

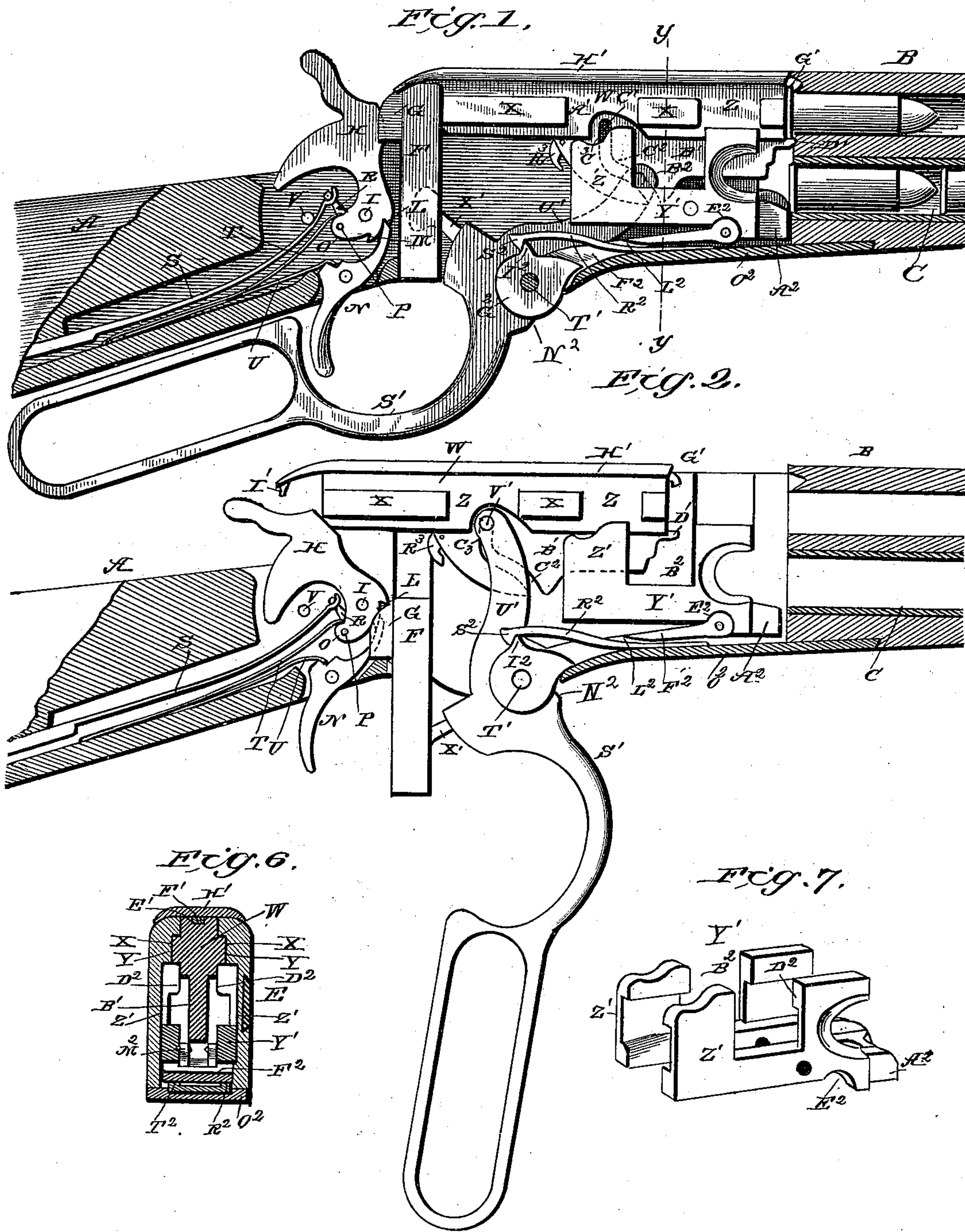
(No Model.)

3 Sheets—Sheet 1.

E. E. REDFIELD.
MAGAZINE GUN.

No. 378,556.

Patented Feb. 28, 1888.



WITNESSES

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(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

