

(No. Model.)

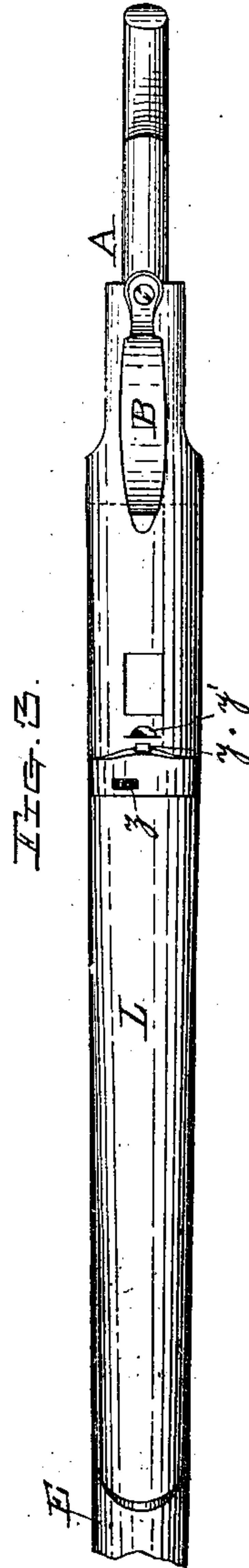
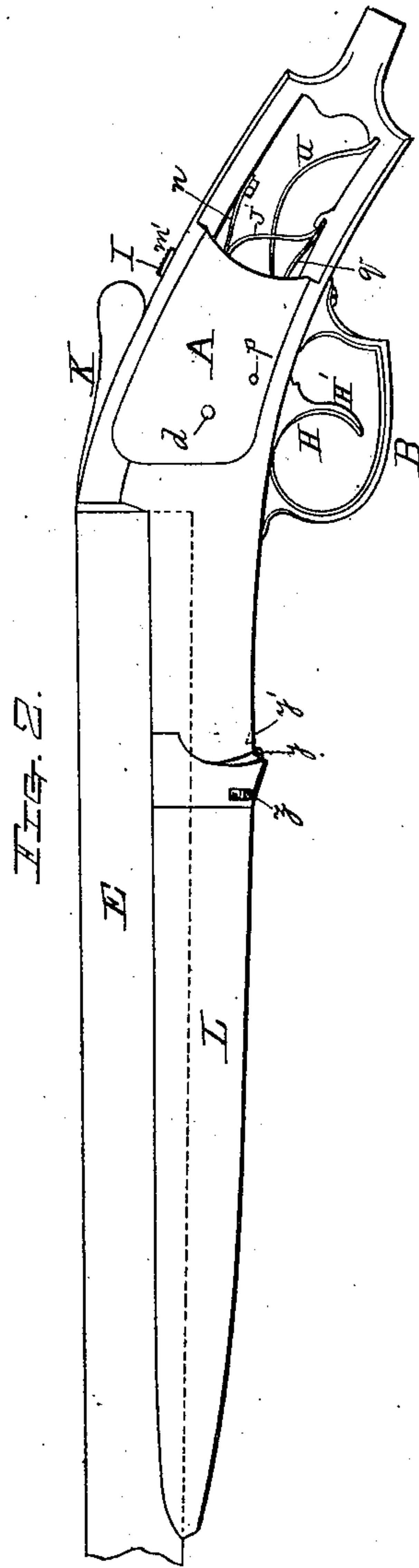
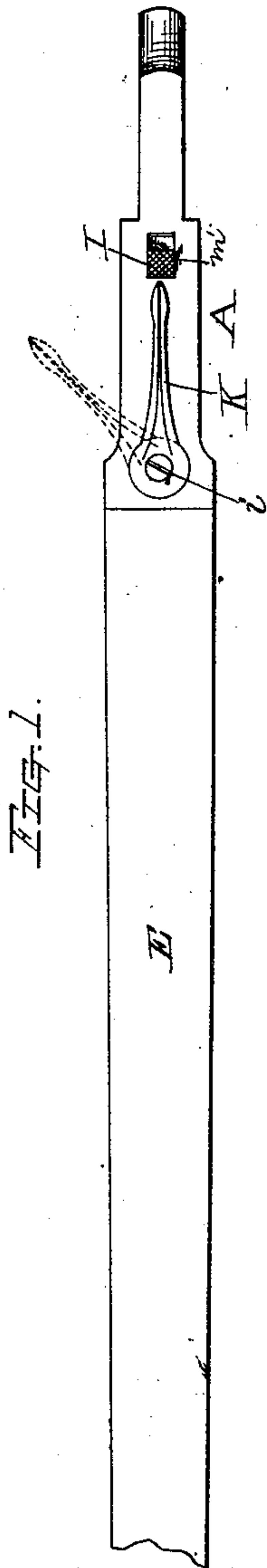
4 Sheets—Sheet 1.

