

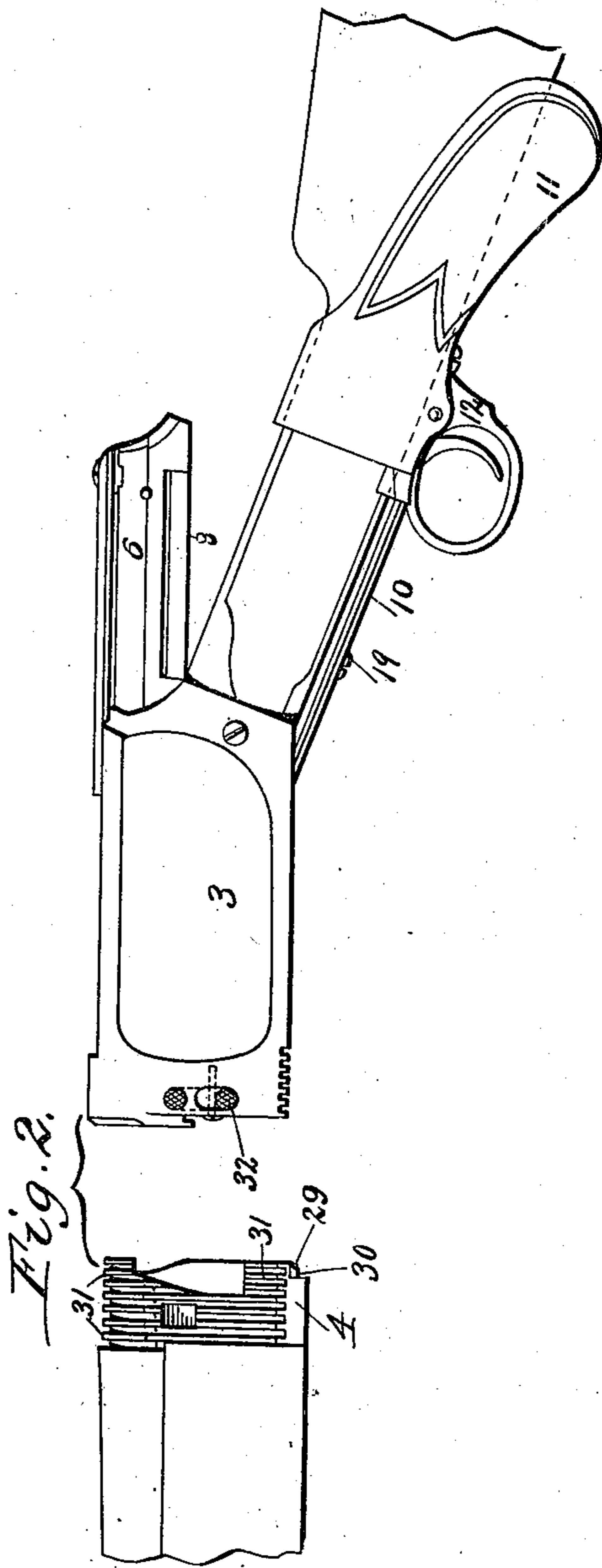
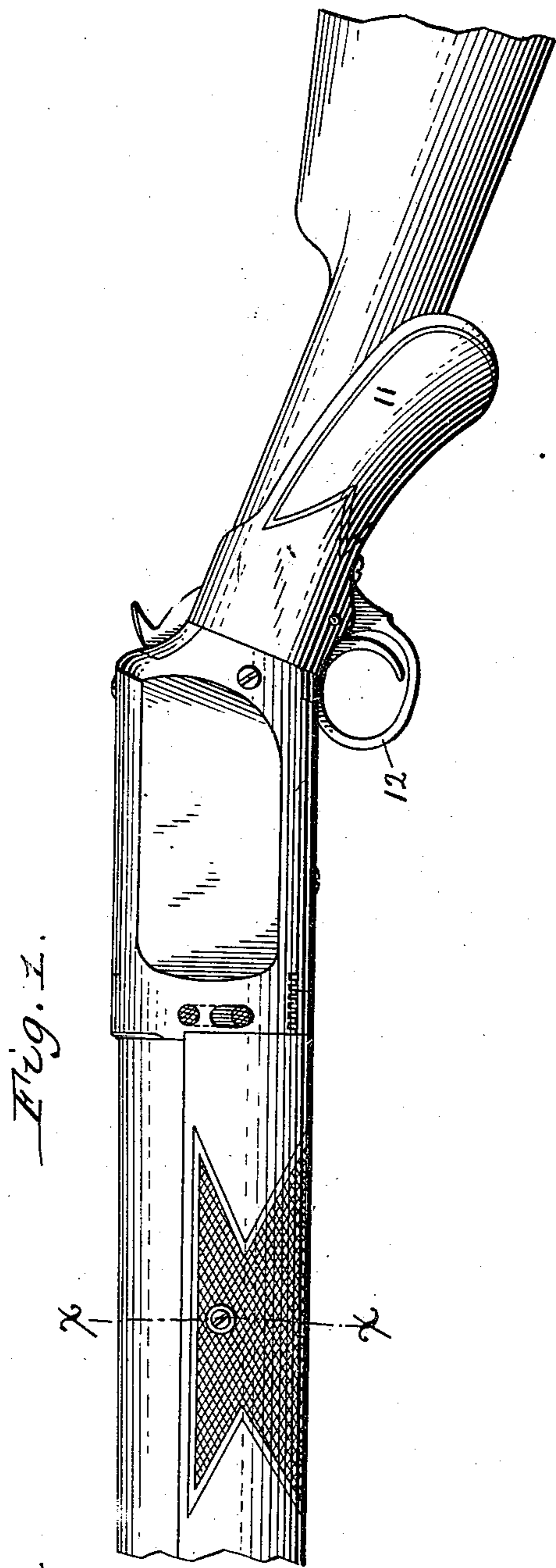
(No Model.)

