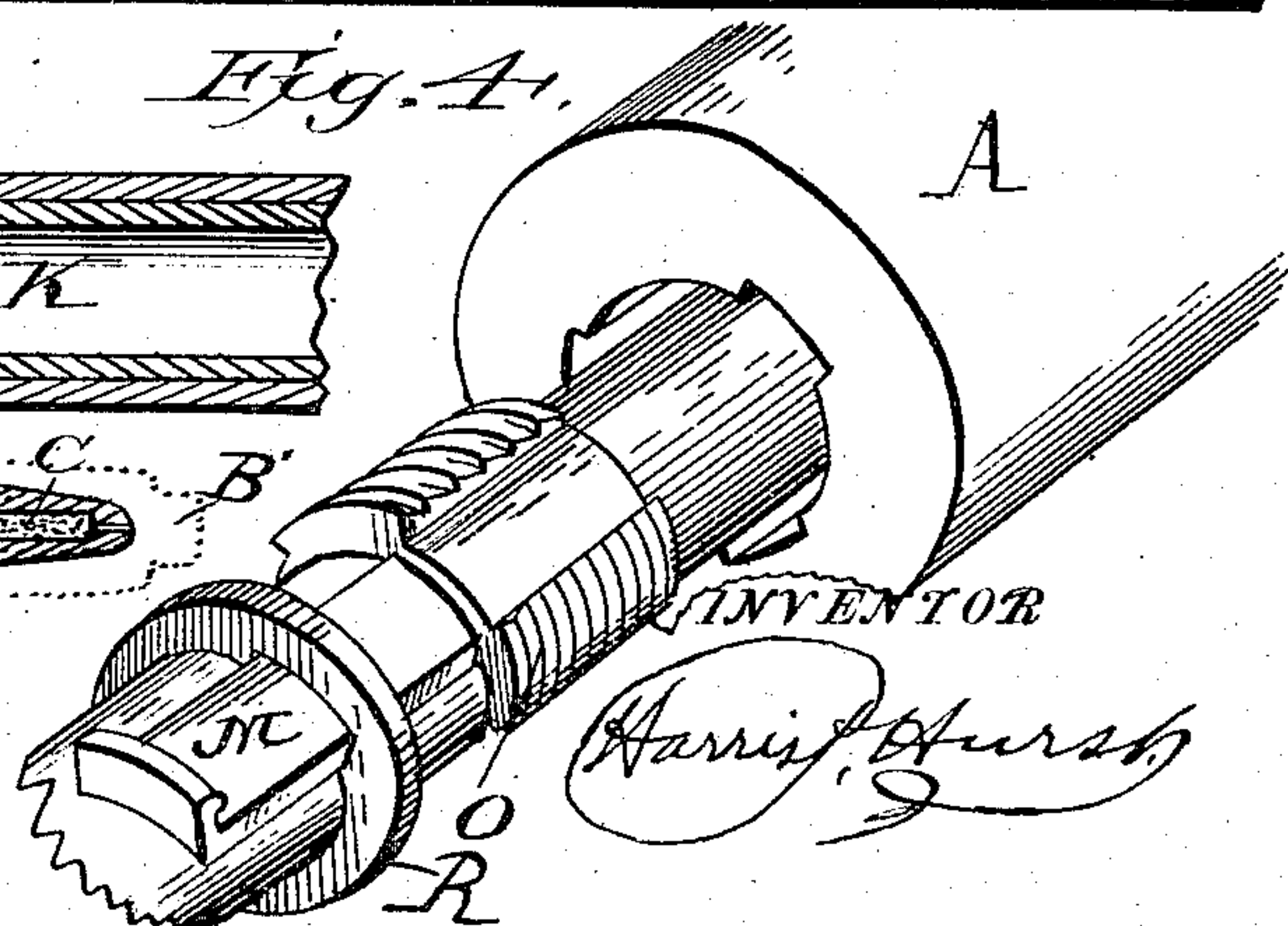
