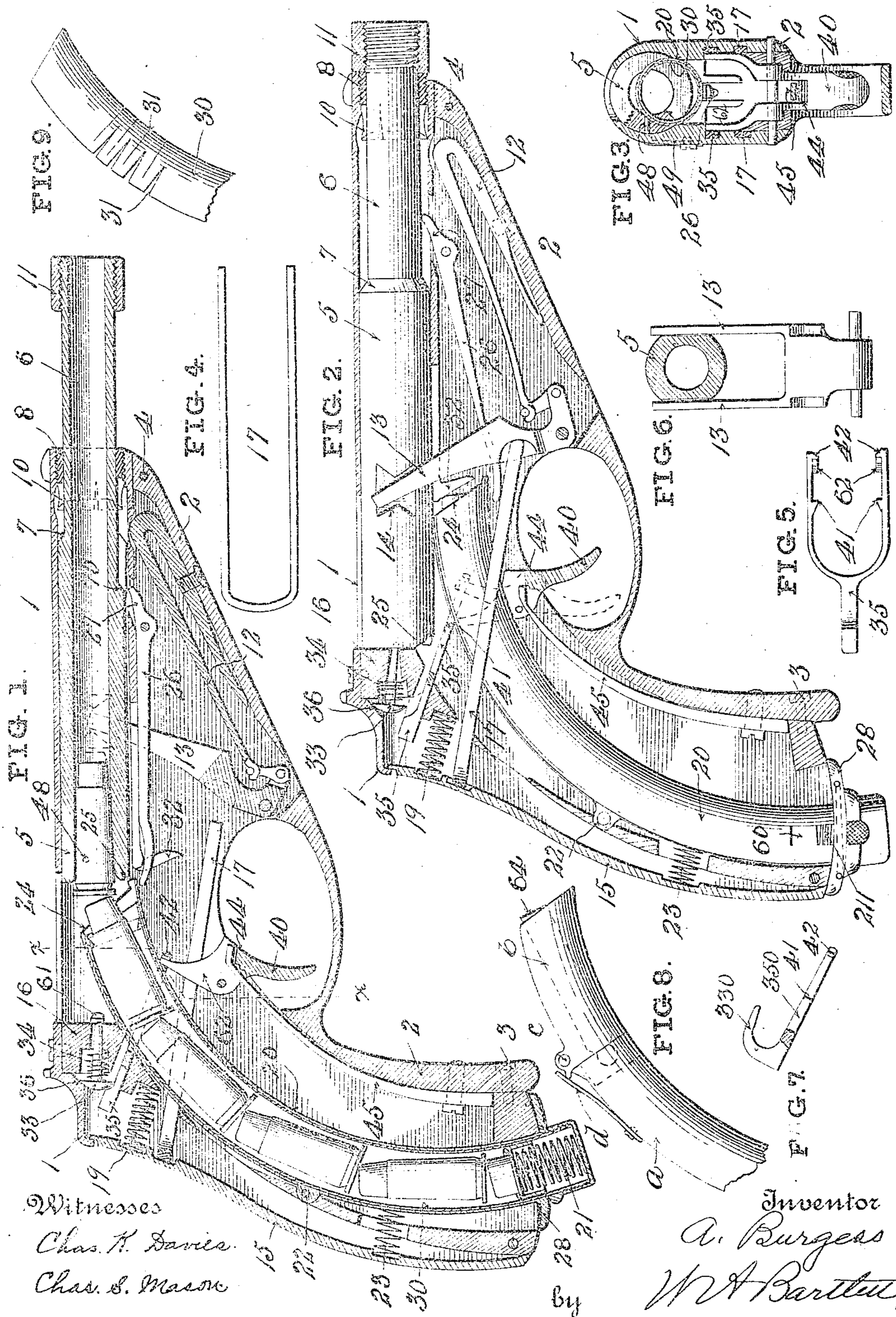


A. BURGESS.
AUTOMATIC MAGAZINE GUN.
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AUTOMATIC MAGAZINE-GUN.

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To all whom it may concern:

Be it known that I, ANDREW BURGESS, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Automatic Magazine-Guns, of which the following is a specification.