3 Sheets—Sheet 1.

A. BURGESS.
MAGAZINE FIREARM.

No. 557,360.

Patented Mar. 31, 1896.



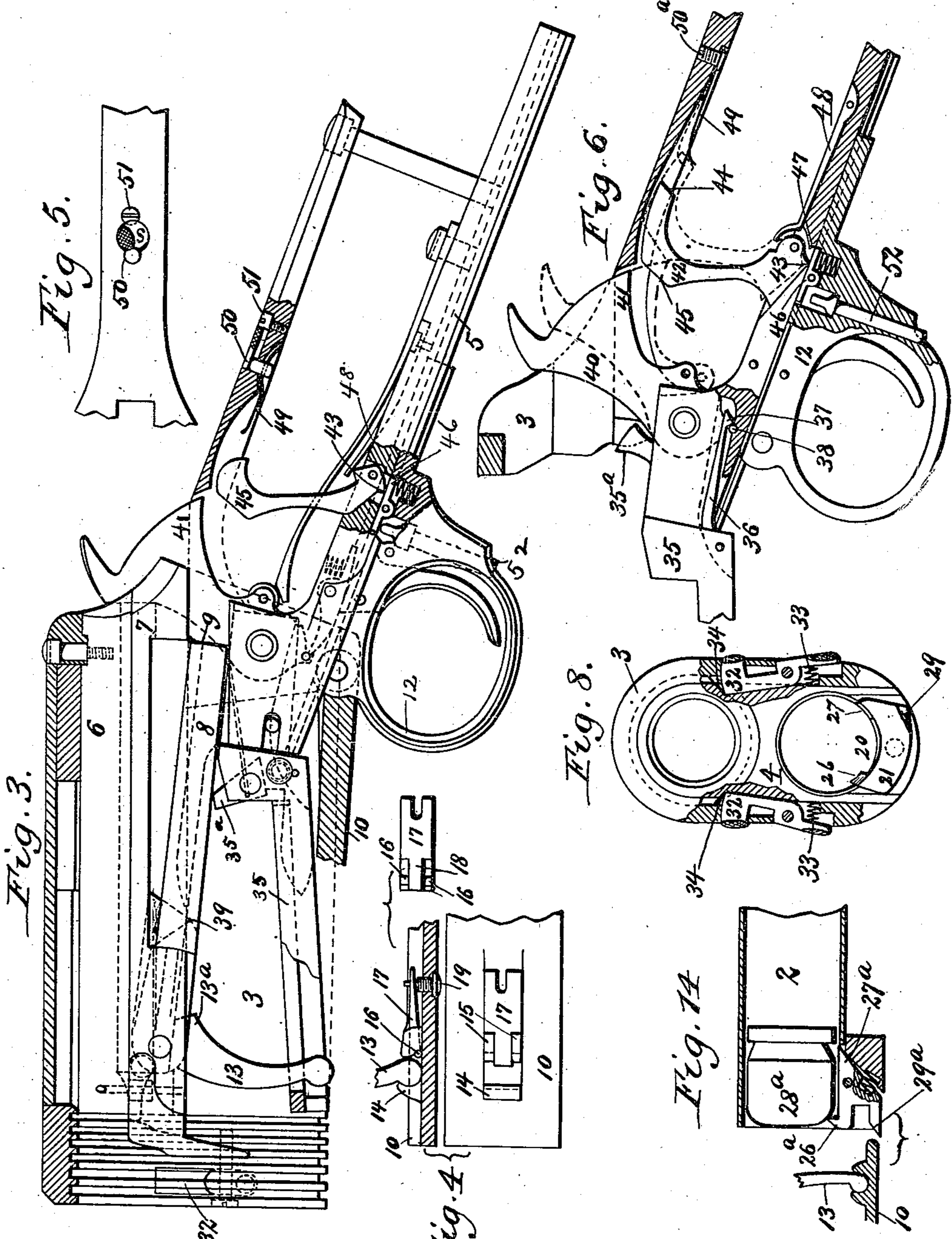
Witnesses:
Thos. L. Popp.
E. L. Mortimer