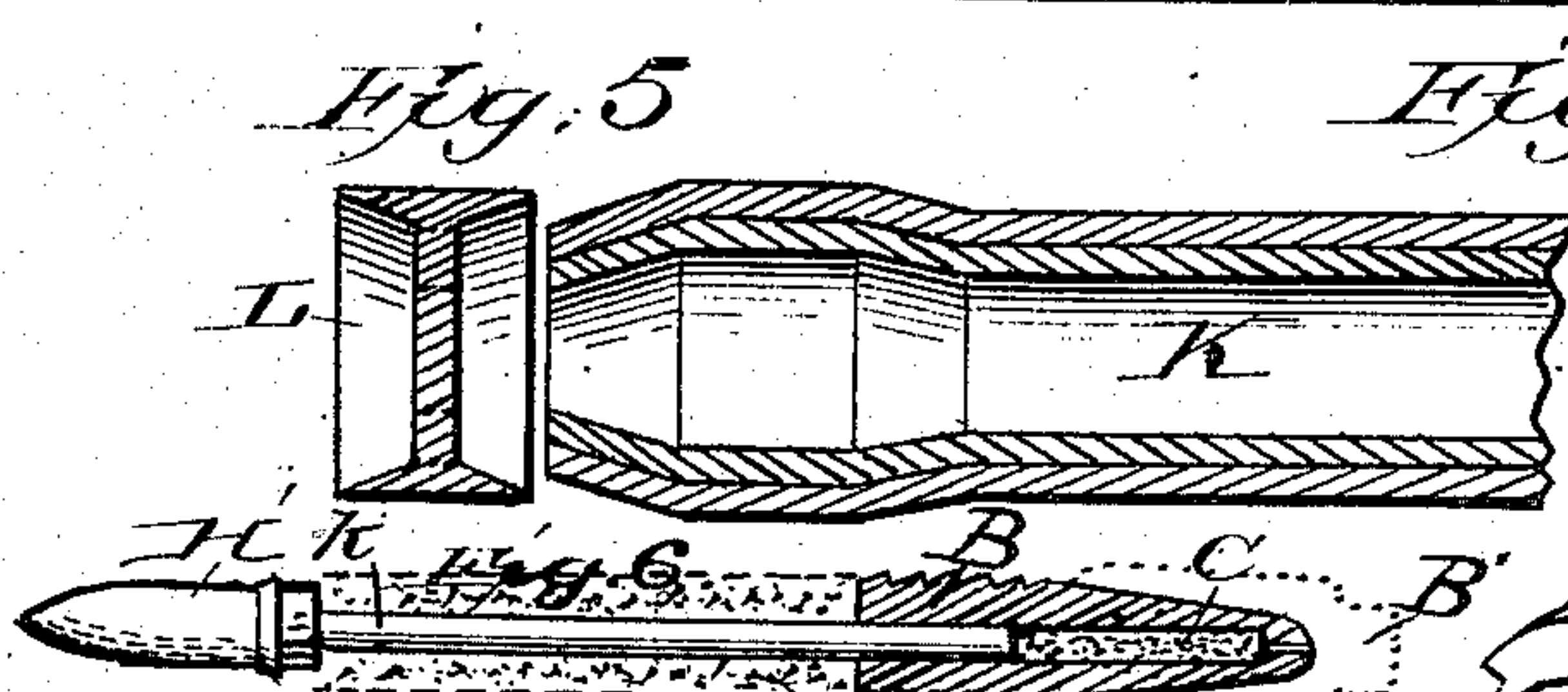
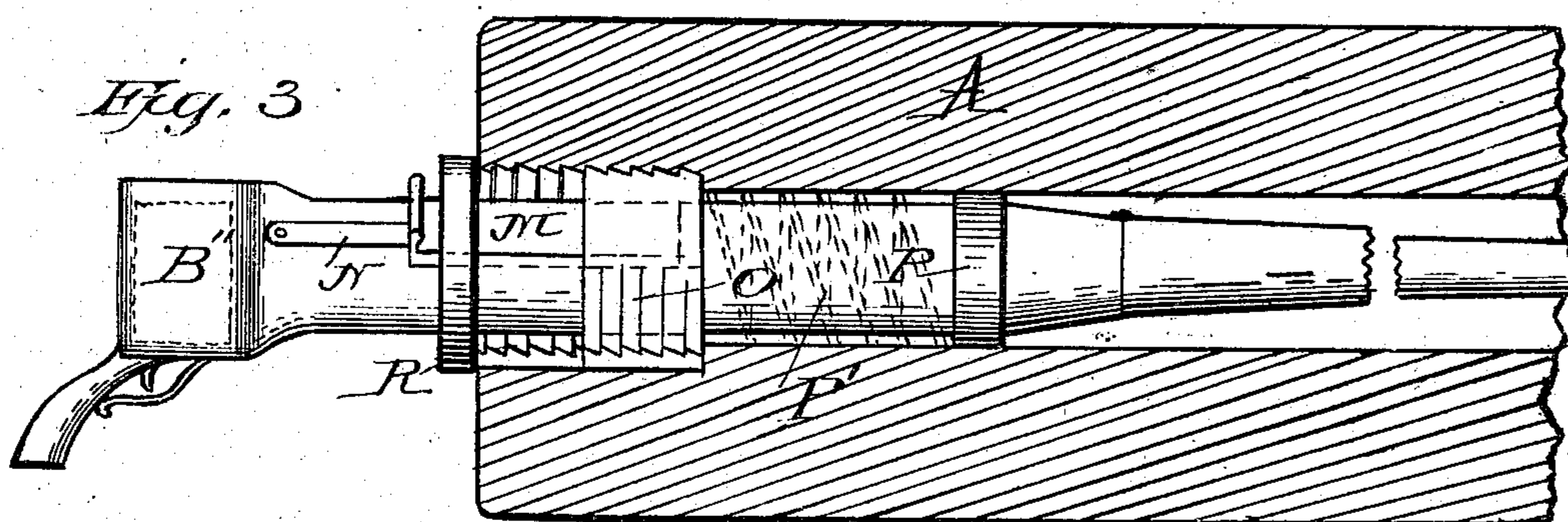
