

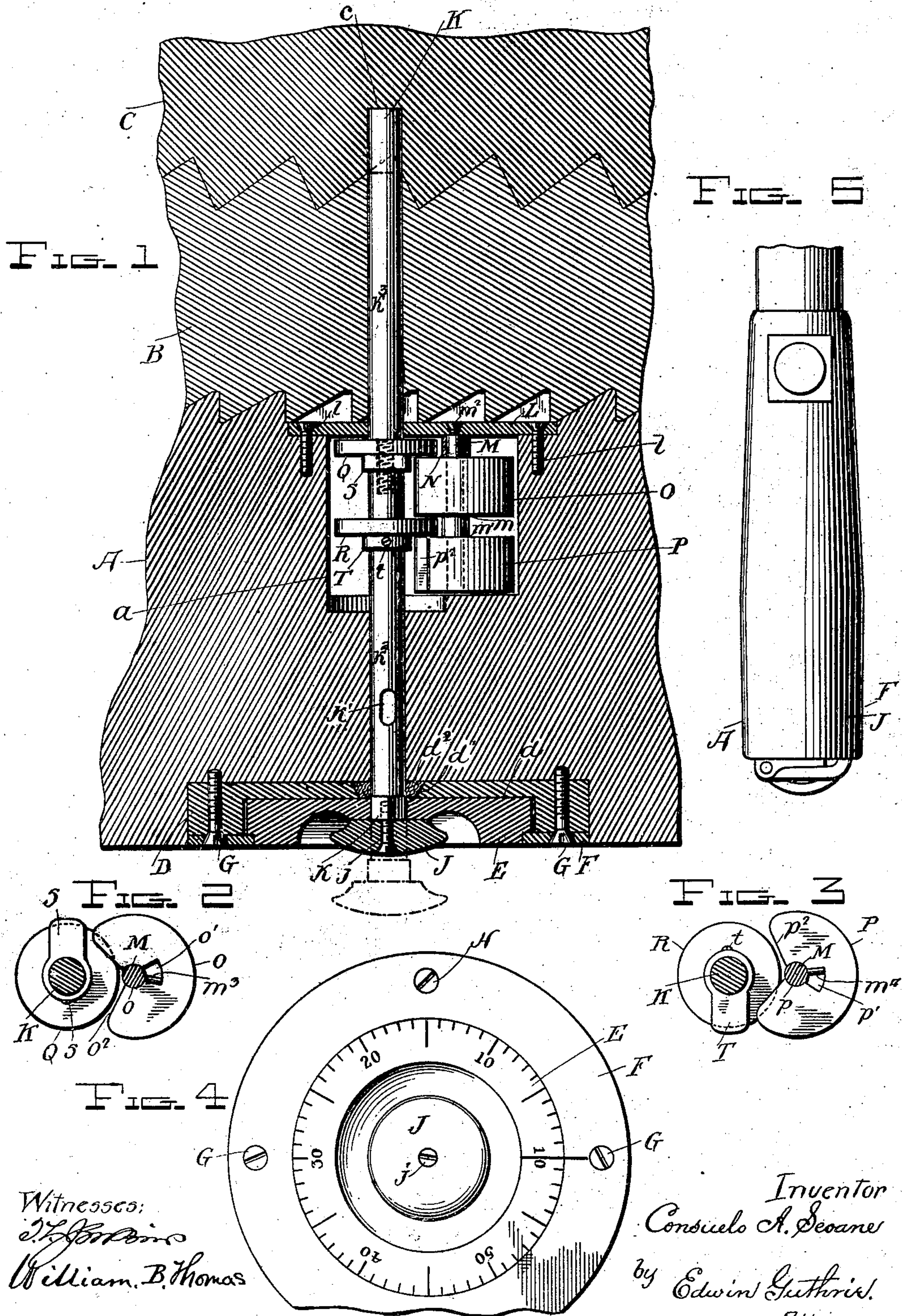
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C. A. SEOANE.
DISABLING LOCK FOR ORDNANCE.

(Application filed Feb. 11, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

CONSUELO A. SEOANE, OF MERRIFIELD, VIRGINIA.

DISABLING-LOCK FOR ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 716,946, dated December 30, 1902.

Application filed February 11, 1902, Serial No. 93,583. (No model.)

To all whom it may concern:

Be it known that I, CONSUELO A. SEOANE, a citizen of the United States, residing at Merrifield, in the county of Fairfax and State of Virginia, have invented certain new and useful Improvements in Disabling Emergency-Locks for Ordnance; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to disabling emergency-locks for ordnance, and has for its object the production of mechanism performing the function of a permutation or combination lock or other secret fastening device located within the gun and inaccessible from without otherwise than herein provided and capable of being opened only by those possessing the key or combination. Such mechanism I apply to the breech of a gun to lock the breech-block in place, thereby making it practically impossible of operation by an enemy in case of capture of the piece.