I. JOHNSON & A. FYRBERG.

FIRE ARM.

No. 350,681.

Patented Oct. 12, 1886.



Witnesses:

Walter B. Nourse.
Lucius W. Briggs

Inventors:

Iver Johnson.
Andrew Fyrberg.
By A. A. Barker, Att'y.

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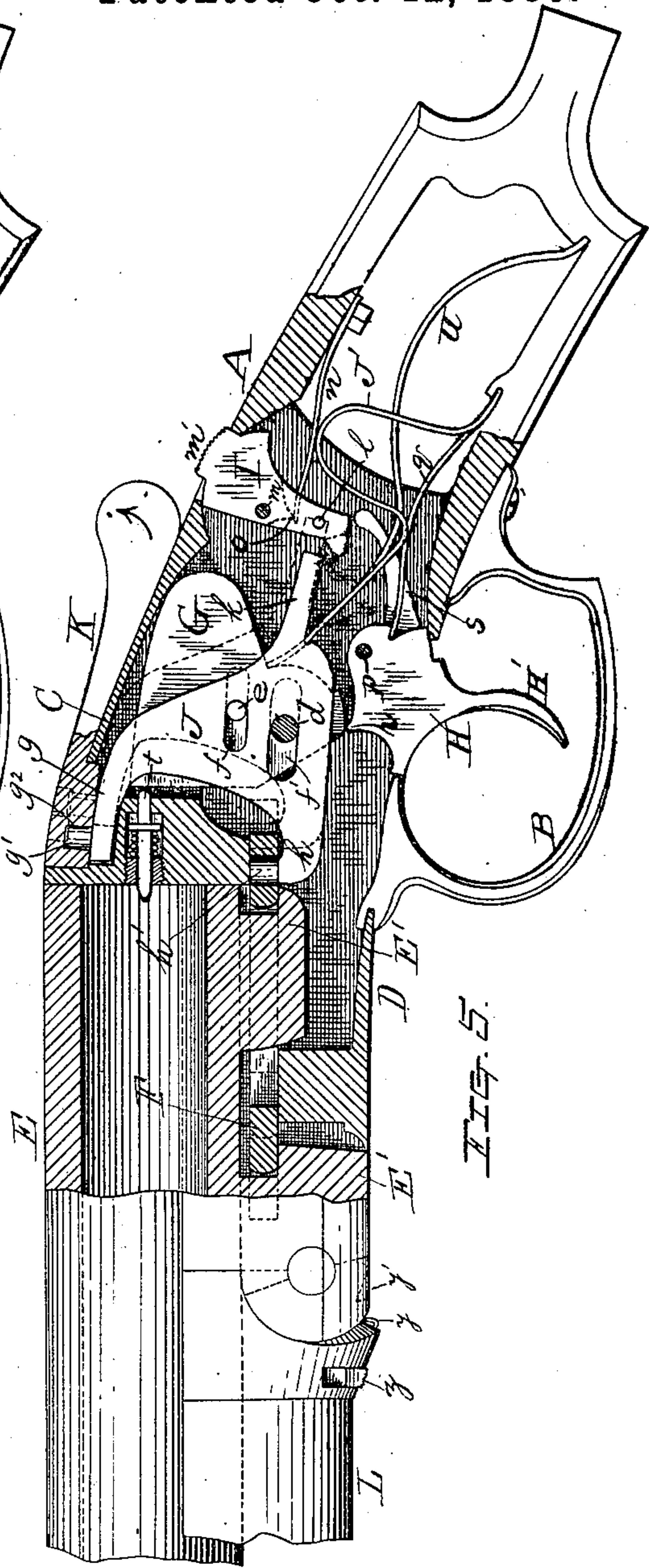
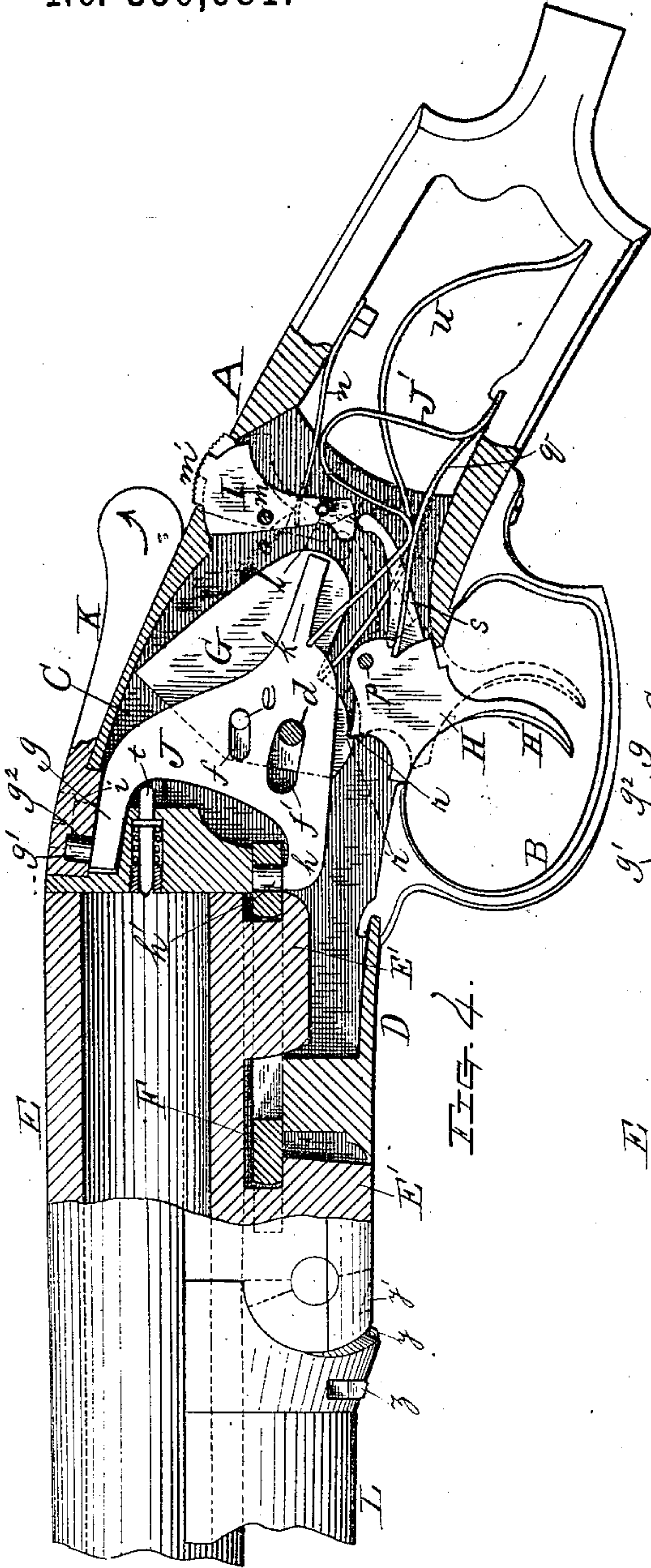
4. Sheets—Sheet 2.