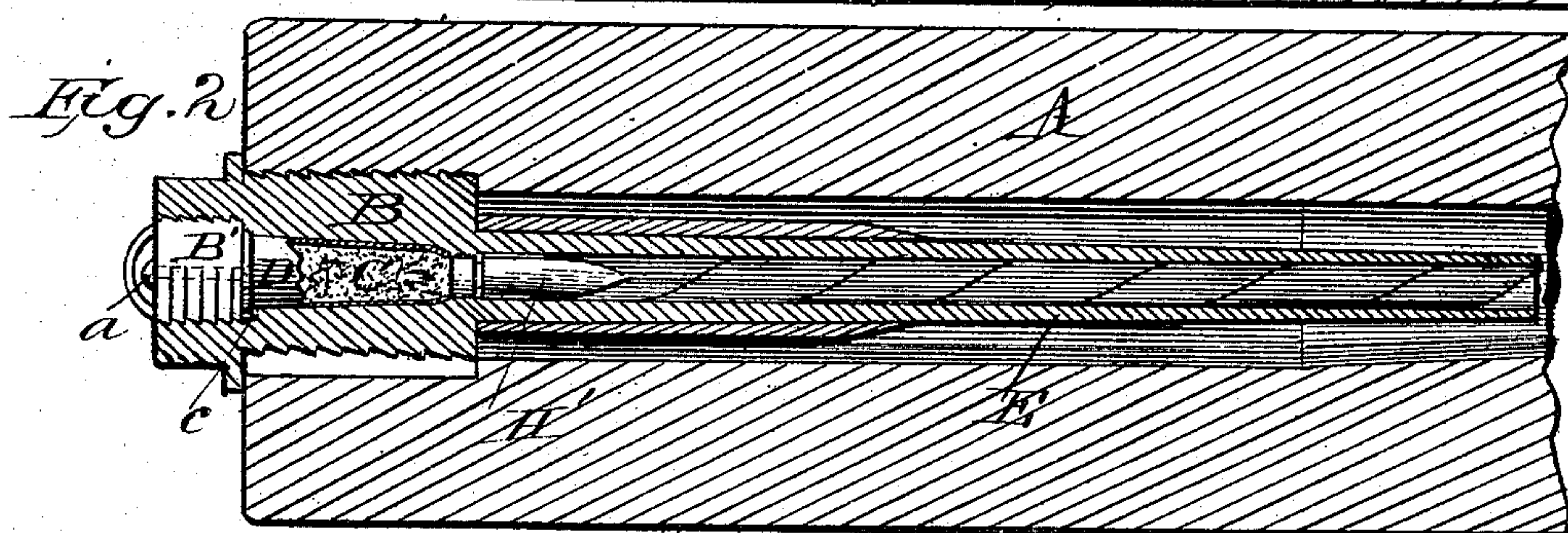
