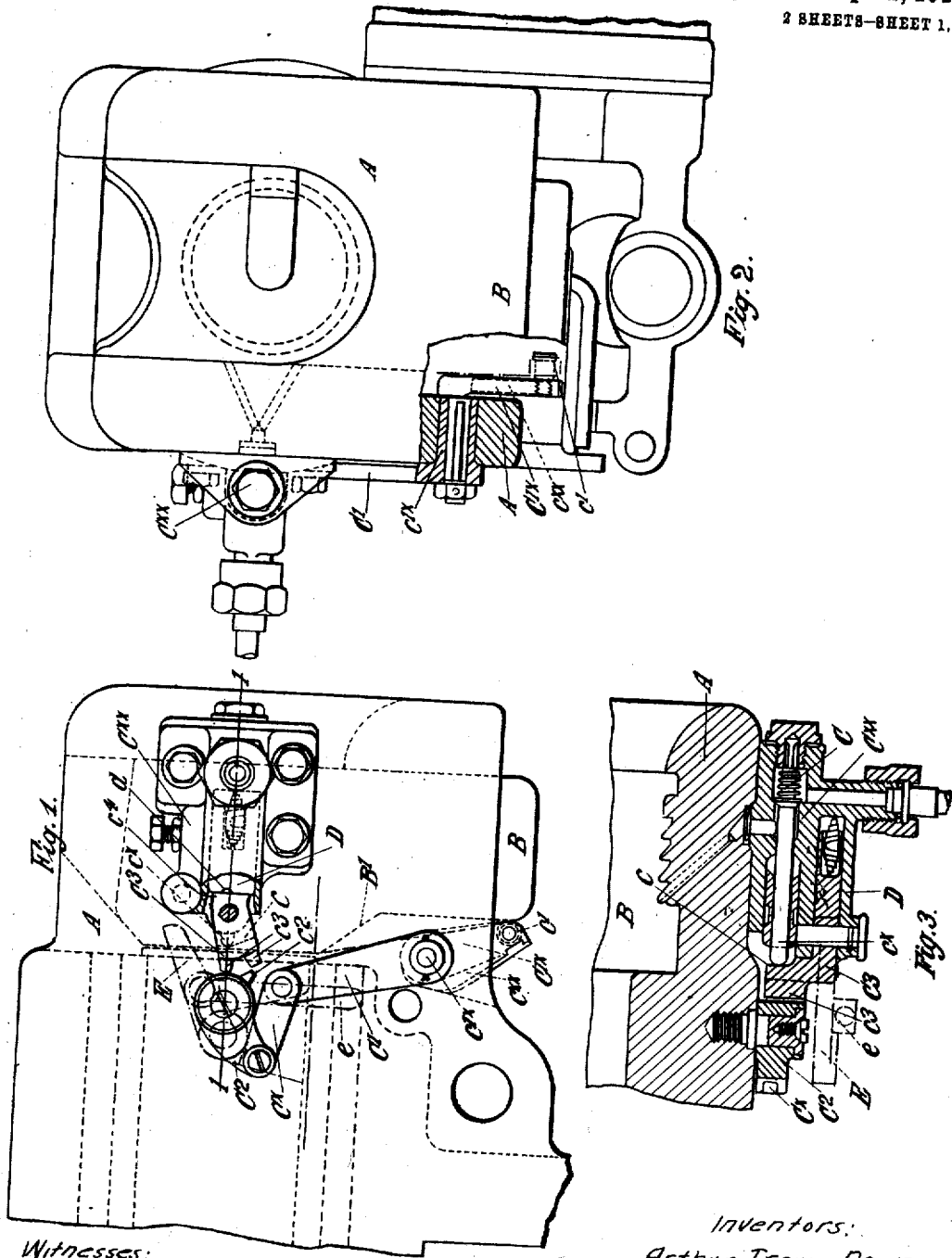


A. T. DAWSON & G. T. BUCKHAM.
BREECH LOADING ORDNANCE.
APPLICATION FILED DEC. 29, 1910.

1,022,124.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.