Andrew Burgess Inventor.

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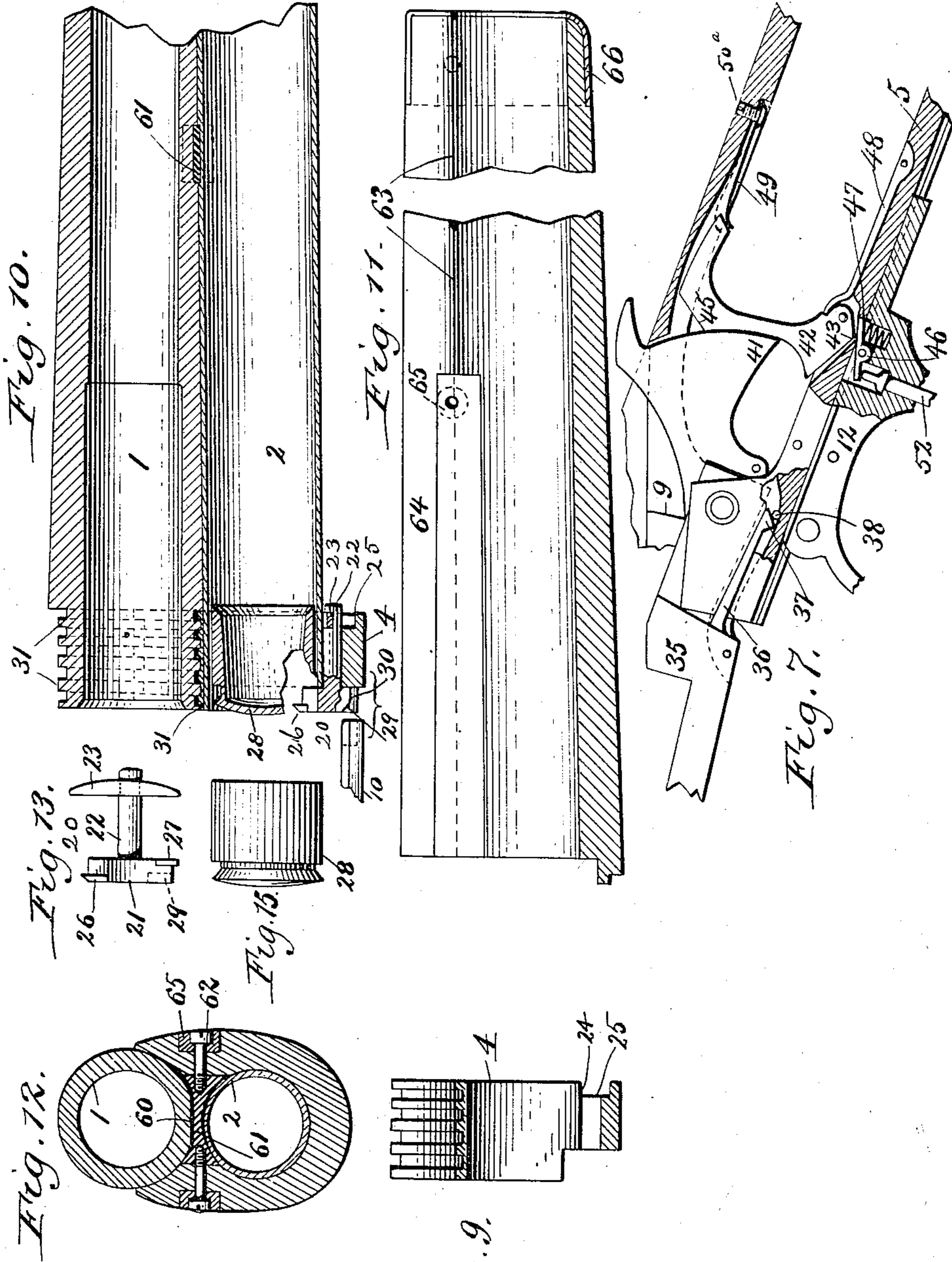
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UNITED STATES PATENT OFFICE

