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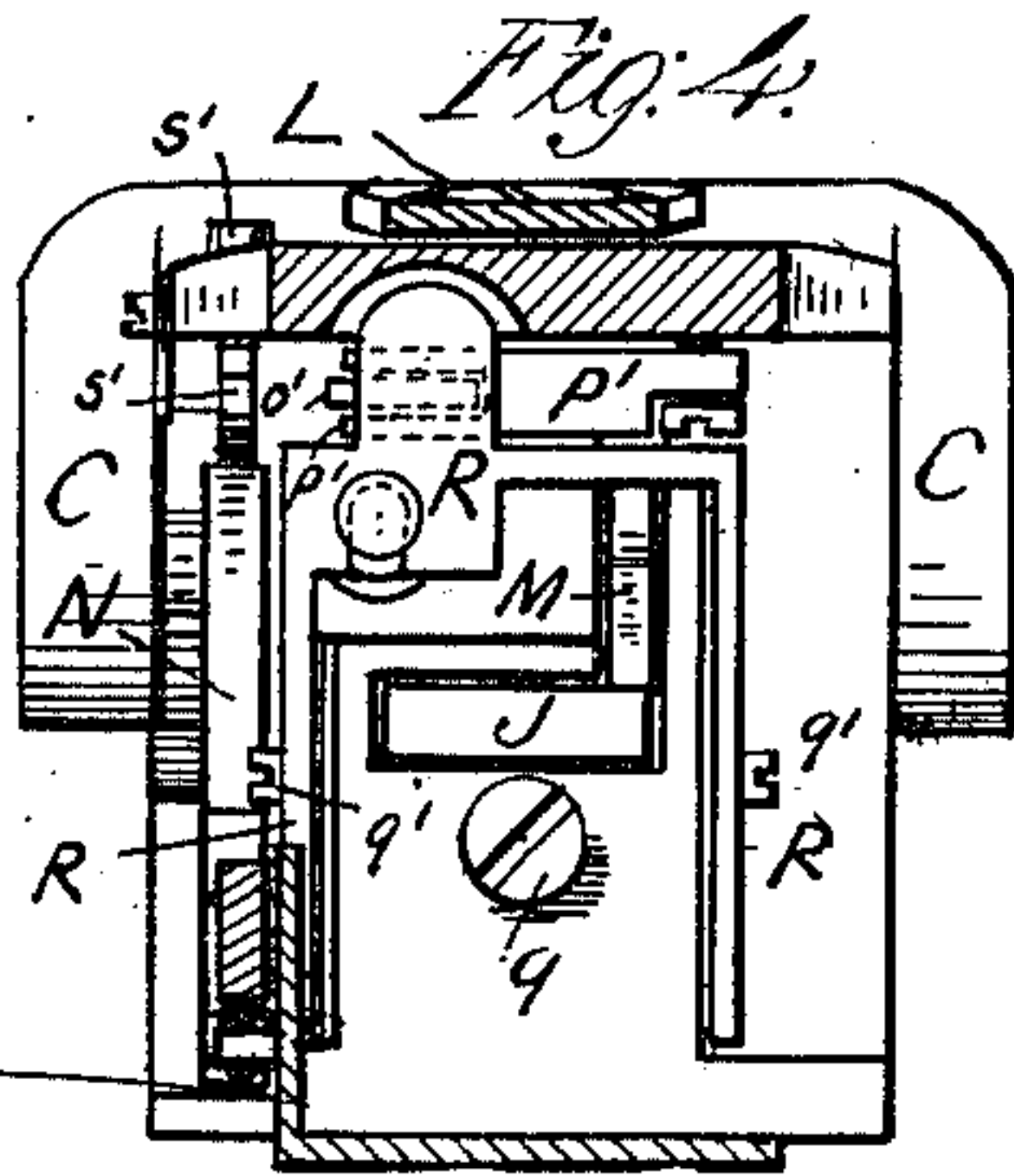
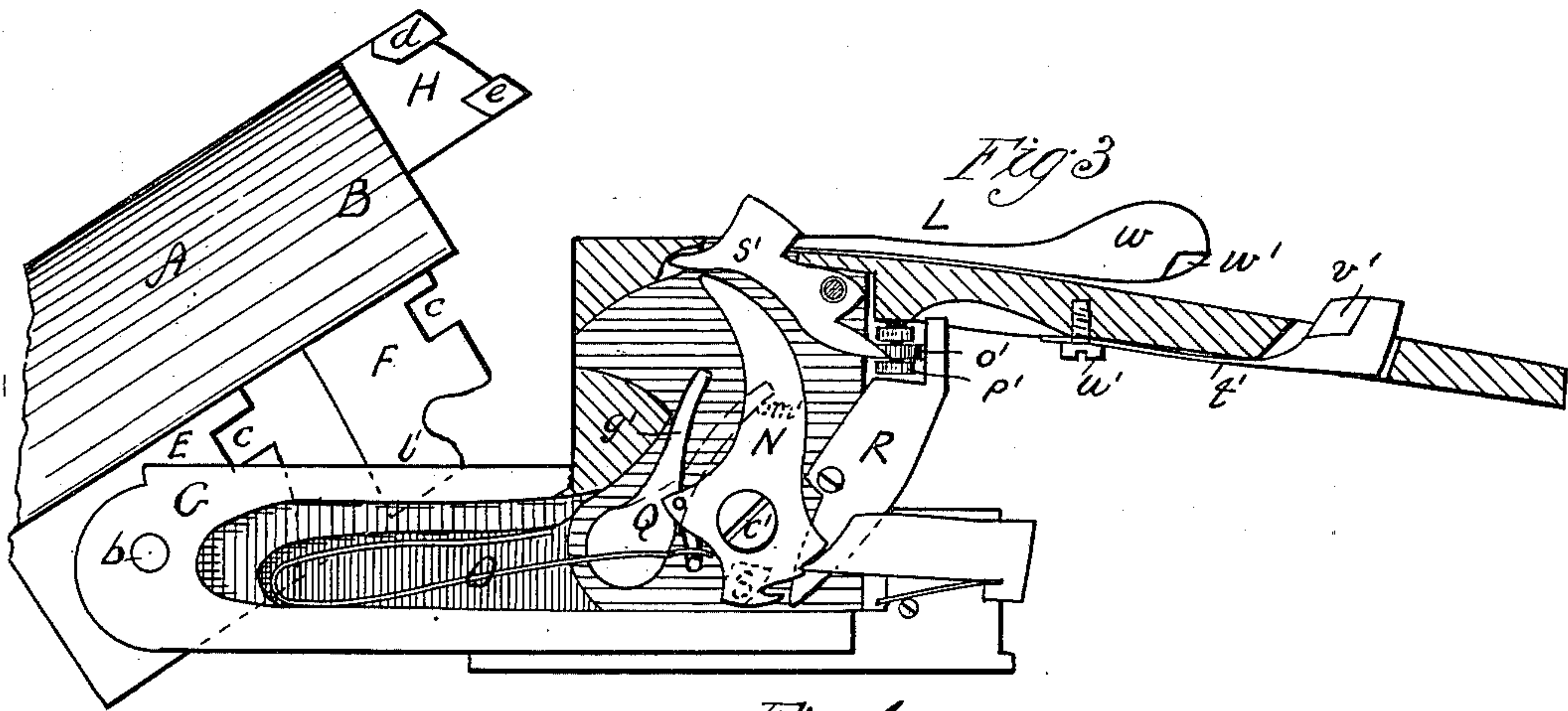
