

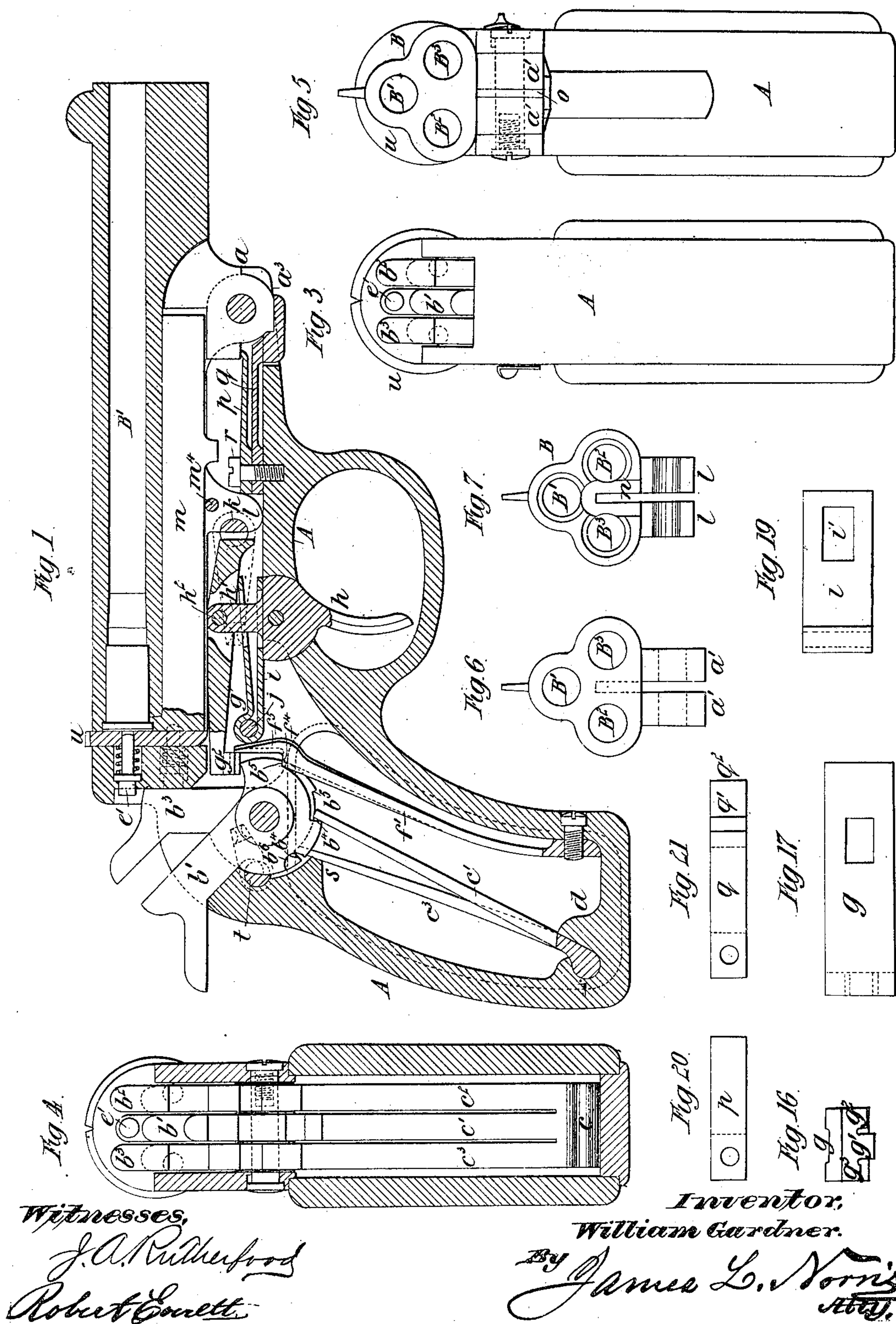
(No Model.)

2 Sheets—Sheet 1.

W. GARDNER.  
BREECH LOADING FIRE ARM.

No. 285,993.

Patented Oct. 2, 1883.