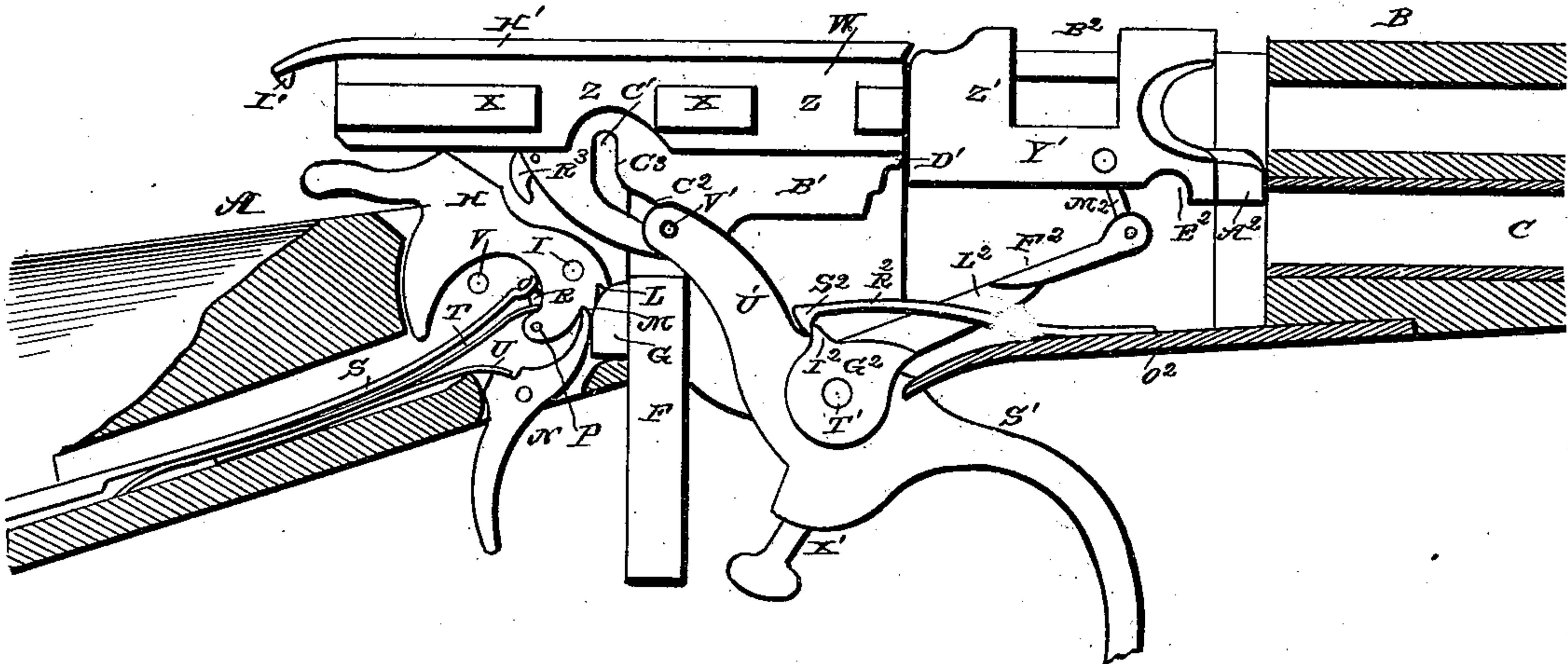


Fig. 4.

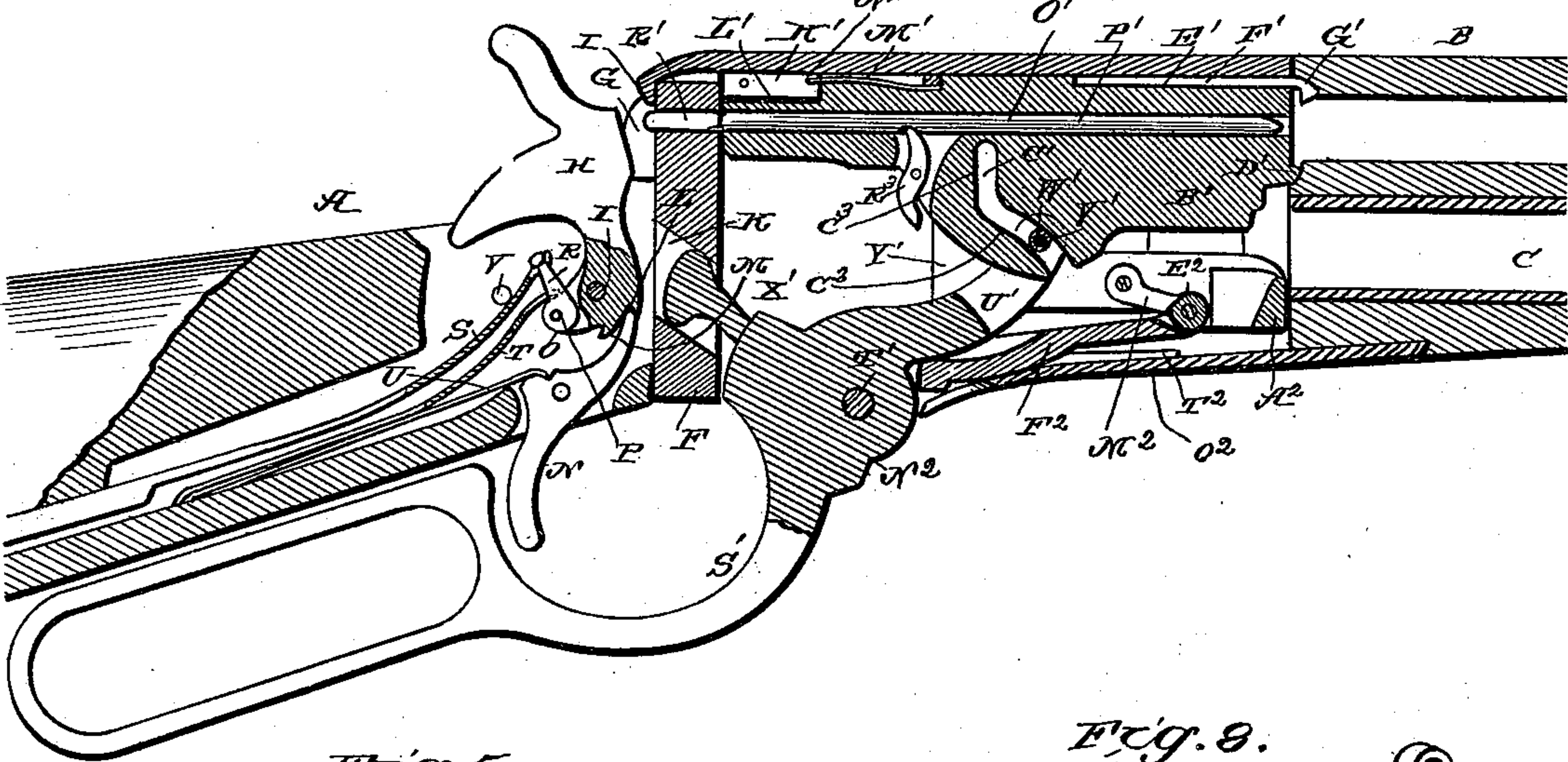


Fig. 5.