This invention relates to automatic magazine-guns.

The object of the invention is to produce a magazine-gun in which the front end of a lengthwise-feeding magazine shall serve as a carrier to move the cartridge sufficiently into alinement with the barrel to cause it to enter the chamber of the barrel; also, to improve the firing mechanism so that it shall be fully under control of the operator and shall act in part to open the breech of the gun and to swing the magazine to feeding position, and, in general, to improve the construction of guns of the general character stated.

The invention consists in the construction of the magazine, of the barrel and frame connections, of the firing mechanism, and of the combination of elements hereinafter described, and more specifically pointed out in the claims.

Figure 1 is a longitudinal central section of a pistol involving my present invention, showing cartridges in magazine and barrel, the barrel being in its open position. Fig. 2 is a longitudinal section of the same pistol, but showing barrel and magazine and some of the operating parts in elevation, the barrel being closed to firing position. Fig. 3 is a cross-section on the irregular line $x x$ looking forward or toward the muzzle of the pistol. Fig. 4 is a top or front view of the yoke-shaped push-piece. Fig. 5 is a top view of the firing-pin and magazine pull-piece. Fig. 6 is a cross-section of the barrel, showing the barrel-moving lever. Fig. 7 is an elevation of a modification when the pull-piece and firing-pin are made integral. Fig. 8 is a broken side elevation of a modification of the magazine. Fig. 9 is a broken side elevation of a feed-tube which enters the magazine.

The gun is of that class in which the barrel moves forward to open the breech for the entrance of a cartridge or withdrawal of a shell, the barrel not being locked when in closed position, but held closed by its own inertia and by spring-pressure.

The numeral 1 indicates the main frame,

which is bored from the front to receive the barrel. The lower part 2 of the frame is made separate and detachable and by its removal access is had to the working parts of the gun. The part 2 may be held in place by a screw at 3 and a pin at 4, or by other usual means.

The barrel 5 is made cylindrical in the main, but with a reduced front portion 6 and an inclined shoulder 7, leading from the larger to the smaller cylindrical part.

A ring 8, screw-threaded externally, surrounds the reduced part 6 of the barrel and by entering the threaded opening at the front of the frame holds the barrel from escaping in forward direction. Ring 8 has spring-fingers 10 extending rearwardly and with inclined ends. The inclined shoulder 7 of the barrel strikes these inclined fingers 10 of the barrel-holding ring when the barrel moves to its extreme forward position, the fingers acting as a buffer and moderating the rebound of the barrel backward. The frame is slightly cut away around the fingers 10 to permit their expansion.

A muzzle-ring 11 on the barrel serves as a handle to draw it forward when desirable.

The barrel is pressed backwardly in the frame, as by a strong spring 12, acting by a link connection on forked lever 13, as in my Patent 726,399, of April 28, 1903. The arms of this lever 13 enter notches 14 in the sides of the barrel in the present case, and the forked lever may be actuated to press the barrel either forward or backward.

The butt-piece or butt-plate 15 is not held rigid to the frame, but yields somewhat like the elastic butt-plates of well-known guns.

When the gun is fired, the recoil carries back the frame proper, including the recoil-shield or breech-piece 16; but the plate 15, resting against the hand of the operator, is relatively moved forward, bearing directly on the push-piece 17. This push-piece 17 (preferably in form of a yoke) bears directly against lever 13 when the barrel is closed, as shown in Fig. 2. The recoil of the gun thus tends to start the barrel forward by the action of the yielding butt-plate.

I have found in practice that when a gun of this general character is held rigidly the barrel may not move to its extreme forward position under the impulse of the passing projectile and gases and so fails to fully open the breech; but with the additional impulse

of the recoil (acting in this instance through a yielding butt-plate and barrel-moving mechanism) this difficulty is overcome and the barrel is fully opened, whether the gun be
5 firmly or loosely held.