Witnesses:
M. A. Bell
C. A. Hennessey

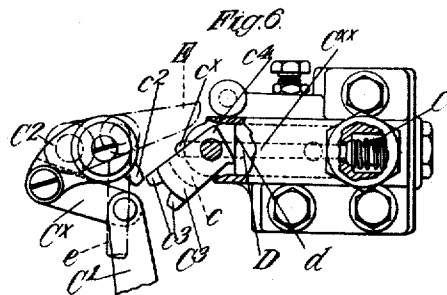
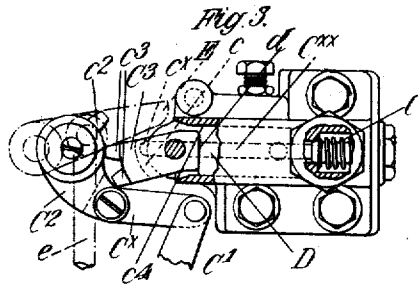
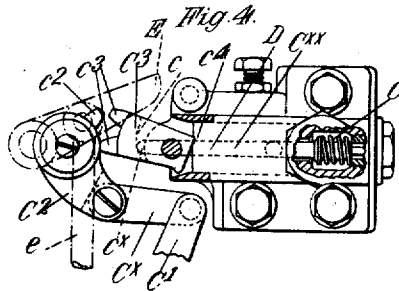
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Atty.

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Arthur Trevor Dawson
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UNITED STATES PATENT OFFICE.

ARTHUR TREVOR DAWSON AND GEORGE THOMAS BUCKHAM, OF WESTMINSTER, LONDON, ENGLAND, ASSIGNORS, BY MESNE ASSIGNMENTS, TO VICKERS LIMITED, OF WESTMINSTER, ENGLAND.

BREECH-LOADING ORDNANCE.

1,022,124.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed December 29, 1910. Serial No. 599,940.

To all whom it may concern:

Be it known that we, ARTHUR TREVOR DAWSON, knight, and GEORGE THOMAS BUCKHAM, both subjects of the King of Great Britain, residing at 32 Victoria street, Westminster, in the county of London, England, have invented certain new and useful Improvements Relating to Breech-Loading Ordnance, of which the following is a specification.

This invention relates to breech loading ordnance of the kind in which means are provided for injecting into the gun breech a jet or jets of compressed air or other suitable fluid during the opening of the breech, with the object of obviating the backward rush of flame or hot gases which is liable to occur when the gun is fired in a head wind and also with the object of effectually clearing the bore of the gun of any combustible matter which may remain therein after firing.

It is the chief purpose of the present invention to so construct and arrange the apparatus for controlling the supply of the compressed air or other fluid to the gun, that the said apparatus can be used in conjunction with breech mechanism of the kind in which the breech block in opening and closing the breech slides or moves transversely to the axis of the gun.

According to this invention the valve for controlling the supply of compressed air or other fluid is so arranged in relation to the breech block and appropriate intervening mechanism, that the sliding movement of the said block in opening the breech opens the air control valve, and the movement of the block in closing the breech causes the said valve to be displaced to cut off the air supply. We may also provide an independent hand actuated device for the purpose of closing the said valve, if desired, before the breech block has been moved to its closed position.

In order that the said invention may be clearly understood and readily carried into effect we will describe the same more fully

with reference to the accompanying drawings in which:—

Figure 1 is a side elevation of the breech end of a gun provided with our improvements, the gun being of the kind having a falling breech block. Fig. 2 is an end view of Fig. 1, showing a portion thereof in section. Fig. 3 is a horizontal section taken approximately on the line —1— of Fig. 1. Fig. 4 is a view of the valve operating gearing showing the position of the parts when the breech and the control valve are fully open. Fig. 5 is a similar view showing the valve closed by the independent hand operated device, the breech being still open, and Fig. 6 is a similar view showing the position of the parts when the breech mechanism is returning to the closed position after the valve has been closed by hand.

In these figures, A is the gun, B is the sliding breech block, and C is the air controlled valve. The breech block B is formed with an incline B' so situated that during its downward movement the said incline will coöperate with the aforesaid intervening mechanism. In the example shown this mechanism comprises a spring controlled actuating lever C' which is pivoted at c' at or near the breech end of the gun and has on the lower arm C' thereof a roller c'. The upper end of the said actuating lever C' is connected by means of a link C^x with a member C² that is also pivoted at or near the breech end of the gun. The said member C² is formed with a projection or tooth c² which coöperates with projections or teeth c³ on a lever C³ for controlling the movements of the aforesaid valve C. The said valve lever C³ is formed with a cam surface c against which the rounded end of the spindle c⁴ of the spring controlled valve bears, and is under the control of a spring plunger D the outer surface of which is formed with a notch d to engage with a heel c⁴ of the valve lever as hereinafter referred to.

