

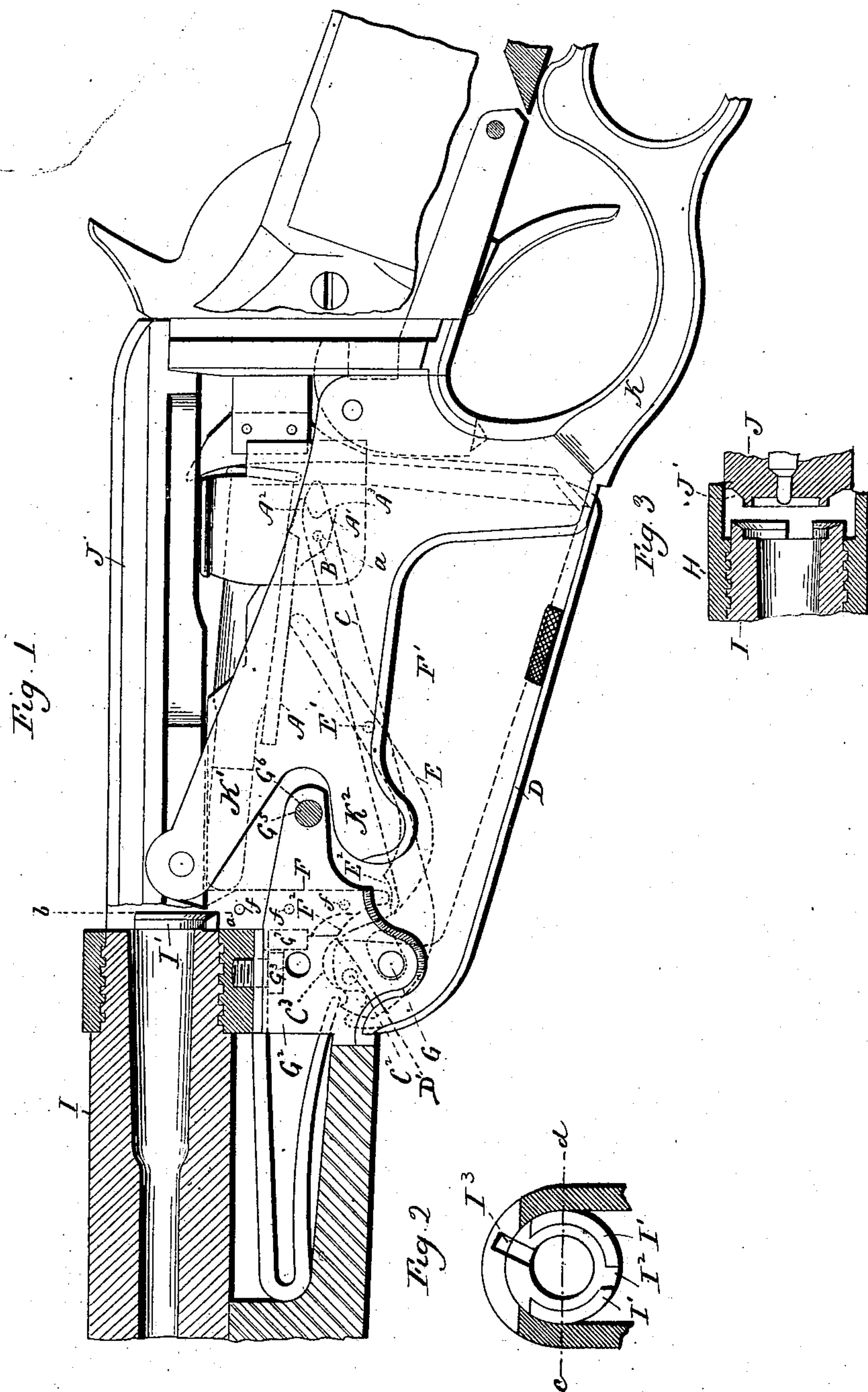
(No Model.)

2 Sheets—Sheet 1.

T. C. JOHNSON.
BOX MAGAZINE FIREARM.

No. 597,908.

Patented Jan. 25, 1898.



Witnesses
J. H. Shumway.
Lillian D. Kelbey.