Witnesses,  
*J. A. Rutherford*  
*Robert Emmett*

Inventor,  
*William Gardner.*  
By *James L. Norris*  
*Atty.*



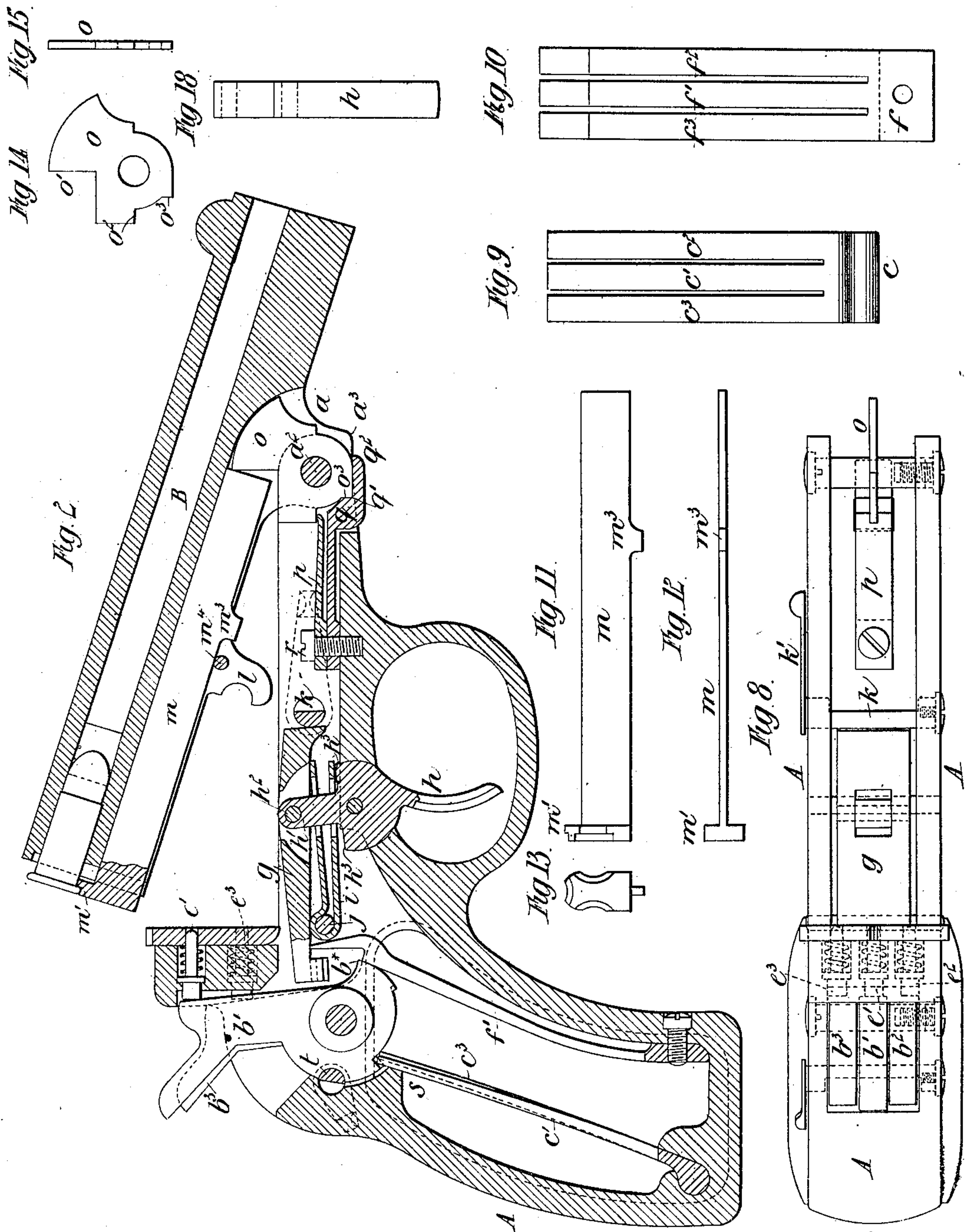
(No Model.)

