

UNITED STATES PATENT OFFICE.

ARTHUR TREVOR DAWSON AND GEORGE THOMAS BUCKHAM, OF LONDON, ENGLAND, ASSIGNORS TO THE VICKERS, SONS & MAXIM, LIMITED, OF SHEFFIELD, ENGLAND.

BREECH MECHANISM FOR BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 629,288, dated July 18, 1899.

Application filed December 13, 1898. Serial No. 699,164. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR TREVOR DAWSON and GEORGE THOMAS BUCKHAM, citizens of England, residing at No. 28 Victoria street, Westminster, London, England, have invented certain new and useful Improvements in Breech Mechanism for Breech-Loading Ordnance, (for which applications for patents have been made in Belgium, dated October 27, 1898, No. 108,523; in France, dated October 27, 1898, No. 270,319; in Great Britain, dated October 27, 1898, No. 22,606; in Italy, dated October 31, 1898, No. 14,828, and in Sweden, dated October 29, 1898, No. 1,676,) of which the following is a specification.

This invention has for its object to improve the mechanism of the breech-loading ordnance for which Letters Patent Nos. 602,785 and 610,110 were issued April 19, 1898, and August 30, 1898, respectively.

The breech mechanism to which our invention is applied is of the kind in which the breech of the gun is closed by a screw-plug which has interrupted or segmental threads or rings and is locked or unlocked by a partial rotation on its axis. This plug is carried on a swinging arm or carrier which is hinged to one side at the breech of the gun and is moved by a hand-lever or by worm-gear worked by hand.

The form of obturator which we employ is such that the breech-plug can be swung out of the gun without any longitudinal withdrawal directly after it is unlocked.

We shall describe our invention, referring to the accompanying drawings.

Figure 1 is a front view, and Fig. 2 is a plan, of the carrier and breech mechanism. Fig. 3 is a part section on the line 3 3 of Fig. 2, and Fig. 4 is an elevation of part of the breech of the gun with the plug and carrier in section.

A is the carrier, and B the breech-plug, which are shown in the open position by the dotted lines A' B' in Fig. 2, the carrier swinging on its hinge-pin C. On this pin, about midway of its height, we fix a toothed segment D, which gears with a segment of a pinion E, pivoted in a recess in the carrier. Part of the periphery of the pinion E has skew-teeth

gearing with similar teeth on a pinion F, which is also pivoted in a recess of the carrier, so that it can revolve in a plane parallel to the breech-face of the gun. From the pinion F projects a short arm G, having a pin *f* connected by a link H to a pin *b*, projecting rearward from the face of the breech-plug. The link H and the short arm G are so arranged as to be in a nearly-straight line when the breech is locked, the pin *f* being then somewhat past the dead-center and the link H bearing against the upper side *h* of the recess of the carrier in which the parts are accommodated. Thus when the breech is closed the breech-plug is locked against any tendency to become unlocked by the shock of the explosion.

The hinge-pin C, on which the carrier A is fixed, may be rotated by hand or by worm-gear K, as shown.

When the firing-gear L is of the kind described in the Patent No. 610,110, the nut and slide are so arranged that the slide instead of moving vertically down to cock the firing-pin for safety is moved horizontally toward the pivot of the carrier. In order to effect this movement, we employ a connecting-bar M, sliding in a groove on the rear face of the carrier A and having its one end connected to the slide of the firing-gear by a spring-pin *m*, and at its other end there is a second spring-pin *n*, which projects forward into the recess in the carrier in which the pinion F is pivoted, so as to enter a cam-slot N, formed in the rear part of the arm G. This cam-slot is so formed as to give the connecting-bar M a very quick motion toward the pivot of the carrier during the first part of the movement of the arm G before the breech-plug is unlocked—that is, before the pin *f* has moved back beyond the dead-center. This insures that the charge cannot be fired except when the breech-plug is locked in the gun. By the continued movement the cam-slot N moves the connecting-bar M of the firing-gear still farther toward the side of the gun, causing automatic ejection of the fired primer, as described in the specification No. 610,110, above referred to.

The pins *m* and *n* are held engaged by

No. 629,426.

Patented July 25, 1899.

G. D. COLEMAN.

ANTIFOULING COATING FOR METAL STRUCTURES.

(Application filed Apr. 11, 1898.)

(No Model.)

Fig. 1.

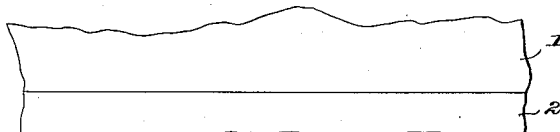


Fig. 2.

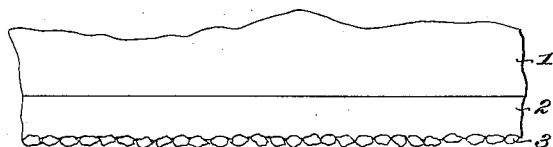


Fig. 3.

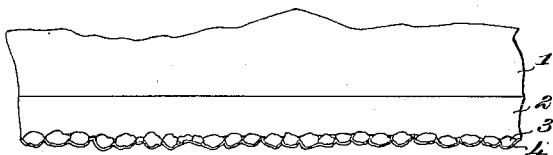


Fig. 4.

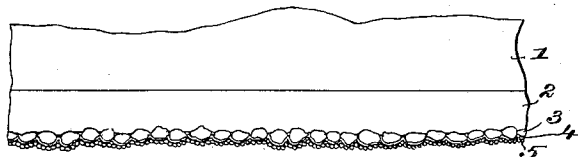
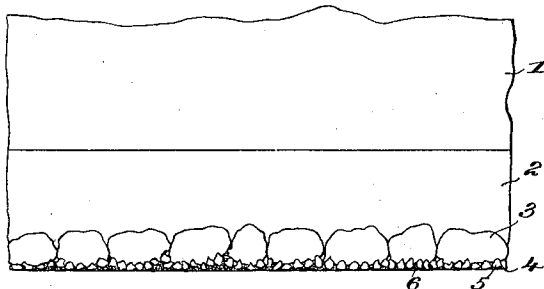


Fig. 5.



Witnesses:

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By his attorneys,
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