A. BONANZO.

Disabling Cannon.

No. 37,946. Patented March 24, 1863.

Fig. 1.

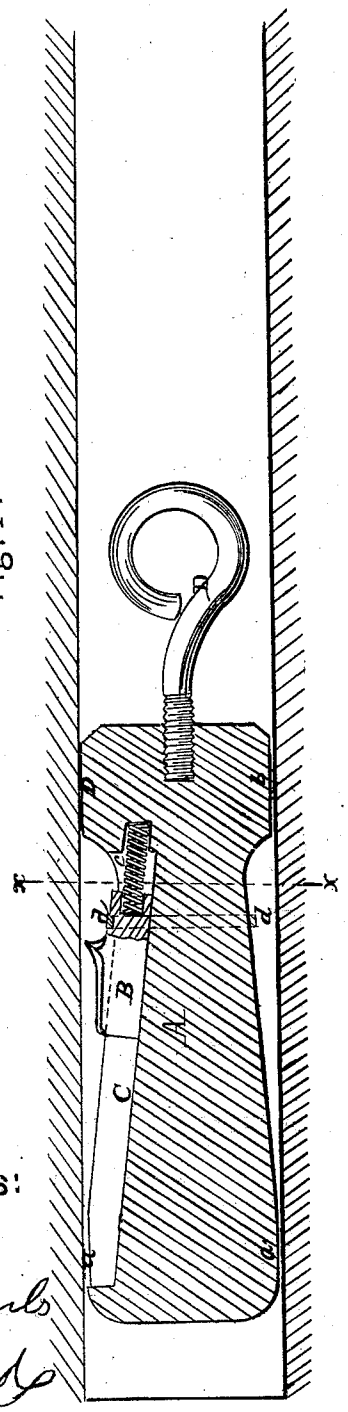
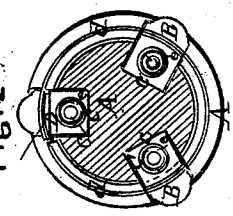


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ADOLPHUS BONZANO, OF DETROIT, MICHIGAN.

IMPROVEMENT IN IMPLEMENTS FOR DISABLING ORDNANCE.

Specification forming part of Letters Patent No. **37,946**, dated March 24, 1863.

To all whom it may concern:

Be it known that I, ADOLPHUS BONZANO, of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Apparatus for Disabling 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 the apparatus, showing it applied within the bore of a cannon. Fig. 2 is a transverse section of the same in the plane indicated by the line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists of a block of metal fitted loosely to the bore of a piece of ordnance, and having inclined longitudinal grooves, to which are fitted sliding teeth or cutters, whose operation is so controlled by springs that they offer no obstruction to the passage of the block along the bore; but on any attempt to withdraw the block or drive it out by the explosion of the charge, in case of the gun having been loaded before its insertion, they will cut and indent themselves into the metal of the piece in such manner as to render such attempt unsuccessful.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is the block of cast or wrought iron or steel, having its ends of cylindrical form, as shown at *a* and *b*, and having the intermediate portion conical.

c c are parallel-sided grooves in the conical portion of said block, having their bottoms inclined to the axis of the block, as shown in Fig. 1, such inclined bottoms forming portions of a cone.

B B are the cutters, made of steel, hardened and tempered, and fitted to the grooves *c c* in such manner as to slide freely therein in a longitudinal direction, the points *d d* of the said cutters being directed toward the front end of the block—that is to say, the end next to which the lower parts of the grooves *c c* are situated.

C C are springs so applied to the cutters as to force them along the grooves *c c* toward the higher ends thereof.

d is a light band of steel, copper, or other metal encircling the cutters and entering transverse grooves provided therein, for the purpose of preventing the cutters from dropping out from the grooves and keeping them all in corresponding positions. If this band is of steel, it may be composed of a strip simply rolled into the desired form, and not having its ends united, and it may be sprung into its place, but, if of copper, may be composed of a strip wound around the cutters, and have its ends united by soldering. In either case it will yield or give way, to permit the moving outward of the cutters from the center of the block.

D is a handle screwed into the front end of the block A, for convenience of handling the apparatus. The front end should be hardened if the block be of steel, chilled if the block be of cast-iron, or steel-faced and hardened if the block be of wrought-iron, to prevent the block from being drilled out. The rear end of the block may be so formed as to permit it to pass right up to the breech of the piece of ordnance, to prevent any gunpowder from being inserted through the vent; or it may have a stud inserted, to prevent it from passing up to within a certain distance of the breech.

The cutters may be of various forms; but in any case their points should have a forward direction, to cause them to indent themselves into the metal of the piece of ordnance in case of any attempt to draw out the block, but to permit them to pass with the block backward toward the breech.

To disable a piece, it is only necessary to insert the block A in the bore and push it back either not quite to the charge of gunpowder, if the piece be loaded, or up to the breech, if it be not loaded. In this operation the cutters have their points kept in contact with the bore by the springs, but yield to the friction of their points against the bore, and offer no very perceptible resistance to the passage of a block. When any attempt is made to draw or force out the block by any means whatever, the slightest movement of the block causes the bottoms of the grooves *c c* to act like wedges upon the cutters and force them outward from the center of the block and drive them into the metal of the piece, and the continued application of force to draw out the block causes the cutters to indent themselves deeper and deeper into the metal, and offer an increasing

resistance to the movement of the block. In case of any attempt to blow the block out by the explosion of a charge of gunpowder in rear of it, the most likely result will be the bursting of the gun. The rear end of the block may be fitted with an expanding packing of any suitable kind to prevent windage in case of an attempt to blow it out by the explosion of gunpowder, as any gas escaping round the block might act upon the cutters themselves to force them down the inclined bottoms of the grooves, and so cause the withdrawal of their points from contact with the bore of the piece.

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

The apparatus for disabling ordnance, composed of a block, A, having grooves *c c* with inclined bottoms, a series of cutters, B B, fitted to the said grooves, and a series of springs, C C, applied to the cutters, the whole combined and operating substantially as herein specified.

ADOLPHUS BONZANO.

Witnesses:
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