(No Model.) 2 Sheets—Sheet 1.

H. A. A. THORN.

GUN LOCK.

No. 259,946. Patented June 20, 1882.

Fig. 1.

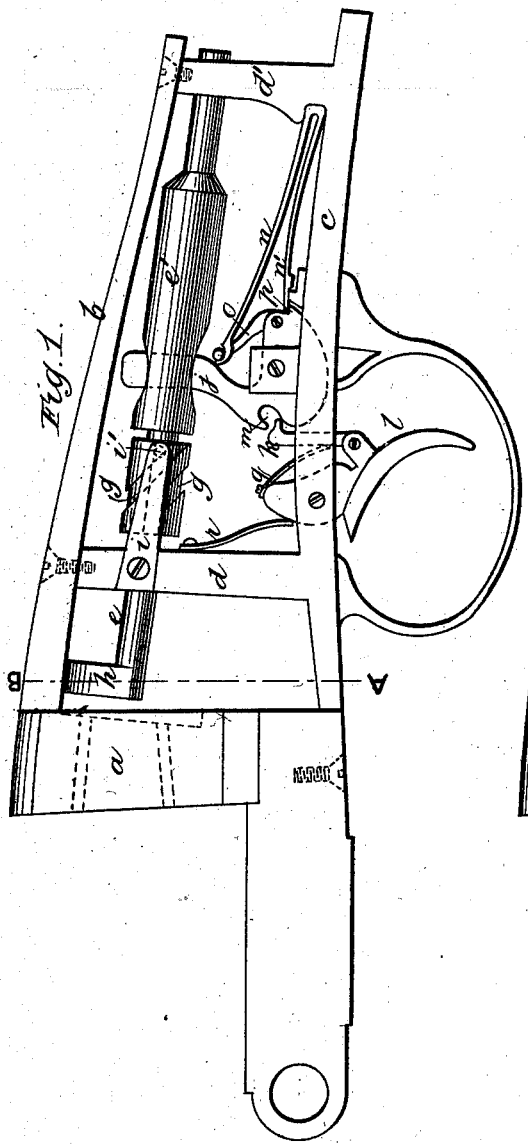
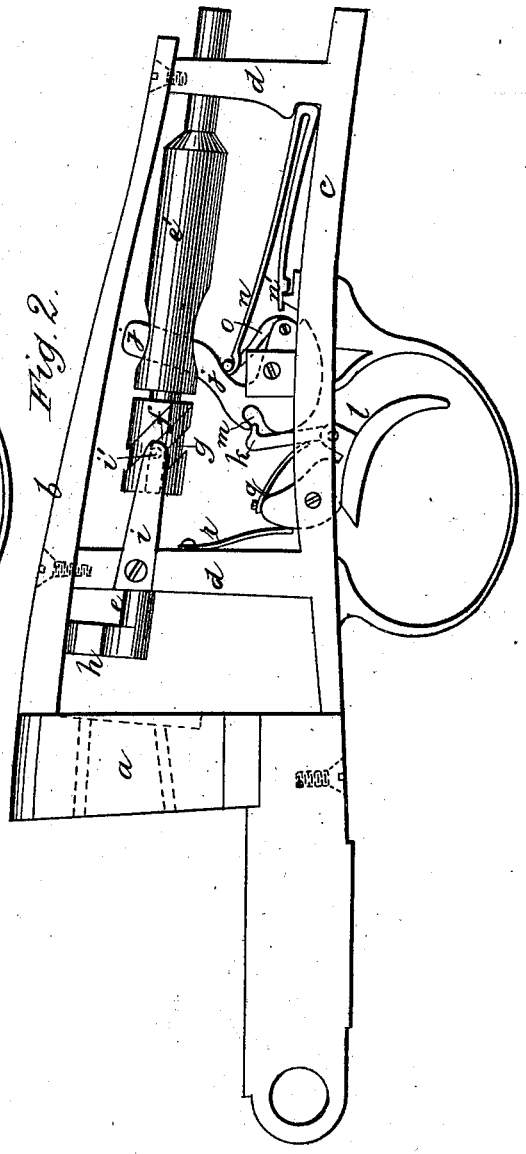


Fig. 2.



Witnesses.
Wm. Halsted
D. P. Core

Henry A. A. Thorn. Inventor.
by John J. Halsted.
his Atty

(No Model.) 2 Sheets—Sheet 2.

H. A. A. THORN.

GUN LOCK.

No. 259,946. Patented June 20, 1882.

Fig. 7.

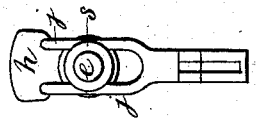


Fig. 6.

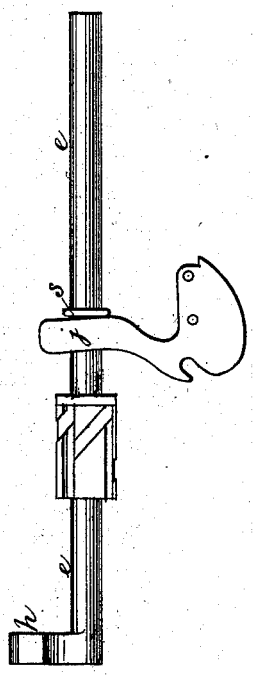


Fig. 9.

