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J. B. THORNEYCROFT, M. G. FARQUHAR & A. H. HILL.

BREECH LOADING SMALL ARM.

APPLICATION FILED AUG. 4, 1905.

2 SHEETS—SHEET 1.

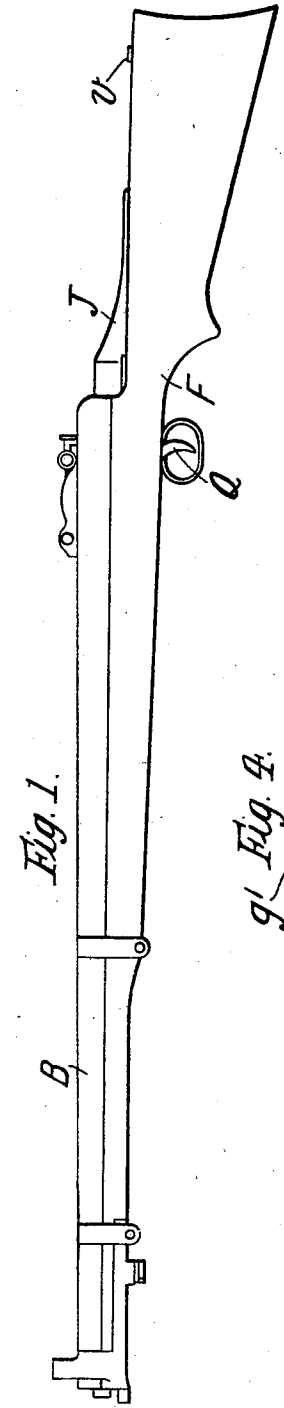

Fig. 1.

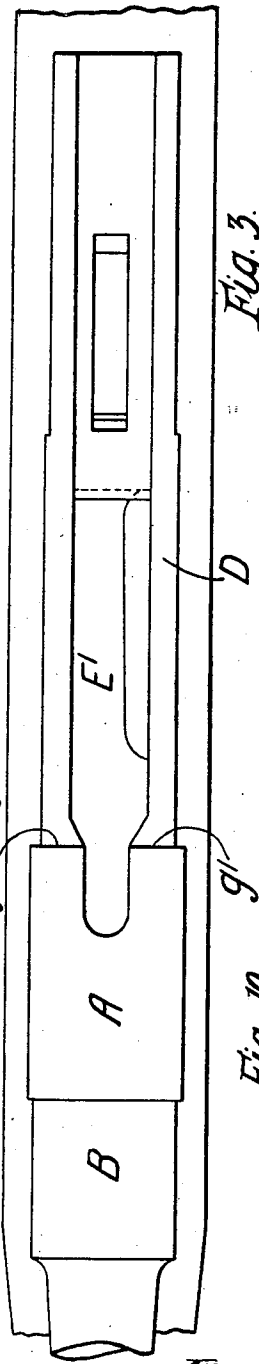

Fig. 4.

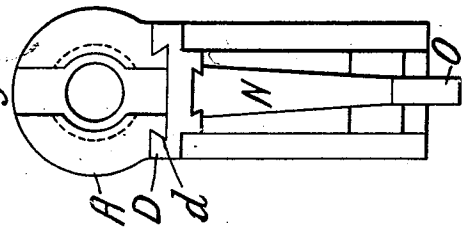

Fig. 3.

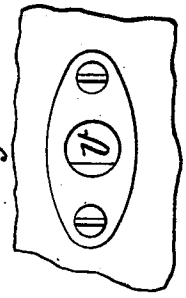

Fig. 10.

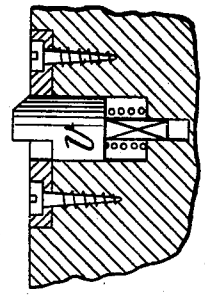

Fig. 11.