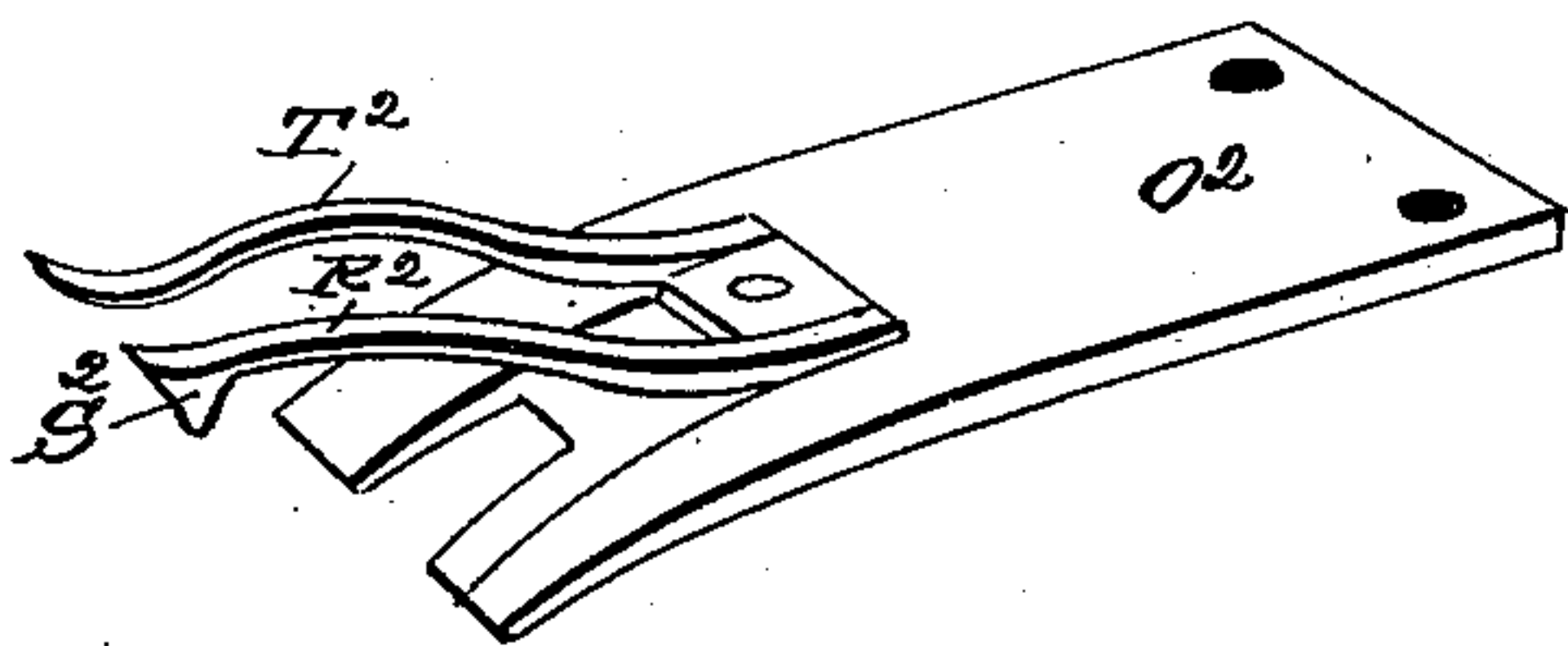


Fig. 8.

