

(No Model.)

S. SEABURY.
BREECH LOADING ORDNANCE.

No. 483,267.

Patented Sept. 27, 1892.

Fig. 1.

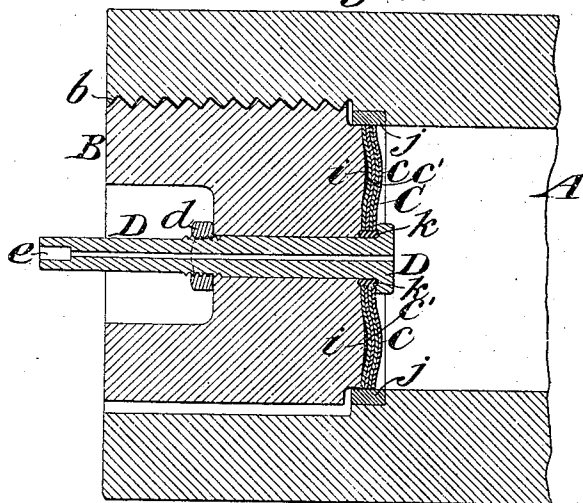


Fig. 2.

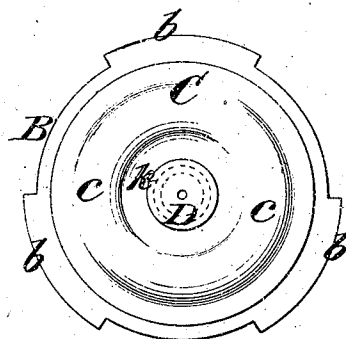


Fig. 3.

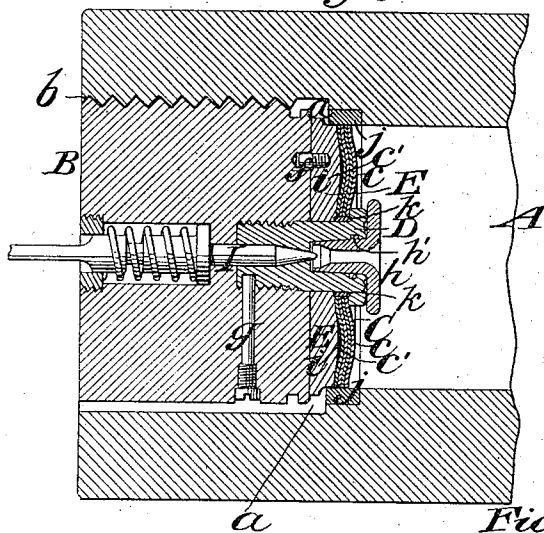


Fig. 4.

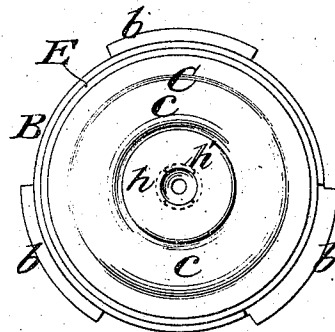


Fig. 5.

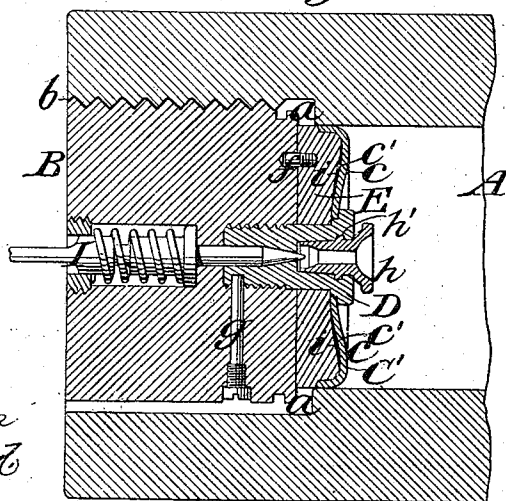
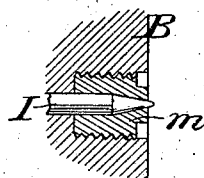


Fig. 6.



Witnesses:

O. Sundgren
D. B. Raymont

Inventor:
Samuel Seabury
by attorneys
Pount & Seward

UNITED STATES PATENT OFFICE.

SAMUEL SEABURY, OF THE UNITED STATES NAVY.

BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 483,267, dated September 27, 1892.