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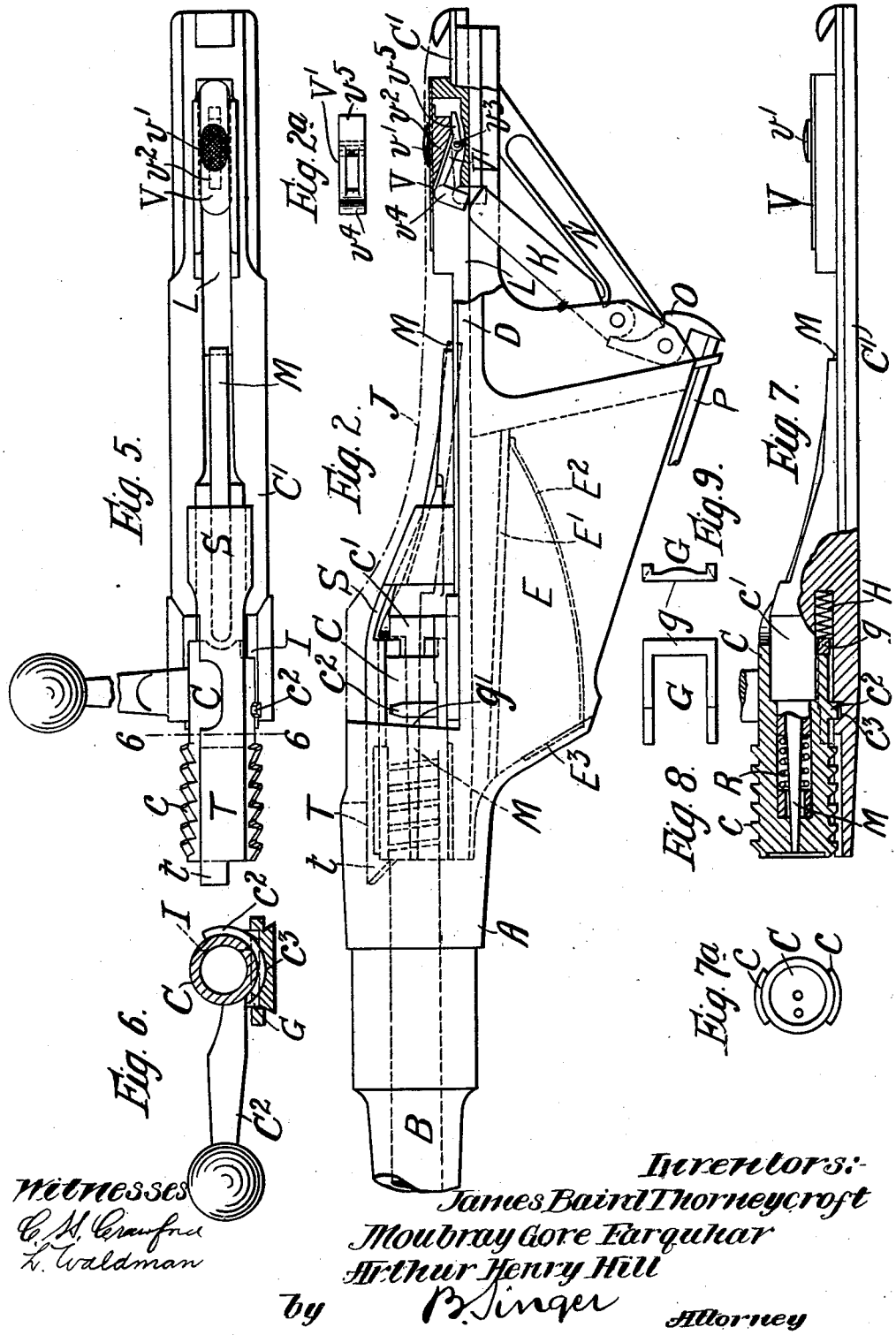
2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES BAIRD THORNEYCROFT, OF MAUCHLINE, AND MOUBRAY GORE FARQUHAR, OF ABOYNE, SCOTLAND, AND ARTHUR HENRY HILL, OF BIRMINGHAM, ENGLAND.

BREECH-LOADING SMALL-ARM.

No. 827,893. Specification of Letters Patent. Patented Aug. 7, 1906.

Application filed August 4, 1905. Serial No. 272,710.

To all whom it may concern:

Be it known that we, JAMES BAIRD THORNEYCROFT, residing at Mauchline, Ayrshire, and MOUBRAY GORE FARQUHAR, residing at Aboyne, Aberdeenshire, Scotland, and ARTHUR HENRY HILL, residing at Birmingham, Warwickshire, England, subjects of the King of the United Kingdom of Great Britain and Ireland, have invented certain new and useful Improvements in Breech-Loading Small-Arms, of which the following is a specification.

This invention, which relates to breech-loading firearms, has for its objects the provision of a bolt-action of improved construction and its adaptation to magazine-rifles in which the overall length of the weapon is reduced by projecting the magazine and action into the stock.

In the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of the improved rifle. Fig. 2 is a side elevation, partly in section and to a larger scale, of the breech-bolt action, magazine, and relative parts, the inclosing stock and woodwork being removed. Fig. 2^a is a plan view of a detail of the safety device, hereinafter referred to; Fig. 3, a rear end view of the action with bolt removed; Fig. 4, a plan of Fig. 3. Fig. 5 is a plan of the bolt and bolt-carrier removed from the rifle; Fig. 6, a cross-section at the line 6 6 of Fig. 5; Fig. 7, a longitudinal sectional elevation of the bolt and its carrier; Fig. 7^a, an end elevation of the bolt and ejector; Figs. 8 and 9, respectively, a plan and end view of a device which holds the bolt-lever vertical when the bolt is withdrawn from the breech. Fig. 10 is a plan, and Fig. 11 a vertical sectional elevation, of a spring-catch in the butt-end which prevents accidental withdrawal of the bolt-carrier from the slideway in which it fits.