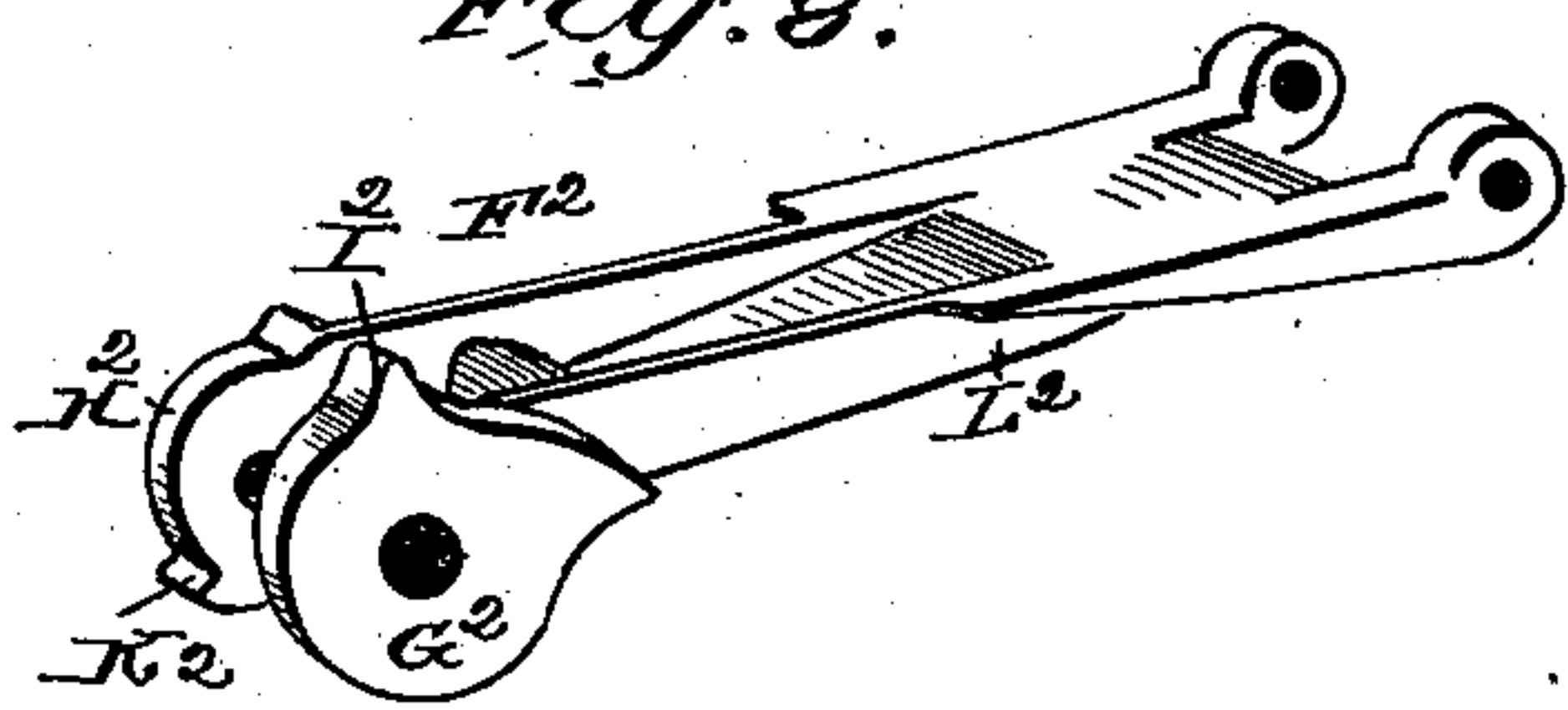
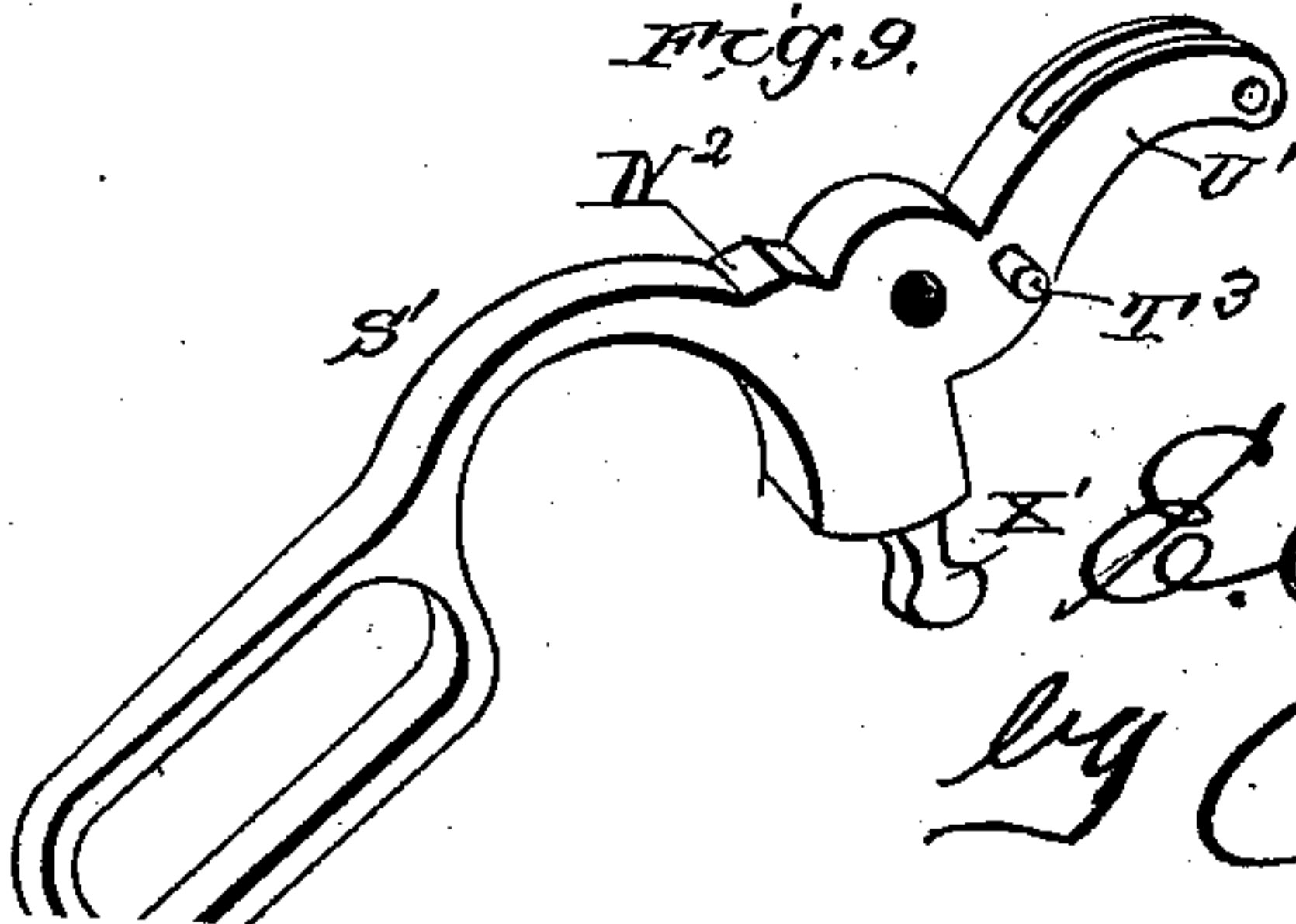


Fig. 9.