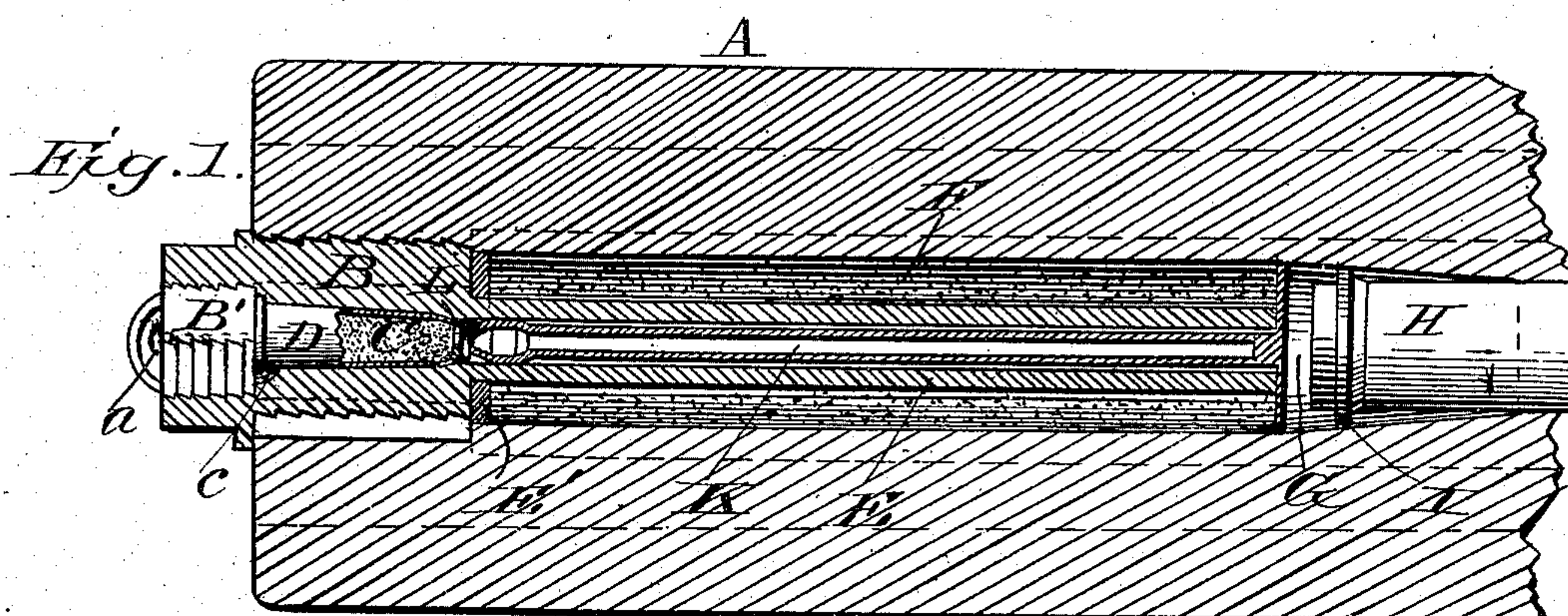