Thomas C. Johnson.
Inventor.
By atty. Earl K. Reynolds

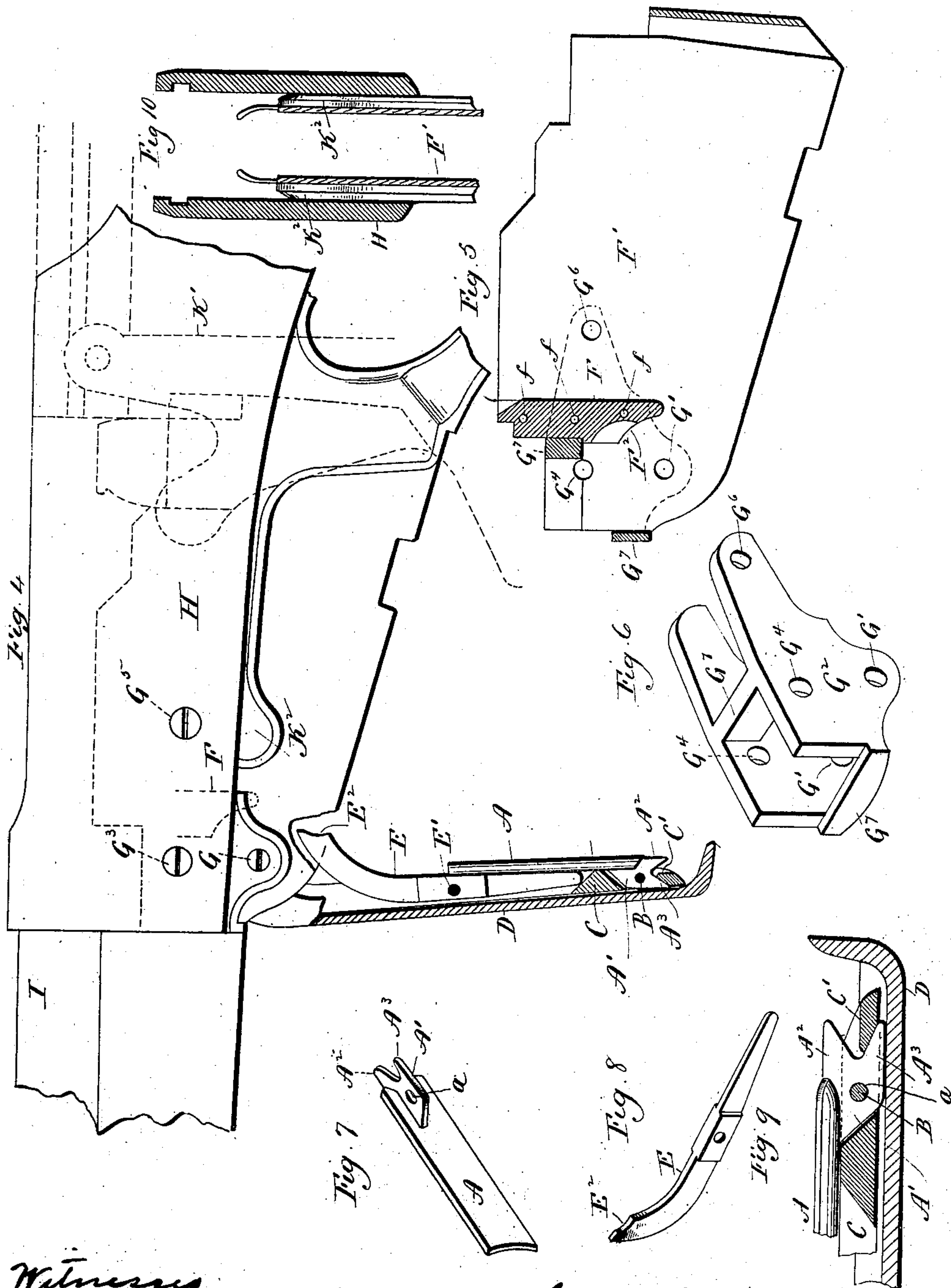
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By atty. Earle Heywood

UNITED STATES PATENT OFFICE.

THOMAS C. JOHNSON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

BOX-MAGAZINE FIREARM.

SPECIFICATION forming part of Letters Patent No. 597,908, dated January 25, 1898.

Application filed January 14, 1897. Serial No. 619,134. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. JOHNSON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Breech-Loading Box-Magazine Lever-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,
10 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 elevation and partly in section, of a gun containing my
15 improved features of invention; Fig. 2, a detail sectional view on line *a b* of Fig. 1 and looking forward toward the rear end of the gun-barrel; Fig. 3, a detail sectional view on the line *c d* of Fig. 2 and looking downward
20 and showing the deflecting-flange of the barrel and the beveled forward end of the breech-bolt; Fig. 4, a broken view showing the lower end of the magazine and the cover in its open position, with the carrier or cradle in its re-
25 tired or closed position; Fig. 5, a detached view of the box-magazine, shown partly in elevation and partly in vertical section; Fig. 6, an enlarged detached perspective view of the rigid stirrup which provides for connect-
30 ing the forward end of the magazine with the gun-frame and also provides a bearing for the pin on which the pivotal cover is suspended; Fig. 7, a detached perspective view of the carrier proper or cradle; Fig. 8, a similar view
35 of the equalizing-lever; Fig. 9, an enlarged sectional view showing the projection on the outer edge of the drawing-tooth of the carrier or cradle below the outer or lower face of the carrier-arm in position to come into contact
40 with and coact with the inner face of the pivotal cover; Fig. 10, a partial view of the gun in transverse section, showing how the blocking-fingers rise between the side walls of the frame of the gun and the elastic side walls of
45 the box-magazine to prevent the same from being spread open.