The recoil impulse of the frame part against the inertia of the barrel, when permitted by the yielding grip insured by the spring butt-plate, will usually sufficiently assist the im-
10 pulse given by the primary opening effect of the discharge to fully open the breech even without assistance from the push-piece.

The yielding butt-plate 15 has a strong spring 19 interposed between itself and the
15 recoil-shield 16. This permits a backward movement of the frame with reference to the butt-plate.

The magazine 20 is of the class in which the cartridges are placed end to end and
20 pressed forward by a spring-follower, as 21. In Figs. 1 and 2 the magazine is shown as pivoted at 22 to a suitable abutment in the frame, so as to swing on said pivot. In the stock of a pistol the magazine must be curved
25 or bent; but in a shoulder-gun the same principle may be embodied in a magazine practically straight.

A spring 23, bearing against the rear face of the magazine below its pivot 22, tends to
30 lift the front end of the magazine either against or behind the barrel. The front end of the magazine is inclined, (shown at 24,) and a backward movement of the barrel presses down the front of the magazine, an
35 abutment on the barrel riding along this incline 24 and forcing down the magazine by cam or wedge action.

When the barrel is nearly forward, as in Fig. 1, the front corner of the magazine
40 comes behind a shoulder or notch 25 in the barrel and holds the barrel forward until the front of the magazine is swung down. A strong spring-lever 26 is hung on a pivot in the frame, and its rear arm bears on the mag-
45 azine to lift or hold it upward whenever the barrel is far enough forward for the enlarged part 5 to bear on the front arm 27 of the spring-lever 26; but when the barrel moves
50 back this spring-lever 26 becomes inert, as will be understood from Fig. 2.

In the construction shown the lower end of the magazine is inclosed in a sliding plate
55 28, which covers the opening in the lower end of the pistol-stock. This is a convenient but not essential construction.

I prefer to inclose the cartridges in a loading-tube 30, which can be removed from and
60 replaced in the magazine-tube. In the curved magazine illustrated the loading-tube is made either curved or flexible to be able to curve. A flexible construction is shown in Fig. 9, where the thin tube is partly
severed by cuts 31.

The loading-tube may be composed of any
55 material which will readily bend. For con-

venience for packing and shipment and storage in a cartridge-box it is manifest that
straight tubes are advantageous, and a tube of flexible material consequently has the ad-
vantages of both the straight and the curved
70 construction.

The loading-tube 30 is held in the outer tube by the usual spring-dog 60, pressed by
spring 211.

In the modification shown in Fig. 8 the
75 lower part *a* of the magazine may be fixed, while the upper or front part *b* is made movable on the pivot *c*, the spring *d* acting to lift the front of the magazine. A long flexible
80 follower 64 is in this case provided. As the front end of the magazine acts as a cartridge-carrier to guide a cartridge into the barrel, it is obviously immaterial whether the whole
magazine or only a part of it rocks into and
85 out of the general line of the barrel.

In the position of Fig. 1 the magazine is shown to be full of cartridges and a cartridge
is in the barrel. This latter cartridge can be inserted by moving the barrel forward by
90 hand before or after the magazine is filled with cartridges. As the magazine feeds directly into the breech end of the barrel, a cartridge or shell in the barrel will act as a
95 stop for succeeding cartridges, and when the open barrel is in front of the magazine loading will proceed automatically. Any usual
extractor, as 61, may be used to withdraw the empty shell. An inclined cartridge-stop
32 extends from the frame in front of the
100 magazine when the magazine is in lowered position.

The gun in the position of Fig. 1 may be considered as in cocked position, the maga-
zine acting as a sear and the barrel a ham-
105 mer. The lowering of the front of the magazine permits the barrel to be driven quickly backward by the force of spring 12, bringing the cartridge forcibly against the firing-
pin 33.