(No Model.)

H. P. HURST.
BREECH LOADING ORDNANCE.

No. 533,171.

Patented Jan. 29, 1895.



WITNESSES
F. L. Orvand
O. W. Smith

INVENTOR

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UNITED STATES PATENT OFFICE.

HARRIS P. HURST, OF SUMMIT, MISSISSIPPI.

BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 533,171, dated January 29, 1895.

Application filed August 17, 1892. Serial No. 443,329. (No model.)

To all whom it may concern:

Be it known that I, HARRIS P. HURST, a citizen of the United States, residing at Summit, in the county of Pike and State of Mississippi, have invented certain new and useful Improvements in Breech-Loading Ordnance; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to breech loading ordnance and particularly to heavy guns and the system of using them with high service or light practice charges as occasion may require.

Figure 1 is a longitudinal sectional view of the rear end of my eight-inch high power breech loading rifle, embodying the main features of my invention, using a service charge. Fig. 2 is a longitudinal sectional view of the rear of an eight-inch gun using a single or practice charge. Fig. 3 is a similar view of a similar gun using a rapid fire gun adapted for service or practice use. Fig. 4 is a perspective of Fig. 3 showing the locking device. Fig. 5 is an enlarged sectional view of the rear end of the telescopic tube and gas check shown in Fig. 1. Fig. 6 is a modification of breech block of Fig. 1.

Referring to the drawings A represents the body of the gun which may be of any construction—dotted lines Fig. 1 and this attachment to telescope with the tubular wall or partition extending forward from the breech block and separate the respective charges may have a buffer *g'* on its forward end indicating it may be jacketed and built up. The breech block B is of the well known interrupted or mutilated screw variety, and may be made in one or more pieces, the rear end of which is, as shown in Figs. 1, 2 and 6, slightly, or considerably, elongated though this is not essential in all cases. A smaller breech block B', (Figs. 1 and 2,) which may be of any suitable type, is fitted in the rear end of the larger breech block which is chambered to contain a charge C, which may be a primary or main charge, and may be placed in a metallic or other suitable cartridge case D.

The forward portion of the breech block may have made integral with it or secured to

it in any suitable way a tube E, a gas check pad E' fitted over its bore, Fig. 1, and the main charge F is placed in the space forward of breech block B—the forward portion of charge chamber G having a seat for the projectile H the forward end resting in the bore proper and the rear end centered and supported in the enlarged charge chamber by studs or an annular wad or ring I of any suitable material such as wood or felt or paper.

The telescopic tube K may be a part of the projectile or independent of it or secure in the gun as shown in Fig. 1, and its rear end is slightly enlarged and then turned inward so as to permit the gas cup check L to fit over it loosely until fired when it is driven on tight forming a perfect gas check, and the center section of the check as shown in dotted lines is intended to be blown out when fired, or be driven thereon by the explosion.

The breech block B may be secured and locked in any suitable manner and so may breech block B', and also B'' dotted lines Fig. 3.

As shown in Figs. 1 and 2 breech block B' is provided with a firing pin *a*, which may be made to operate automatically, and the breech mechanism may be provided with suitable extractors or ejectors *c* (dotted lines), and the cartridge cases being of the standard center-fire variety may be used, as shown, with or without the projectile H'.

For practice each gun is provided with an extra breech block B chambered to contain a loaded cartridge as shown in Fig. 2, and tube E is rifled and adapted to fire accurately and rapidly the regulation ammunition used in the ordinary rapid-fire guns of similar caliber.