This invention relates to an improvement in breech-loading box-magazine lever-fire-
arms of the type having the lower ends of the
50 box-magazines made open and closed by means of a pivotal cover, which is swung into

its open position for feeding the cartridges into the magazine through the bottom thereof, the object of my present invention being to
produce a simple, compact, reliable, and effi- 55
cient gun, constructed with particular refer-
ence to the operation of the carrier, to the stirrup employed for connecting the carrier with the gun-frame, and to constructing the
60 rear end of the gun-barrel so as to avoid the
fouling of the cartridges as they are fed forward by the breech-closing instrumentality.

With these ends in view my invention consists in a carrier provided at its forward end
with a finger which coacts with the cover for
65 drawing the carrier into its closed position when the cover is opened.

My invention further consists in an equalizing-lever having its cammed forward end arranged to coact with the lower end of the for-
70 ward end wall of the box-magazine.

My invention further consists in the combination, with a sheet-metal box-magazine, of a stirrup applied to the lower corner of the forward end of the magazine and providing for
75 its connection with the gun-frame and for the reception of the cover which closes the open lower end of the magazine.

My invention further consists in a gun-barrel having its rear end extended into the re-
80 ceiver-chamber and beveled so as to act and give direction to the cartridges, thus preventing them from fouling as they are pushed forward by the breech-closing instrumentality.

My invention further consists in certain de-
85 tails of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I form the rear end of the carrier proper or cradle *A* with
90 a web *A'*, arranged at a right angle to it and formed with a stop-finger *A²* and a closing-finger *A³*. The said web *A'* has formed in it at a point forward of the said fingers a trans-
verse pivot-hole *a*, which receives the pivot
95 *B*, by means of which the carrier or cradle is pivotally mounted by its rear end in the rear end of the carrier-arm *C*, which is sometimes
called the "carrier," but which I prefer to
100 call the "carrier-arm," as the real function of
carrying the cartridges is performed by what I have called the "carrier" or "cradle" *A*.

The stop-tooth A^2 , before mentioned, engages with the web C' , formed at the extreme rear end of the carrier-arm for limiting the elevation of the carrier or cradle above the same, while when the carrier or cradle is in its closed position the drawing-tooth A^3 projects very slightly below the lower face of the rear end of the carrier-arm, so as to permit the tooth to come into engagement with the cover D . The said carrier-arm is slotted nearly throughout its length for the reception of an equalizing-lever E , which oscillates upon a pivot E' , the rear end of this lever engaging with the under face of the carrier or cradle for gradually lifting the same as the arm is lifted, so as to equalize the position of the carrier or cradle and keep it in a substantially horizontal position throughout its entire upward movement. The forward end of the said equalizing-lever is made comparatively wide and cammed by forming it with a notch E^2 . The said forward end of the lever instead of co-acting with a transversely-arranged pin, as has heretofore been done, is designed to coact in the gun of my present invention directly with the rounded lower edge of the block F , which forms the forward end wall of the box-magazine F' , which is made of sheet metal and the forward ends of the side walls of which are secured to the said block by transverse rivets f , three in number, as shown in Fig. 1. The lower end of the said block is reduced in thickness, as shown, for coöperation with the cammed forward end of the equalizing-lever. The forward face of the lower end of the said block is also formed with a cam-surface F^2 , which coacts with the cam-surface D' , formed at the forward end of the carrier-arm C , which is hung upon a transverse pivot C^2 , mounted in the forward end of the cover, which is slotted to permit the forward end of the carrier-arm to set down into it. The cover D is itself suspended upon a pivot G , located below the pivot C^2 and supported at its ends in pivot-holes $G' G'$, formed in the depending side walls of the box-magazine stirrup G^2 , into which the lower corner of the forward end of the box-magazine is soldered or otherwise secured. The said stirrup is designed to reinforce the box-magazine, which will be made of comparatively light sheet metal, and is secured in place by means of a pin G^3 , which passes through pin-holes $G^4 G^4$, formed at opposite points in its forward end, and also through suitably-located holes formed in the gun-frame H . An additional screw G^5 , entering the said gun-frame H and a tapped hole G^6 , formed in the rear end of the stirrup, steadies the same. This stirrup may be made of wrought or malleable metal and is designed, as aforesaid, to stiffen and reinforce the box-magazine, and also to provide convenient and effective means for firmly connecting the same with the gun-frame. It also provides the heavy and stable bearing required for the cover-pin, which is exposed to severer strain than the thin sheet-