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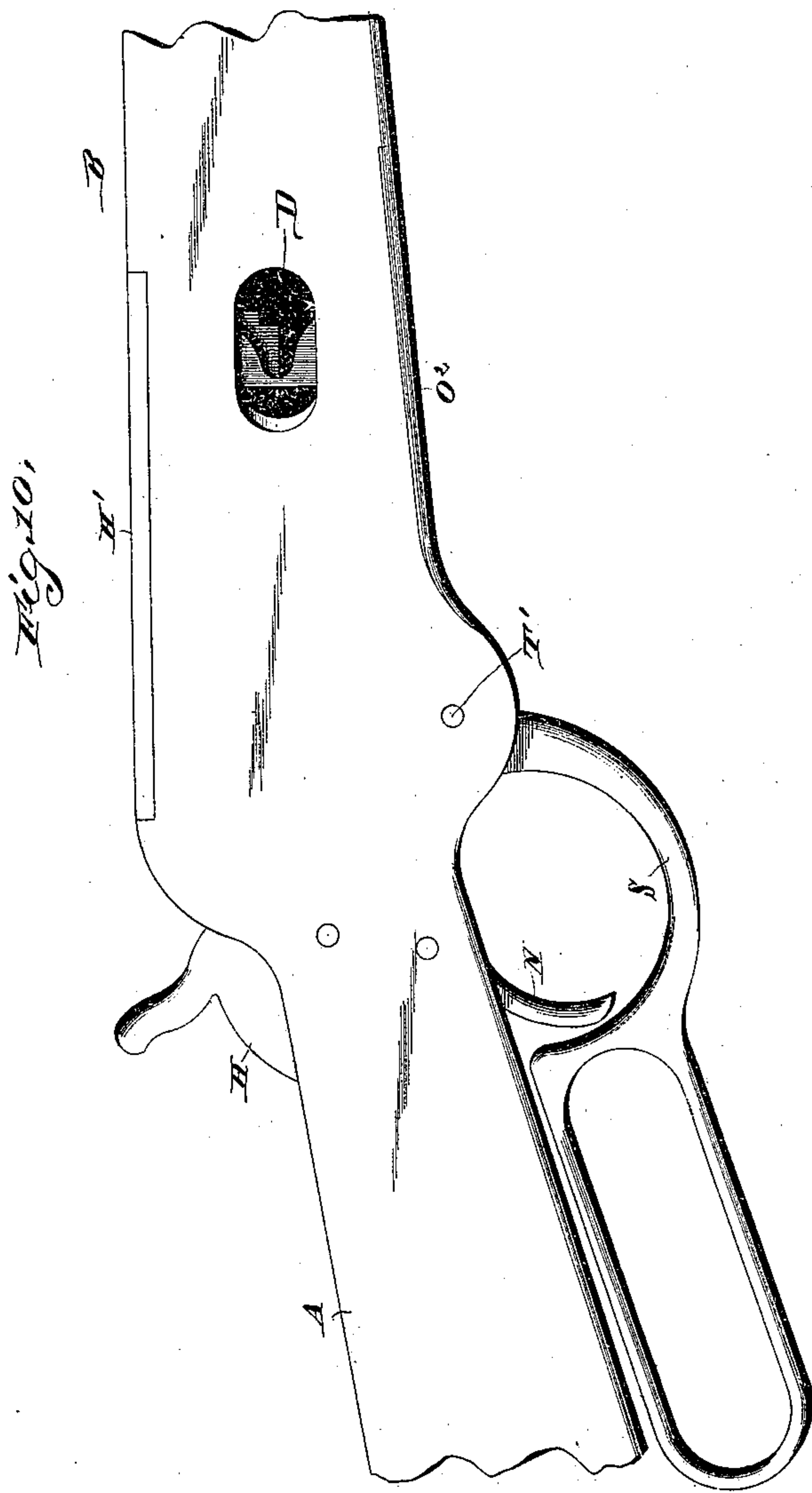
(No Model.)

3 Sheets—Sheet 3.

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Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD EVERTT REDFIELD, OF LINKVILLE, OREGON.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 378,556, dated February 28, 1888.

Application filed May 7, 1887. Serial No. 237,469. (No model.)

To all whom it may concern:

Be it known that I, EDWARD EVERTT REDFIELD, a citizen of the United States, residing at Linkville, in the county of Klamath and State of Oregon, have invented a new and useful Improvement in Magazine-Guns, of which the following is a specification.

My invention relates to an improvement in magazine-guns; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is an elevation of the operating parts of my improved magazine-gun, showing the same in position for firing. Fig. 2 is a similar elevation of the same, showing the operating-lever partly depressed, the breech-block lowered, and the breech-bolt moving rearward and in the act of cocking the hammer. Fig. 3 is a similar elevation showing the carrier raised to eject the shell of the discharged cartridge and in the act of feeding another cartridge to the bore of the barrel. Fig. 4 is a vertical longitudinal central sectional view of the operating parts of my magazine-gun. Fig. 5 is a detail view of the plate O², with its attached springs. Fig. 6 is a vertical transverse sectional view taken on the line *y y* of Fig. 1. Fig. 7 is a detailed perspective view of the carrier. Figs. 8 and 9 are detached views of various parts. Fig. 10 is an elevation of a portion of a gun embodying my improvements.