ANDREW BURGESS, OF BUFFALO, NEW YORK.

MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 557,360, dated March 31, 1896.

Application filed February 6, 1893. Serial No. 461,195. (No model.)

To all whom it may concern:

Be it known that I, ANDREW BURGESS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Magazine-Firearms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to breech-loading and magazine-firearms, and has for its object the utility, rapidity, and safety of such arms; and it consists of various improvements on the cartridge-feeder and connecting parts, the coupling of the handle to breech mechanism, the construction and attachment of the fore-arm and its tip to the barrel and magazine, coupling the barrel to and releasing it from the frame, the construction of the carrier and its spring, and the recoil or "shock" unlocking mechanism, together with other arrangements and combinations of parts herein more fully set forth and described.

In the accompanying drawings, Figure 1 is an outside view of the operative parts of the gun closed; Fig. 2, an outside view open and barrel-and-stock parts separated. Fig. 3 is a vertical longitudinal section showing some parts in elevation. Fig. 4 is the front part of the bottom cover cut away to show the engagement of the brace by the coupling-lever, a bottom view of the coupling-lever detached, and a top view of it in position. Fig. 5 is a plan view of the top tang of Fig. 3. Fig. 6 is a detail, slightly modified, of Fig. 3, and shows arrangement of hammer and unlocking-piece, also carrier and its spring. Fig. 7 is similar to Fig. 6, but with the handle locked, hammer cocked, and carrier raised. Fig. 8 is a rear end view of the frame, barrel, magazine, and cartridge-feeder, the forward and rear parts of the receiver cut away to show the barrel-locking levers coupling the parts together. Fig. 9 shows a longitudinal side elevation in section on a vertical plane of the front part of the receiver, which is seen receiving the barrel and magazine in Figs. 2 and 8. Fig. 10 is a vertical longitudinal section

on the axial line of the barrel and magazine and front or removable part of the receiver, also showing the follower and cartridge-feeder; and Fig. 11 is a similar view of fore-stock and tip. Fig. 12 is a cross-section on the line *xx* of Fig. 1. Fig. 13 is a detail plan view of the cartridge-feeder. Fig. 14 shows a modification of the cartridge-feeder and operating parts. Fig. 15 is a side view of the cartridge-follower.

The gun in which I show these improvements has a sliding handle, which consists of a sleeve around the small of the stock, a trigger with its guard, and a pistol-grip. When the right hand grasps the handle, the forefinger is always in position in the guard and at the trigger and an easy back-and-forth shifting motion is all that is required to operate the gun. The handle is connected to the reciprocating breech-bolt by means of the bottom cover and locking-brace. As the handle moves backward the bottom cover is drawn backward thereby, thus opening the breech of the gun and at the same time permitting access to the end of the magazine through the opening in the bottom of the frame. Cartridges may then be fed into or removed from the magazine, the feeder or detent acting to retain the cartridges in the magazine unless manipulated to release them.