Application filed May 28, 1892. Serial No. 434,700. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL SEABURY, lieutenant United States Navy, at present residing at Bergen Point, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Breech-Loading Ordnance, of which the following is a specification.

This invention relates to breech-loading ordnance in which the removable breech-block or breech-piece is inserted into the gun by a movement in line or parallel with the axis of the bore.

The improvement consists in a gas-check of the novel and simple construction hereinafter described and claimed, whereby great efficiency is obtained; and it further consists in the novel means hereinafter described and claimed, whereby a breech-block of the kind hereinbefore mentioned may be quickly and easily adapted to the use of either fixed ammunition, which has its own gas-check, or to the use of such cartridges as have no gas-check.

Figure 1 represents an axial section of the breech portion of a cannon, the breech-block of which, constructed for the use only of such cartridges as have no gas-check, has my improved gas-check applied; and Fig. 2 is a face view of the said breech-block and gas-check. Fig. 3 represents an axial section of the breech portion of a gun, illustrating the construction of the breech-block and the application of my gas-check thereto for a cannon in which either fixed or loose ammunition may be used, as desired. Fig. 4 is a face view of the breech-block and gas-check, corresponding with Fig. 3. Fig. 5 represents an axial section illustrating a modification of what is shown in Fig. 3. Fig. 6 is a detail to be hereinafter explained.

Similar letters of reference designate corresponding parts in all the figures.

A designates the body of the cannon, bored through the breech and counterbored to receive the breech-block B, which is represented as fitted to the counterbore with mutilated screw-threads *b* in a well-known manner, which provides for its being locked by turning it after it has been inserted into the counterbore by a movement in line or parallel with the axis of the gun. This breech-piece

so far as described does not differ from those in common use.

C D designate the gas-check, which is represented in Figs. 1, 2, 3, and 4 as composed of a number of annular disks of sheet-steel or other suitable metal, and a bolt D, which passes centrally through the said disks and into the breech-block and by which the said disks are secured to the face of the breech-block. The said annular disks, which are of such circumference that in their normal condition their outer edges, which are presented circumferentially, fit easily or loosely to the bore of the cannon, have between the said outer edges and their central openings an annular bulge *c* in a forward direction, and between the backs of their so-bulged parts and the face of the breech-block there is left a sufficient space *c'* (shown black in Figs. 1 and 3) to permit the so-bulged parts to be pressed backward and the disks to be to a certain extent flattened by the force of the explosion of the charge of the gun, the effect of so pressing back the so-bulged parts and flattening the disks being to produce such radial and circumferential expansion of the latter as to bring their edges gas-tight against the bore of the gun.

In the example shown in Figs. 1 and 2, which is a gun for the use only of loose cartridges which have no gas-check, the front part of the breech-block is represented as fitted to the bore proper of the gun forward of the counterbore or breech-block seat, and thereby serving as a rearward support to the outer marginal portions of the gas-check disks C, and in this example the central bolt D passes through the center of the breech-block and is provided at its front end with a head which overlaps the inner edges of the annular disks C, and the said bolt has on its rear portion a screw-thread for the reception of a nut *d*, by the screwing up of which the inner and outer marginal portions of the said disks are brought tightly up against the face of the breech-block. The said bolt has a central bore to constitute the vent for firing the gun, and its rear end is counterbored, as shown at *e*, to receive a primer.

In the example shown in Figs. 3 and 4 the counterbore or breech-block seat and the breech-block proper B are constructed in fire-