metal walls of the magazine are adapted to withstand. The stirrup is itself reinforced by transverse bridges $G^7 G^7$. By the employment of this stirrup I am enabled to very materially reduce the size and weight of the gun-frame, as when the stirrup is employed it is not necessary to extend the frame downward to afford a bearing for the pivotal cover. When the cover is closed, the drawing-tooth A^3 will not be called into operation; but when the cover is thrown into its open position, as shown in Fig. 4, the carrier-arm C will be forced by the coaction of its cam C^3 with the cam F^2 of the block F of the box-magazine to the inner face of the cover. This in turn will bring the edge of the drawing-tooth into engagement with the inner face of the cover, whereby the carrier or cradle will be forced by the lever-age thus secured to assume a retired or closed position, in which it hugs, so to speak, the inner face of the carrier-arm. It is important that the carrier or cradle should thus be compelled to assume a closed or retired position when the cover is open, so that it will be out of the way and not interfere with the feeding of cartridges into the bottom of the box-magazine, or, on the other hand, so that it will not interfere with withdrawing the cartridges in the same way.

In order to prevent the cartridges from fouling on the rear end of the barrel, I form the barrel I with an upwardly-opening segmental flange I' , having its inner edge beveled and extending rearward into the chamber of the gun-frame or into what is sometimes called the "receiver-chamber." This flange is necessarily so located in order to insure the performance of its function below the center of the barrel and, as shown, it extends above the same. It is intersected at a point below the barrel by a slot I^2 , which receives the ejector; but this slot will only be necessary when the gun is provided with an ejector secured to the lower portion of the breech-closing instrumentality, which in this case is a bolt J . The gun-barrel is slotted, as at I^3 , at a point above its center and above the flange for the reception of the forward end of the extractor, but this has nothing to do with the flange itself. To adapt the forward end of the breech-bolt J to properly close the gun when the barrel is thus provided with a deflecting-flange, the forward end of the bolt is beveled, as at J' in Fig. 3. It will be readily understood that in case the cartridges are deflected laterally one side or the other upon the carrier, however that may be constructed, they may get so far out of the central line of the barrel that they would foul on the rear end of the same if the gun were tilted to one side or the other if it were not for the described flange on the barrel. With this flange the cartridges are at once deflected or thrown inward sufficiently to cause them to invariably feed properly when the breech-bolt begins to push them forward. This deflecting-flange is particularly useful in insur-

ing the proper feeding of the cartridges, which are sometimes fed singly by hand into the open upper end of the magazine and onto the carrier when the gun is used as a single-loader.

I am of course aware that guns have before been adapted to be used as "single-loaders" by providing for the manual introduction of single cartridges into the open upper ends of their receivers, and I do not therefore broadly claim such a construction, but only my improved deflecting-flange when the same is constructed and arranged substantially as shown, whereby cartridges are prevented from fouling on the rear end of the gun-barrel even though they are thrown or tossed into the top of the gun with the rapidity acquired by the most expert user and without any care further than that the cartridges are right end foremost.

My improved gun is constructed with particular reference, as has already been explained, to being loaded from the bottom of the box-magazine, for which purpose the cover is thrown open. However, when the operating or finger lever K is thrown into its open position, as shown by broken lines in Fig. 4, for the purpose of opening the gun by the retraction of the breech-bolt J, the open upper end or top of the box-magazine is exposed, at which time a single cartridge may be introduced into the gun, if desired, so that it may be used as a single-loader. It is desirable, however, to prevent a person unfamiliar with the gun or a person maliciously disposed from blocking or clogging it by forcing a cartridge into the top of the magazine when the gun is open in an improper manner. With this end in view the arms K' K', forming the forward portion of the said lever, are constructed with forwardly and downwardly projecting knuckle-like blocking-fingers K² K², which when the lever is thrown into its fully-open position, in which it is shown in broken lines by Fig. 4, occupy the spaces between the side walls of the gun-frame H and the upper portions of the rear ends of the elastic side walls of the box-magazine F' and the lower portions of the elastic combined guide and stop plates F² F², which are secured to and project above the said side walls of the magazine at the extreme rear ends thereof. The elastic side walls of the box-magazine and the lower portions of the said plates are thus blocked against being spread apart in case a person attempts to ignorantly or maliciously crowd a cartridge into the open top of the box-magazine when the gun is opened in any manner but the proper one, or, in other words, in any other position but one in which the flange or rim of the cartridge will pass down back of the rear edges of the said plates. The said blocking-fingers do not therefore block the box-magazine, so as to prevent the gun from being used as single-loader, by the introduction of single cartridges into the top of the box-magazine when the gun is open, but the