A represents the gunstock.

B represents the barrel; and C represents the magazine, which is arranged under the barrel, and is provided with the usual spring (not shown) to move the cartridges rearward and feed the same to the operating mechanism.

An opening, D, is made in the stock of the gun, on one side thereof, at the rear end of the magazine and communicating with the latter, and through the said opening the cartridges are inserted in the magazine. This opening is normally closed by a slide, E.

F represents a vertically-movable locking-block which operates in a vertical transverse recess or slot extending through the gunstock at a suitable distance in rear of the barrel. This locking-block is provided on its rear side, at its upper end, with a pair of rearwardly-extending vertical flanges, G. The space be-

tween the said flanges is of sufficient width to receive the upper end of the hammer H, which is pivoted on a pin, I, that extends transversely through the gunstock at a slight distance in rear of the locking-block. The latter has a vertical longitudinal slot, K, extending through its lower end. The hammer is provided with the usual notches, L and M, adapted to be engaged by the usual spring-actuated trigger, N. When the engaging-arm of the trigger bears in the notch L, the hammer is at half-cock, and when the said engaging-arm of the trigger bears in the notch M the hammer is at full-cock. From the rear side of the lower portion of the hammer projects a pair of ears, O, through which extends a pin, P. On the said pin is pivoted the lower end of a link, R, and the upper end of the said link is provided with a transverse T-head, which is engaged by the free upper end of the mainspring S.

T represents a curved flat spring which bears between the mainspring S and the spring U, that engages the trigger, and the front end of the said spring T is bifurcated and bears upon the upper sides of the ears O on the rear portion of the hammer and extends on opposite sides of the link R.

V represents a transverse pin which extends across the gunstock at a suitable distance in rear of the pin I. The said pin V is arranged at such a height that the upwardly-moving free end of the mainspring S will engage it just before the hammer strikes the firing-pin when the trigger is pulled, and thus the mainspring will have its free end momentarily disengaged from the T-head of the link R and the hammer will complete its stroke by the momentum previously acquired.

As the spring T is at all times engaged with the upper sides of the lever-ears O, the hammer will complete its stroke against the tension of the said spring T, and the latter will cause the hammer to rebound after it strikes the firing-pin to a position of safety or half-cock. By means of this construction and combination of devices the hammer is prevented from bearing against the firing-pin when half-cocked, even though the trigger be pulled, and consequently all danger of a premature discharge of the gun is prevented.

W represents a longitudinally-movable breech-bolt which is provided on opposite

sides with laterally-projecting longitudinal flanges X, which bear in similar recesses or grooves, Y, made in the side plates of the gunstock. Vertical openings Z are made through the said flanges X near the front end of the breech-bolt, and similar openings, A', are made through the said flanges at a suitable distance in rear of the openings Z. From the under side of the breech-bolt depends a vertical longitudinal tongue or plate, B', which extends from the front end of the breech-bolt to within a suitable distance of the rear end thereof.

C' represents an open slot which is made in the tongue or plate near its rear end. This slot forms a downwardly and forwardly extending compound curve, C², and the upper portion of the slot is vertical, as at C³. At the front end of the breech-bolt, at the under side thereof, is a forward-extending stud, D', adapted to bear under the rim at the base of the cartridge-shell, and in the front upper side of the breech-bolt is a longitudinal slot, E', in which is pivoted a spring-detent, F', the front end of which projects forward a slight distance beyond the breech-bolt and has a hook, G', adapted to engage the upper side of the base-rim of the cartridge-shell. The front side of this hook G' is curved or beveled, as shown.

H' represents a guard-plate which is arranged on the upper side of the breech-bolt and extends laterally therefrom over the sides of the gun case or stock. The rear end of the said guard-plate projects rearwardly a suitable distance beyond the rear end of the breech-bolt and is curved downward and is provided on its under side with a depending offset, I'. At a suitable distance in front of the offset I' a depending ear, K', is formed on the under side of the guard-plate, and the said ear is pivoted in a vertical longitudinal groove, L', made in the rear upper portion of the breech-bolt.

M' represents a spring-arm which is arranged in the said groove, and the rear end of the said spring-arm bears in a notch or recess, N', made in the front side of the ear K'. The function of this spring is to keep the front end of the guard-plate normally in contact with the upper side of the breech-bolt; but the said spring permits the front end of the guard-plate to be slightly elevated, as will be more fully hereinafter described.

The firing-pin O' is made in two sections. The front section, P', is arranged in a longitudinal opening which extends through the breech-bolt, and the rear section, R', of the firing-pin is arranged in an opening in the upper end of the locking-block.

R³ represents a lever made in the form of a compound curve and fulcrumed in a vertical recess made in the breech-bolt at a suitable distance from the rear end thereof and communicating with the opening in which the front section of the firing-pin is arranged. The upper end of the said lever engages the said front section of the firing-pin, and the lower end of the lever projects downward and

rearward from the breech-bolt and on the rear end of the plate or tongue B' thereof.

S' represents the operating-lever, which is fulcrumed on a pin, T', which extends transversely across the gun stock or case at the under side thereof and at a suitable distance below the breech-bolt.

U' represents a curved arm which projects from the front upper end of the operating-lever, and has its free end provided with a longitudinal open slot, and is thereby bifurcated. A transverse pin, V', extends across the bifurcated free ends of the said arm, and on the said pin is journaled an anti-friction roller, W', which works in the open slot C' of the breech-bolt.

X' represents an arm which projects from the operating-lever at a suitable angle from the arm U', the said arm X' entering the slot K in the lower end of the locking-block.