The barrel part is easily separable at the front of the frame from the rear portion of the gun for convenience in carrying, and the magazine may remain charged with safety, so the gun will be ready for instant use when put together.

In detail, similar figures of reference indicating corresponding parts, 1 is the barrel; 2, the magazine. 3 is the main portion of the frame; 4, the forward or separable part, and 5 that part which constitutes the lower tang.

A reciprocating bolt 6 is guided by longitudinal ribs 7 entering corresponding grooves in the frame, and the brace 8 is pivoted in the front part of the bolt so its rear part may be turned down to lock against abutments 9 in the frame, as in Fig. 3, or close up into the bolt to ride rearward over the locking-shoulders when the breech is opened, as in Fig. 2. The bottom cover 10 serves as a link to connect the handle 11 (of which the guard 12 forms a part) to the brace and thereby to the bolt.

The lower arm 13 of the brace turns slightly and reciprocates on the axial line of the gun, and the bottom cover when carried back by the guard moves obliquely downward to the position shown in Fig. 2.

The lower arm 13 of brace 8 has an enlarged head, preferably rounded. On the bottom cover 10 there is a fixed projection 14, which locks partly around this head when the parts are in operative position. Two ears or projections 15 extend up from the cover a little in the rear of the head on the arm 13 when the parts are so assembled. These ears are cut away to form seats for trunnions 16 on the coupling-lever 17. The lever 17 has a narrow neck or bar to lie between the ears 15, and a screw 19 passes through the cover 10 and has a reduced end which lies in a notch in said lever 17. (See Fig. 4.) This set-screw may be turned to rock the lever 17.

To couple the parts as above described the screw 19 is turned out to allow the long rear arm of the coupling-lever to fall and turn its short arm back to widen the notch between the projections of the bottom cover, so that said cover can be pressed upward and take the rounded end of the locking brace-arm in its notch, when the screw may be entered a little to tighten the coupling-lever on the brace, as seen in Fig. 4, to bind the parts strongly together and at the same time allow the turning movement of the brace and link. To uncouple, the screw may be loosened, when the link will fall or may be forced down out of engagement with the brace. To regulate the feeding of the cartridges and hold the follower in the magazine a rocking cartridge-feeder 20 is hung at the mouth of the magazine. This feeder consists of the rocker 21, its hub 22 integral therewith, and the flat spring 23.

The feeder-hub has a notch in its forward end and is inserted in a hole 25 below the magazine, as in Fig. 10. The spring 23 is then inserted in the notch, one of its ends in position to bear against the wall 24 of the frame to turn the feeder and bear its beveled outer point 26 to project into the bore of the magazine and its side resting against the shoulder 25 to hold the feeder forward in place.

The rocking feeder has two projections 26 and 27, the same being at opposite sides of the hub or fulcrum on which the feeder rocks, and one being a little in advance of the other in longitudinal direction of the magazine-tube, which tube is notched or cut away for the entrance of said projections. One or the other of said projections thus acts as a cartridge-stop to prevent the cartridges moving all at once out of the magazine. The face of the projection 26, at the side toward the front of the gun, is perpendicular to the bore of the magazine, while the rear side is inclined. (See Figs. 8 and 13.) When a cartridge is entered into the magazine, its flange strikes this incline and moves the feeder, so that the lead passes by said projection 26. The fur-

ther entrance of the head rocks the feeder in the opposite direction. The thickness of the cartridge-flange is such that the projection 27 lies forward and the projection 26 in rear of said flange when the flange is against the face of the projection 26.

The follower 28 is formed with a long cylindrical portion and a beveled incut or annular groove to allow some movement of the feeder when there are no cartridges in the magazine, and the follower is then engaged alternately by the spurs 26 or 27, which hold the follower in and prevent it from being forced out of the magazine. The cylindrical portion of the follower is too large to pass by the projections 26 and 27, one or the other of which must project into the magazine.