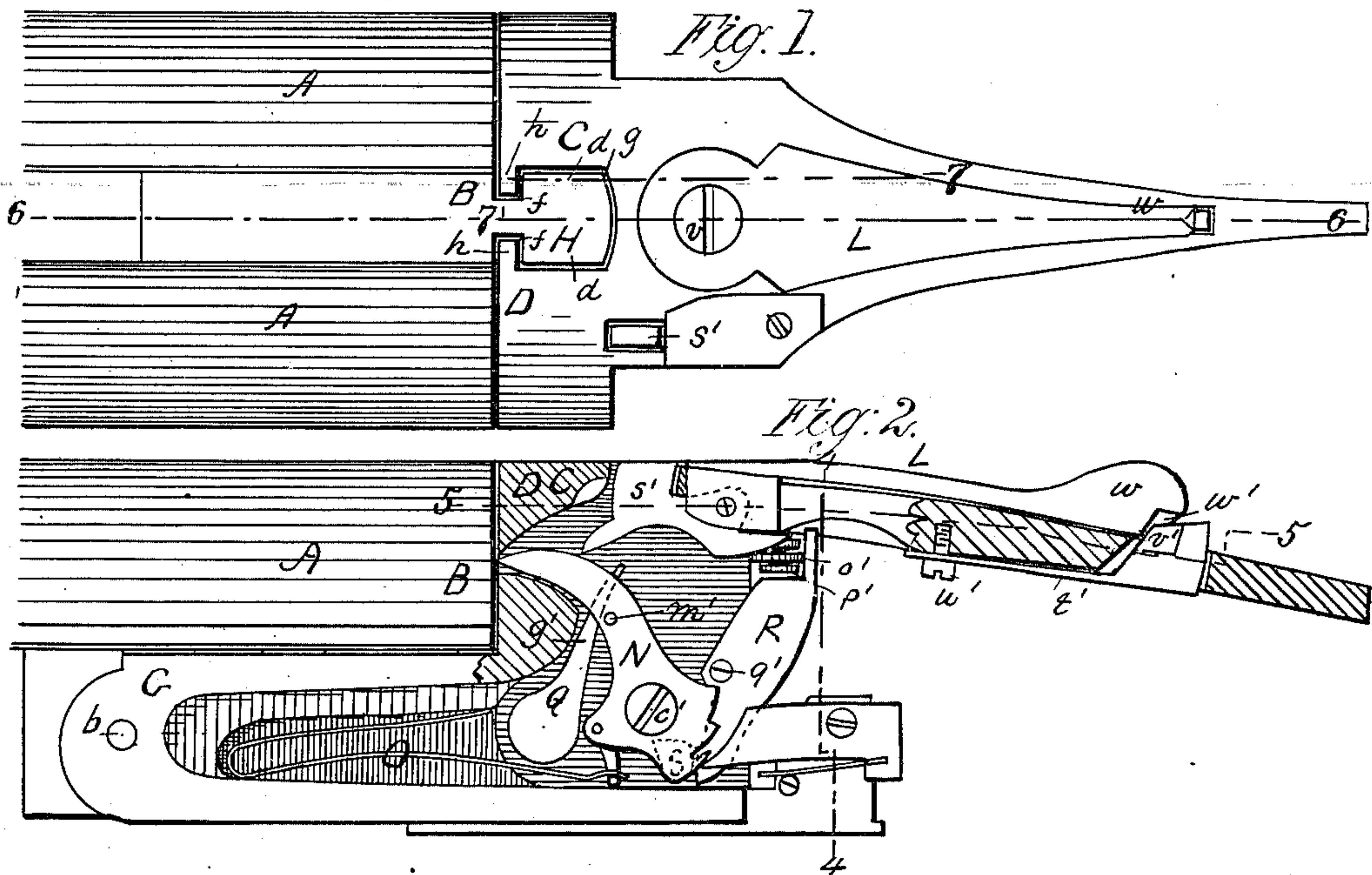
2 Sheets—Sheet 1.

