(No Model.) 3 Sheets—Sheet 1.

J. M. BROWNING.

BOX MAGAZINE FIREARM.

No. 549,345. Patented Nov. 5, 1895.

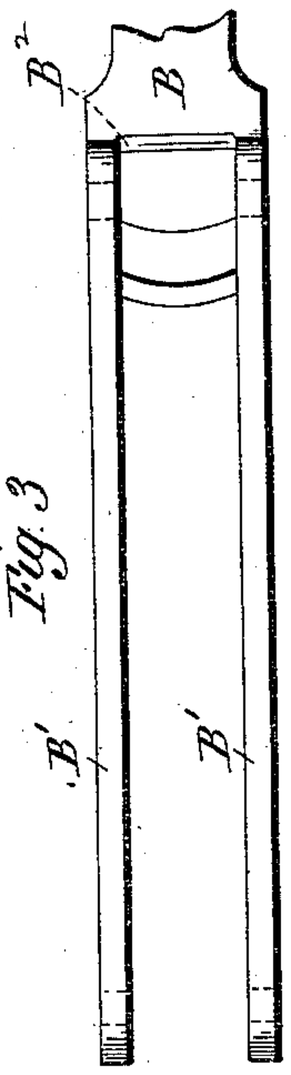

Fig. 3

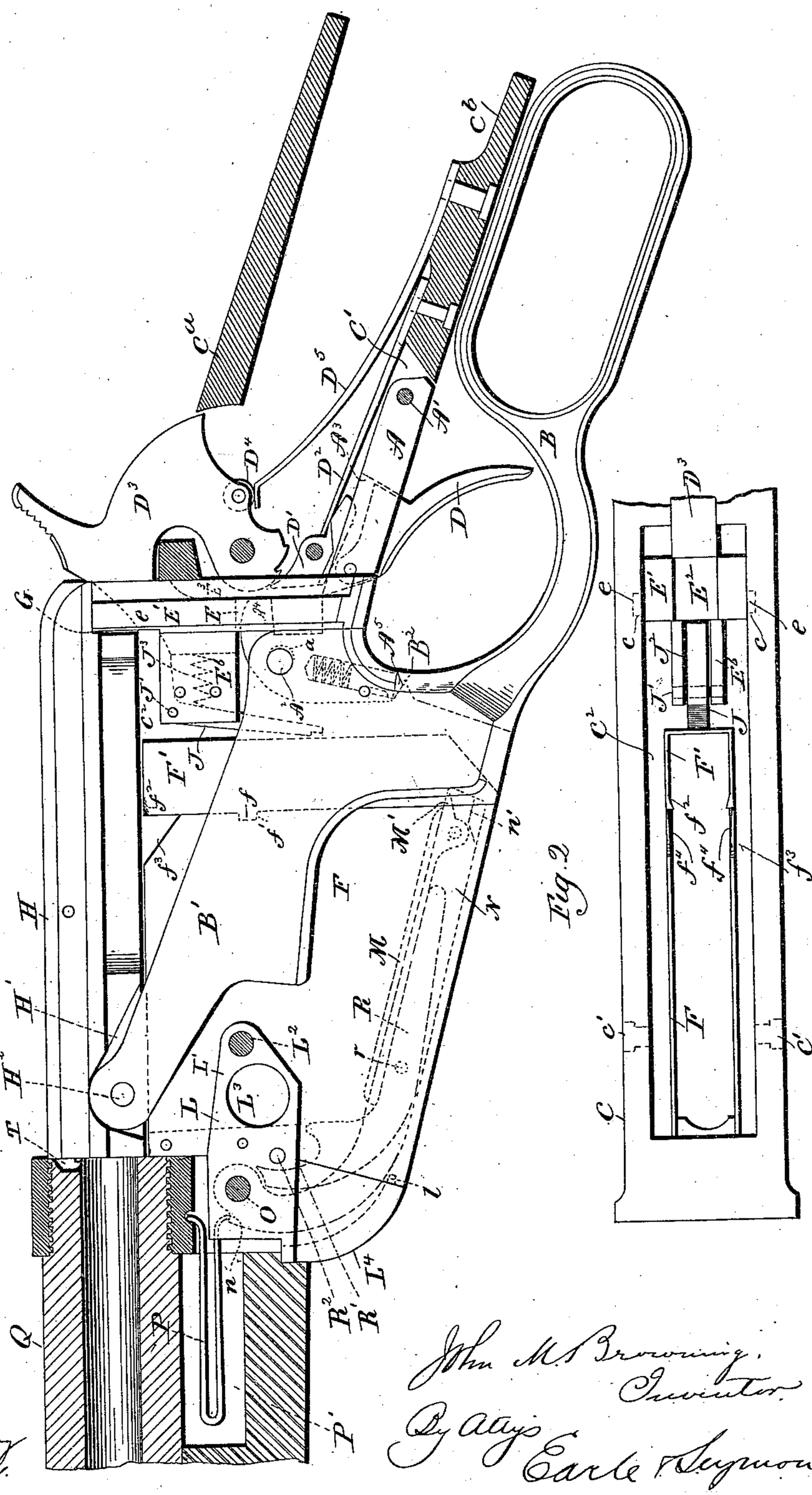

Fig. 1

Fig. 2

Witnesses.
J. H. Hemmy
Lillian D. Kelsey.