2 Sheets—Sheet 2.

W. GARDNER.  
BREECH LOADING FIRE ARM.

No. 285,993.

Patented Oct. 2, 1883.



Witnesses,

J. A. Rutherford  
Robert Everett.

Inventor,

William Gardner.

By J. L. Norris  
Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM GARDNER, OF LONDON, ENGLAND.

## BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 285,993, dated October 2, 1883.

Application filed June 5, 1883. (No model.) Patented in England April 12, 1883, No. 1,854.

*To all whom it may concern:*

Be it known that I, WILLIAM GARDNER, of London, England, engineer, have invented new and useful Improvements in Breech-Loading Fire-Arms, (for which I have applied for provisional protection in Great Britain on the 12th day of April, 1883, No. 1,854,) of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in breech-loading fire-arms of that class in which there are two or more barrels. It is chiefly designed to improve the construction and increase the efficiency of pistols, but is also applicable to rifles, carbines, sporting-guns, and the like.

In the following description I will more particularly refer to my said improvements as applied to a pistol.

The ordinary modern type of a pistol with multiple barrels is the revolver, whose construction is so well known that I need not now describe it.

My improved pistol is not a revolver, and my invention is designed to supersede pistols of this class, and replace them by a weapon which will really accomplish the objects and afford the advantages which have been sought and hoped for by numerous inventors and manufacturers of pistols with revolving barrels or cylinders. Only those persons who are familiar with the use of these arms can fully realize the extent to which in practice they fall short of the theoretical perfection which they have had the reputation of possessing; but it is not difficult to show that their defects are inherent to the principle of their construction and action, and that although the inconveniences resulting from such defects may possibly be diminished by very great care and attention to their construction and skill in their use, yet they must exist. It is not necessary to enumerate the defects which I allude to; but to facilitate the explanation of the objects of my invention, I will refer to one feature in the use of revolvers which it will be universally admitted seriously impairs their value. A superficial understanding of the nature of these weapons has resulted in a prevailing impression that in an emergency, where time is all-important

for attack or defence, all of the barrels of a revolver can be successively fired with as true an aim and as sure effect as the single barrel of an ordinary pistol; but a little consideration will show this idea to be fallacious. If the revolver is of that class wherein the hammer has to be raised or cocked by hand after firing each barrel, it is obvious that the act of cocking gives to the adversary an advantage which, though but slight in point of time, may be decisive, and if the revolver is self-cocking, although time is saved in its manipulation, yet the greater exertion required in pulling the trigger will be found very disadvantageous in cases where in discharging the barrels one after the other accuracy of aim is of vital importance. Now, by my invention these evils are entirely avoided. I provide a pistol with two or more barrels arranged in combination and fired with one trigger.

For the sake of convenience of description, I will now refer more particularly to a three-barreled pistol, of which I have shown an example in the accompanying drawings.

Figure 1 is a central longitudinal section, showing the breech closed. Fig. 2 is a similar section with the breech open. Fig. 3 is a view of the butt-end. Fig. 4 is a transverse section through the portion of the frame which incloses the hammers and mainsprings. Fig. 5 is a view of the pistol, looking at the muzzle end. Fig. 6 is a view of the barrels, looking at their muzzles. Fig. 7 is a view, looking at their breech end. Fig. 8 is a plan or top view of the frame with the breech mechanism and without the barrels. Fig. 9 shows the mainsprings, and Fig. 10 shows the sears, as they would be seen from the rear of the pistol. Fig. 11 is a side view, Fig. 12 a top view, and Fig. 13 a rear end view, of the extractor. Fig. 14 is a side view, and Fig. 15 an edge view, of a device for assisting to actuate the same. Fig. 16 is an end view, and Fig. 17 a plan, of a sliding piece, hereinafter described. Fig. 18 is an edge view of the trigger. Figs. 19, 20, 21 are plans of springs, hereinafter described.

Like letters indicate the same parts throughout the drawings.

A is the frame, which may be constructed of brass or other suitable material.