J. TONKS.

BREECH LOADING FIRE ARM.

No. 254,728.

Patented Mar. 7, 1882.



Witnesses.
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(No Model.)

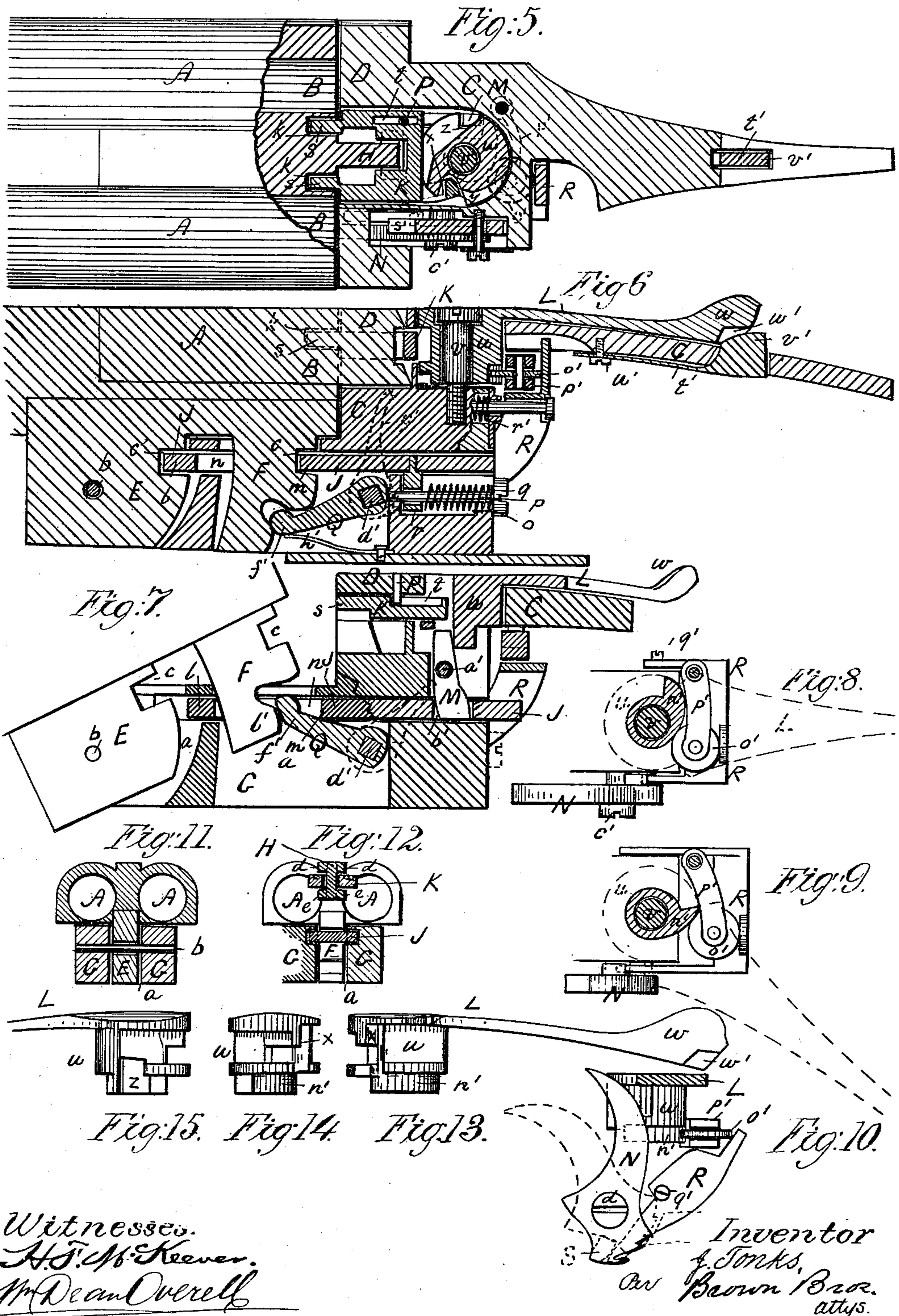
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UNITED STATES PATENT OFFICE.

JOSEPH TONKS, OF MALDEN, MASSACHUSETTS.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 254,728, dated March 7, 1882.

Application filed April 4, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH TONKS, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and
5 useful Improvements in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description.

This invention relates to that class of breech-loading fire-arms having the barrel at its
10 breech end hinged to the front end of the stock, so that the barrel may be tilted upon the stock to open its breech for the insertion of the cartridge, and to close and there secure it against the stock in readiness for being discharged
15 when so desired.

The invention consists principally in a construction and arrangement of parts for fastening together the barrel and stock and for unfastening the same, leaving the barrel free to
20 be tilted upon the stock; for cocking the hammer from the movement of parts to unfasten the barrel from the stock and to leave it so cocked when the barrel and stock are closed and fastened together; for the locking of the
25 hammer either at half or full cock without affecting the parts which fasten the barrel to the stock, and for other movements and effects necessary for a perfect operation of such class of fire-arms, all substantially as hereinafter de-
30 scribed.