John M. Browning,
Inventor.
By Atty's
Earle & Seymour

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

(No Model.) 3 Sheets—Sheet 2.

J. M. BROWNING.

BOX MAGAZINE FIREARM.

No. 549,345. Patented Nov. 5, 1895.

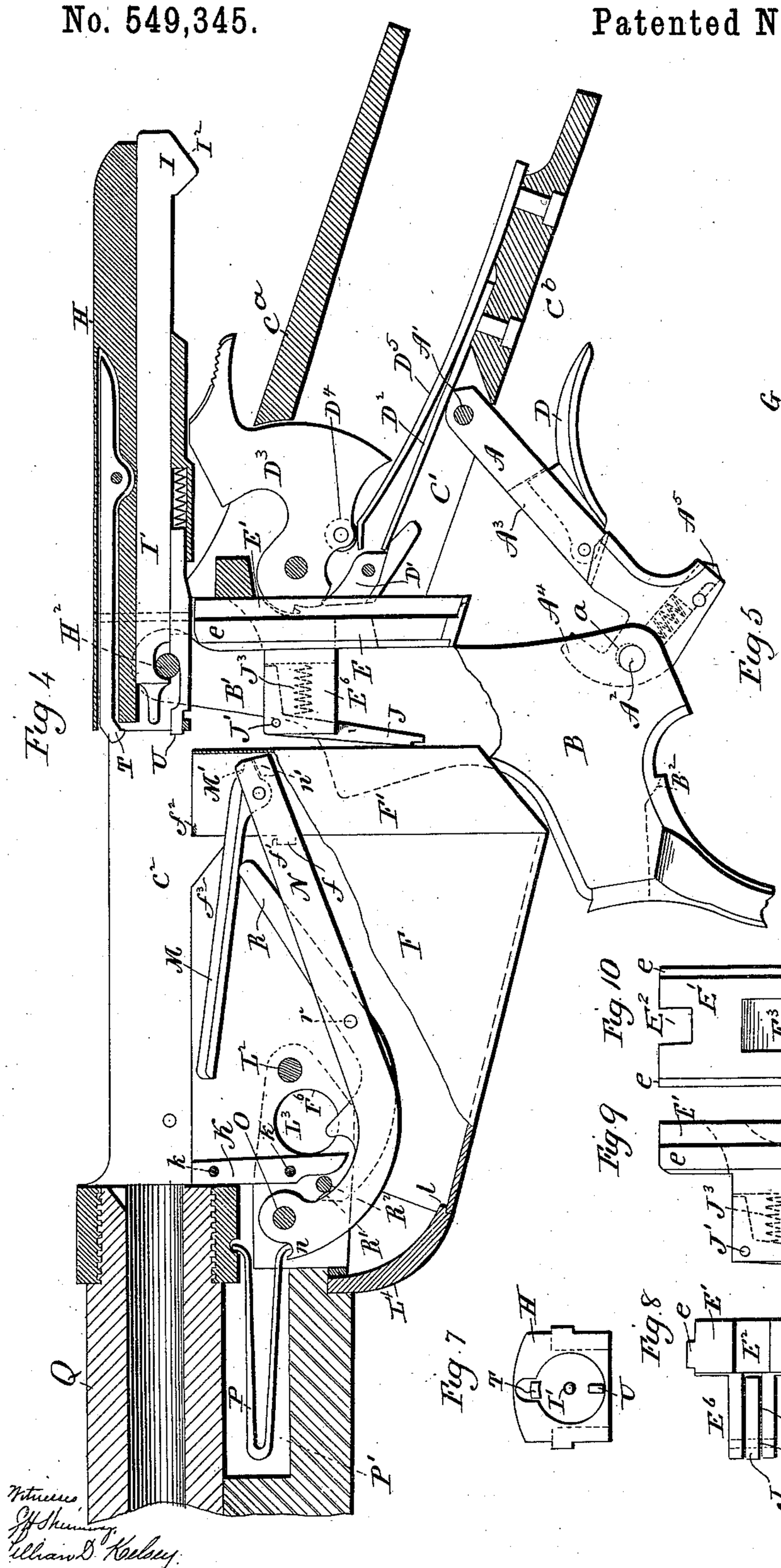

Fig. 4

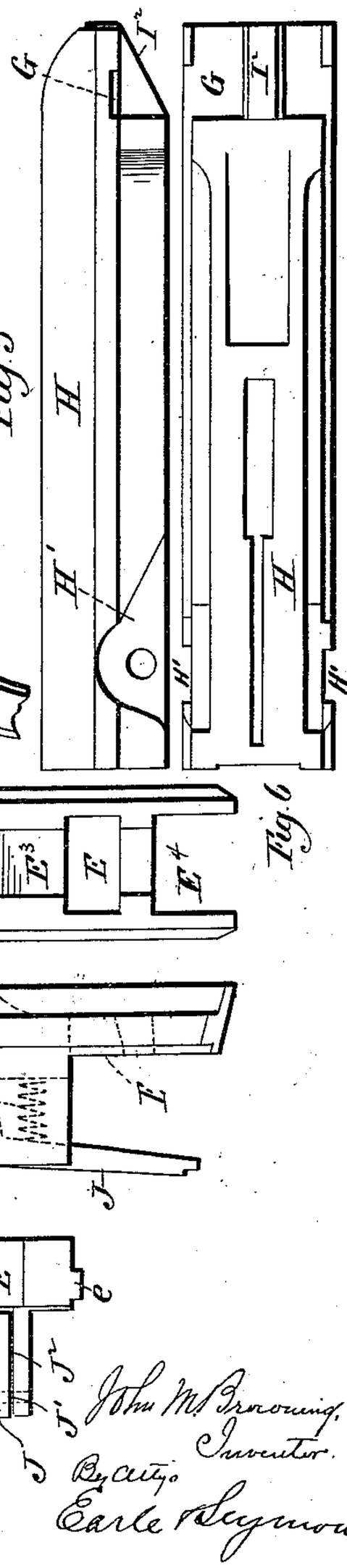