B is the group of barrels. The three bar-



réls B' B<sup>2</sup> B<sup>3</sup> are preferably formed in one piece  
 of metal and in the relative position of the  
 angles of a triangle, as shown, although they  
 may be otherwise arranged, if desired. They  
 5 are jointed to the frame at *a*, so that they can  
 be freely moved on the joint for opening and  
 closing the breech, as hereinafter described.  
 As they are all formed in one piece, it is ob-  
 vious that they all move together on the said  
 10 joint or hinge. At the rear of the said bar-  
 rels are the cocks or hammers *b' b<sup>2</sup> b<sup>3</sup>*, one for  
 each barrel. In the three-barreled arm which  
 I am now particularly describing, it will be  
 seen that the middle barrel, B', is placed cen-  
 15 trally above the barrels B<sup>2</sup> B<sup>3</sup>. The numbers  
 indicate the order in which I prefer to have  
 them consecutively fired.

The mechanism for actuating the hammers  
*b' b<sup>2</sup> b<sup>3</sup>* is as follows—that is to say, I use three  
 20 mainsprings, *c' c<sup>2</sup> c<sup>3</sup>*, formed of one flat piece  
 of steel, divided longitudinally into three  
 equal tongues or leaves from one end nearly  
 to the other end, as shown in Fig. 9. The  
 undivided end *c* is thickened and formed to fit  
 25 and be secured in a nearly-circular channel  
 extending transversely across the bottom of  
 the stock or butt-end of the frame at *d*. Each  
 tongue-leaf or spring actuates one of the ham-  
 mers—that is to say, the spring *c'* actuates the  
 30 hammer *b'*, the spring *c<sup>2</sup>* actuates the hammer  
*b<sup>2</sup>*, and the spring *c<sup>3</sup>* actuates the hammer *b<sup>3</sup>*.  
 Each cock or hammer has on the periphery  
 of its boss or central portion a notch or shoul-  
 der, *b<sup>4</sup>*, properly arranged relatively to its  
 35 spring for the latter to act thereon to drive the  
 hammer down upon the corresponding firing-  
 pin. There are three firing-pins, *e' e<sup>2</sup> e<sup>3</sup>*, fitted  
 in chambers in the breech in the proper posi-  
 tion to act on the cartridges in the three barrels.  
 40 In combination with the said hammers and  
 springs I arrange the sears *f' f<sup>2</sup> f<sup>3</sup>*, which are  
 also constructed by dividing from one end  
 nearly to the other a suitably-shaped steel  
 plate into three tongues or bars, each of which  
 45 forms an independent sear. The middle sear,  
*f'*, acts upon the hammer *b'*, and the sears *f<sup>2</sup>*  
*f<sup>3</sup>* act upon hammers *b<sup>2</sup> b<sup>3</sup>*. This triple sear is  
 secured at its undivided end *f* by a screw or  
 other means to the stock of the pistol. The  
 50 upper end of each sear has a shoulder, *f<sup>4</sup>*, ar-  
 ranged to engage with a notch or tooth, *b<sup>5</sup>*, on  
 the periphery of the boss of each hammer, and  
 is extended up beyond this shoulder to engage  
 with a sliding piece, *g*. The latter is connect-  
 55 ed to a vertical arm, *h'*, on the trigger *h* in  
 such a manner as to be moved forward when  
 the said trigger is pulled. This sliding piece  
*g* is capable of a slight tilting or vibrating  
 movement on the joint *h<sup>2</sup>*, which connects it  
 60 with the vertical arm of the trigger. The said  
 sliding piece *g* has on the under side of its rear  
 extremity three claws or projections, *g' g<sup>2</sup> g<sup>3</sup>*,  
 which, when the hammer is cocked, rest on  
 edges *b<sup>5</sup>\**, which form the termination of the  
 65 under portion of the hammers—that is to say,  
 the portion wherein the said notches *b<sup>4</sup>* and *b<sup>5</sup>*