In the accompanying plates of drawings the present improvements in breech-loading fire-arms are illustrated.

In Plate 1, Figure 1 is a plan view of the
35 barrel at its breech end and the front-end portion of the stock, the two being locked together. Fig. 2 is in part a side view and longitudinal section of Fig. 1, with the hammer uncocked. Fig. 3 is a similar view to Fig. 2,
40 but with the barrel open from the stock and the hammer at full-cock. Fig. 4 is a section on line 4 4, Fig. 2.

In Plate 2, Fig. 5 is a section on line 5 5, Fig. 2. Fig. 6 is a section on line 6 6, Fig. 1.
45 Fig. 7 is a section on line 7 7, Fig. 1, with the barrel opened from the stock. Figs. 8 to 15, inclusive, are views in detail, the nature of each of which will more or less appear from the description in detail which follows.

50 As illustrated in the drawings above described, there are two barrels, arranged side by

side, as usual in "double-barreled" guns, so called; but, as will be obvious, the construction and arrangement of the parts as hereinafter described are as well applicable to a single as a double barreled gun, as will plainly
55 appear. In some respects they are the same for two barrels as for one barrel, and in other respects require but a duplication to secure similar results as to the cocking, uncocking, 60 half-cocking, and letting off the hammer for each barrel.

In the drawings, A represents two barrels, arranged side by side, as usual, and B their common breech end, open at each barrel, to be
65 there charged with a cartridge as desired.

C is the portion of the stock making the connection for the barrels to the stock proper, which, as it is to be otherwise of the usual form and construction, it is not thought neces-
70 sary to show in the drawings.

D is the front end of the stock C, and the end at and by which the open breech ends of the barrels A are closed, and this and the said barrels have a construction and arrangement
75 together for the latter to be opened from and closed against the other, and when so closed securely fastened, as will be now described.

E and F are two blocks or "lumps" upon the under side of the barrels A, each projecting
80 downward and separately therefrom, the one in advance of the other, but both in a common line coincident with the central longitudinal line between the two barrels. The forward
85 lump, E—that is, the lump farthest from the open breech of the barrels—is within the opening *a*, between the forked forward-projecting part, G, of the stock, and it is hung by a transverse pivotal pin, *b*, thereto, so that it can be
90 freely swung or tilted thereon, and when the breech of the barrels is closed against the forward face of the stock the under side of the barrels will rest upon the upper face of this said forked extension G of the stock. Each
95 lump E and F is similarly notched, as at *c*, in the same line with each other and between the hinge-pin *b* of the barrel and stock, and, in addition, the forward lump, E, from the lower side of its notch *c* rounds downwardly toward the muzzle end of the barrels.
100

H is a lug projecting horizontally from and between the two barrels at their breech ends.

This lug is flush with the upper surface of the barrels, and upon each side it is provided with the horizontal projecting parallel lugs *d e*, (an upper, *d*, and lower one, *e*,) and also with notches *f* at opposite sides of said lug H. This lug H, when the barrel is closed against the stock, lies within an opening, *g*, in the forward face of the stock, of suitable shape to receive it, and its side notches, *f*, interlock with suitably shaped and located lugs *h* of such opening, and as the barrel is swung open or closed it swings into and out of such opening.

k is a socket in breech end of barrels, one at each side of the lug H thereof.

J is a plate or bolt arranged to slide within the forward-projecting part, D, of the stock C, and in a plane corresponding to the plane of the notches *c* in the two lumps E F of the barrels when the barrel is closed. This bolt, at its forward end, *l*, enters and closely fills the notch *c* of the forward lump, E, and back of such end, by its part *m*, it enters and closely fills the notch *c* in the hinder lump, F, and between these so interlocking parts the bolt is cut out, as at *n*, whereby the hinder lump of the barrels can pass through and thus in and out of the same as the barrels are swung upon the stock to open and close their breech ends. The bolt extends into the stock C, back of the seat of the barrel within the stock, and at such extension it is connected to a spiral spring, *o*, arranged upon a guide-rod, *p*, to bear at one end against a fixed bearing, *q*, of the stock and at the other end against a lug, *r*, of the bolt, and in such manner as to secure at all times a forward pressing of the bolt—that is, a pressing of it in a direction to interlock it, and so keep it with the notches of the barrel-lumps until such pressure is overcome and the bolt is moved back and out of such interlock.