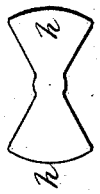


Fig. 8.

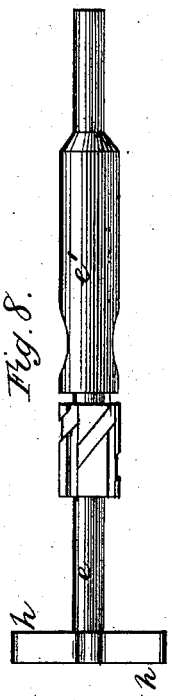
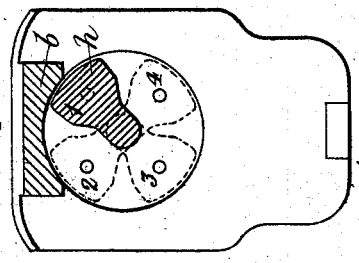


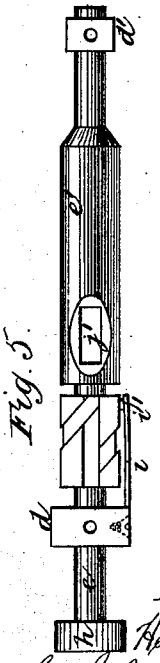
Fig. 3.



Section on line A. B. Fig. 1.

Fig. 4

Fig. 5.



Witnesses.
Jno. J. Halsted
Willis B. Magruder.

Inventor.
Henry A. A. Thorn.
by John J. Halsted.
his atty.

UNITED STATES PATENT OFFICE.

HENRY A. A. THORN, OF LONDON, ENGLAND.

GUN-LOCK.

SPECIFICATION forming part of Letters Patent No. 259,946, dated June 20, 1882.

Application filed September 24, 1881. (No model.) Patented in England March 21, 1881, No. 1,242; in Germany July 26, 1881, No. 17,097; in France July 29, 1881, No. 144,166; in Belgium August 8, 1881, No. 55,339; in Austria-Hungary October 24, 1881, Nos. 38,994 and 24,075, and in India October 24, 1881, No. 922.

To all whom it may concern:

Be it known that I, HENRY ALFRED ALEXANDER THORN, a subject of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Breech-Loading Fire-Arms, of which the following is a specification.

This invention relates to the improvements hereinafter described in breech-loading small-arms of the kind called "drop-down guns," the object of the improvements being as more particularly hereinafter described, having for their object a simple lock mechanism or action in cases in which is employed only one trigger for fire-arms having more than one barrel, the arrangement being also applicable to arms having only one barrel.

In carrying out my invention I provide a hammer-bolt having a number of grooves or slots (preferably four, or corresponding in number with the number of barrels to the arm) parallel with the axis of the bolt, a corresponding number of inclined grooves or slots being also formed between the straight slots, the said slots opening into one another. The end of the hammer-bolt is formed with one or more projections, for the purpose hereinafter described. The hammer-bolt is also provided with a collar to allow of the bolt being withdrawn by the trigger a given distance to sufficiently compress the spring which operates the bolt, the lever or tumbler operated by the trigger-blade being formed with an inclined surface or slot, so that when the bolt has been withdrawn the required distance it is free to be driven forward by its spring; or the lever or tumbler operated by the trigger-blade may pass in a slot in the hammer-bolt and the bolt be formed in two parts, one turning on the other. A spring is provided having a stud which fits into the hereinbefore-described grooves or slots, the said spring being so placed as to always tend to rotate the hammer-bolt.

To make my invention better understood, I will now proceed to describe the same by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a lock mechanism or action constructed according to my invention, and suitable for a drop-down gun having four barrels, the parts being in their normal position—that is to say, the position they would occupy after the gun has been fired; Fig. 2, a similar view, showing the parts in the position which they take by the trigger being pulled back, and just before the firing of the gun; Figs. 3 to 9, details.

Similar letters in all the figures represent similar or corresponding parts.

a is the usual break-off, *b* the tang of the same, and *c* the trigger-plate.

d d' are uprights forming bearings in which can slide and turn what I term the "hammer-bolt" *e e'*. This hammer-bolt may be formed in two parts, as shown in Figs. 1 and 2, and also in the detached views at Figs. 4 and 5, which represent respectively a longitudinal section and a plan of the hammer-bolt. The front part, *e*, of the bolt is bored out, as shown, so that it can revolve on the reduced end of the part *e'* of the bolt.

f f are the grooves or slots (four in number) parallel with the axis of the bolt, and *g g* are the inclined grooves or slots, (also four in number,) and communicating with the said longitudinal slots, as shown.

h is the projection on the fore end of the hammer-bolt, also shown in cross-section at Fig. 3.