Y' represents a vertically-movable carrier which comprises the vertical side walls, Z', connected together at their front lower corners by a forward-projecting stud, A². The side walls of the carrier are provided in their upper sides with vertical open recesses B², and on the opposing sides of the side walls, at the upper edges thereof, are formed longitudinal inwardly-projecting flanges D². The rear upper corners of the side walls of the carrier are curved and indented, as shown. The under side of the carrier, near the front end thereof, is provided with a transverse semi-cylindrical recess, E².

F² represents a lever which has its rear end bifurcated, and thereby adapted to receive the fulcrumed portion of the operating-lever S, and the said lever F² is pivoted on the same pin on which the operating-lever is fulcrumed. By bifurcating the rear end of the lever F² it is provided on one side with an ear, G², and on the opposite side with an ear, H². The upper side of the ear G² is provided with a projecting stud, I², and the upper side of the ear H² is rounded and cut away, and thereby a shoulder, K², is formed, which projects rearward from the lower side of the said ear H². Recesses L² are made in opposite sides of the lever F², and the front end of the said lever is rounded and adapted to fit in the semi-cylindrical recess at the lower front corner of the carrier.

M² represents a link which is hinged or pivoted at its upper end to the opposing sides of the carrier, at the lower sides thereof and near its front end, and the lower end of the said link is pivoted to the free end of the lever F². The operating-lever S has a shoulder or offset, N², on its under side, which is adapted to engage the under side of the lever F², near the rear end thereof, and thereby operate the said lever and cause it to elevate the carrier, as will be described hereinafter.

O² represents a plate which is screwed to the under side of the gunstock and covers the lower side of the case formed between the side plates of the gunstock. The rear end of this

plate extends to the fulcrumed portion of the operating-lever S, and on the upper side of the plate is secured a pair of springs, T² and R². These springs extend upward and rearward through the recesses L² of the lever F² and bear on opposite sides of the fulcrumed portion of the operating-lever. The spring R² has a hook or detent, S², formed at its rear end, which is adapted to engage the stud I² of the ear G², and the free end of the spring-arm T² is adapted to engage a stud, T³, which projects laterally from the adjacent side of the operating-lever.

The operation of my invention is as follows:
 15 The operating parts of the gun are in their normal positions. When the rear end of the operating-lever is raised against the under side of the gunstock, the breech-bolt is moved forward to close the rear end of the bore of the barrel and engages the base-rim of the cartridge-shell in the barrel, the carrier communicates with the rear end of the magazine, the locking-block is elevated so as to bear against the rear end of the breech-bolt and bring the rear section of the firing-pin in line with the front section thereof, and the hammer is at half-cock, as shown in Fig. 1. If it be desired to discharge the cartridge in the barrel without operating the self-feeding mechanism, this may be done by cocking the hammer with the thumb of the right hand and then operating the trigger with the forefinger of the right hand in the usual manner. The operator then depresses the rear end of the operating-lever, which causes its arm X' to lower the locking-block out of the path of the breech-bolt, and thereby disconnect the rear section of the firing-pin from the front section thereof. While the locking-block is being lowered, the front end of the arm U' of the operating-lever causes the anti-friction roller to move upwardly in the lower curved portion of the slot C'. As soon as the locking-block is sufficiently lowered to clear the breech-bolt, the anti-friction roller bears against the rear side of the vertical upper portion, C³, of the said slot, and as the operating-lever continues to be depressed the locking-block is caused to move rearward from the rear end of the barrel, thereby withdrawing the shell of the discharged cartridge from the barrel, as will be readily understood. As the breech-bolt continues to move rearward, it engages the upper side of the hammer and cocks the same, and as the rear end of the breech-bolt continues to move rearward over the hammer after the latter is cocked the lower end of the lever R³ comes in contact with the front side of the hammer and is partly turned on its fulcrum, and thereby moves the front section of the firing-pin rearward in the breech-bolt and from the base of the discharged cartridge-shell. When the breech-bolt starts to move rearward, its depending tongue or plate B' is caused to move rearward through the carrier, and the spring in the magazine forces the hindmost cartridge therein into the carrier as the tongue

or plate recedes, and when the breech-bolt reaches the rearward limit of its movement the cartridge is entirely within the carrier. 70 The shoulder or offset N² on the operating-lever then comes in contact with the lower side of the lever F² at a slight distance in advance of the fulcrumed rear end of the latter lever, and the free end thereof is thereby raised, 75 causing the link which connects it to the carrier to gradually swing from nearly a horizontal to nearly a vertical position, and thereby elevate the carrier in front of the breech-bolt. As the carrier rises, the shoulder or stud at the front end thereof closes the rear end of the magazine and prevents the cartridges therein from moving rearward, and the upper side of the carrier bears under the shell of the discharged cartridge and disengages the same 85 from the engaging hook and stud at the front end of the breech-bolt and ejects the said discharged cartridge-shell from the gun, as will be very readily understood. When the carrier reaches the upper limit of its movement, 90 the cartridge therein comes in line with the bore of the barrel, and the flanges D² on the inner sides of the walls of the said carrier align with the longitudinal grooves formed between the upper sides of the side flanges of the breech-bolt and the lower side of the guard-plate thereon. 95 The operating-lever is then reversed and is caused to reassume its normal position. (Illustrated in Fig. 1.) At the initial reverse movement of the operating-lever the breech-bolt is caused to move forward, and thereby force the cartridge from the carrier into the bore of the barrel. The front end of the guard-plate engages the rounded rear upper corners of the carrier, and is elevated by the same, thus enabling it to slide over the upper side of the carrier and offer no impediment to the forward motion of the breech-bolt. When the breech-bolt first starts forward, the arm X' of the operating-lever is moving upward in the slot K of the locking-block, and by the time that the rear end of the breech-bolt has cleared the path of the locking-block the said arm X' engages the upper end of the slot in the locking-block, so that continued upward movement of the said arm will cause the locking-block to rise to the initial position illustrated in Fig. 1. When the breech-bolt reaches the rear end of the barrel, the openings Z and A' in its sides register vertically with the inwardly-projecting flanges of the carrier, so that no obstruction is offered to the descent of the latter. While the breech-bolt is being moved forward the operating-lever is moving the lever F² forward, and thereby causing the link connecting the said lever to the carrier to swing from a vertical to nearly a horizontal position. At the instant that the breech-bolt reaches the rear end of the barrel the arm U' of the operating-lever is in such a position that its anti-friction roller is out of the vertical portion C³ of the slot in the breech-bolt and is at the upper portion of the curved portion C² of the said slot, and the lower side of the said