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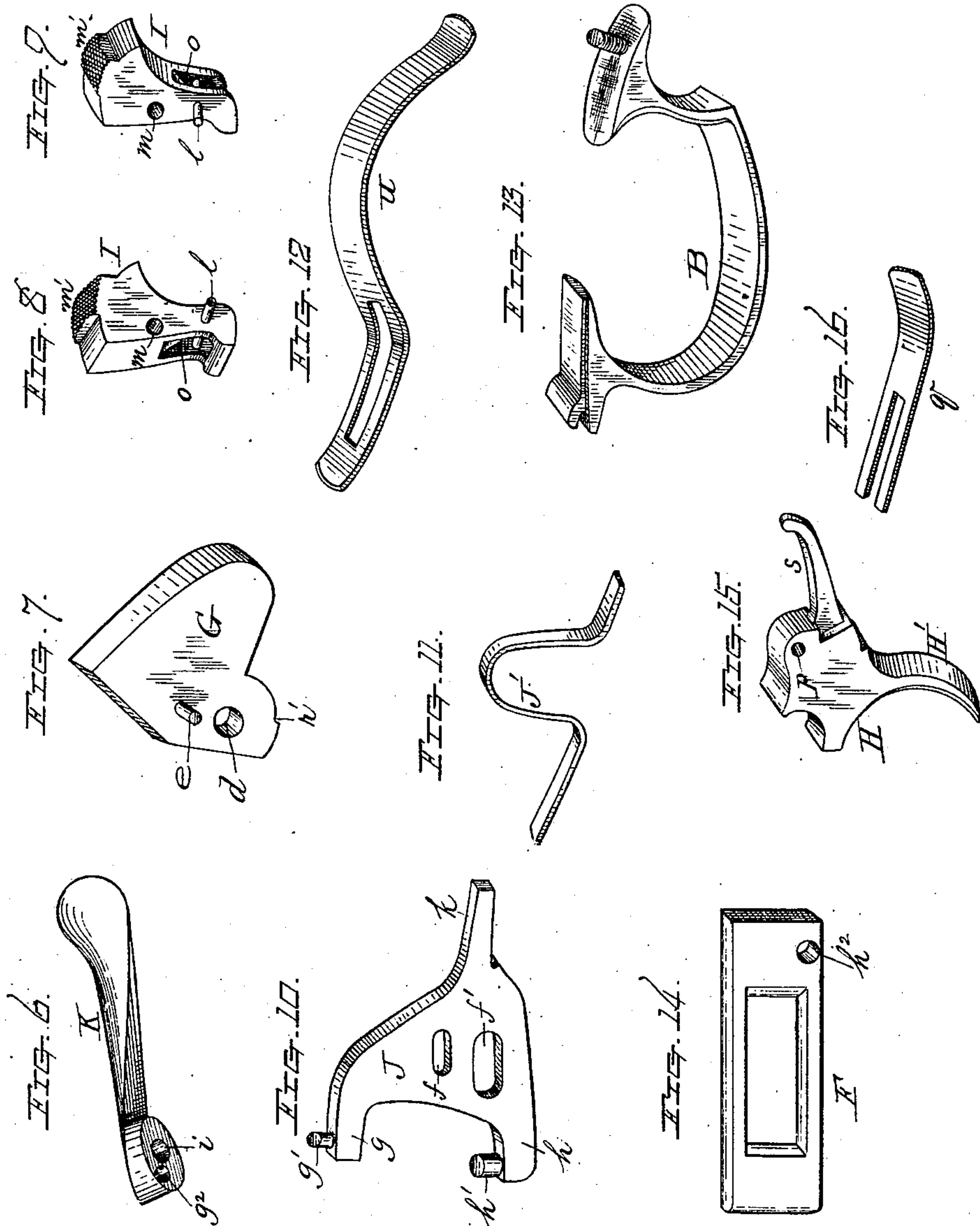
4 Sheets—Sheet 3.

