

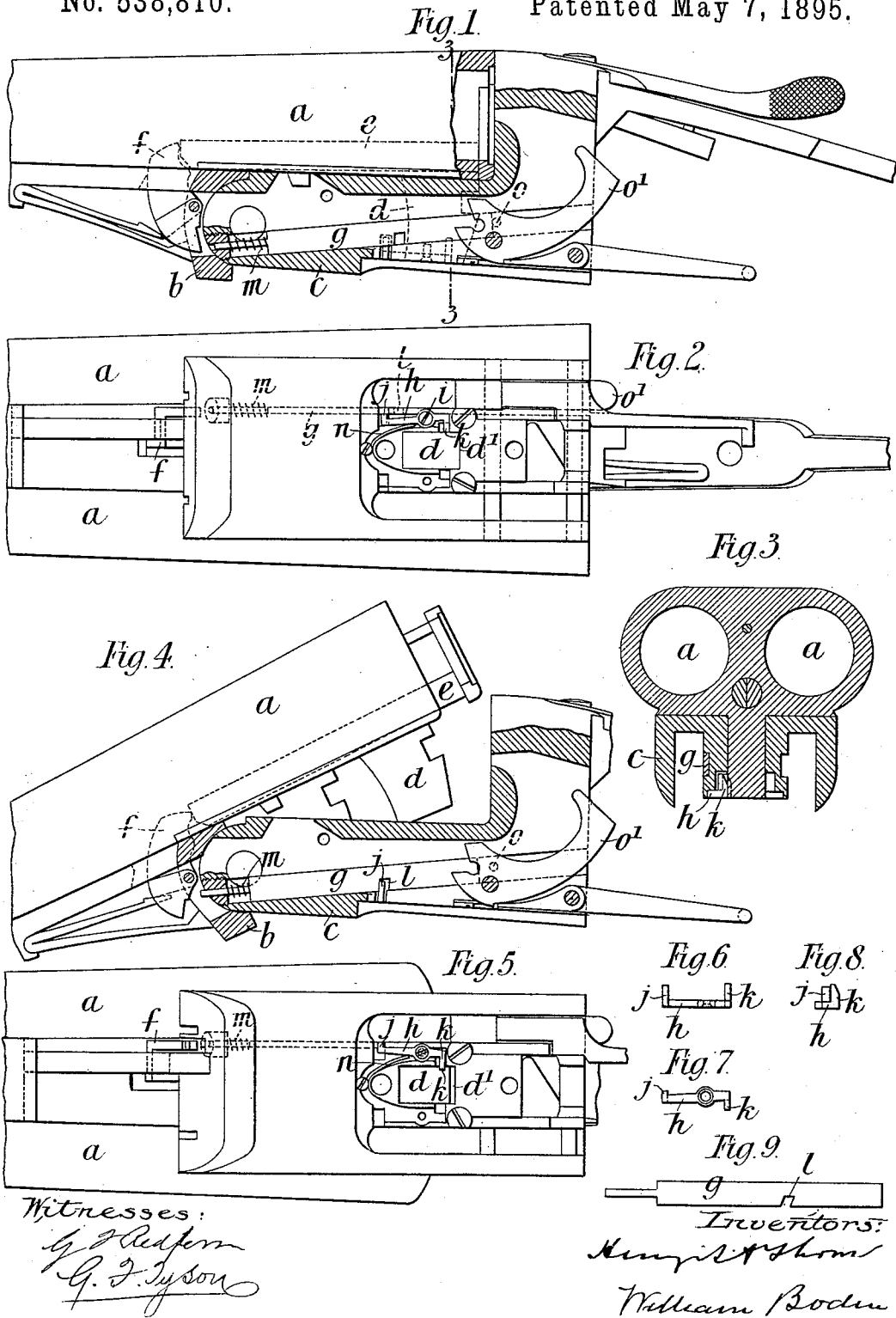
(No Model.)

2 Sheets—Sheet 1.

H. A. A. THORN & W. BODIN.
EJECTING MECHANISM FOR BREAKDOWN GUNS.

No. 538,810.

Patented May 7, 1895.