The firing-pin 33, as illustrated in Figs. 1
110 and 2, fits loosely in an enlarged opening in the recoil-plate 16. The head of the firing-pin may drop down, as in Fig. 1, and in such case the pin is retracted by spring 34, so that its point does not project far enough to fire a
115 cartridge.

A pull-piece 35, preferably forked, has an
incline which extends under the head of the firing-pin. When this pull-piece 35 is drawn
120 forward, the movement lifts the head of the firing-pin along incline 36 in the frame, and the firing-pin is then held so far forward that its point will explode a cartridge in the back-
wardly-moving barrel. When the incline on the pull-piece has lifted the firing-pin, a
125 straight portion holds it up, while the pull-piece may move further.

The pull-piece 35 has an arm at each side of the magazine, and its fork is in rear of the
130 magazine. The forked trigger 40 is pivoted

in the frame in usual position, and its upper arms 62 62 rest between the shoulders 41 and 42 on the arms of the pull-piece 35 in position to move the pull-piece in either direction, but with some lost motion.

When the gun is in the position of Fig. 1, a pull on the trigger 40 draws forward the pull-piece 35, thus locking the firing-pin in firing position and at the same time swinging down the front of the magazine, (which acts as a sear,) and thus permitting the barrel to slide back and act as a hammer to fire the gun. The recoil and pressure in the barrel immediately carry the barrel forward and the parts resume the position of Fig. 1.

Spring-lever 26, actuated by shoulder 70 on the barrel, lifts the front end of the magazine as soon as the barrel has moved far enough forward to permit this movement, and the front of the magazine remains elevated while the barrel completes its forward and begins its backward or closing movement. As soon as the shoulder 70 has moved back far enough to relieve pressure on arm 27 of the spring-lever 26 the pull on the trigger (which had been overcome by the action of spring-lever 26) again becomes effective to lower the front of the magazine, and the barrel having meantime received a cartridge from the magazine moves back for another firing; but if it is desired to discontinue the firing the pressure on the trigger is released, and the barrel stays forward, the magazine acting as a sear or barrel-lock, as in Fig. 1.

The magazine when its front end swings upward serves to throw out any empty shell which may be in the grasp of the cartridge-extractor.

In carrying the pistol it is preferable that it be in the position of Fig. 2, as the length over all is then decreased, and in Fig. 2 the barrel is not in "full cock" position, although said barrel is in firing position.

When the barrel is closed to the rear, as in Fig. 2, and the trigger is in the position shown in dotted lines, a forward pressure on the lower end of the trigger carries the shoulder 44 of the trigger forward and allows the point of the mainspring to drop a little to engage in a notch behind the said shoulder 44. The point of the mainspring then serves as a sear to hold the trigger forward, and a pull on the trigger in the ordinary manner will then turn the shoulder 44 down and back under the point of the mainspring to release said spring. This permits the mainspring 45 to relieve its tension by a quick movement to the position of Fig. 1, throwing the upper arms of the trigger, the pull-piece 35, and the firing-pin 33 quickly forward, and firing the cartridge. The further action of the gun is then similar to what has been described. The modified pull-piece and firing-pin of Fig. 7 shows how these parts become

coactive for the purpose of a striker to explode the cartridge. In this modification, 330 indicates the firing-pin and 350 the pull-piece, forming one integral part.

A pin 48 (shown in Fig. 3) and its position (shown in Fig. 1) extends through the wall of the barrel. A spring 49 in the side of the frame bears on the outer end of this pin when the barrel is in forward position, and thus applies pressure to the cartridge in the firing-chamber of the barrel to prevent said cartridge from becoming displaced. As the barrel moves back to firing position this pin 48 is carried from under the spring 49, so that pin 48 is loose and offers no resistance to the extraction of the cartridge.

I have not attempted to describe the precise construction of all the parts, as I believe an expert mechanic from the above description, aided by the drawings, will be able to construct and use my invention, although the figures of drawings are not made to scale and are explanatory, not actual working drawings.