arm U' bears against the inner upper side of the lever F². As the operating-lever continues to be moved upward, its arm T' moves downward, causing its anti-friction roller to move freely through the curved slot C², and causing the lever F² to be depressed, so as to lower the carrier from the path of the breech-bolt and return the same to its normal position at the rear end of the magazine. The hook on the spring-arm R² engages the stud I² on the ear G² of the lever F², thereby locking the said lever in its downward position and retaining the carrier against accidental displacement, and the spring-arm P² engages the stud T² of the operating-lever, and thereby locks the same firmly in position, with its rear end bearing against the under side of the gunstock. Inasmuch as the previous rearward movement of the breech-bolt cocked the hammer, as before described, it is only necessary to pull the trigger in order to discharge the gun.

A magazine-gun thus constructed is cheap and simple, is entirely safe, is very strong and durable, and possesses many advantages.

The locking-block is solid, and when raised to the firing position bears firmly against the rear end of the breech-bolt, so that there is no danger when the charge is fired.

By making the firing-pin in two sections—one located in the breech-bolt and the other in the locking-block—the gun cannot be fired until the locking-block is raised, and thereby a premature explosion is rendered impossible.

Having thus described my invention, I claim—

1. In a magazine-gun, the combination of the longitudinally-movable breech-bolt having the side flanges, X, provided with the vertical recesses Z and A', with the vertically-movable carrier having the sides provided with the open recesses B² and the inwardly-projecting flanges D², adapted to pass through the recesses in the breech-bolt, for the purpose set forth, substantially as described.

2. In a magazine-gun, the combination of the vertically-movable carrier to receive the cartridge from the magazine, the longitudinally-movable breech-bolt having the depending tongue or plate extending into the carrier and across the rear end of the magazine, said tongue or plate having the compound curved slot C', the operating-lever having the arm engaging the said curved slot to operate the breech-bolt and the offset or shoulder N² near its fulcrum, the lever F², adapted to be operated by the said shoulder or offset, and the link connecting said lever to the carrier, substantially as described.

3. In a magazine-gun, the combination of the carrier movable bodily across the inner ends of the magazine and of the barrel, the operating-lever S', the lever F², adapted to be operated by the lever S', and the link connecting the lever F² to the carrier and adapted to fold under the carrier as the latter is lowered, substantially as described.

4. In a gun, the combination of the longitudinally-movable breech-bolt, the locking-block movable at right angles to the breech-bolt and across its line of movement, the firing-pin made in two sections, one of said sections being in the breech-bolt and the other being in the locking-block, for the purpose set forth, the lever R³, pivoted to the breech-bolt, engaging the firing-pin section therein, and the hammer arranged in the path of lever R³ and adapted to trip the same when the breech-bolt is at the rear limit of its movement, substantially as described.

5. In a magazine-gun, the combination of the longitudinally-movable breech-bolt having the cartridge-shell extractor and the side flanges, X, provided with the vertical recesses Z and A', the vertically-movable carrier to receive the cartridge from the magazine, having the sides provided with the open recesses B² and the inwardly-projecting flanges D², adapted to pass through the recesses in the breech-bolt, and the lever to operate the breech-bolt and connected to the carrier to move the latter directly across the path of the breech-bolt to a point in front of the same when the breech-bolt is at the rear limit of its movement, and thereby eject the discharged cartridge-shell, substantially as described.

6. In a gun, the combination of the longitudinally-movable breech-bolt, the locking-block movable at right angles to the breech-bolt and across the line of movement, and the firing-pin made in two sections, one of the said sections being in the breech-bolt and the other being in the locking-block, whereby the said sections of the firing-pin will align when the locking-block moves over the rear end of the breech-bolt, substantially as described.

7. The combination of the longitudinally-movable breech-bolt having the slot C' and one section of the firing-pin, the locking-block movable transversely across the path of the breech-bolt and having the slot K and the other section of the firing-pin, and the operating-lever having the arm engaging the slot C' and the arm engaging the slot K, substantially as described.

8. The combination of the longitudinally-movable breech-bolt, the carrier movable across the path of the breech-bolt to a position at the front end of the same and having the rounded rear upper corners, and the guard-plate arranged on the upper side of the breech-bolt, having its rear end pivoted thereto, the front end of said guard-plate being adapted to slide over the carrier when the breech-bolt moves forward, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDWARD EVERTT REDFIELD.

Witnesses:

W. C. HALE,
I. C. JOHNSON.