i is the spring fixed to the upright *d*, provided with a stud or pin, *i'*, which fits into the hereinbefore-described grooves or slots in the hammer-bolt.

j is the lever or tumbler operated by the trigger-lever *k*, pivoted to the trigger *l*, the nose on the upper end of the said lever *k* working in the curved slot *m* in the lever or tumbler *j*. The upper end of the tumbler passes through a slot, *j'*, in the bolt *e'*.

n is the mainspring, swiveled to the upper end of the lever *o* of the tumbler *j*, the other end, *n'*, of the spring *n* being arranged, as shown, to operate on the projection *p* of the tumbler, for the purpose hereinafter described; *q*, spring for keeping the nose of the lever *k* within the slot *m*; *r*, a spring for bringing the trigger *l* and lever *k* back to their normal position after each discharge.

The action is as follows, the parts being in

the position shown in Fig. 1: The trigger *l* being pulled back will, by means of the lever *k* and tumbler *j*, draw back the hammer-bolt *e e'* into the position shown in Fig. 2, and the part *e* of the bolt, by means of the stud *i'*, held in one of the inclined grooves *g* by the spring *i*, will revolve the fore part of the bolt and its projection *h*, so as to bring it from the position marked 1 in Fig. 3 to the position shown in dotted lines, and marked 2. The trigger being still pulled, the stud *i'* will come into the next longitudinal groove or slot, *f*, Fig. 2, and the nose of the lever *k* being pushed out of the slot *m* by the breast of the tumbler, the bolt will be free to be driven forward by the mainspring *n*, and the projection *h*, impinging against the striker in line with it, will explode the cartridge, the rebound of the hammer-bolt being effected by the end *n'* of the mainspring *n* operating on the projection *p* of the tumbler so as to place the arm at half-cock, or clear of the striker. The gun having been discharged, as hereinbefore described, the stud *i'* will be brought into the rear end of the next inclined groove or slot *g*, the nose of the lever *k* will be carried by its spring back into the slot *m* of the tumbler *j*, and the trigger may be again pulled so as to fire the next barrel, and so on, the projection of the hammer-bolt taking respectively the positions shown by the dotted lines marked 3 and 4, Fig. 3—that is to say, revolving a quarter of a revolution at each pull of the trigger.

As has been already stated, Figs. 1, 2, and 3 of the drawings represent the action of a four-barrel gun. In the case, however, of a two-barrel gun, I prefer to form the hammer-bolt with two projections, *h*, as shown in plan and end view at Figs. 8 and 9, the number of slots *f* and *g* remaining the same, so that each pull of the trigger would discharge a barrel, although the bolt would only be rotated a quarter of a revolution at each pull of the trigger; or the number of slots may be varied so as to correspond with the number of barrels of the arm, as will be well understood.

Instead of forming the hammer-bolt in two parts, as hereinbefore described, I sometimes form it in one piece, as shown in the detached views at Figs. 6 and 7. In this case the tumbler *j* is slotted, so as to pass on each side of the bolt *e*, which latter is provided with a collar, *s*, to allow of the bolt being withdrawn by the trigger, and also to allow of the whole of the bolt rotating to discharge the different barrels successively. The operation is otherwise the same as that described when referring to Figs. 1 and 2.

For a gun with more than four barrels the number of the slots or grooves *f* and *g* in the hammer-bolt would be increased so as to correspond with the number of the barrels. For one barrel the bolt would require no projections, but the end of the bolt would strike the pin at each movement.

For fixing the parts of the lock or action so as to prevent the arm being accidentally discharged when not in use, I employ any suitable arrangement, such as a small lever pivoted to the under side of the tang of the break-off and operated by a suitable thumb-lever.

Any suitable known arrangement may be employed for bolting and releasing the barrels.

Although I have described and shown my invention as applied to a gun, it will be understood that the invention is equally applicable to pistols.

Having thus described the nature of the said invention, what I claim is—

1. In combination, the hammer-bolt, made in two parts, connected by means of a reduced end of the part *e'* entering the bored-out part of part *e* and having the grooves *f g*, the tumbler *j*, trigger *l*, and trigger-lever *k*, and their respective springs, the combination operating substantially as and for the purposes described.

2. In a lock or action for breech-loading small-arms having several barrels and a single trigger, a hammer-bolt formed in two parts, *e e'*, the latter of which projects into the bored-out part *e*, and is also slotted to receive the upper end of the tumbler, and provided with a series of longitudinal slots, *f*, and with a corresponding number of inclined slots, *g*, between and opening into said slots *f*, as and for the purposes described.

3. In combination with the hammer-bolt, made in two parts, as described, one part being slotted and the two parts being connected together, as set forth, the trigger-lever *k*, having a nose at its upper end, tumbler *j*, provided with a curved slot, *m*, and projection *p*, lever or link *o*, and a spring, *n n'*, one end of which bears on the shoulder or projection of the tumbler and the other end on the link, the combination being and operating substantially as shown and described.

HENRY A. A. THORN.

Witnesses:
G. F. REDFERN,
A. ALBUTT.