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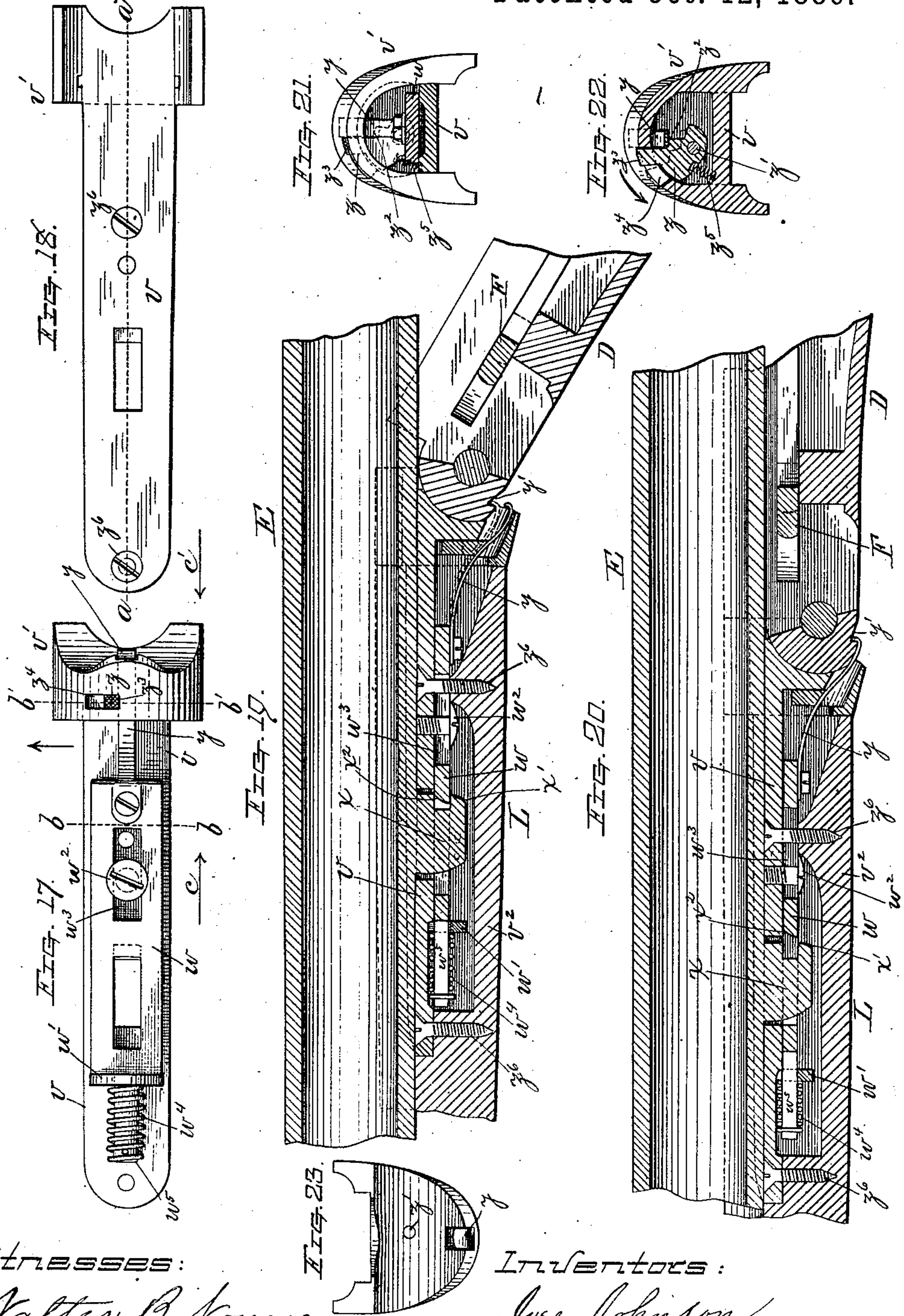
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UNITED STATES PATENT OFFICE.