Fig. 5

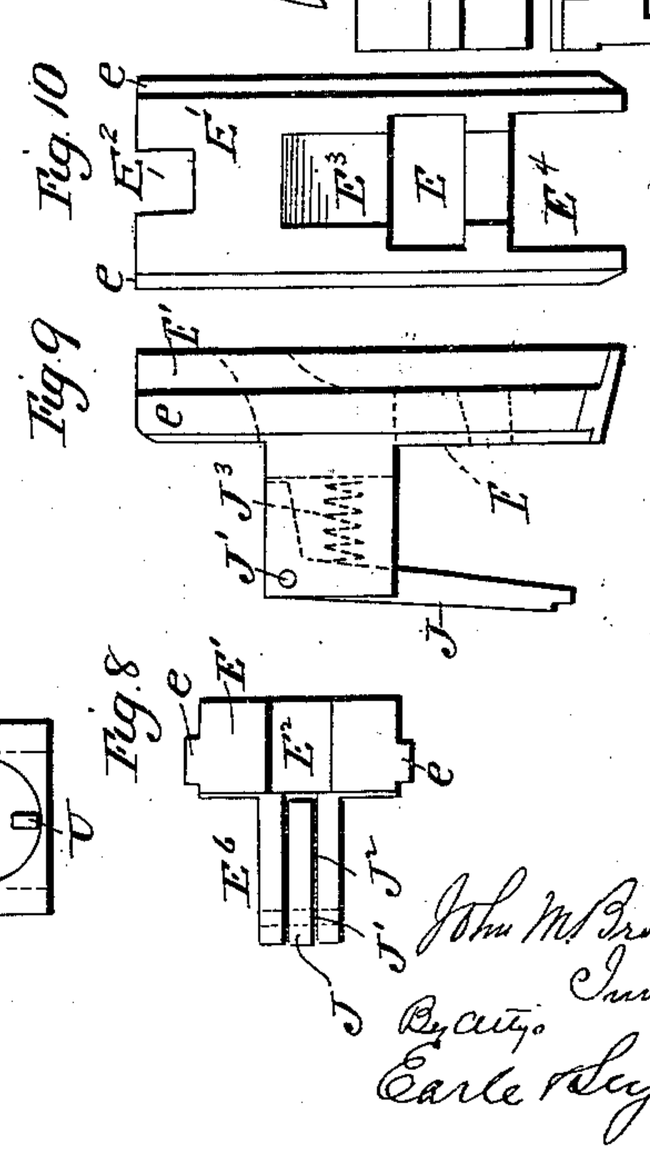

Fig. 10

Fig. 6

Fig. 9

Fig. 8

Fig. 7

Witnesses:
J. F. Shumway.
Willard D. Kelsey.

John M. Browning.
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(No Model.) 3 Sheets—Sheet 3.

J. M. BROWNING.

BOX MAGAZINE FIREARM.

No. 549,345. Patented Nov. 5, 1895.