manner common to breech-loading guns of the same kind for the use of fixed ammunition—that is to say, with a space *a* (see Fig. 3) for the flange of the cartridge-shell, and the so-constructed breech-block is provided with a concentric nose-plate *E*, which is applied to it when loose cartridges are to be used, but taken away when fixed ammunition is to be used. The gas-check disks *C* are applied in front of this nose-plate *E* instead of directly to the face of the breech-block. In Fig. 3 the face of this nose-plate is represented as constructed like the face of the breech-block shown in Fig. 1, with a space *c'* behind the bulged parts of the disks *C*, and the said nose-plate is represented as having its front part constructed to enter and fit the bore proper of the gun when the breech-block is closed, and so to constitute a rearward support to the marginal portions of the said disks. In this example the hollow bolt *D* of the gas-check which secures the disks *C* passes through the nose-plate also and secures that too to the breech-block; but the said bolt, instead of passing through the breech-block, as in the first example, is screwed into the breech-block. To prevent the nose-plate *E* from turning, it has screwed into it a dowel-pin *f*, (see Fig. 3,) which enters a hole provided for it in the face of the breech-block, and to prevent the unscrewing of the bolt *D* a screw-pin *g* is screwed through one side of the breech to enter a notch in the said bolt. The bolt *D* is represented in Fig. 3 as counterbored in front to taper form to receive a primer-cup *h*, which is fitted to said taper counterbore with a mutilated screw-thread *h'*, by which it can be tightly screwed up in place, but which provides for its easy removal, and the breech-block is represented as bored centrally in rear of the said bolt *D* to receive a firing-pin *I*, which enters the said primer-cup *h* through the hollow bolt *D*. The face of the solid breech-block *B* (shown in Fig. 1) and the face of the nose-plate *E*, which is practically a part of the breech-block shown in Fig. 3, are each represented as having an annular forward bulge *i* behind the bulge *c* of their respective gas-check disks; but the said bulge *i* is made less prominent or full than the bulge *c* of the disks, in order that the space *c'* may be preserved between the face of the block or nose-plate and the back of the disks. The object of this bulge *i* on the face of the disk is to prevent the bulged parts of the disk *C* from being so much pressed back by the force of the explosion that they would not recover themselves and allow the disks to resume their normal condition after the explosion.

In order to guard against the cutting out or injury of the bore of the gun by the outer edges of the gas-check disks *C*, I provide in the rear part of the bore, where these rings are received, a hardened-steel bushing-ring *j*, as shown in Figs. 1 and 3, the gun being counterbored in front of the breech-block seat to

receive the said ring, which is tightly driven into its place and the interior of which is of a caliber corresponding with the bore of the gun. To protect the center bolt *D*, which may be of soft steel, from the inner edges of the gas-check disks, I place around that part of the said bolt which receives the said disks a collar *k* of hardened steel.

The gun shown in Fig. 5 corresponds exactly with that shown in Figs. 3 and 4, except as to the particular form of the gas-check, which in Fig. 5 has but a single disk *C'*, the edges of which are cupped and turned back over a portion of the nose-plate *E*, which is reduced in circumference to receive it, the turned-in or cupped portion of the said disk having such an external circumference as to permit the said disk to pass freely with the nose-plate into the bore of the gun. This disk *C'*, like those *C* before described, has a forward bulge *c* and a space *c'* left behind the said bulge between it and the face of the nose-plate or breech-block, so that when the said disk receives the pressure resulting from the discharge of the gun its bulged part may be forced back, with the effect of expanding the said disk against the bore, as described with reference to the disks *C* in Figs. 1 and 3.

When it is desired to use the gun shown in Figs. 1, 2, and 3 for fixed ammunition, it is only necessary first to unscrew and take out the central hollow bolt *D* and then remove the nose-plate. The tapped hole provided in the breech-block for the said bolt is then to be plugged up flush with the face of the block by a short plug *m*, such as is shown in Fig. 6, which represents a longitudinal section of said plug and the surrounding parts of the block. The said plug is bored to receive the forward end of the firing-pin, which passes through it to strike the primer in the center of the head of the cartridge-shell.

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

1. The combination, with the breech-block of a breech-loading gun, of one or more gas-check disks secured to the face of said block and having a forward bulge, behind which there is a space between the said disk or disks and said face, substantially as and for the purpose herein set forth.

2. The combination, with a breech-loading gun and a breech-block fitted thereto and entering it from the rear, of gas-check disks secured to the face of said block and having their outer edges presented circumferentially and also having forwardly-bulged portions, behind which there is a space into which said bulged portions can be forced back to expand said circumferentially-presented edges against the bore of the gun, substantially as herein set forth.

3. The combination, in a breech-loading gun, of a breech-block having a bulged face and one or more gas-check disks secured to said face and having a forward bulge fuller than the bulge of said face, whereby a space

is provided between the bulged portions of said face and said disk or disks, substantially as and for the purpose herein set forth.

5 4. The combination, with the breech-block of a breech-loading gun, of a gas-check disk secured to the face of said block and having separate bearings against said face near the circumference thereof and near the center

thereof and having between said bearings a forward bulge, behind which there is a space 10 between the said disk and the said face, substantially as herein described.

SAMUEL SEABURY.

Witnesses:

FREDK. HAYNES,

CHARLES E. LUNDGREN.