IVER JOHNSON AND ANDREW FYRBERG, OF WORCESTER, MASSACHUSETTS;
SAID FYRBERG ASSIGNOR TO SAID JOHNSON.

FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 350,681, dated October 12, 1886.

Application filed July 7, 1886. Serial No. 207,305. (No model.)

To all whom it may concern:

Be it known that we, IVER JOHNSON and ANDREW FYRBERG, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Fire-Arms; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figures 1, 2, and 3 represent, respectively, a top or plan view, a side view, and a bottom or under side view of so much of what is known as a "concealed-hammer gun" as is necessary to illustrate our improvements thereon. Figs. 4 and 5 represent upon an enlarged scale vertical longitudinal sections showing parts of the gun in elevation and the various operating parts thereof in different positions, as hereinafter more fully described. All the following figures are shown upon the same enlarged scale. Figs. 6 to 16, inclusive, are detail views in perspective of the various parts which constitute the firing mechanism of the gun. Figs. 17 and 18 represent an under side and top view, respectively, of our improved front stock-locking device, hereinafter described. Fig. 19 represent a central vertical longitudinal section through said front stock-locking device, taken on line *a a*, Fig. 18, also showing a part of the front stock, barrel, and forehand, with the various parts in position preparatory to unlocking the front stock from the barrel. Fig. 20 is a similar section of the aforesaid parts to that shown in Fig. 19, with the various parts in position after unlocking the front stock preparatory to removing said front stock from the arm. Figs. 21 and 22 represent cross-sections of our improved front stock-locking device, taken on lines *b b* and *b' b'*, respectively, looking in the direction of arrow *c*, Fig. 17; and Fig. 23 represents an end view of said locking device, looking in the direction of arrow *c'*.

Our invention relates to what are commonly known as "concealed-hammer guns," and comprises improvements in the mechanism for raising the hammer, for locking the trigger when the hammer is thus raised or at full-cock, for locking and unlocking the barrel to and from the forehand of the frame, and for locking and unlocking the front stock to and from

the barrel, all as hereinafter more fully set forth.

To enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe it more in detail.

In the drawings, the part marked A represents the frame of the fire-arm, which is made of the proper shape to receive the various parts constituting the firing and barrel-locking mechanism of said arm. To the rear end of said frame may be secured the usual back stock, and to its underside the trigger-guard B. C is the receiver, and D the forehand of the frame A.

The part marked E is the barrel having the usual notched holding flanges or ears *E' E'* upon the under side thereof, by means of which and the usual slide-bolt F said barrel is fastened to the frame.

Our improvement in said locking device consists only in the manner of operating the sliding bolt to perform said operation, said bolt being used in other fire-arms for the same purpose, but operated in a different manner from that which we have adopted.

G is the hammer; H, the trigger; I, the trigger-locking lever; J, a vertical plate fitted to slide forward and back; and K, the top lever for operating said plate, as and for the purpose hereinafter described.

The part marked L is the front stock, in which is fitted our improved locking device, also hereinafter described.

The hammer G is fitted to turn upon the pivot-bolt *d*, secured at each end, as usual, in frame A. In this instance it is arranged at the right of the plate J, between the latter and the frame; but said position may be reversed, if desired, in making the fire-arm. Upon the inner side of said hammer is formed or secured a stud, *e*, at right angles thereto, which passes through a slot, *f*, in the plate J, and by means of which the hammer is raised to cock the same by the back movement of the plate against said stud, as hereinafter more fully explained. The plate J is also provided with a slot, *f'*, to admit of the same moving back and forth on the pivot *d*, and with two arms, *g h*, extending forward, as shown in Figs. 4 and 5, each arm being provided with a stud or projection, *g' h'*, respectively, for the following

