

No. 726,109.

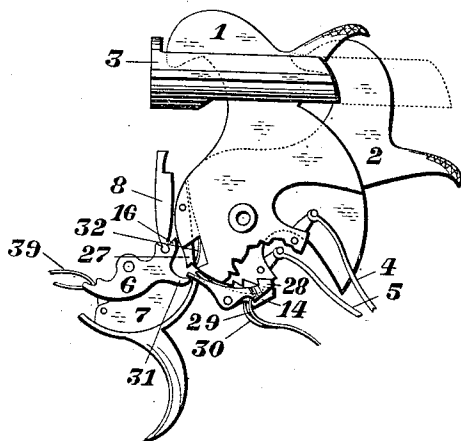
PATENTED APR. 21, 1903.

A. H. STOW.
AUTOMATIC FIREARM.
APPLICATION FILED JULY 29, 1901.

NO MODEL.

3 SHEETS—SHEET 2.

Fig. 5



WITNESSES:

T. D. Burgess
M. H. Gilman

INVENTOR
Audley H. Stow

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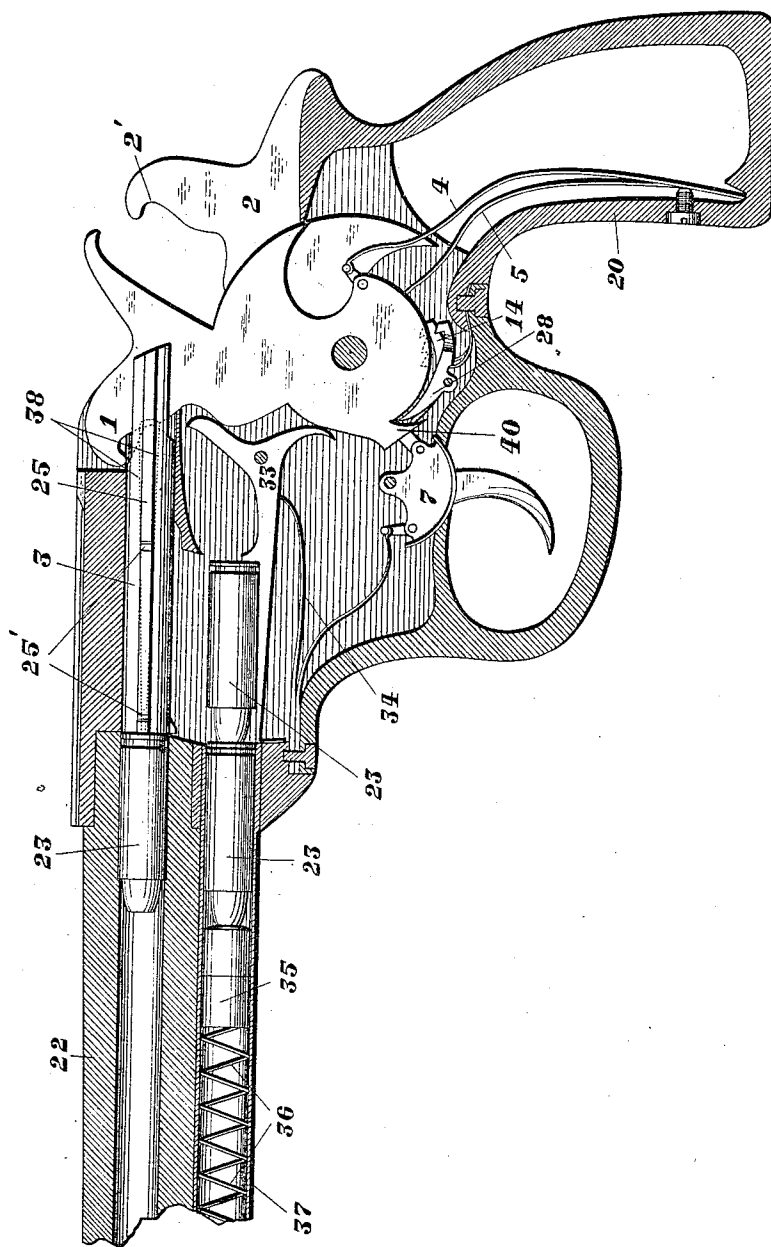
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3 SHEETS—SHEET 3.

Fig. 6



WITNESSES:

T. D. Burges
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INVENTOR
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UNITED STATES PATENT OFFICE.

AUDLEY H. STOW, OF HUNTER, WEST VIRGINIA.