Fig 16

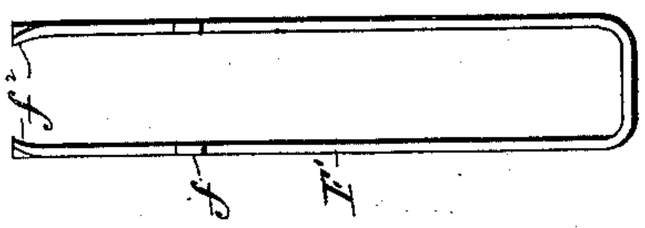


Fig 18

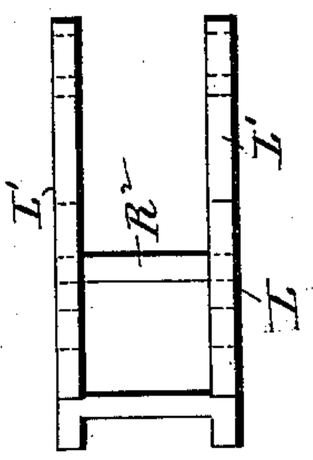


Fig 15

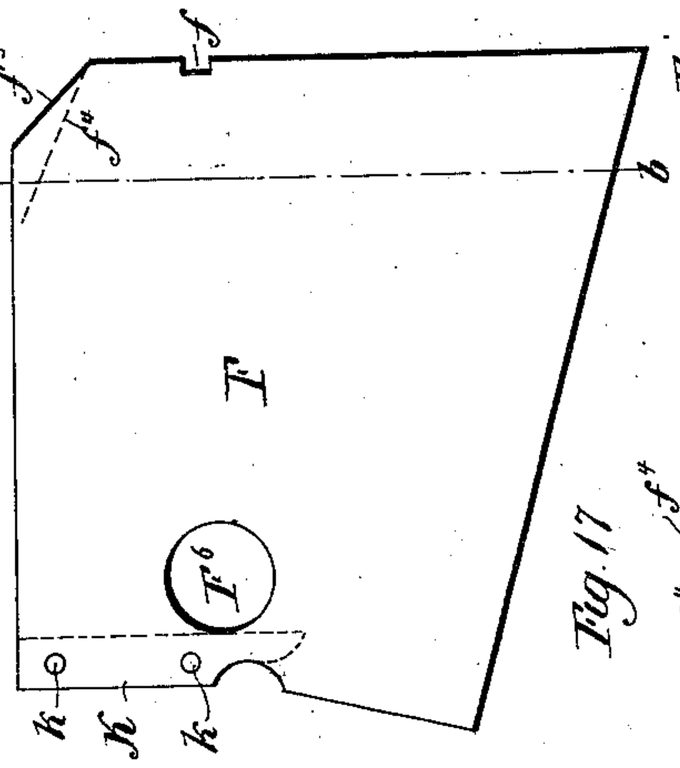


Fig. 19.

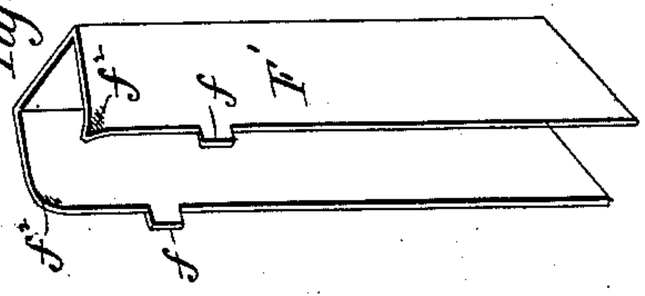


Fig. 17

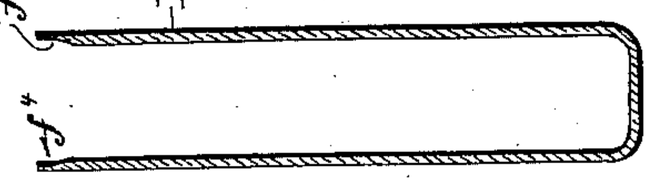


Fig. 20

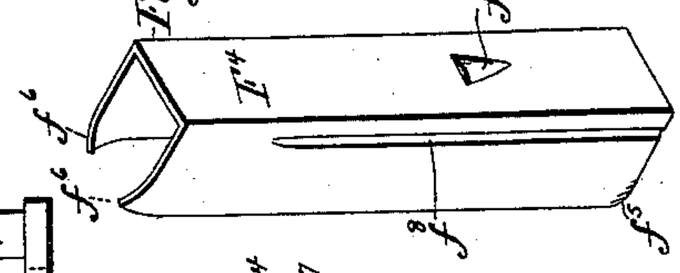


Fig. 12

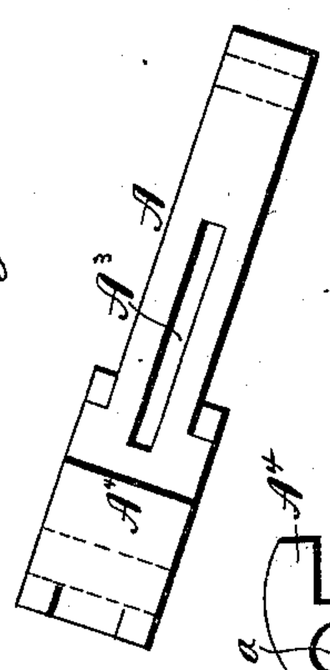


Fig. 11.