K is a bolt arranged to move within the stock. This bolt has two prongs or arms, *s*, and between such arms and otherwise it is shaped and located as shown, all so as to enter by its arms the sockets *k* of the barrels, to embrace the barrel-lug H upon each side and to enter and lie between the upper and lower side lugs, *e*, of the said barrel-lug. This bolt is arranged to move in the stock C toward and away from the breech end of the barrel, and in such movement it is guided and directed by suitably-constructed ways of the stock, and it is limited in either direction by the ends of the slot *t* in the bolt and the pin P of the stock, which enters such slot.

The two bolts J K upon the stock and the two lumps E F, having notches *c*, and lug H, having side lugs and notches, together constitute the devices of this invention for fastening the barrels in their position against and in relation to the stock herein described, and they are each and all arranged, and they are to be relatively shaped, so that when interlocked the barrel and stock can have no lateral or up-and-down or forward-and-backward movement or play upon each other, and obviously, if so made, their relative construction and arrange-

ment otherwise are such as to secure a most reliable and durable fastening of the two parts (barrel and stock) together, and, furthermore, such as to enable the bolts on the stock to be unbolted from the barrels, and when so unbolted and held leave the barrels free to be tilted upon the stock and again put in position and bolted as before.

For moving the bolts to unbolt or unfasten the barrel from the stock, mechanism as follows is provided.

L is a lever-handle, turning by its barrel portion *u* upon a pin, *v*, which is fastened in the stock just back of the barrel-lug H, that enters the opening *g* of the stock, and *w* the handle end of the lever; *x*, a notch in the barrel portion of the lever L, and in this notch fits a stud, *y*, of the upper bolt, K. *z* is another notch in said barrel portion, below the notch *x*, before mentioned, and on the opposite side thereto, and in this latter notch fits the upper end of a vertical lever, M, which turns upon a fulcrum-pin, *a'*, of the stock, and at its lower end engages with a notch, *b'*, in the rear portion of the lower bolt, J, behind the portion of such bolt which engages with the hinder lump of the barrels.

By the construction and arrangement of the parts above described the swing of the lever in the one direction obviously will withdraw the bolts from their interlock with the barrels, as above described, and its swing in the other direction will obviously work upon the bolts in the reverse direction; but to prevent this in the case of both bolts the lever for the upper bolt, K, has the wall of its notch *x* which then would act upon its bolt shaped so as to then swing clear of its stud *y*, and the notch *z* for the lever M of the lower bolt, J, has its wall which would then act upon the lever M of such lower bolt, J, shaped so as to pass clear of the upper end of such bolt-lever. The return of the bolts to their normal position after the force applied to the lever to move the bolts out of interlock is removed is secured by the reaction of the spring *o* applied to the lower bolt, which, acting on such bolt, acts through it upon its lever, and thus upon the barrel portion of the operating-lever L, which in turn acts upon the upper bolt, K, as is obvious without further description.

In swinging the barrel into position against the front face of the stock the rounded portion of the forward block E on the barrel works against the forward end of the lower bolt, and, working such bolt backward, through it works the upper bolt in a similar direction, and as a consequence the two bolts are placed in position for their after interlock with the parts of the barrels adapted for them under the reaction of the spring when the barrels have reached the proper position therefor and are in their proper place relatively to the stock.

N is a hammer arranged for one of the barrels. This hammer turns upon a fulcrum-pin, *c'*, and when swung to be wholly or half cocked works against a bent spring, O, and is adapt-

ed to engage with a trigger constructed or arranged to be set free, and also the hammer to strike the cartridge in its barrel, all as ordinarily.

5 Q is an angular lever turning upon a fulcrum-pin at d' , and in position at the outer end of one of its arms, $f'g'$, to be worked upon in the opening swing of the barrels by the lower end, l' , of the hinder lump, F, of the barrels, and thus to move the outer end of its other arm, g' , against a side projecting stud, m' , of the hammer, and through such stud move the hammer backward as the barrels are opened, and thereby cock it.