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Fig. 10

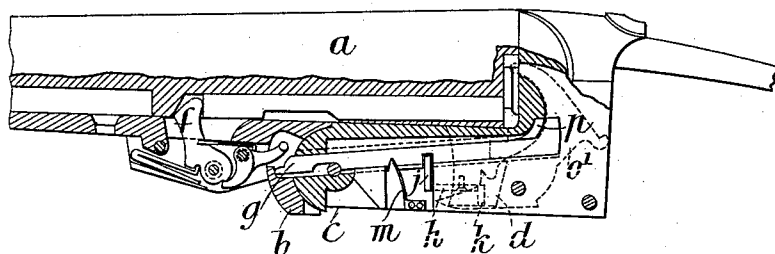
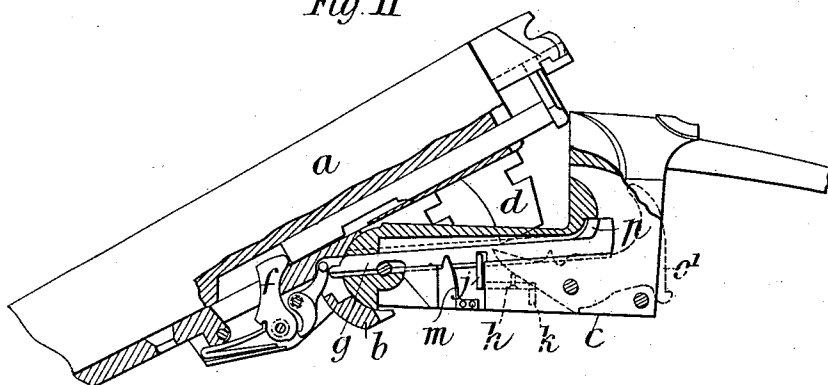


Fig. 11



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UNITED STATES PATENT OFFICE.

HENRY ALFRED ALEXANDER THORN AND WILLIAM BODIN, OF LONDON,
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EJECTING MECHANISM FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 538,810, dated May 7, 1895.

Application filed January 2, 1895. Serial No. 533,539. (No model.)

To all whom it may concern:

Be it known that we, HENRY ALFRED ALEXANDER THORN (trading as CHARLES LANCASTER) and WILLIAM BODIN, subjects of the Queen of Great Britain, residing at London, England, have invented new and useful improvements in Drop-Down Guns or Small-Arms, of which the following is a specification.

Our invention relates to a means of holding the tripping rod working in the body of the action in its forward state for the purpose of tripping ejecting mechanism carried in the fore-end, such holding forward not being dependent on the hammer being at cock or at bearer at the moment of tripping. By this means we are able to regulate the tripping of the ejector mechanism to any moment during the opening of the gun. To effect this we pivot in the frame of the action a spring locking lever so formed as to engage at one end with the lump of the gun and at the other with the tripping rod. On the firing of the gun the rod is carried forward in the usual manner and allows the one end of the pivoted lever to engage with it by means of an operating spring and hold it rigid on the opening of the gun. On closing the gun the lump coming in contact with the other end of the pivoted lever, rotates it out of contact with the rod and allows the tripping rod to be returned.

To enable our invention to be fully understood we will describe the same by reference to the accompanying drawings, in which—

Figure 1 is a view, partly in elevation and partly in longitudinal section, of the breech portion of a drop-down gun in which the ejector is operated by a "roll-over" hammer in the fore-end directly actuated by a tripping-rod; and Fig. 2 is an under side view of the same. Fig. 3 is a section on the line 3 3, Fig. 2, certain parts being removed; and Fig. 4 is a view similar to Fig. 1, but showing the breech open and the other parts of the mechanism in a corresponding position. Fig. 5 is a view similar to Fig. 2, but showing the position of the parts when the breech is open. Figs. 6, 7, 8, and 9 are views hereinafter described of our improved spring-lever and of the tripping-rod. Fig. 10 is an elevation, partly in section, showing the application of our invention to a

gun in which the ejector is operated by means of a hammer normally held by a sear or like lever. Fig. 11 is a view similar to Fig. 10, showing the position of the parts when the breech is opened.

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

a' a are the barrels.

b is the fore-end strap, *c* the frame of the gun and *d* the lump of the barrels, which lump when the gun is closed enters a correspondingly shaped slot or aperture *d'* in the frame.

e is the extractor rod, *f* the hammer or cam by means of which the rod is operated and *g* the tripping rod sliding in the frame and serving to actuate or cause the release of the cam or hammer *f*, all of which parts are of ordinary construction and require no further description.

h is our locking lever which is pivoted at *i* on the under side of the frame *c* and provided with two lugs or projections *j*, *k* at its ends the former of which two projections is designed to enter the notch *l* which we form in the tripping rod while the latter *k* is designed, when the barrels are dropped down and the lump *d* consequently withdrawn from the aperture *d'* to project into the said aperture. The construction of this lever *h* will be most clearly understood by reference to Figs. 6, 7 and 8 which are respectively a side view, an under side view and an end view of the said lever; and the arrangement of the notch *l* in the rod *g* will be clearly understood by reference to Fig. 9 which is an elevation of the tripping rod *g* detached. It will be seen by reference to these figures that the locking lever *h* consists in this instance of a flat bar having at one end the upturned projection for engaging the trip rod *g* and at the other end the upturned projection *k* having a beveled or cam surface for engaging the barrel lump.

m is a spring which acts to move the tripping rod *g* so as to draw its projecting end into the frame of the gun when the gun is closed and *n* is a spring which normally tends to move the lever *h* so that its end *j* shall engage with the notch *l* in the tripping rod *g*.