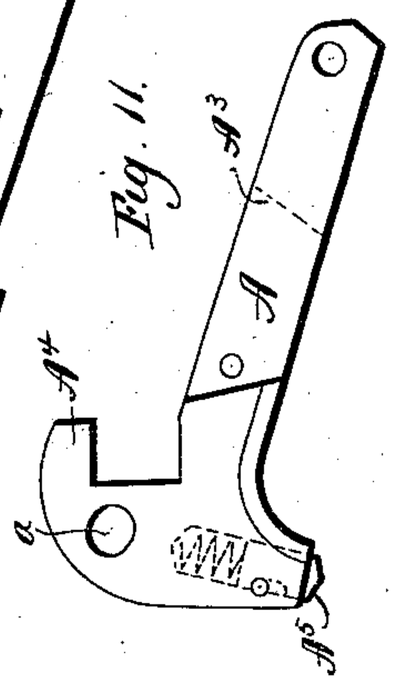


Fig 13

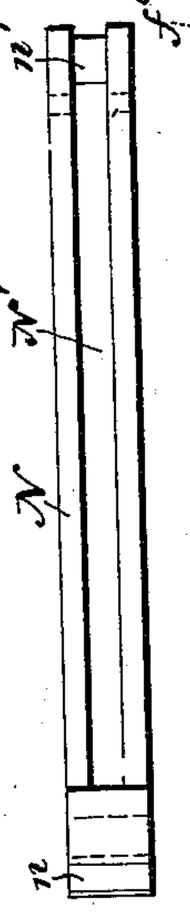
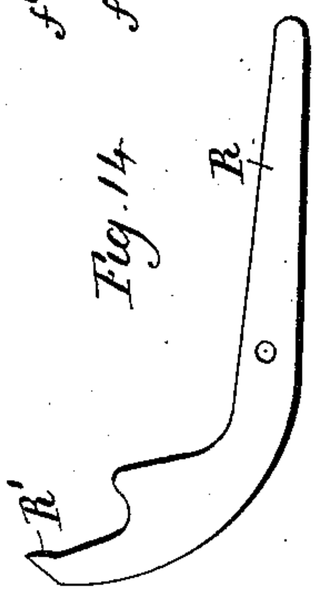


Fig. 21.

Fig. 14



Witnesses.
J. H. Shumway.
Lillian D. Kilsey.

John M. Browning.
Inventor.
By Attys Earle & Seymour

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

JOHN M. BROWNING, OF OGDEN, UTAH TERRITORY, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN, CONNECTICUT.

BOX-MAGAZINE FIREARM.

SPECIFICATION forming part of Letters Patent No. 549,345, dated November 5, 1895.

Application filed November 19, 1894. Serial No. 529,259. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, of Ogden, in the county of Weber and Territory of Utah, have invented a new Improvement in Box-Magazine Breech-Loading Guns; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view, partly in side elevation and partly in vertical longitudinal section, of one form of a gun constructed in accordance with my invention, the parts of the gun being shown in the positions due to them when the gun is closed; Fig. 2, a broken detached plan view of the frame of the gun with the breech-bolt removed and showing the stationary and flexible members of the two-part box-magazine and the recoil-block and the pivotal dog mounted therein; Fig. 3, a detached plan view of the finger-lever; Fig. 4, a view corresponding to Fig. 1, but showing the parts in the positions due to them when the gun is open; Fig. 5, a detached view in side elevation of the breech-bolt; Fig. 6, a detached reverse plan view thereof; Fig. 7, a detached view of the breech-bolt in front elevation; Fig. 8, a detached plan view of the recoil-block; Fig. 9, a view thereof in side elevation; Fig. 10, a front view thereof; Fig. 11, a detached view in side elevation of the link employed to connect the finger-lever with the lower tang of the frame; Fig. 12, a plan view thereof; Fig. 13, a plan view of the carrier-arm; Fig. 14, a view in side elevation of the equalizing-lever; Fig. 15, a view in side elevation of the stationary forward member of the box-magazine; Fig. 16, a view thereof in rear elevation; Fig. 17, a view thereof in vertical section on the line *a b* of Fig. 15; Fig. 18, a plan view of the stirrup by means of which the said part of the magazine is secured in place; Fig. 19, a perspective view of one form which the flexible rear member of the magazine may have; Fig. 20, a perspective view of a modified form thereof; Fig. 21, a plan view of the said modified form.

My invention relates to an improvement in that class of magazine breech-loading firearms which have box instead of tubular magazines, the object being to produce a convenient, safe, and effective arm, constructed with particular reference to having a compact, narrow frame.

With these ends in view my invention consists in a box-magazine breech-loading firearm, a link located to the rear of the finger-lever and having articulate connection with the same and the frame of the arm, whereby the finger-lever has only to straddle the box-magazine.

My invention further consists in such a firearm when provided with a link located to the rear of its finger-lever, having articulate connection with the same and with the frame of the arm and coacting with a recoil-block which locks the breech-bolt in its closed position.

My invention further consists in such an arm when provided with a firing-pin having a beveled operating-head at its rear end, and with a recoil-block for locking the breech-bolt in its closed position, and having a notch formed in its upper end for the reception of the said beveled head of the firing-pin.

My invention further consists in such an arm when provided with a recoil-block for locking the breech-bolt in its closed position, and constructed at its lower end with a clearance space adapting it to fit over a link by which the said block is operated, and which is located to the rear of the finger-lever of the arm and is articulated with the same and with the frame.

My invention further consists in such an arm when having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I employ a pivotal hook or link A for connecting the finger-lever B with the lower tang C^b of the frame C, but located to the rear of the said lever instead of forward of the same, as has been done in some cases heretofore, the rear end of the said link or hook being connected by a pin A′ to the said tang C^b, while its forward end has an elongated opening *a* formed in it to receive a pin A^2, mounted in the finger-