15 n' is a cam-periphery surrounding the barrel portion u of the operating-lever for the bolts J K, and o' a friction-roll carried by a horizontal lever, p' , resting against said cam-periphery. This friction-roll, in its side opposite to the cam n' , rests against a stirrup-shaped vertical frame, R, hung upon a center or fulcrum, q' , and at the lower end of one of its arms such frame bears against the hammer N, as at S, below the fulcrum thereof, and it is adapted by a spiral spring, r' , to be returned to its position of rest when the actuating-cam therefor is returned or returns to its normal position. This cam is so shaped that in the swing of its lever-handle L in the one direction it will throw the stirrup-frame R in the proper direction to raise the hammer to a full or a half cock, according to the distance of such movement, and in its swing in the other direction it will act in no manner upon the hammers. This stirrup-frame can be as well and similarly connected with another hammer for the other barrel of the fire-arm, and thus the two hammers be cocked simultaneously.

40 It is obvious that the angular lever through which the hammer is cocked upon the opening of the barrels may be duplicated for the hammer to the other barrel, and the two operated by and through one and the same projection or end of the hinder lump, F, of the barrel, or through a similar projection upon another and similar lump, F, upon the barrel.

45 s' is a lever in position over the upper side of the hammer, and there arranged to be raised as the hammer is cocked. This lever s' is constructed with a knob or raised edge, which lies within an opening or slot at the upper side of the stock, and when such lever is raised it is projected above the same. By this means the cocking of the hammer is indicated, and when the hammer is set free this lever can drop of its own weight to its normal position, or be brought thereto by a spring suitably applied.

50 t' is a spring-catch, which is secured in place by a set-screw, w' , and has a lip, v' , in position to engage, except when released, with the notch w' in one side of the lever-handle, and for the wall of such notch to rest against one side of such lip. The relative arrangement of this spring-catch and the notch of the handle-lever is such as to allow the handle-lever to be swung without releasing the catch in that di-

rection of its swing by which the bolts of the stock are released from the receiving parts therefor of the barrel, but to compel a release of the catch when desired to swing the lever-handle in the other direction, and under which movement the said bolts are practically unaffected, and only the hammer placed at full or half cock, as the case may be. This feature is desirable, as it leaves the lever-handle L free to be operated to unbolt the barrel and stock at all times, but requires an additional movement on the part of the operator when desired to put the fire-arm at cock or half-cock without disturbing the bolting mechanism of the fire-arm.

The advantage of the intermediate lever, R, is that it changes the direction of the line of operation on the hammer, thereby securing longer leverage and less friction of the parts, and consequently the hammer can be cocked more easily.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The upper and lower bolts, K J, and lever L, having notches xz , in combination with the lug y of the upper bolt, K, and the lever M of the lower bolt, all substantially as and for the purpose specified.

2. The lever L, with the cam n' , lever p' , provided with a friction-roll, lever R, and hammer N, relatively arranged and constructed and to operate all substantially as described, for the purposes specified.

3. In fire-arms, the barrel hinged to the stock and provided with notched lumps E F, one in advance of the other, bolt J, adapted to fit the notches of said lumps, a lug, H, having side notches, f , and side lugs, $d e$, adapted to fit an opening, g , in the stock, in combination with a bolt, K, provided with two prongs, s , arranged to fit sockets k in breech end of the barrel, both of said bolts being operated, through suitable connecting mechanism, by one and the same lever, L, by which the barrel is locked and unlocked from the stock, substantially as described.

4. In a breech-loading fire-arm, the lever L, pivoted on the upper side of the stock, and provided in one side of its rear end with the notch w' , and devices, substantially as described, operated by the lever, to cock the hammer and lock and unlock the barrel, in combination with the depressible spring-catch t , having at one side of its rear end the vertical lip v' , arranged to engage the notch in the lever to prevent the latter from swinging in one direction unless the parts are disengaged, but permitting the lever to swing in the other direction without manipulating said catch, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

Witnesses: JOSEPH TONKS.
EDWIN W. BROWN,
WM. S. BELLOWS.