purpose: The stud g' is fitted in an opening, g^2 , (see Figs. 4, 5, and 6,) in the head of the top lever or "snap," K, a little to one side of its pivot i , and at the proper point to cause the plate J to be moved back by swinging said lever K out from the arm, as indicated by the arrows in Figs. 4 and 5 and dotted lines, Fig. 1. The stud h' fits into an opening, h^2 , in the rear end of the barrel-locking bolt F. Therefore, when the top lever is swung out and the plate J moved back, as above described, said bolt is drawn back with the same, thus disengaging it from the flanges E' E' on the barrel, and in consequence releasing said barrel, so that it may be removed from the arm in the usual way. Upon the pressure against the outer end of the top lever being removed the plate J and parts connected therewith are sprung back into their original normal positions by means of a suitable spring, J', having a bearing at one end in a notch or recess, j , in frame A, and the opposite end against the rear end of the plate. Said rear end is provided with an arm, k , projecting back therefrom, which is adapted to come against a stud or projection, l , on the lower end of the trigger-locking lever I, when the plate is forced back, as hereinbefore specified, thereby swinging said lever on its pivot m from the position shown by dotted lines, Fig. 4, and full lines, Fig. 5, to that shown by full lines in Fig. 4, the latter being in the position which it occupies when the trigger is locked. It is held in each adjusted position, either forward or back, by means of a spring, n , secured at one end to frame A, and whose other end bears upon the lower end of a beveled or curved part, o , formed upon or secured to said lever in such a manner that when the lever is swung forward or back the bearing-point against the spring n will come at one side of the vertical center of pivot m , as shown by dotted lines in Figs. 4 and 5. The lever is thus held with sufficient force to prevent its moving out of position accidentally, while at the same time it may be readily swung on its pivot to unlock the trigger by placing the thumb upon the upper milled or roughened end, m' , and drawing back upon the same, the frame being slotted out to allow said part to extend up through a little above its surface and admit of said operation. The trigger H is hinged upon a pivot, p , and is held in its forward or normal position by the spring q , secured at one end in frame A, and bearing at its other end against the back of the trigger below its pivot in the usual way. Said trigger is provided upon its front side with a projection, r , adapted to catch in a notch, r' , formed in the under edge of the hammer when the latter is raised, and with an arm, s , projecting back and up from its back edge, which is adapted to bear at its outer end against the bottom of the lock-lever I, when the latter is forced back by the plate J into the position shown by full lines in Fig. 4. Therefore it is obvious that when the top lever is swung out and the hammer raised, as

previously specified, the shoulder or notch r' , being carried forward of the projection r , allows the latter to be sprung up into said notch by the spring q , and the lock-lever I being at the same time forced back, as previously described, the trigger H is locked between the bottom of said lever and the notch in the hammer, thus holding said hammer also in a locked position until released by pulling back the finger H' of the trigger, said latter operation causing the projection r on the trigger to be drawn out of the notch r' in the hammer, and consequently allowing the latter to be sprung down against the usual firing-pin, t , by the mainspring u , which is made and adapted to perform said operation as in other fire-arms.

Referring to Figs. 4 and 5, the operation of the several parts hereinbefore described in firing the arm may be briefly summed up as follows: The top lever is first swung around, (toward the right in this instance, assuming that the gun is held in position for firing,) which operation, causing the plate J to be forced back, draws the barrel-locking bolt with it, raises the hammer, and also pushes back the lower end of the trigger-locking lever, thus unlocking the barrel and locking the hammer in its full-cocked position. The barrel is now dropped down or lowered, and the desired cartridge inserted therein, when it is then swung up and locked in its normal position, the locking-bolt and bearing-points on the barrel being, it will be understood, so formed in practice as to admit of the aforesaid operation, but requiring the bolt to be pulled back to unlock the barrel, as hereinbefore described. The gun having been loaded and the barrel sprung up into position, as aforesaid, by now pulling back the upper end of the trigger-locking lever, as previously described, the arm may be fired in the usual well-known way.

If it is desired at any time to replace one loaded cartridge for another, or remove the same for any other cause, it is simply necessary to push out and hold against the lever with the thumb, while at the same time drawing the trigger with the other hand in a similar manner to performing the same operation with a gun having its hammer upon the exterior thereof.

Our improved device for locking the front stock in position is constructed and arranged as follows: A plate, v , having a head, v' , is fitted in the upper part of the wooden portion v^2 of the stock, said plate being arranged to come against the under side of the barrel E, while its head v' is fitted against the forward end of the forehand D, as best shown in Figs. 2, 19, and 20, and its outer contour made to conform with that of the wooden part v^2 of the stock, being a continuation thereof when the parts are fitted together. Upon the under side of the plate v is arranged a locking-bolt, w , which is fitted to slide longitudinally thereon in any convenient manner. It is arranged between the head v' and a flange, w' , projecting downward from said plate v ,