To release the cartridges from the magazine the feeder may be turned by hand, as to unload it; but in use for shooting, the bottom cover in closing engages an incline 29 on the feeder to turn its outer spur 26 outward and release the rear cartridge, which will then feed backward, as the breech is opened in a well-known manner, but the next cartridge will be held in the magazine by the spur 26, (as the feeder will have been released by the link 10,) to be then returned by its spring to the position shown in Fig. 8.

It will be seen that I form the feeder with the incline 29 at its rear part and a flat portion 30 forward, and that the link or bottom cover may pass forward of and under the rear shoulder of the barrel portion of the gun. The object is to engage and fully operate the feeder before the breech is quite closed. This in rapid firing gives the cartridge-flange an instant more time to start back and clear itself from the spur 26 before the breech again begins to open, and avoids the clogging which sometimes happens when no allowance is made, and by bringing the strong forward end of the cover under the barrel portion it blocks said barrel portion so it cannot start to be separated from the frame when the breech is closed.

The modified feeder, Fig. 14, has a lateral pivot and spurs 26^a and 27^a arranged forward and rearward, in a similar manner to the one before described, but one spur directly back of the other. A spiral spring is shown to turn the spur 26^a inward, and the bevel 29^a is in position to be engaged by the link 10 to press the spur 26^a outward and disengage a cartridge, and the follower 28^a is shown with its cut-out ring near one end. By an obvious equivalent construction the incline to operate the cartridge-feeder may be formed on the link or bottom cover 10 instead of on the feeder.

To fix the barrel and magazine together and attach them to the frame a receiver-piece 4 is hollowed out at its top and grooved to take the projections 31 of the rear end of the barrel, and is also bored through below the barrel to receive the rear end of the magazine, and below the magazine to receive the car-

tridge-feeder. When the piece 4 is attached to the barrel and magazine by brazing or otherwise, as shown in Figs. 8 and 10, it forms a firm substantial connection, and when the magazine is also brazed or welded to the barrel the said barrel may be thinned somewhat at its bottom, as shown in Fig. 10, and its strength maintained by such connection to it of the magazine.

In Fig. 2 the receiving-piece 4 is seen fixed to the barrel and magazine and the threads 31 on the barrel continued down the sides of said piece 4.

Grooves are made in the inside of the frame, as shown in Fig. 3, to receive the projecting threads 31 of the barrel and its piece 4.

To attach the barrel to the frame, the barrel portion is entered from the bottom of the frame. It will usually reach its proper position by force of a slight blow of the hand, when the lever-catches 32 32, or one of them, (when one only is used,) will snap in by force of spring 33 to hold the barrel up in place.

Should the barrel fail to find its seat in the frame, the lever-catches 32 will engage inclines 35 on the barrel when the parts are nearly in place, and by a wedge action these catches 32 will tend to complete the movement and lock the barrel.

The catches are shown pivoted in the frame, but they may be hung in the barrel portion by a mere reversal of parts.

I prefer to enter the barrel into the frame part of the gun from the bottom, as shown, but an entrance lateral to the axis of the bore of the gun from the top, sidewise or diagonal, is obviously an equivalent, and the threads or projections on the barrel part may be more in number or less, or by reversal may be formed on the frame and the barrel part hollowed and grooved to receive them.

The carrier 35 by a transverse pin is hung in the lower part of the frame, and its tang part 5 to swing on a vertical plane and raise the cartridges on its forward part to alignment with the barrel. The carrier is raised by contact of the shoulder 13^a of the brace with the projection 35^a of the carrier when the breech opens, and is lowered by the projection 39 of the firing-pin, which bears down on the projection 35^a when the breech is being closed. A spring 36 is attached to the carrier, forward of its pivot, and has a V projection 37 at its rear end to engage a pin 38 in the frame part of the gun by the forward incline of its V, as in Fig. 6, when the carrier is in its down position, or by the rear incline when the carrier is raised, as in Fig. 7. By this construction the spring 36 holds the carrier either up or down and assists to raise it when the point of its V passes forward of the pin 38 in raising, and when rearward of said projection in falling it presses the carrier downward.