My claims are intended to cover the broad subject-matter to which they refer, except in instances where they are specifically limited in their terms.

What I claim is—

1. In a magazine-gun, a longitudinally-reciprocating barrel having a shoulder thereon, a frame in which said barrel slides, and a retaining-ring surrounding the barrel and held by the frame, said ring having elastic fingers against which the shoulder of the barrel abuts in the forward movement, all combined.

2. In a magazine-gun a frame, a longitudinally-moving barrel provided with an inclined shoulder, and a ring surrounding the barrel and held by the frame, said ring having spring-fingers with inclined ends projecting toward the inclined shoulder of the barrel, all combined.

3. In a magazine-gun, a frame bored from its front to receive a cylindrical barrel, a removable retaining-ring, a barrel generally cylindrical but having notched sides, and a forked lever hung in the frame and having its arms in the notches in the barrel, whereby the removable barrel moves the lever or the lever the barrel in both directions.

4. The combination with the barrel having notches in its sides, of a forked lever pivoted in the frame and having its fork-arms in said notches, a butt-piece hinged to the stock, and a push-piece interposed between said forked lever and said butt-piece.

5. In a magazine-gun, the combination of a frame, a longitudinally-reciprocating barrel, a swinging magazine having an incline, and an abutment on the barrel acting to swing the magazine by engaging the incline thereof.

6. In a magazine-gun, a longitudinally-

movable barrel, a pivoted endwise-feeding movable magazine, and a lever operated by the barrel to swing the magazine, all combined.

5 7. In a magazine-gun, a longitudinally-moving barrel, a movable swinging magazine, and a lever pivoted in the frame, said barrel in part of its movement acting on an arm of the lever to bear on the magazine, and
10 in another part releasing the lever and magazine.

8. In an automatic gun, a longitudinally-moving barrel, a movable magazine, lever-actuated by the barrel in its forward movement to move the magazine into the line of
15 movement of the barrel, and a trigger connected to the magazine for the removal of the same from the path of the barrel.

9. In a magazine-gun, a curved magazine
20 pivoted in the stock and having its front end movable into line with the rear of the barrel, and a flexible loading-tube constructed to enter said magazine and to conform to the curve thereof.

25 10. In a magazine-gun, a longitudinally-reciprocating barrel, a firing-pin laterally and longitudinally movable in the frame, and an incline in the frame by which the lateral movement of the firing-pin in one direction
30 also advances said pin, all combined.

11. In a magazine-gun, a longitudinally-reciprocating barrel, a firing-pin laterally and longitudinally movable in the frame, an incline on the frame against which the head of
35 the firing-pin bears, and a movable piece connected to the trigger by which the firing-pin may be forced along said incline, all combined.

12. In combination with a curved maga-
40 zine, a flexible loading-tube constructed to

enter said magazine and to conform to the curve thereof.

13. In combination with a curved magazine, a loading-tube constructed to enter said
45 magazine said loading-tube having a series of transverse cuts in its sides, so as to flex in the magazine.

14. In a magazine-gun, the combination of the barrel, trigger pivoted in the frame and having a shoulder thereon, a pull-piece and a
50 firing-pin cooperating with the trigger, and a mainspring arranged to bear on either the rear or the top of the trigger-shoulder as described, so as to bear the trigger in one direction or swing it forcibly in the other direc-
55 tion.

15. The combination of the frame, a trigger pivoted therein and having a shoulder below the pivot, a mainspring bearing on said
60 shoulder, a pull-piece engaging the trigger above the pivot, and a firing-pin cooperating with the pull-piece.

16. The combination of the frame, a trigger pivoted therein, the mainspring bearing on an abutment of the trigger from the rear,
65 or striking the trigger from above according to the position of the trigger, and means connected to the trigger for firing the cartridge.

17. The combination of a reciprocating barrel, a cartridge-holding pin, and a spring
70 in the frame and bearing on the cartridge-holding pin when the barrel is in forward position.

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

ANDREW BURGESS.

Witnesses:

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