AUTOMATIC FIREARM.

SPECIFICATION forming part of Letters Patent No. 726,109, dated April 21, 1903.

Application filed July 29, 1901. Serial No. 70,095. (No model.)

To all whom it may concern:

Be it known that I, AUDLEY H. STOW, a citizen of the United States, residing at Hunter, in the county of Mingo and State of West Virginia, have invented a new and useful Automatic Firearm, of which the following is a specification.

My invention relates to improvements in automatic firearms in which the rearward pressure of the gases resulting from the firing of the cartridge is utilized to make the action of the firearm automatic; and the objects of my invention are, first, to provide an automatic device adapted to general use in the different types of firearms, and, second, to provide an automatic firearm durable and simple of construction, quickly adjusted, and easily under control. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the frame of revolver, exposing a side view of the working parts as they appear just as the second shot is about to be fired; Fig. 2, a side view of breech-block; Fig. 3, an end view of breech-block; Fig. 4, a top view of breech-block; Fig. 5, a side view of breech-block, hammer, trigger, and cylinder-revolving device; and Fig. 6, a longitudinal section of the frame of pocket-rifle, exposing a side view of the working parts as they appear with the firing-hammer in position for firing.

Similar numbers refer to similar parts throughout the several views.

In addition to the illustrations necessary to clearly explain the nature of my invention I have added others, that it may be evident on the face of it that I do not confine myself to the precise details of one construction, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

It will be understood that the various parts of this weapon which are common to firearms of usual construction are located in the firearm in about their usual positions. The cartridge in its position for firing has its head resting against a breech block or bolt in a broad sense substantially like the sliding breech-bolt common to many well-known firearms. The movable bolt or breech-block 3 has, preferably, the vertical longitudinal cut

26, Fig. 4, in its rear end suitably made to receive both the return-lever 1, Fig. 1, preferably pivoted to the frame concentrically with the hammer 2, and also the said hammer 2. The said return-lever has in its upper forward face the recess 1', and the hammer has the recess 2', so as to receive the bar 24, Fig. 4, of the breech-block 3 in such a manner that the pressure of gases resulting from the firing of the cartridges will in driving the breech-block to the rear force both the hammer and the return-lever to their extreme rear positions. As soon as the said pressure of gases is relieved through the emergence of the bullet from the barrel the return-lever spring 4, Fig. 1, acting on said return-lever, will return the said breech-block and the empty shell to their forward position, the horizontal breech-block guides 25, Fig. 3, acting within suitable grooves in the frame, serving to keep the movement of the breech-block in line with the cartridge-chamber. The return-lever 1, Fig. 1, has in its lower forward face the spring 15, which as the said return-lever 1 moves forward from its rear position engages the rocker-lip 16 of the rocker 6, to which latter is attached the hand 8, (the upper end of which is broken away,) and thus depresses the said hand sufficiently to engage the next ratchet-tooth of the revolver-cylinder in well-known manner. A further forward motion of the said return-lever serves to disengage the spring and said rocker-lip, leaving the rocking spring 39 free to return the said hand to its upward position by means of the said rocker, thus rotating the cylinder 21. A projection 18 on the said hand serves to disengage the spring-catch 9 (which has held the said hammer in firing position) at the instant that the upward movement of the said hand through the consequent rotation of the cylinder has brought a fresh cartridge into the firing position, when if the usual trigger has been held in its rear position, as shown, the hammer will be free to fire the next cartridge, which cycle of operations will then be automatically repeated, provided the said trigger is held in the rear position, as long as there are unfired cartridges in the cylinder, the cylinder having been full; but the firing may be stopped by simply allowing the said trigger to move forward, and thus allow-

ing the trigger-sear 14 to engage the said hammer in the usual manner. Firing may be again resumed by again pulling the trigger to the rear position.

- 5 The main sear 28, Fig. 5, controlling the motion of the hammer, in addition to the usual trigger-sear 14 is preferable to the spring-catch 9 i. Fig. 1. In the latter construction the rocker-sear lip 31, Fig. 5, disen-
 10 gages the main sear from the hammer at the instant a fresh cartridge has been brought into the firing position, as heretofore described, the spring-catch 27 being preferable to the said spring 15, Fig. 1, for operating
 15 said rocker 6 by engaging the spring-catch lip 16.