The handle 11, of which the guard 12 forms a part, locks in the frame when the breech is closed (independent of the locking of the

breech) by means of the spring-dog 46, which is hung in the guard to snap forward of the abutment 47 in the frame, as shown in Fig. 6. The dog 46 may be turned to release the handle by pressing upward on the pin 52, which is housed in the guard; but for rapid firing, automatic unlocking is preferable, and I attain it by the inertia-piece 42 (which is operated by the recoil or shock of firing) and its spring 48. The inertia-piece 42 is transversely pivoted in the lower tang of the frame. The principal weight of said piece is above its pivot. A spring 48 engages a cam or in a notch at the rear of the inertia-piece in a manner to cam or press said piece forward when turned toward its forward or unlocking position, as shown in Fig. 6, or to "set" it by engaging in its notch or above the center of its axis, as shown in Fig. 7, when the spring will lightly hold it back in its rearmost position. A spring 49 is held in the top tang by a thumb-piece 50 or screw 50^a in such manner that said spring may be moved at will to a position to engage the rear incline 44 of the inertia-piece when in its back or set position or may be moved to clear it. A forward incline 45 on the inertia-piece is in the line of movement of and in position to be engaged by the rear projection 41 of the hammer, when said hammer turns back toward a cocked position. Said projection thus becomes an actuator to act on the inertia-piece.

When the hammer is turned to half-cock, as shown in dotted lines in Fig. 6, its rear part 41 forces back the inertia-piece by engaging its incline 45 to the position indicated in broken lines, and thereby frees its lower point 43 from contact with the locking-dog 46, which will then be turned by its spring to the position shown in Fig. 7, in which it locks the handle.

When the hammer turns to full-cock, as shown in Fig. 7, it rides down the forward wall of the inertia-piece and still confines it in its backward position, where it will remain set when the hammer falls if the spring 49 has been turned or loosened, so as not to start it forward. If the said spring shall be tightened by turning the screw or turned into the line of movement of the inertia-piece by the thumb-piece 50, it will by its elasticity allow the hammer to cock as before, but will start the inertia-piece forward whenever the hammer strikes, and its spring 48 will press the projection 43 downward to overpower the spring of the locking-dog 46 and unlock the handle.

When the gun is to be fired, the spring 49 should be turned to "safe," or made inoperative, and the inertia-piece will not then fall unless the gun fires. The shock of firing gives a sudden backward impulse to the body of the gun, and the weight of the top of the piece 42 by its inertia resists said impulse sufficiently to start its top forward and relieve it from its set position, when its spring 48 will complete its impulse of turning for-

ward to unlock the handle. By this arrangement the handle will only unlock when the gun fires, and if a cartridge "hangs fire" the gun will wait for it and avoid all danger from premature opening of the breech.

If a cartridge fails to fire, the handle may be unlocked by the push-pin 52.

I show the inertia-piece adapted to primarily unlock a sliding handle which then unlocks the breech; but I do not limit my claims to that purpose, as by a mere change of mechanical construction it may serve other purposes.

As a means for connecting the barrel and magazine, I may by preference flatten or concave the bottom of the barrel, as at 60, and interpose a saddle-piece 61, thin in the middle and wider at the ends. This saddle-piece 61 is preferably brazed both to the magazine and barrel, but a dovetail or other means of fastening may serve the purpose of confining it in position. The ends of the saddle-piece 61 are tapped and threaded to receive screws 62 62.

The interior of the fore-stock has ribs 63 to enter the hollows between the magazine and the barrel, and the said ribs of the fore-stock 64 are cut away slightly to receive this saddle, so the said stock can be shoved back into position from the front, and is attached by the screws 62 passing through metallic escutcheons 65, as usual in such attachments. The screws 62 not only serve to draw the sides of the fore-stock to place, but they strengthen the fore-stock and overcome a tendency to split.

When the saddle is attached to the magazine by brazing, it may consist of a thin strip to project into the hollowed interior of the fore-stock. The interior ribs strengthen the forward part of the fore-stock and constitute a thick portion, by which the tip 66 may be attached, as shown, by a screw or an equivalent rivet.

I claim—

1. In a gun a reciprocating bolt, a locking-brace connected thereto, a sliding handle and a link connecting the handle to the locking-brace, a notch in the link and a lever turning into said notch, to engage and hold a projection of the locking-brace, and a screw to turn the lever.