are cut. These claws *g' g<sup>2</sup> g<sup>3</sup>* are kept properly  
 in contact with the points of the sears *f' f<sup>2</sup> f<sup>3</sup>*  
 by a bent spring, *i*, placed between the slid-  
 ing piece *g* and the trigger *h*, as clearly shown 70  
 in Figs. 1 and 2. The said spring also serves  
 by its pressure on the shoulders *h<sup>3</sup>* of the trig-  
 ger to restore the latter to its normal position  
 after firing. It is formed by bending a flat  
 piece of steel, and is kept in place by a trans- 75  
 verse pin, *j*, extending through its bent end.  
 It is slotted, as shown at *i'*, Fig. 19, to permit  
 the vertical arm *h'* of the trigger to pass through  
 it. The arrangement of the aforesaid claws *g'*  
*g<sup>2</sup> g<sup>3</sup>* relatively to the hammers *b' b<sup>2</sup> b<sup>3</sup>* and sears 80  
*f' f<sup>2</sup> f<sup>3</sup>*, which is an important feature of my  
 invention, is as follows, viz: The claw *g'* cor-  
 responds with the hammer *b'* and projects  
 down beyond the claws *g<sup>2</sup> g<sup>3</sup>*. The claw *g<sup>2</sup>* pro-  
 jects below the claw *g'*, as clearly shown in 85  
 Fig. 16. Therefore while this hammer *b'* re-  
 mains cocked the rear end of the said sliding  
 piece is in its highest position—that is to say,  
 while in this position the claw *g'*, engaging  
 with the point of the sear *b'*, projects down be- 90  
 hind the latter and rests on the edge *b<sup>5</sup>\** of the  
 hammer *b'*, the claws *g<sup>2</sup> g<sup>3</sup>* being thereby kept  
 up out of engagement with the sears *f<sup>2</sup> f<sup>3</sup>*, and  
 the shoulder *f<sup>4</sup>* of the sear *f'*, engaging with  
 the notch *b<sup>5</sup>* in the hammer *b'*, holds the latter 95  
 cocked. When the trigger is pulled, the slid-  
 ing piece *g* moves forward and its claw *g'* pulls  
 the sear *f'* out of engagement with the ham-  
 mer, which is then driven forward by the main-  
 spring *c'* and fires barrel B'. The sliding piece 100  
 and trigger then return to their normal posi-  
 tion, and the claw *g<sup>2</sup>*, which has been till now  
 kept from dropping into engagement with the  
 sear *f<sup>2</sup>*, drops behind the point of this sear up-  
 on the edge *b<sup>5</sup>\** of the hammer *b<sup>2</sup>*. The trigger, 105  
 being then pulled, moves the sliding piece,  
 which, acting on the sear *f<sup>2</sup>*, pulls it away from  
 the hammer *b<sup>2</sup>*, thereby firing barrel B<sup>2</sup>. The  
 sliding piece and trigger then again return,  
 the claw *g<sup>3</sup>* drops on the edge of hammer *b<sup>3</sup>* and 110  
 into engagement with the sear *f<sup>3</sup>*, and the trig-  
 ger being again pulled, the said sear is dis-  
 engaged from its hammer *b<sup>3</sup>*, and barrel B<sup>3</sup> is  
 fired in its turn. Thus all of the hammers  
 can be successively operated by one trigger: 115  
 and it will be obvious that as all of the ham-  
 mers can be instantaneously cocked, and can  
 be kept cocked, the arm will be readily avail-  
 able in any emergency, and all of the barrels  
 may be successively fired without any delay or 120  
 disturbance of the arm through having to cock  
 the hammers between the shots. The afore-  
 said sliding piece *g* also serves another pur-  
 pose—viz., it acts, in combination with a trans-  
 verse pin, *k*, to prevent the firing of either of 125  
 the barrels before the same are properly closed  
 at the breech. The said pin *k* extends through  
 the sides of the frame below the barrels. From  
 the latter a hook, *l*, fixed or formed solidly  
 thereon, extends downward in the proper po- 130  
 sition to engage with the said pin *k*. This pin  
 has its middle portion made semi-cylindrical,



and is fitted with a capability of turning in its bearings in the frame, outside of which it has a small arm or button,  $k'$ , to facilitate its manipulation. By turning this pin  $k$  on its axis its semi-cylindrical portion can be caused to engage with the said hook, as shown in Fig. 1, to lock the barrels securely to the frame, and while the pin  $k$  is in this position the sliding piece  $g$  can move forward, as aforesaid, when the trigger is pulled; but when the said pin is turned out of engagement with the said hook, as shown in Fig. 2, it lies across the forward end of the sliding piece  $g$ , which is thus stopped and prevents the action of the trigger.