In the arrangement of our invention shown

in Figs. 1 and 2 the tripping rod *g*, which acts directly upon the spring operated "roll over" hammer *f* to throw it over the dead center so that the usual spring will act upon it to operate the ejector, has one end reduced in diameter and the spring *m* placed upon this reduced portion in such a manner that the said spring normally tends to hold the rear end of the tripping rod within the frame against a pin or projection *o* upon the hammer *o'*, while in the arrangement of our invention shown in Figs. 10 and 11, wherein the tripping rod operates to move the sear or like lever which holds the hammer *f*, the spring *m* is represented as engaging with a notch in the tripping rod in such a manner as to tend to normally draw the said tripping rod within the frame of the gun and hold a projection *p* upon the tripping rod in contact with the hammer *o'*.

The operation of the mechanism hereinbefore described is as follows: So long as the hammer *o'* is in the cocked position the tripping rod *g* is wholly within the frame of the gun and our locking lever *h* is in the position shown in Fig. 2, that is to say, in a position in which the end *j* is out of engagement with the notch *l* in the tripping rod. If now the gun is fired the hammer *o'* causes the tripping rod to be projected forward so that its end projects beyond the end of the frame and so that the notch *l* in the tripping rod *g* is brought opposite to the end *j* of the lever *h*.

When in opening the gun, for the purpose of ejecting the empty cartridge cases; the lump *d* commences to move out of the aperture *d'* the support is taken away from the end *k* of the lever *h* whereby the latter is allowed, under the action of its spring *n* to move so that its end *j* engages with the notch *l* in the tripping rod *g* as shown in Figs. 4 and 5, the other end *k* projecting into the aperture *d'*. The tripping rod is then firmly held against longitudinal movement so that it will operate the ejecting cam or hammer *f* notwithstanding the fact that the complete opening of the gun causes the cocking of the hammer or striker *o'* in a well known manner. When the gun is again closed the lump *d* by pressing against the end *k* of the lever *h* moves the latter to draw the end *j* out of engagement with the notch *l* whereby the tripping rod is free to move back, under the action of its spring, into the position shown in Fig. 1 in which it will be again moved forward by the hammer *o'* when the gun is again discharged.

In order that the end *k* of the lever *h* which projects into the aperture *d'* shall not form an obstruction to the proper closing, the surface of the said projection *k* against which the lump *d* first impinges is beveled as before stated and as shown clearly in Figs. 3 and 8.

The operation of the arrangement shown in

Figs. 10 and 11 is the same as that hereinbefore described except that the tripping rod instead of operating directly upon the "roll over" hammer operates against the sear or like lever which releases the hammer *f*.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. In a drop down gun, the combination with the ejector and ejector operating mechanism, of a trip rod operatively connected with the hammer and adapted to be forced into operative relation with the ejector operating mechanism, by the falling of the hammer, and a locking lever for locking said trip rod in operative position when the gun is opened, substantially as described.

2. In a drop down gun, the combination with the ejector and ejector operating mechanism, of a trip rod operatively connected with the hammer and adapted to be forced into operative relation with the ejector operating mechanism, by the falling of the hammer, and a locking lever, having a part for engaging and locking said trip rod in operative position when the gun is opened, and a part in position to be engaged by the barrel lump when the gun is closed, substantially as described.

3. In a drop down gun, the combination with the ejector and ejector operating mechanism, of a trip rod operatively connected with the hammer, and adapted to be forced into operative relation with the ejector operating mechanism, by the falling of the hammer, a spring for normally holding said trip rod out of operative position, and a pivoted locking lever having a part for engaging and locking said trip rod in operative position when the gun is opened, and a part adapted to be engaged by the barrel lump to disengage said lever from said trip rod, substantially as described.

4. In drop down guns in which the empty cartridge cases are ejected by means of an extractor operated by a hammer the movements of which are produced by the end of a tripping rod projecting out of the body of the gun, the combination with the said tripping rod of a lever adapted to engage at one end with the tripping rod and at the other end to be operated by the contact therewith of the lump upon the barrels, the said lever having arranged in conjunction with it a spring which tends to cause the said lever to engage with the tripping rod, substantially as described and for the purpose set forth.

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