage to cast-iron guns having the breech cast solid with the body; but as I believe that, owing to the rigid connection made between the bottom and sides or cylindrical portion of the bore in such guns, great strain is thrown upon the center of the bottom and at the junction of the bottom and sides, I prefer, in order to avoid the rigid connection between the bottom and sides of the bore, to

employ, in combination with the re-enforce B, the screw-plug C, which I will now proceed to describe. The length of that portion of the said plug which is received within the body is about equal to one and a half caliber of the gun, and it has formed upon it a head, *b*, which may be of suitable shape to form a casing to the gun, or of any other shape which will enable it to have applied to it a suitable instrument for screwing it into the body, the said head fitting up to the rear of the body with a shoulder, *c*. The male screw-thread *d*, formed upon the exterior of the said plug, commences at the shoulder *c* and extends about half-way to the end *e*, which forms the face of the breech, the diameter of the said plug at the bottom of the screw-thread being greater than the caliber of the gun, and the portion *f* of the said plug in front of the screw-thread being turned to fit tightly into the bore of the gun.

In boring the body for the reception of the plug the bore is continued through the rear, and the body is then counterbored of a diameter equal to that of the plug at the bottom of the screw-thread and to a depth equal to the length of the screwed portion of the plug, and a female-screw is then cut in the counterbore of the body for the reception of the male screw-

thread *d*, which is screwed tightly into the body as far as the shoulder *c*.

The plug thus constructed is screwed into the body before the application of the re-enforce; and it may be further secured against turning in the body by pins *g g*, Fig. 1, screwed into tapped holes in the re-enforce and the body, and entering smaller holes drilled in its screwed portion.

I do not claim, broadly, the re-enforcement of a cast-iron gun with a band of wrought-iron, when such band and the body of the gun are not proportioned to each other, and the re-enforce does not occupy a position on the body substantially as herein set forth; nor do I claim fitting a gun with a screw-plug, when such plug is movable, for breech-loading, and used without a wrought-iron re-enforce; but

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

1. A gun made as herein shown and described.
2. The arrangement of the screw-plug *c*, constructed, as shown, with the said gun, as herein set forth.

ROBERT P. PARROTT.

Witnesses:

G. PAULDING,
ELISHA NELSON.