2. In a firearm, a magazine having an opening to deliver the cartridges rearward to the frame, a cartridge-feeder having an engaging-piece hung to vibrate at the mouth of the magazine and provided with a beveled rear holding-point, and another holding-point forward, and a spring to turn the rear point into the bore of the magazine, and a follower having the beveled annular channel described, to admit movement of the feeder and engagement of its forward point to hold the follower in the magazine.

3. In a firearm, a magazine having an orifice to feed the cartridges, a vibrating feeder

provided with the beveled point 26 to hold the cartridges in the magazine, in combination with the incline 29, and a movable part of the breech mechanism to operate on said incline in closing the breech and then pass forward of the incline, all in combination, substantially as specified.

4. In combination in a magazine-firearm, a vibrating cartridge-feeder constructed with the rocking part 21, holding-point 26, the hub 22 integral with the rocking part, and a spring engaging the hub to turn the feeder in direction to hold the cartridge in the magazine by point 26, and a movable part operated by the breech mechanism to turn the feeder to retire said point and release the cartridge.

5. In a firearm, the barrel, the magazine, and the receiver-piece 4, firmly attached together, said receiver-piece embracing the magazine and cut away to form a seat for the cartridge-feeder, at the mouth of the magazine, all substantially as described.

6. A barrel portion consisting essentially of the barrel 1, the magazine 2, and the receiver-piece 4, permanently attached together, substantially as specified, and having a rib, or ribs 31, extending around the top of the barrel and down the sides of piece 4; in combination with a receiver constructed with one or more grooves to take the aforesaid ribs, and means to hold the ribs from lateral movement in the grooves.

7. In a firearm, a barrel having ribs 31 and provided with the receiver-piece 4, also provided with ribs, a frame constructed with grooves suitable to receive the said barrel-ribs, spring-levers adapted to force the barrel portion "home" in the frame by cam engagement, and confine the parts together.

8. In a firearm, the breech-operating handle and its connections, the pivoted inertia-piece and the spring-catch therefor, the handle-locking dog, and the dog-operating spring, all combined substantially as described.

9. In a firearm, the breech mechanism and operating-handle, the handle-locking dog, the inertia-piece in the gun and movable into position to engage said dog to unlock the same, and the hammer in position to engage and set the inertia-piece, all combined substantially as described.

10. In a gun, a sliding handle connected to the breech-piece, a catch to lock said handle, to thereby hold the breech in closed position, an inertia-piece and a spring to throw it into operative position to release the catch, and unlock the handle, all in combination and with means to set the inertia-piece in inoperative position, substantially as described so that the shock of firing shall make it operative, to release the handle.

11. The handle sliding on the wrist of the gun, and the breech-piece connected thereto, a catch making engagement between the handle and a fixed part of the gun, the inertia-piece arranged in the gun to unlock said catch

under the impulse of recoil and the hammer operating as described to set the inertia-piece, all combined substantially as described.

5 12. In a magazine-firearm, and in combination with the breech-locking mechanism thereof the gun-barrel and the magazine, and the saddle with the contracted portion, and expanded ends, interposed and secured between said barrel and magazine, in combination with a fore-stock and means for securing it to the saddle.

10 13. The combination of the barrel and magazine-tube and a projecting piece at the sides between the magazine-tube and barrel and attached to both, the fore-stock formed to embrace the barrel and tube and having a rib between, which rib is cut away at the rear to pass over the projection above referred to, and the retaining-screw passing through the fore-stock and into said projection, all combined substantially as described.

15 14. The gun-barrel and magazine in contact, said barrel having a notch in its surface

as described, and a saddle having a thin portion lying in said notch and provided with 25 projections having shoulders to receive attachments to the fore-stock; interior depressions in the fore-stock to receive the saddle, and means to attach the said stock and saddle, substantially as specified. 30

15. A fore-stock having at its middle portion means to secure it to the barrel and magazine, interior projecting ribs to fill the hollow between the barrel and magazine at its forward portion, but cut away rearward for the 35 attachment as described, in combination with a tip-piece secured to the front of the fore-stock, by screws entering into the ribs of said fore-stock.

In testimony whereof I affix my signature 40 in presence of two witnesses.

ANDREW BURGESS.

Witnesses:

E. L. MORTIMER,
MILLS W. BAISE.