The mechanism just above described lies below the extractor, which serves for the three barrels. This extractor is formed of a thin bar,  $m$ , with a vertical piece,  $m'$ , at its rear end, properly formed to engage with the flanges of the cartridges in the said barrels, and to push the same out when the extractor is forced backward. The said bar  $m$  is fitted to slide in a narrow groove or channel,  $n$ , formed between the two lower barrels, and its forward end is arranged in combination with the following peculiar devices, viz: Between the two jaws  $a'$  of the joint on which the barrels move I place a loose piece or catch,  $o$ , which is fitted to turn on the joint-pin  $a''$ . This loose piece has a shoulder,  $o'$ , which, when the barrels have been turned down a short distance, engages with the forward extremity of the extractor-bar  $m$ , so as to force the same backward to push out the cartridge-cases when the breech is opened. The said loose piece or catch  $o$  is arranged to act in such a manner that although it will start the empty cartridge-cases from the barrels as they are turned down on their joint, yet it offers no obstruction to the insertion of fresh cartridges. This result is obtained as follows—that is to say, the said loose piece has on its rear lower edge a shoulder,  $o''$ , which engages with the extremity of a spring,  $p$ , secured to the frame A. This spring tends always to throw the said piece or catch  $o$  forward clear of the extractor; but this tendency is (until the barrels are depressed to a certain distance) counteracted by a spring,  $q$ , which acts on another shoulder,  $o''$ , on the said catch  $o$ . When, however, by the continued depression of the barrels, this last-named shoulder is freed from the resistance of the spring  $q$ , that acts thereon, the other spring,  $p$ , turns the said catch  $o$ , so that the extractor can slide freely forward. I prefer that these two springs  $p$   $q$  should be placed one above the other, and both secured at their rear extremity by one screw,  $r$ , to the frame. The upper spring,  $p$ , which acts to drive the catch forward, may be a simple flat piece of steel. The other spring has at its free extremity a shoulder,  $q'$ , to engage with the shoulder  $o''$  on the catch, and its extremity  $q''$  projects beyond the said shoulder into contact with a part,  $a''$ , of the joint, which acts

as a cam and forces the spring  $q$  down, as the barrels are depressed, till the shoulder  $q'$  on the said spring is clear of the shoulder  $o''$  on the catch. I provide the extractor-bar with a projection,  $m''$ , so arranged, in combination with the stop  $m'$ , as to prevent the accidental displacement of the extractor.

Reverting to the hammers, I will now describe an arrangement which I have devised for preventing accidental discharge of the cartridges by a blow on a hammer when the pistol is being carried uncocked.

The interior of the stock A is provided with a projection,  $s$ , which limits the movement of the mainsprings, so that at the moment of the impact of the hammer on the firing-pin the said hammer is out of engagement with the spring. As a result of this, the hammer, when not cocked, is free to fall back a slight distance from the firing-pin, as shown in Fig. 2, and a blow thereon might cause the latter to discharge the cartridge. I, however, prevent all danger of such an accident by the following device, viz: I pass transversely through the frame at the rear of the hammer, a pin,  $t$ , with a semi-cylindrical portion, and capable of being turned on its axis, like that above described. In the periphery of the boss or curved portion of each hammer I form a semicircular notch or recess,  $b''$ , in such a position that it will engage with the said pin  $t$  when the hammer is uncocked and its nose or extremity is a slight distance from the end of the firing-pin. When the transverse pin  $t$  is so turned as to enter the said notch  $b''$ , as shown in Fig. 2, the hammer will be held immovably, and could not be driven forward by a blow on its upper portion or be cocked; but when the said pin is turned out of the said notch, the hammer is released, as shown in Fig. 1. A small cross-bar or button is fixed on the said pin at one side of the stock, to facilitate its adjustment.