According to the present invention the body A, secured to the rear end of the barrel B, is formed, as usual, with internal screw-threads or recesses to receive an interrupted screw or lugs *c*, formed on the bolt C, and it has fitted rearwardly from its base a bifurcated or slotted guide-plate D, straddling the magazine E and extending horizontally over part of the stock F, to which it is secured, the said guide-plate D, which constitutes the upper part of the action, having formed in it a dovetailed recess *d*, wherein is fitted to slide a combined cover for the magazine and carrier C′ for the bolt C. This cover-plate or carrier C′ terminates at its forward end in a stem *c′*, on which the cylindrical bolt C is fitted to rotate to engage with the screw-threads or recesses in the body A, the bolt being provided with a handle C^2, by means of which it may be turned on the carrier-stem *c′* to effect its engagement or disengagement with the body.

The bolt C is secured to the stem *c′* by a pin-and-slot connection or is held thereon by means of a rib c^2 thereon entering a groove c^3 in the carrier C′ or by like means, allowing of rotation of the bolt when in position for closing the breech; but when withdrawn it is locked against rotation by means of a forked catch G, Figs. 8 and 9, whose cross-bar end *g* is pressed by a spring H into engagement with a flat face I, formed near the rear end of the bolt, the locking-catch having forwardly-projecting fingers or forks, which, when the bolt C is forced home into the breech, strike the body at *g′* and are driven back against the power of the spring H to release the bolt and permit its rotation.

The guide-plate D and cover or carrier C′ are comparatively thin and are kept well down below the center line of the barrel B, to which line the stem *c′* at the forward end of the carrier C′ and the bolt C are raised. This depression of the parts of the action at rear of the body and bolt, in conjunction also with the absence of the usual cylindrical bolt-carrier and guiding part of the body, permits of the free use of the weapon without excessive elevation of the sight above the line of the barrel B. A light cover J, of wood, vulcanized fiber, or like material, is fitted over the rear of the bolt-carrier to inclose it and the hammer K, whose upper end passes through a slot L in the carrier or cover C′ and strikes the end of a firing-needle M, carried forward through the bolt-stem *c′*.

The hammer K, which is cocked in the act of retracting the bolt-carrier C′, may be operated by any of the spring-actuating devices in use in sporting-guns, such as the spring N, and it is engaged by a sear O, operated by a connecting-rod P from the trigger Q, which is placed forward of the magazine. The bolt in the act of being turned to

withdraw it from the breech may draw back the striking-needle by cam action or by the usual helical spring R in the bolt. A shield S, fitted on the sliding cover C′, limits the rearward movement of the striking-needle M and has formed on it a forwardly-extending extractor-blade T, having at its forward end an extractor-hook *t*. To prevent accidental withdrawal of the sliding cover C′ of the action, a tailpiece is formed thereon to abut against a spring-actuated stop *y*, provided in the stock near the upper butt-end, as indicated at Figs. 10 and 11.

A safety device is provided to lock the hammer K when cocked and consists of a sliding plate V, having a milled projection *v*′ for engagement with the thumb and an inclined projection v^2, adapted on sliding forward the plate V to engage with one arm v^4 of a small beam-lever V′, pivoted at v^3, and so bring said arm v^4 to bear on the upper end of the hammer K and lock it against movement, while on sliding the plate V to the rear the arm v^5 of the beam-lever is engaged with the projection v^2 to disengage the arm v^4 from the hammer K, as shown at Fig. 2.

The magazine E may be of the ordinary form to hold a number of cartridges and is fitted with a loose platform E′, supported by a blade or other spring E^2, the forward end of the magazine being inclined at E^3 to facilitate the directing of the individual cartridges toward the breech when pushed forward by the bolt C.

Having now described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

The improved bolt-action for breech-loading small-arms, comprising in combination a flat sliding cover C′ extending rearwardly over the magazine, a bolt C rotatably mounted on said cover C′, a spring-actuated fork-like catch G for preventing rotation of the bolt when said bolt is withdrawn from the breech, said catch engaging the flattened rear part of the bolt but being released from engagement with the bolt C on forcing the bolt home into the breech, as shown and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES BAIRD THORNEYCROFT.
MOUBRAY GORE FARQUHAR.
ARTHUR HENRY HILL.

Witnesses:
WALLACE FAIRWEATHER,
MARY MCCREDIE.