said fingers do prevent the gun from being fouled by the crowding of cartridge in an improper position into the open top of the box-magazine. The particular shape of the knuckle-like blocking-fingers K² K² may be varied, as it is only necessary that they shall be adapted in length, width, and thickness to slide in between the inner faces of the side walls of the gun-frame and the lower ends of said plates and the outer faces of the elastic side walls of the box-magazine at a point in front of and adjacent to the said plates.

Inasmuch as the other features of the gun are not to be claimed in this case it is thought unnecessary to describe them, and they have been shown merely to show the improved parts in their relation to a suitable gun organization.

I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations therein 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 firearm, the combination with a box-magazine having its lower end open, of a pivotal cover hung by its forward end and adapted to normally close the open lower end of the box-magazine, a carrier-arm swung from its forward end, and extending rearwardly into the said box-magazine, a carrier having its rear end pivotally connected with the rear end of the said carrier-arm, and also having its rear end constructed to coact with the inner face of the rear end of the cover which forces it into its closed or retired position when the cover itself is swung into its open position, and an equalizing-lever pivotally mounted in the said carrier-arm, and engaging with the carrier to cause the same to rise in right position.

2. In a box-magazine firearm, the combination with a box-magazine having its lower end open, of a cover for normally closing the open lower end of the magazine, a carrier-arm pivotally mounted in the said cover, an equalizing-lever pivotally mounted in the carrier-arm, and a carrier pivotally mounted in the rear end of the carrier-arm, coacting with the said lever, and provided at its rear end with a drawing-tooth which extends rearward of its pivot, and coacts with the inner face of the cover for forcing the carrier into its closed or retired position when the cover is open.

3. In a box-magazine firearm, the combination with a sheet-metal box-magazine having a solid block located within its forward end, the said block being formed at its extreme lower end with a rounded or cam surface, and also formed upon the forward face of its lower end with a cam-surface; of a cover swung by its forward end and normally closing the lower end of the box-magazine, a carrier-arm swung from its forward end, extend-

ing rearwardly into the said box-magazine, and formed at its forward end with a cam which coacts with the cam-surface in the forward face of the lower end of the said block, 5 a carrier having its rear end pivotally connected with the said carrier-arm; and an equalizing-lever pivotally mounted in the said carrier-arm, coacting at its rear end with the carrier, and having its forward end constructed to coact with the cam-surface at the extreme 10 lower end of the said block, whereby the employment of a transversely-arranged, independently-formed pin for coaction with the forward end of the equalizing-lever is dispensed with. 15

4. In a box-magazine firearm, the combination with a box-magazine having its lower end open, of a pivotal cover for closing the open lower end of the magazine, a carrier-arm pivotally mounted in the said cover, a carrier 20 pivotally connected with the said carrier-arm, and an equalizing-lever pivotally mounted in the carrier-arm, coacting at its rear end with the carrier, and having its forward end cammed to coact with the lower end of the forward end wall of the box-magazine. 25

5. In a box-magazine firearm, the combination with a sheet-metal box-magazine having its lower end open, of a rigid stirrup connected with the gun-frame, adapted to receive the lower corner of the forward end of 30

the box-magazine, and having its side walls extended downward, a cover for normally closing the open lower end of the box-magazine, having its forward end inserted between 35 the said downwardly-extended side walls of the stirrup and pivotally connected therewith, a carrier-arm having its forward end pivotally connected with the forward end of the cover, a carrier having its rear end pivotally connected with the rear end of the carrier-arm, and an equalizing-lever pivotally mounted in the carrier-arm and coacting with the carrier to cause the same to lift in right position. 40 45

6. In a firearm adapted to be used as a single-loader by having cartridges introduced singly into the open top of its receiver, a gun-barrel provided at the extreme end of its butt with a short, rearwardly-projecting, segmental, deflecting-flange extending below the 50 bore of the gun-barrel, and opening upward to permit the bullet ends of cartridges to engage with it.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 55

THOMAS C. JOHNSON

Witnesses:

DANIEL H. VEADER,
A. W. EARLE.