In Fig. 3 I show how a rapid fire gun can be made to do service in an 8-inch rifle either for practice, or in the case of the chase of the big gun being damaged in action, or from other cause being unserviceable, a smaller gun for service is run into the breech and locked in position by the sliding wedge M, (Fig. 3,) which is prevented from working out of slotted portion of breech block and corresponding slotted parts of the walls of the gun by the spring catch N. The screw threaded and slotted band O is the equivalent of the breech block B and may be made to take the place of the trunnion band or may be shrunk

on the gun hot or screwed on or fitted as a loose sleeve and the gun is centered in the powder chamber of the larger gun by the soft metal ring P which should be made to fit the chamber snug and compresses spring P' when the gun recoils through band O in firing. The smaller gun may be specially designed to fit certain guns either on board ship or on shore, and in Fig. 4 the band O may fit loosely or be permanently attached to the gun and the wedge M is held in position by the collar R, though other devices may be used for this purpose.

For drill or target practice any size, style and caliber of breech loading gun or charge carrying barrel may be provided with a light screw-threaded breech closure or breech block to hold the barrel in the breech of the gun; and the central portion, or the muzzle section of the barrel, may be centered and supported in the gun chamber by any means, preferably by a band P, and with small caliber barrels, extending through a central longitudinal opening, the band may be omitted—the breech block supporting the barrel.

It is apparent many modifications may be made without departing from the letter and spirit and scope of my invention as shown in Figs. 2, 3 and 6.

In Fig. 6 I show how a rear extension of the breech block may be made to contain the primary charge C and the tube K being of sufficient length the main charge F could be contained in the charge chamber (dotted lines) forward of the breech block and thus dispense with the inner tube E. Dotted lines indicate this breech block has a secondary breech mechanism and could be placed in Fig. 1 without alteration of the gun.

The central idea of this invention is by extending the ordinary breech block rearwardly I get a propelling charge within the breech block or its equivalent a rapid fire or practice gun, and I desire to protect the invention without regard to the rearward form of the breech block extension or the gun to be used therein, or whether or not the breech block extension carries the primary, auxiliary or main charge, it being adapted to contain the main charge by elongating or enlarging the rear extension, as shown in dotted lines Fig. 6.

The invention illustrated and described herein largely consists in using in any class of breech loading rifled or smooth bored guns plural propelling charges divided and separated into primary and auxiliary or main charges and secured by plural breech blocks, so as to use the maximum propelling material the strength of the gun will permit, and I do not desire to limit myself as to the location of the primary, auxiliary or supplementary cartridge-charged charge-chamber C the rear of which is closed and secured by the primary, supplemental or auxiliary breech block B', as shown in Fig. 1, and described herein, as it is apparent this feature of my invention can be applied and placed in any desired place

or position upon the gun without departing from the letter and spirit and scope of my invention, and I claim it regardless of its location upon the gun, or whether or not the supplemental breech block B' closes the primary or auxiliary cartridge-charged chamber, as it is apparent it may close either chamber.

I claim—

1. A breech closure or breech-block for breech-loading guns having a central longitudinal opening carrying therein a charge-carrying barrel and means to support and center said barrel within the chamber of the gun, substantially as described.

2. A breech closure or breech block for breech loading guns having a charge-carrying barrel and provided with a centering and supporting band or ring forward of said breech-block, substantially as described.

3. A breech block as B for breech loading guns carrying a gas check as E' on its forward end and having therein a breech loading charge chamber extending therethrough and secured at the rear by an independent breech closing mechanism, substantially as described.

4. A breech block for breech loading guns having its rear end extended beyond the bore of the gun, said extension chambered to contain a propelling charge, substantially as described.

5. A breech block having a charge chamber through its body, said body carrying on its forward end a charge carrying barrel the bore of which is continuous with said charge chamber and an independent breech mechanism at the rear thereof to close said chamber, substantially as described.