lever, which is thus connected with the link. The said tang C^b is constructed with a slot C′ to receive the link when the same is in its closed position, as shown in Fig. 1 of the drawings. The link itself has formed in it a central longitudinal slot A^3, Figs. 1, 4, 11, and 12, to receive the trigger D, which it carries, the said trigger engaging, when the link is in its closed position, with a sear D′, projecting downward into the slot C′ before mentioned, controlled by a sear-spring D^2 and engaging with notches formed in the usual manner in the hammer D^3, which has an antifriction-roller D^4 engaged by the hammer-spring D^5, as clearly shown in Figs. 1 and 2. The forward end of the link is furnished with an integrally-formed hook or beak A^4 extending upward and rearward and adapted to take into an opening E, Figs. 1, 4, 9, and 10, formed to receive it in the vertically-movable recoil-block E′. The said recoil-block is arranged vertically in the frame and constructed upon its opposite edges with vertically-arranged longitudinal guide-ribs *e e*, which take into grooves *c c*, formed to receive them in the opposite walls of the frame, and offsetting from the chamber C^2, formed therein to receive the two-part box-magazine, comprising the parts F and F′, and the arms B′ B′, Fig. 3, produced by bifurcating the forward end of the finger-lever B to adapt the same to embrace the two-part box-magazine.

It will be noticed by referring to Fig. 2 of the drawings that the frame is very narrow. I am enabled to make it so by locating the link A to the rear of the finger-lever, thus dispensing with the use of a bifurcated pivotal base-plate or link located in front of the lever, in which case the frame must be adapted in width to receive not only the box-magazine, but also the arms formed by bifurcating the forward end of the finger-lever and the arms of the bifurcated base-plate.

The breech bolt H has the opposite faces of its forward end recessed, as at H′ H′, to receive the extreme inner ends of the arms B′ B′ of the finger-lever, the said arms being connected with the block by means of a horizontal pin H^2.

The breech-bolt H has formed in the lower face of its extreme rear end a large transverse notch G, adapted to receive the upper end of the recoil-block.

The extractor T and the ejector U, mounted in the breech-bolt, may be of any approved construction and arrangement.

I may mention here that the opening *a*, formed in the link A to receive the pin A^2, which connects the same with the finger-lever B, is sufficiently elongated to allow of the lost motion required to permit the recoil-block to be drawn down sufficiently, through the medium of the finger-lever, to clear the breech-bolt before the same begins its rearward movement, and on the other hand to permit the breech-bolt to be moved forward into its closed position before the lever begins to raise the recoil-block into its closed position. It is to be noted, also, that by locating the trigger in the link A, I effectually guard against the accidental firing of the arm through the medium of the trigger, which, being carried by the link, is only in position to act upon the sear and thus release the hammer when the breech-bolt and recoil-block are in their closed positions.

The upper end of the recoil-block is constructed with a central vertical notch E^2, which receives the beveled operating-head I, located at the rear end of the firing-pin I′, mounted in the usual manner in the breech-bolt, the said operating-head having a beveled face I^2, which engages with the upper end of the hammer D^3, when the breech-bolt is thrown open and throws the hammer back into its fully-cocked position, as indicated in Fig. 4. Ordinarily in this class of guns the breech-bolt itself engages with the hammer and throws the same back into its fully-cocked position, but under my present invention the same office is performed by the firing-pin, which is thereto provided with a beveled operating-head, as described. The rear face of the recoil-block is cut away, as at E^3, to clear the sear D′ and the hammer D^3, while its extreme lower end is cut away so as to form the clearance space at E^4, Fig. 10, to adapt it to fit down over and embrace the forward end of the link A when the same is in its closed position. The downward movement of the recoil-block is limited by the engagement of the upper end of the cut E^3 with the hammer.

For maintaining the link and finger-lever in their closed positions the former is provided at its lower end with a spring-pressed friction-pin A^5, which, when the link and lever are in the said positions, takes into a notch B^2, formed in the lever, as shown in Fig. 1. A vertically-arranged elbow-lever J is mounted on a horizontal pin J′ in a vertical slot J^2, formed in an arm E^6, which projects forward from the recoil-block, with which the said elbow-lever moves up and down. A spring J^3, mounted in the said arm at a point below the pin J′, on which the lever is hung, impinges against the same and exerts a constant effort to throw the lower end thereof forward against the closed rear wall of the flexible rear member or part F′ of the two-part magazine, whereby the said part is retained in place. The said lower end of the said lever rides up and down upon the said rear wall of the said part F′, the open forward edge whereof opens directly into the open rear end of the main part F of the magazine. For the purpose of coupling the two parts of the magazine together so as to prevent the flexible part from being longitudinally displaced the sides thereof are furnished with two corresponding lugs *f f*, which take into corresponding notches *f′ f′*, formed in the rear edges of the sides of the stationary part F, before mentioned. The sidewise

displacement of the flexible part F′ is prevented, as will be understood, by the engagement of the outer faces of its sides with the inner faces of the arms B′ B′ of the finger-lever B, as shown in Fig. 2. It will be understood that sufficient clearance is secured for the insertion and removal of the part F′ by pressing back the elbow-lever J against the tension of its spring J^3.

My object in making the box-magazine in two parts, as described, is to secure elastic inclosure for the heads of the cartridges, which I do by making the part F′ of the magazine of sheet metal sufficiently light to be elastic, its sides pinching the heads of the cartridges enough to hold them against displacement, but yielding readily to allow them to be introduced into the magizine and fed out of the same one by one in the operation of the gun. It will be noted that the character of the connection between the fixed and flexible parts of the magazine in no wise interferes with the flexure of the latter.