The frame A may be of any suitable construction. For the pistol above described I prefer to make it of brass or similar metal. In this case I provide a steel breech-plate,  $u$ , at the rear of the barrels. By making the frame in this manner I am enabled to avail myself of a comparatively easy and cheap manner of construction, as I can plane the brass or other like metal parallel on both sides, and then secure thereon the steel plate  $u$  (which is wider than the frame) in any convenient manner.

What I claim is—

1. The combination of a series of barrels, a series of hammers corresponding to the number of barrels, a single trigger common to all the hammers, and connecting mechanism between the trigger and all the hammers, whereby the latter may be simultaneously cocked, and then successively fired by operating the single trigger, substantially as described.

2. The combination of a series of barrels, a series of hammers corresponding in number to the barrels, a series of mainsprings, a series of sears for locking the hammers cocked, a



sliding piece adapted to successively act on the  
sears to disengage them from the hammers,  
and a single trigger connecting with the slid-  
ing piece to successively fire all the hammers,  
5 substantially as described.

3. The combination of a series of barrels,  
the hammers corresponding in number to the  
barrels, and having bosses provided with shoul-  
ders and notches, a series of sears having shoul-  
10 ders at their upper ends, the sliding piece hav-  
ing claws corresponding in number to the sears,  
and the single trigger connecting with the slid-  
ing piece to successively fire the hammers,  
substantially as described.

15 4. The combination of a series of barrels, the  
hammers corresponding in number thereto and  
having bosses, the sears for engaging the bosses  
of the hammers and locking them cocked, the  
sliding piece having claws for successively dis-  
20 engaging the sears and the hammers, and a sin-  
gle trigger for moving the sliding piece, sub-  
stantially as described.

5. The combination of the sliding piece *g*,  
having claws, the trigger *h*, and the bent spring  
25 *i*, arranged between the sliding piece and the  
trigger, with the sears and the hammers, sub-  
stantially as and for the purposes described.

6. The combination, with the frame and the  
barrels hinged thereto, and provided with the  
30 hook *l*, of the pin *k*, having a semi-cylindrical  
middle portion and extending transversely  
through the frame, and capable of rotating to  
engage and disengage the hook on the barrel,  
and the sliding piece arranged in rear of the  
35 pin, substantially as and for the purposes de-  
scribed.

7. The combination, with the barrels and  
frame hinged together by a pin *a*<sup>2</sup>, of the loosely-  
pivoted catch *o*, the spring *p*, with one end of  
which the catch engages, the longitudinally- 40  
movable extractor-bar *m*, and the spring *q*, act-  
ing on the catch, whereby when the barrels  
are partly depressed the extractor-bar will be  
moved to start the shell, and by further de-  
pression of the barrels the extractor-bar will 45  
be released, substantially as described.

8. The combination, with the barrels and  
frame hinged together by the pin *a*<sup>2</sup>, of the  
catch *o*, loosely pivoted on said pin, and hav-  
ing the shoulders *o'*, *o*<sup>2</sup>, and *o*<sup>3</sup>, the longitudi- 50  
nally-movable extractor-bar *m*, the spring *p*,  
acting on the shoulder *o*<sup>2</sup> of the catch, and the  
spring *q*, having the shoulder *q'*, acting on the  
shoulder *o*<sup>3</sup> of the catch, substantially as and  
for the purpose described. 55

9. The combination, with the hammers hav-  
ing recesses *b*<sup>6</sup>, of the transverse pin *t*, having  
a semi-cylindrical middle portion, and arranged  
to be rotated for engaging and disengaging  
the said recesses, substantially as and for the 60  
purpose described.

In testimony whereof I have hereunto signed  
my name in the presence of two subscribing  
witnesses.

WILLIAM GARDNER.

Witnesses:

JOHN DEAN,

HERBERT E. DALE,

Both of 17 Gracechurch St., London.