6. A breech block and means to operate and secure the same in the gun, said breech block carrying a charge chamber therein and having at its rear an independent breech block provided with a firing and ejecting mechanism, substantially as described.

7. A breech block for securing the forward charge and chambered to contain the rearward charge and having on its front end a gas check interposed between said forward charge and the breech block to prevent the backward flow of gas when the gun is fired, substantially as described.

8. A breech block having a rear extension thereon extending beyond the bore of the gun and carrying a charge within the block secured by an independent breech block at the rear thereof and a charge in the gun forward therefrom and means interposed between the base of the projectile and the breech block to separate said charges until fired, substantially as described.

9. A breech loading gun having plural charge chambers one of which is the breech-block, the latter charge communicating, when fired, through said breech block to a charge forward thereof, substantially as described.

10. A breech loading gun having a charge chamber forward of its breech block, said gun having an auxiliary breech-loading cartridge-

charged chamber, said cartridge secured therein by a supplemental breech block, substantially as described.

11. A gun having a charge chamber forward of the breech-block, another charge chamber to the rear of the former and within the breech-block and a tubular wall extending from the breech-block to the base of the projectile, entirely separating the charges in the respective charge chambers until the starting of the projectile by firing, substantially as described.

12. A gun chambered for the charge forward of its breech block, said breech block carrying an additional charge therein, and means as I on projectile H to support the rear end of the projectile in the forward portion of said enlarged chamber and center the same until fired, substantially as described.

13. A breech loading gun having plural breech blocks securing plural charges, said charges being separated, until fired, by an independent attachment extending rearward from the base of the projectile, substantially as described.

14. A breech loading gun having plural charges secured by plural breech blocks, said charges separated, until fired, by an independent rod extending rearward beneath the base of the projectile and means on the lower end of said rod to check the forward flow of gas, substantially as described.

15. A gun having a breech block securing a charge forward thereof and carrying within itself an additional charge secured by an independent breech block and a telescopic partition extending rearward from the base of the projectile to the breech block separating said charges until fired, substantially as described.

16. A breech loading gun having its plural charges separated from each other, until fired, by a tube extending rearwardly beneath the

base of the projectile, a gas check thimble at the lower end of said tube adapted to be driven thereon by the explosion, substantially as described.

17. A breech loading gun, the breech block for closing the same having reciprocating therethrough a charge carrying barrel, substantially as described.

18. A breech loading gun, the breech block for closing the same having reciprocating therethrough a charge carrying barrel provided with means to check the recoil of the latter in the gun, substantially as described.

19. A breech block having a bolt adapted to slide between its interrupted screw threads and corresponding interrupted threads within the rear screw-threaded walls of the gun and lock the same, substantially as described.

20. In a breech-loading gun a breech block having a sliding bolt operating between its slotted screw-threads to lock the same in the gun and a spring to secure the bolt in position, substantially as described.

21. A breech loading gun having its plural charges separated from each other, until fired, by an extension forward from the breech block to the base of the projectile, said extension having a buffer as *g'* on its forward end, substantially as described.

22. A breech loading gun having its plural charges separated from each other, until fired, by a tube extending forward from the breech to and beneath the base of the projectile and means on the lower end of said tube to check the forward flow of gas, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRIS P. HURST.

Witnesses:

P. W. RALLEY,
WM. H. DE LACY.

Corrections in Letters Patent No. 533,171.

It is certified that in Letters Patent No. 533,171, granted January 29, 1895, upon the application of Harris P. Hurst, of Summit, Mississippi, for an improvement in "Breech-Loading Ordnance," errors appear in the printed specification requiring correction as follows: In line 54, page 1, and lines 94 and 119, page 2, the word "bore" should read *base*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 12th day of February, A. D. 1895.

[SEAL.]

Countersigned:

JOHN S. SEYMOUR,

Commissioner of Patents.

JNO. M. REYNOLDS,

Assistant Secretary of the Interior.

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[SEAL.]

JNO. M. REYNOLDS,
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Commissioner of Patents.