It will be seen by reference to Fig. 19 of the drawings that the upper forward corners of the part F′ of the magazine are bent slightly inward to form retaining-fingers f^2. The upper rear corners of the sides of the stationary part F of the magazine are correspondingly cut away to form clearance spaces f^3 f^3, located at points directly in front of the inwardly-turned retaining-fingers f^2 of the flexible part of the magazine. By forming the clearance spaces f^3 f^3 as described the heads of the cartridges are permitted to emerge from the magazine as soon as the breech-bolt has pushed them forward far enough to clear them from the fingers f^2. Inclined guideways f^4 f^4, located below the clearance spaces f^3 f^3 just described and extending forward beyond the same, are formed opposite each other by cutting away the inner faces of the side walls of the stationary portion of the magazine. These guideways have the function of gradually elevating the cartridges through their heads as they are moved forward after their emergence into the clearance spaces f^3 f^3 and from their confinement between the fingers f^2 of the part F. It will be understood, of course, that the inclination of the guideways is pitched, so as to cause the right presentation of the cartridges to the breech-block G and the bore of the gun-barrel Q.

When the gun is in condition for operation, the flexible part of the box-magazine is not disturbed, more than to be sprung, when the magazine is being filled with cartridges, which are introduced in any approved manner; but I may, if desired, construct the flexible part of the magazine so that it will have the additional function of a pack, which will be introduced into the gun filled with cartridges and removed therefrom empty of cartridges as often as required. I thus convert the flexible part of the magazine into what I may term a "skeleton pack," one form of which is shown in Figs. 20 and 21 of the drawings. This pack F^4 is made of sheet metal bent into box-like form and made so as to have flexible sides, which are inwardly upset to form longitudinal ribs f^8 f^8, between which and the rear wall of the pack there is just enough space for the heads of the cartridges. The lower ends of the sides of the pack are turned inward to form retaining-fingers f^5 f^5 to prevent the cartridges from escaping through the lower end of the pack, while the upper ends of the said sides are bent inward to form retaining-fingers f^6 f^6, which prevent the cartridges from escaping from the upper end of the pack. It is designed that this pack shall be supplied in duplicate to the gun and filled prior to being introduced thereinto. When in the gun, it operates in substantially the same manner as the flexible part F′ before referred to, and is held in place by means of a projection f^7, formed upon its rear wall, in position to be engaged by the notched lower end of the elbow-lever J. (Shown in Fig. 9.)

The stationary member F of the box-magazine is formed for the most part from a single piece of sheet metal and has the upper portion of its forward end closed by means of a head-block K inserted into it and secured in place by rivets *k k*.

A horizontally-arranged stirrup L, a detail view of which is shown by Fig. 18, is employed for supporting the part F of the box-magazine in place in the frame, the middle portion of the forward end of the said part being inserted between the arms L′ L′ of the stirrup and the magazine being brazed on to the said arms, the extreme rear ends of which receive screws L^2 L^2, mounted in the side walls of the frame, which is thereto furnished with screw-holes *c′ c′*, as shown in Fig. 2. The said part F of the box-magazine is thus supported in place within the frame by means of the said screws L^2 L^2 through the medium of the stirrup. Circular openings L^3 L^3, formed in the arms of the stirup, and corresponding openings F^6, formed in the opposite walls of the box-magazine, are made to lighten the gun, but of course the formation of these openings is optional. A hollow projection L^4, depending from the forward end of the stirrup and furnished with a toe *l*, which enters the forward end of the magazine, is provided for bridging the space between the said end of the magazine and the frame, the exterior surface of the said arm being thereto curved.

The feeding mechanism of the arm comprises a carrier M, located within the box-magazine and pivotally secured at its rear end to a pivotal carrier-arm N, the upwardly-curved forward end of which receives a horizontal pin O, passing through the forward end of the stirrup and also through the side walls of the frame, the said forward end of the carrier-arm having a shoulder *n* engaged by one end of a bowed spring P, located within a chamber P′, formed to receive it at a point directly under the butt-end of the gun-barrel

Q. In order to preserve the carrier in substantially-horizontal position during its upward movement in the box-magazine, I provide the feeding mechanism with what I shall term an "equalizing-lever" R, which is located in a long slot N′, extending nearly throughout the length of the center of the carrier-arm N, in which the said lever is mounted upon a pivot *r*. The rear end of this lever engages with the lower face of the carrier near the rear end thereof in front of its pivotal point, while the forward end of the lever is shaped to form a cam R′, which coacts with a horizontal pin R^2, mounted in the stirrup L. The said cam is shaped so that as the equalizing-lever is lifted with the carrier-arm it will be brought into contact with the said pin R^2 and thus move the lever as required for maintaining the carrier in the right position of inclination throughout its upward movement in the box-magazine. At its extreme rear end the carrier is formed with a stop M′, which engages with the upper face of the extreme rear end of the carrier-arm at the point *n′*, Fig. 13, and prevents the carrier from being unduly elevated. Under the construction described the spring P will lift the carrier-arm, which in turn will lift the carrier, while the equalizing-lever will maintain the carrier in the right position of inclination to suitably present the bolts of the cartridges to the bore of the gun-barrel and the heads of the cartridges to the breech-bolt.