and is in this instance held in position upon the plate by a screw, w^2 , fastened in said plate, which passes through a slot, w^3 , in the bolt, the latter admitting of said bolt moving longitudinally, as above described. A forward tension is produced upon the bolt w , which keeps its forward end against the projection w' by means of a spiral spring w^4 , fitted over a short spindle, w^5 , extending forward from the bolt through an opening in said projection w' , said spring being arranged between a pin or projection on the outer end of the spindle and the front side of the projection on the plate v . Said plate v and bolt w each have a vertical slot formed therein on a line with each other to admit of the notched projection x on the under side of the barrel to be passed through, the aforesaid notch or slot being adapted to receive the bolt when the parts are fitted together, and said bolt is allowed to be drawn forward by its spring w^4 , after having been released from its sprung-back position, as hereinafter described.

To the forward end of the bolt w is fastened a spring, y , which extends back a sufficient distance to overlap the forward end of the forehand D . Said spring is made to bear upward, and its outer end shaped in the form of a hook, for the purpose of catching and holding in a notch, y' , formed in the under side of the forehand near its forward end, as shown in Fig. 20. When in its normal position, the spring is disengaged from the notch in the forehand, as shown in Figs. 2 and 3, being held down out of said notch by means of hinged lever z . (See Figs. 21 and 22.) Said lever is arranged in a recess formed in the head v' at the inner end of the plate v . It is fitted to turn on a pivot, z' , and is provided with a shoulder or projection, z^2 , upon which the spring may rest to hold it out of its notch, as above described. The spring is allowed to engage with the notch by swinging the lever z from the position shown by full lines to that shown by dotted lines, Fig. 22, said operation causing the shoulder z^2 to be moved to one side of said spring, and thus allowing the latter to spring up into the notch. The lever is swung to one side, as aforesaid, by pushing upon its outer roughened or milled end, z^3 , which projects up through a slot, z^4 , a little outside of the surface of the head v' , as shown in Figs. 21 and 22. A constant pressure is imparted to the lever toward the spring y , so that it will assume its position under said spring when the latter is raised above the holding-notch z^2 , by means of a spring, z^5 , interposed between said lever and the head v' , as is also shown in the above figures. A suitable slot is formed in said head for the spring y to work in, and it is otherwise recessed or cut out, as well as the stock to receive the various parts of our locking device, hereinbefore described. The plate v is in this instance secured to said stock by means of the screws z^6 .

Assuming that the stock is locked upon the gun with the hooked end of the spring y rest-

ing upon the outer surface of the forehand, disengaged from its notch y' , as shown in Figs. 2 and 3, the operation of first unlocking said stock, then removing it, and replacing it in the aforesaid assumed position is as follows: The top lever, K , is first swung out to unlock the barrel, as hereinbefore described. Said barrel is then swung or dropped down from the frame so that the parts will occupy the relative positions shown in Fig. 19, which, as will be observed, causes the notch y' to be moved over the hooked end of the spring y . The lever z now being swung from the position shown in Fig. 17, and full lines, Fig. 22, in the direction shown by the arrows into the position indicated by dotted lines in said Fig. 22, the spring y being released is forced up, so that its hooked end engages with the notch y' in the forehand, as shown by dotted lines, Fig. 19. The lock-bolt w being thus connected with the frame of the gun, when the barrel is unlocked and swung down as aforesaid, it is obvious that by now swinging up and locking the barrel, as shown in Fig. 20, the bolt is drawn back and disengaged from the holding-notch in the flange x of said barrel, when the stock may then be easily removed therefrom.

In placing the stock back upon the gun it is simply necessary to place the head thereof against the front end of the forehand, and then swing its forward end up against the barrel, a slight pressure only causing the bolt w to be forced back sufficiently by the curved corner x' on the flange x , to allow the same to spring forward into the holding-notch of said flange, as shown in Fig. 19, the operation being facilitated by curving the bolt at the back end of its slot, as indicated at x^2 in said Figs. 19 and 20.

Having described our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

1. The top lever, K , in combination with the plate J , its spring J' , the barrel-locking bolt F , trigger-locking lever I , and its spring n , the top lever being hinged to the bridge and to plate J , and said plate arranged to slide forward and back at one side of the hammer, also being hinged to the barrel-locking bolt and provided with a rear projecting arm, whereby said bolt and the trigger-locking lever may be respectively drawn and forced back to unlock the barrel and lock the trigger by the operation of swinging out the top lever, substantially as shown and described.