The device for closing the air control valve by hand comprises a lever E piv-

totally mounted on a non-recoiling part of the gun mounting, which lever may be actuated by a rod *e* attached thereto for operating the valve *C* through the intervention of the valve lever *C*³ in the manner herein-after described.

When the breech block descends in opening the breech, the aforesaid incline *B'* thereon rocks the actuating lever *C'* about its pivot *c'*^x and through the aforesaid link *C*², displaces the toothed member *C*². By the coöperation of the tooth *c*² with one of the teeth *c*³ on the valve member *C*³, the latter is moved in an upward direction to effect the opening of the valve *C* by the engagement of the aforesaid cam surface *c* with the end of the valve spindle *c*^x. The aforesaid incline *B'* is so arranged that the valve is opened as the cartridge case is being ejected, the valve lever *C*³ being retained in its open position by the engagement of the heel *c*⁴ formed thereon with the aforesaid notch *d* in the spring plunger *D* as shown in Fig. 4. To close the valve by hand, the aforesaid rod *e* is actuated and the lever *E* attached thereto brought into engagement with the valve lever *C*³ to move the heel *c*⁴ on the latter out of engagement with the notch *d* in the spring plunger *D* as shown in Fig. 5. If the air control valve *C* has not been closed by hand prior to the closing of the breech, the parts are returned to their normal position as soon as the incline *B'* on the breech block moves out of engagement with the roller *c'* on said lever *C'*, by means of a spring *c*^{xx} (Fig. 1). In the event of the valve *C* having been closed by hand as aforesaid, the return movement of the valve actuating parts under the action of the aforesaid spring *c*^{xx}, causes the valve lever *C*³ to be moved by the tooth *c*² on the member *C*² in the downward direction, the aforesaid cam surface *c* being of such a character that the valve *C* is not actuated during this movement; this position of the parts is shown in Fig. 6. The spring plunger *D* is however depressed, and re-acts to return the lever *C*³ to its normal position after the aforesaid projection or tooth *c*² has moved out of engagement with the valve lever *C*³ into the position shown in Fig. 1.

What we claim and desire to secure by Letters Patent of the United States is:—

1. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, and means for opening the said valve by the lateral sliding movement of the breech block.

2. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, means for opening the said valve by the lateral slid-

ing movement of the breech block, and means for closing the said valve.

3. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, means for opening the said valve by the lateral sliding movement of the breech block and means for closing the said valve by the lateral sliding movement of the breech block in the reverse direction.

4. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, means for opening the said valve by the lateral opening sliding movement of the breech block, and means for closing the said valve by the lateral sliding movement of the breech block in the reverse direction.

5. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, means for opening the said valve by the lateral opening sliding movement of the breech block, and means for closing the said valve by hand.

6. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, means for opening the said valve by the lateral opening sliding movement of the breech block and means whereby the said valve remains open as long as the breech is open.

7. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, an inclined surface formed on the breech block, and mechanism coöperating with said inclined surface, for transmitting motion to the valve.

8. In breech loading ordnance, the combination with the laterally sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, an inclined surface formed on the breech block, mechanism coöperating with said inclined surface for opening the valve, and hand operated mechanism for closing the valve at will.

9. In breech loading ordnance, the combination with the sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, an inclined surface formed on the breech block, a pivoted lever coöperating with the inclined surface, a toothed member connected with said lever and a toothed valve lever gearing with said member.

10. In breech loading ordnance, the combination with the sliding breech block, of a valve for controlling the supply of compressed fluid to the gun, an inclined surface

formed on the breech block, a spring controlled two armed pivoted lever cooperating with the inclined surface, a toothed member connected with one arm of said lever, a
5 toothed valve lever gearing with said member, and means for transmitting the movement of the said valve lever to the valve.

In testimony whereof we affix our signatures in presence of two witnesses.

ARTHUR TREVOR DAWSON.
GEORGE THOMAS BUCKHAM.

Witnesses:

ERNEST E. LARKINS,
HENRY KING.