By the use of my invention a cannon may be as effectually disabled, so far as strangers to its lock are concerned, as if it were spiked or otherwise partially or wholly destroyed. Should the gun be recaptured by its original battery men, it is quickly made ready for service by unlocking the block.

My invention is intended chiefly for employment in emergencies to render the weapon to all intents and purposes useless to its captors, who cannot turn it against the men originally serving it.

Each constituent element of my invention is described in detail and its individual office, together with the mode of operation of the whole, fully explained hereinbelow.

I accomplish the objects stated by means of the mechanism illustrated in the accompanying drawings, of which—

Figure 1 represents a vertical section of a portion of the breech of a gun, showing my invention in position and in connection with those parts of the piece with which it is concerned. Figs. 2 and 3 show top plan views of the recessed locking-disks, the bolt-disks,

and the adjustable lugs contiguous to the bolt-disks. Fig. 4 is a plan view of the exteriorly-located dial-plates. Fig. 5 shows the position of the dial upon a gun.

Like letters refer to like parts throughout.

Considering the drawings, letter A marks the jacket of, for example, a breech-loading rifle, B the base-ring, and C the removable breech-block. As the mechanism for rotating and withdrawing the breech-block is not concerned with and forms no element of my invention, such mechanism is not shown. On the outside of the jacket and usually sunk flush with its surface for protection against accidental blows is placed the dial-holding pan D. This element is ordinarily a flat cylinder having a central circular recess *d*. Within the recess is seated the revoluble dial E, and it is retained by the marked ring F, through which the screws G and H pass. These screws also pierce the dial-pan D and are tapped into the jacket, thus serving to hold all the parts mentioned in position. The central orifice *d'* in the bottom of the dial-pan D diverges and compresses a washer of packing material *d''*, which encircles the bolt. The office of this washer or ring of packing is to cause a certain amount of friction with the bolt. When the bolt is withdrawn, therefore, it is held in its outermost position.

Letter J designates the head of the bolt K. Head J is secured to the bolt by the screw *j* or in any other suitable way. Bolt K passes through the center of revoluble dial E, and immediately beneath the head the portion *k* of the bolt is squared in order that the dial E may be turned when the bolt-head is rotated. At some point the bolt K is bored diametrically or slotted to form a hole *k'*, which weakens the bolt at that point. The reason for thus weakening the bolt is to cause it to break at the bored point if any extraordinary attempt is made to withdraw it through the jacket from the outside, as more fully explained hereinbelow. Bolt K passes through a hole bored in the jacket A and passes similarly through the base-ring B and into the breech-block C, which is properly provided with a bolt-hole *c* to receive the end of the bolt.

The mechanism of the lock, which may be of any selected description, is sunk in the interior surface of the jacket, and is therefore

entirely out of reach from without when the breech is locked except by way of the bolt K or its passage.

Letter α designates the chamber formed in the jacket to receive the lock mechanism. Base-plate L covers the mouth of this chamber and is held in place by screws ll . To the base-plate is secured the fixed shouldered cylindrical pillar M, its two shoulders being marked m and m' , as indicated. The pillar M is held to the base-plate by the screw m^2 , and immediately below the plate a collar N encircles the pillar. Between collar N and shoulder m of the pillar is located the first locking-disk O, and beyond the other shoulder m' of the pillar is placed the second locking-disk P. These locking-disks are ordinarily, though not essentially, duplicates, and a description of disk O will answer for both. It has a central orifice o for the pillar and a small recess o' opening into orifice o , which will be referred to again. From its periphery to its central orifice a sectoral portion is cut away, leaving the recess o^2 . Disk P possesses corresponding features, the central orifice being designated by letter p , the small interior recess by p' , and the sectoral recess by p^2 . The locking-disks O and P are loose upon the pillar, but each is prevented from fully rotating by the engagement of the pins m^3 and m^4 with the small interior recesses o' and p' of the locking-disks.