2. The top lever, K , in combination with the plate J , its spring J' , the barrel-locking bolt F , trigger-locking lever I , its spring n , trigger H , its spring q , hammer G and its spring u , the top lever being hinged to the bridge and to plate J , and said plate arranged to slide forward and back at one side of the hammer, also being hinged to the barrel-locking bolt and provided with a rear projecting arm, as well as the slots f, f' , the hammer being provided with a pin, e , fitting in the slot f , and with a shoulder or notch for the trigger to engage

with, and said trigger being provided with a projection adapted to catch in the notch aforesaid, also with a rear projecting arm adapted to bear upon the bottom of the locking-lever I, whereby when the top lever is swung out the barrel is unlocked, the hammer is cocked, and the trigger is locked, the barrel being subsequently relocked by allowing the top lever to be sprung in again leaving the hammer cocked and the trigger locked until the bottom of the locking-lever is swung forward and the trigger is pulled in firing, substantially as shown and described.

3. The top lever, K, in combination with the plate J, its spring J', hammer G, its spring u, trigger H, its spring q, trigger-locking lever I and its spring n, the top lever being hinged to the bridge and to plate J, and said plate arranged to slide forward and back at one side of the hammer, and provided with a rear projecting arm and slots $f f'$, the hammer being provided with a pin, e, fitted in the slot f, and with a shoulder or notch for the trigger to engage with, and said trigger being provided with a projection adapted to catch in the notch aforesaid, also with a rear projecting arm adapted to bear upon the bottom of the locking-lever I, whereby when the top lever is swung out the hammer is cocked and the trigger is locked, said top lever being sprung back into its normal position after said cocking and locking operations, substantially as shown and described.

4. The top lever, K, in combination with the plate J, its spring J', trigger H, its spring q, trigger-locking lever I, and its spring n, the top lever being hinged to the bridge and to plate J, and said plate arranged to slide forward and back at one side of the hammer, and provided with a rear projecting arm, the trigger also having a rear projecting arm, whereby when the top lever is swung out said trigger is locked, said top lever being sprung back into its normal position after said locking operation, substantially as shown and described.

5. The plate J, arranged at one side of hammer G, and having the arms $g h$ thereof connected with the top lever, K, and barrel-locking bolt F, respectively, also provided with the rear projecting arm, k , and slots $f f'$, in combination with said top lever, K, hinged to the bridge of the fire-arm at i , hammer G, pivoted at d , and provided with the holding-notch r' and pin e, trigger H, pivoted at p and provided with the projection r and rear projecting arm, s , the usual barrel-locking lever F, trigger-locking lever I, pivoted at m and provided with the pin l , bearing part o and milled part m' , the various springs described for operating said parts and for supporting them in position, substantially as and for the purposes set forth.

6. In a fire-arm, the combination of the barrel E, having the notched projection x , the front stock, L, having the plate v and head v' , and forehand D, having the notch y' in the under side of its forward end, with a locking

device consisting of the bar or bolt w , fitted to slide longitudinally in suitable ways in the front stock, and provided with a suitable spring, w' , for exerting a forward pressure thereon, also with a holding part adapted to engage with the notched projection x on the barrel when thus sprung forward, and with a spring, y , at its rear end, having a hook adapted to catch in the notch y' of the forehand when said spring y is moved back of said notch, and is allowed to spring up against said forehand, and lever z , pivoted at z' in the head v' of the stock, and having a shoulder, z'' , for holding the spring y out of the notch y' when required, also a spring, z''' , for forcing the lever forward into position to receive and hold the spring y upon its shoulder, and the milled projecting part z'' , for operating the lever to release spring y , so that its hook may engage with and hold in the notch y' , substantially as shown and described.

7. The combination of the hooked spring y on the rear end of the slide-bar or bolt w of stock L, with lever z , pivoted at z' in the head v' of said stock, and having the shoulder z'' , for holding said spring y out of its notch y' in the forehand, also provided with the spring z''' , for keeping said shoulder under the spring y until forced from under the same by hand, and with a projecting part or lever, by means of which to turn said lever z to release the spring y when required, so that it may engage with its notch y' , as aforesaid, substantially as set forth.

8. In a fire-arm, a front-stock locking device consisting of a bar or bolt arranged and fitted to slide longitudinally in suitable ways in said front stock, and provided with means for imparting a forward longitudinal pressure thereto, also provided with a holding part adapted to interlock with a notched projection on the under side of the barrel when said bar or bolt is sprung forward, and with a hooked spring at its rear end adapted to catch and hold in a notch formed in the under side of the forward end of the forehand when allowed to spring up against the latter, and means for holding and releasing said hooked spring, consisting of a spring-lever pivoted in the head or base end of the front stock, having a shoulder against which the hooked spring bears to prevent it from engaging with its notch in the forehand until the proper time arrives for such connection, and also provided with a projecting arm projecting through a slot beyond the outer surface of the front stock, whereby said lever may be operated to release the hooked spring aforesaid, so that it may spring up into its notch and be connected with the forehand, all constructed and arranged to be operated to lock and unlock the front stock to and from the arm, substantially as shown and described.

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Witnesses:

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