It is apparent that in carrying out my invention some changes in the construction and arrangement of parts may be made, and, furthermore, that the parts are not necessarily limited to use in the particular combination herein shown and described, but might be used in other guns of the same class. Again, the equalizing-lever might be used for insuring the uniform elevation of the carrier of a gun having a different breech-bolt and a different recoil-block, &c. I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a box-magazine breech-loading gun, the combination with the frame and the box-magazine thereof, of a breech-bolt, a finger-lever embracing the box-magazine, and connected with the said bolt for operating the same, a recoil-block to coact with the breech-bolt for locking the same in its closed position, and a link located to the rear of the finger-lever, having articulate connection therewith and with the frame, and coacting with the lower end of the recoil-block for raising and lowering the same, substantially as described.

2. In a box-magazine breech-loading gun, the combination with the frame thereof, of a breech-bolt, a finger-lever connected with the bolt for operating the same, a vertically movable recoil-block coacting with the breech-bolt to lock the same in its closed position, and a link located to the rear of the finger lever, having articulate connection therewith and with the frame, and constructed at its forward end with a hook which takes into the recoil-block, whereby the same is operated by the link, substantially as described.

3. In a box-magazine breech-loading gun, the combination with the frame and the box-magazine thereof, of a breech-bolt, a finger-lever embracing the box-magazine and connected with the breech-bolt for operating the latter, a recoil-block for locking the breech-bolt in its closed position, a link located at the rear of the finger-lever, having articulate connection therewith and with the frame, and coacting with the lower end of the recoil-block for opening and closing the same, a trigger carried by the said link, a sear mounted in the frame and operated upon by the trigger when the link is in its closed position, and a hammer mounted in the frame, and operated upon by the sear, the rear face of the recoil-block being adapted to clear the hammer and sear, substantially as described.

4. In a box-magazine breech-loading gun, the combination with the frame thereof, of a breech-bolt, a firing-pin mounted in the said bolt and provided at its rear end with a beveled operating-head, a recoil-block for locking the said bolt in its closed position, and having a notch formed in its upper end for the reception of the beveled head of the firing-pin, means for operating the said block, and a hammer which co-acts with the said head, and which is thrown into its fully cocked position thereby during the opening movement of the breech-bolt, substantially as described.

5. In a box-magazine breech-loading gun, the combination with the frame and the box-magazine thereof, of a breech-bolt, a finger-lever connected with the bolt for operating the same, a recoil-block for coacting with the bolt to lock the same in its closed position, and constructed at its lower end with an opening and with a clearance space located below the same; and a link located at the rear of the said lever, having articulate connection with the same and with the frame, and constructed at its forward end with a hook which takes into the said opening for raising and lowering the recoil-block, the clearance space of which adapts it to fit down over the link when the same is in its closed position, substantially as described.

6. In a box-magazine breech-loading gun, the combination with a breech-bolt, of a vertically movable recoil-block co-operating therewith, and a box magazine, open at its rear end which is kept normally closed by the said block, substantially as described.

7. A box magazine for a breech-loading gun, having its opposite side walls internally cut away at the upper portion of its rear end to

form guide-ways for the heads of the cartridges to ride upon as they emerge from the magazine, substantially as set forth.

8. In a breech-loading magazine gun, the combination with the frame thereof, of a two-part magazine of which the rear part, which receives the heads of the cartridges is flexible, and a vertically movable recoil-block having sliding connection with the rear wall of the rear part of the magazine for holding the said part in right relation to the forward part of the magazine, substantially as described.

9. In a breech-loading magazine gun, the combination with the frame thereof, of a two-part magazine of which the rear part, which receives the heads of the cartridges, is flexible, a vertically movable recoil-block, and a spring-pressed elbow-lever mounted in the said recoil-block and having sliding connection with the rear wall of the flexible rear part of the magazine for holding the said part in place, substantially as described.

10. In a breech-loading magazine gun, the combination with the frame thereof, of a two-part magazine, the main forward part of which is permanently secured within the said frame, and has the upper corners of its rear end cut away to form clearance spaces, and of which the rear part, which receives the heads of the cartridges, is made flexible, and constructed at its upper end with two inwardly turned retaining fingers, from under which the heads of the cartridges emerge into the clearance spaces formed by cutting away the forward part of the magazine, substantially as described.

11. In a box-magazine, breech-loading gun, the combination with the frame thereof, of an independently formed box magazine located within a chamber formed in the said frame, a stirrup secured to the forward end of the box-magazine, and supporting the same in the frame, a carrier located in the box-magazine, a carrier-arm having the carrier pivoted to its rear end, pivotally mounted at its forward end in the said stirrup, and bifurcated between its two ends; an equalizing lever pivotally mounted in the carrier-arm between the two members formed by bifurcating the same, engaging at its rear end with the carrier, and constructed at its forward end with a cam which co-acts with a pin mounted in the stirrup at a point therein forward of the pivot on which the carrier-arm is hung, and a spring extending forward of the stirrup, and engaging at its rear end with the carrier-arm, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN M. BROWNING.

Witnesses:
E. A. ENSIGN,
JOHN E. RAMSDEN.