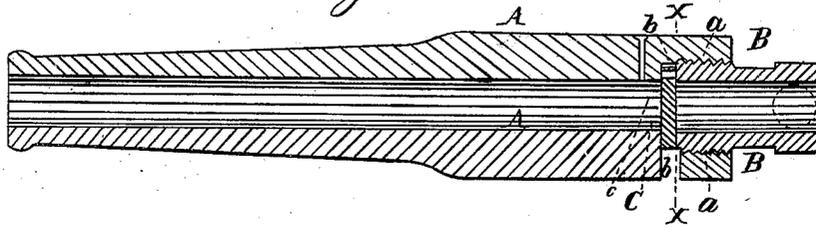


E. A. SUTCLIFFE.  
Breech-Loading Ordnance.

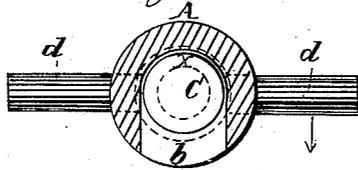
No. 39,596.

Patented Aug. 18. 1863.

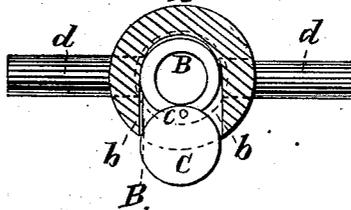
*Fig:1*



*Fig:2.*



*Fig:3.*



*Witnesses.*

*Wm. S. Douglas*

*Geo. W. Reed*

*Inventor.*

*E. A. Sutcliffe*

# UNITED STATES PATENT OFFICE.

ELIHU A. SUTCLIFFE, OF NEW YORK, N. Y.

## IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. 39,596, dated August 13, 1863.

### *To all whom it may concern:*

Be it known that I, ELIHU A. SUTCLIFFE, of the city, county, and State of New York, have invented a new and useful Improvement in Breech-Loading 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 vertical section of a cannon constructed according to my invention. Fig. 2 is a transverse section of the same in the plane indicated by the line *xx* in Fig. 1, showing the breech-piece in a closed condition. Fig. 3 is a similar section, showing the breech-piece in an open condition.

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

This invention relates to the employment of a movable breech-piece inserted into a mortise provided in the gun, and a tightening and sustaining screw which screws directly into the breech and is bored out large enough for the passage through it of the projectile and cartridge. It consists in so combining the said breech-piece with the hollow screw that it is opened by the act of turning back the screw.

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

A is the gun, bored right through the breech, counterbored at the breech, and having a screw-thread, *a*, cut in its counterbore for the reception of the breech tightening and sustaining screw B. This screw is bored centrally of a caliber slightly larger than that of the gun, to permit the projectile and the cartridge to pass easily through it. This screw is furnished at its rear end with a suitable lever or levers, *d*, to which to apply the necessary power to turn it.

*b* is the mortise, cut in the gun immediately in front of the counterbore of the breech for the reception of the movable breech-piece C. This mortise is of a width from side to side greater than the caliber of the gun, and of a depth from back to front slightly greater than the thickness of the breech-piece C. It is cut from the under side of the gun across the bore, and its upper part is finished in semi-circular form with a radius equal to half its width, as shown in Figs. 2 and 3, leaving the upper part of the gun closed, as shown in all the figures.

The breech-piece C consists of a flat circular disk of steel or other metal of a diameter slightly less than the width of the mortise *b*, but sufficiently greater than the caliber of the gun to give it a good bearing against the front of the mortise when closed. This breech-piece is so attached near its circumference by a pin, *c*, to the front end of the screw C that it may come to a position concentric with the screw and the caliber of the gun, as shown in Fig. 2. When the screw is screwed up tightly against it, as shown in Fig. 1, at which time the pin *c* is directly over its axis, the said pin is secured firmly in the screw and the breech-piece hangs loosely upon it. To open the breech the screw is turned back to the extent of a half-revolution, which brings the pin *c* below its axis, and by this means the breech-piece, being liberated from the end pressure of the screw, is caused to roll down one side of the mortise and drop to the position below the bore of the gun, (shown in Fig. 3,) leaving an open passage through the screw into the gun for the admission of the projectile and cartridge. After the insertion of the projectile and cartridge, the screw is screwed in to the extent of half a revolution, and the pin *c* raises the breech which rolls up one side of the mortise until it arrives in the position shown in Fig. 2, when the screw comes hard up against it and secures it to close the breech for firing. If it be required to take out the breech-piece for cleaning or repair, or for disabling the gun in case of necessity, the screw is turned back to the extent of one or more revolutions, or until the pin *c* is withdrawn from its hole in the breech-piece, when the latter drops out through the open bottom of the mortise.

I do not claim, broadly, the combination of a hollow tightening and sustaining screw with a movable breech-piece; but

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

Connecting the movable breech-piece C with the hollow tightening and sustaining screw B by means of a pin, *c*, or its equivalent, by which the turning of the said screw in and out is made to raise and lower the breech-piece, and so close the breech of the gun, substantially as herein described.

ELIHU A. SUTCLIFFE.

Witnesses:

THOS. J. DOUGLAS,  
GEO. W. REED.