It will be observed in Fig. 1 that the bolt K passes through the chamber α and through the base-plate L. Within the chamber and suitably attached to the bolt are the bolt-disks Q and R. These elements are flat cylinders, as illustrated. Immediately below the bolt-disks Q and R are the lugs S and T, adjustably secured to the bolt by the set-screws s and t . I customarily place these lugs to project oppositely as drawn; but their positions may be modified if it is desired to make a change in the reading of the dial or "combination" of the lock. A change of combination would be effected also by using a ring differently marked from that illustrated. It will be noted in Figs. 2 and 3 that the lugs are slightly longer than the radii of the bolt-disks, and by reason of this additional length it will be understood that should the bolt be turned entirely around in either direction the locking-disks would be returned to the positions in the figures—that is to say, each locking-disk would interpose a corner immediately below each bolt-disk and prevent the withdrawal of the bolt either partially or wholly from the breech-block. If, however, the bolt be turned first in one direction to a predetermined extent, that point being read upon the dial and marked ring, and then in the other direction to another prearranged dial-reading, each of the locking-disks may be left in a position indicated by the broken lines in Fig. 2, and by turning the bolt to bring the lugs into the po-

sitions shown in Figs. 2 and 3, this third point being a third reading of the dial, the bolt may be withdrawn and reinserted. It will be seen that at no time are the sectoral recesses of the locking-disks O and P entirely freed from engagement with the bolt-disks Q and R when the bolt is drawn.

The engagement of the pins m^3 and m^4 with the small interior recesses o' and p' of the locking-disks O and P prevent the disks from being turned far enough to take them out of the control of the turning lugs S and T. In Figs. 2 and 3 it will be noted that whichever way the lugs turn the locking-disks will be rotated only within the limits of the engagement effected by the pins and internal recesses. Whether the bolt be withdrawn or inserted the locking-disks cannot be jarred out of a position from which they may be turned to agree with the necessary dial-readings.

In constructing the parts it is believed to be within the purview of my invention to make the lug S and the bolt-disk Q in one piece and the lug T and bolt-disk R also in one piece, as they turn together.

In assembling the parts the pillar M, bearing the locking-cylinder O, is attached to the base-plate L. The base-ring B and breech-block C of the gun being removed the locking-cylinder P is placed in its position at the bottom of cavity α , and the lower half k^2 of the bolt K, to which the bolt-disks and lugs have been secured, is associated with the parts on the plate in such manner that the cylinder O lies partly between the two bolt-disks Q and R. Now by careful manipulation the extremity of pillar M can be passed through the locking-cylinder P, pin m^4 engaging recess p' , and at the same time the lower portion of bolt K is moved downwardly through jacket A of the gun. Plate L is fixed in its seat by screws l . Base-ring B of the gun being now screwed into jacket A, as is customary, the remaining half k^3 of bolt K is passed from the interior through the base-ring and joined to the lower part of the bolt, as indicated. Then the dial-pan D, the dial E, engaging the squared end k of the bolt, and finally the head J of the bolt, are all located as shown in Fig. 1.

To determine exactly how far the dial E must be turned forward and backward to move the locking-cylinders O and P into positions permitting the bolt-disks to pass, it is my practice to set up the entire mechanism before it is put into the gun and to ascertain by observation the necessary relative dial-readings for a given adjustment of the lugs S and T.

All the locking mechanism being inclosed in the metal of the breech and capable of being reached by any one seeking to destroy it only by way of the bolt or bolt-hole, if the bolt is weakened any attempt to draw it out by undue force breaks it at the hole k' , and it can-

not thereafter be reached by any tool. The dials and pan and bolt-head may be entirely broken off without unlocking the breech-block, and the gun could not be employed by an enemy against the original batterymen, as has been repeatedly done in a recent war. When capture is imminent, the officer whose duty it is locks the gun by the emergency-lock, and excepting the possession of very unusual knowledge and skill on the part of the enemy the piece is wholly disabled without injuring it in any part.

The dial and its neighboring elements may be placed at any point on the surface of the jacket at the breech of the gun. It is my practice to place these elements on the lower side of the jacket, as indicated in Fig. 1, where they will not be likely to be disturbed in the regular working of the piece.

I am aware that additional locks have been employed in connection with the breech-blocks of cannon, and I do not claim that feature broadly.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a disabling emergency-lock for ordnance, the combination of a gun having a removable breech-block, lock mechanism inclosed in the metal of the breech of the gun and constructed and arranged to lock the said breech-block against removal, and devices connected with the said lock mechanism and

adapted to operate the lock from the external surface of the gun.

2. In a disabling emergency-lock for ordnance, the combination of a gun having a removable breech-block, lock mechanism inclosed in the metal of the breech of the gun and constructed and arranged to lock the said breech-block against removal, a revoluble dial situated upon the external surface of the gun, and a marked element adjacent to the said dial, the said lock mechanism being connected with and adapted to be operated by the said dial.

3. In a disabling emergency-lock for ordnance, the combination of a gun having a removable breech-block, lock mechanism inclosed in the metal of the breech of the gun and having a revoluble, reciprocating bolt, the said lock mechanism being actuated by the revolution of the bolt, one end of the said bolt being arranged to engage and lock the breech-block against removal, the remaining end of the bolt passing through the metal of the gun to the external surface thereof, and devices constructed to operate the said bolt.

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

CONSUELO A. SEOANE.

Witnesses:

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