- In general the construction shown may be varied largely along well-known lines. The trigger 7 and the hammer 2, as in Fig. 1, may
 20 be replaced by any of the well-known devices for attaining the "double action" or suitably varied, as may be necessary or advisable to that end. In the same way the revolver may be of any of the "solid frames," as in Fig. 1,
 25 or of the "breakdowns," as shown by dotted lines 19. The breech-block may also be varied largely, and in order to attain the desired movements of the hammer and the return-lever with regard to the breech-block
 30 any of the well-known mechanical constructions to that end other than the recess in the upper forward faces of the hammer and return-lever may be used—such as links, gearing, &c.—and it is of note in the revolver
 35 that the frame, as shown by dotted lines 20', Fig. 1, extends back to the extreme rear position of the forward face of the said breech-block, the shell thus being at all times within the frame, whereby injury to the user of
 40 the arm due to possible rupture of the shell is prevented, a breech-block of the same diameter as the rear portion of the shell, as 3, Fig. 6, being preferable, even in the case of a revolver, thus requiring a rimless cartridge,
 45 whereby the rupture of the cartridge may be prevented.

- In general the recesses 1' and 2', Figs. 1, 5, and 6, in the upper forward faces of the return-lever 1 and hammer 2, respectively, are
 50 so proportioned to the hammer-cut 26, Fig. 4, in the breech-block 3 and to the height of the hammer as to give the desired horizontal motion of the said breech-block. When, as in the case of the pocket-rifle illustrated in Fig.
 55 6, it is desired to entirely remove the shell and replace a fresh cartridge in the single chamber, the return-lever and firing-hammer may be made higher in order that the said breech-block readily may have greater horizontal
 60 motion, the said return-lever operating a cartridge-lift 33 by means of upper and lower rearward extensions. The empty shell may be expelled sidewise by well-known means or upward by the next cartridge or by a special
 65 device sidewise operated by the cut 25' in the breech-block guides 25, the cartridges being fed from the usual magazine 37, contain-

ing the button 35 and magazine-spring 36, in which case a suitable projection 40 on the lower part of the said return-lever disengages
 70 the main sear 28 from the said firing-hammer at the instant that a fresh cartridge has been inserted ready for firing. In the same way any of the usual forms of cartridge-lifts may be operated by the return-lever or by a third
 75 hammer. The revolver-trigger shown may be replaced by any of the well-known rifle-triggers.

More particularly in the case of revolvers the firing-hammer 2, as in Fig. 1, may itself
 80 fire the cartridge, or the usual firing-pin, as shown by the dotted lines 38 in Fig. 3, may be employed. The return-lever may also be applied to any of the well-known rifle-actions, to machine-guns, and other firearms and may
 85 itself be suitably controlled by sears, buttons, or other suitable form of catch.

The recesses in the upper forward faces of the return-lever and hammer 1 and 2, as aforesaid, are preferably deep enough so that when
 90 the said hammers are in their extreme rear position the breech-block cannot escape to the rear, although the breech-block guides also tend to prevent this, provided the said pivoted parts in their extreme rear position
 95 are high enough to still check the breech-block.

Each of the springs 4 and 5 may have a separate tension-screw whereby the automatic action of the arm may be suitably
 100 adjusted to the particular cartridge in use, the relative masses of the hammers, breech-block, and other moving parts, together with the tensions of the various springs and length of
 105 barrel, being suitably proportioned to each other, allowing for the inertia of the moving parts when started rearward from rest, that the automatic action may be reliable.

It is to be noted that the firing-hammer may be cocked also by the thumb by means
 110 of its upper rearward projection in the usual manner, the return-lever being uncontrolled, then at once returning as soon as released by the thumb to its forward position, which is of especial advantage in the rifle-actions, and in
 115 general it is preferable to have the said upper rearward projection of the firing-hammer somewhat higher (see dotted lines 41, Fig. 1) than that of the lever in order that, if desired, the said firing-hammer may be cocked with-
 120 out disturbing the return-lever and the parts operated thereby.

The general principle of operation of my device is that the backward pressure of the
 125 cartridge-shell when fired forces back the breech block or bolt in substantially a right line. This breech-block presses back the hammer to its cocked position and also presses back the return-lever, which lies alongside the hammer and is preferably of substantially
 130 the same form as the hammer. A spring acting on the return-lever causes said lever to force the breech-block forward to closed position and to partially rotate the cylinder if

the invention be applied to a revolver or to feed a cartridge from the magazine if the invention be applied to a magazine-gun, the sequence of movements being as usual in weapons of such classes.

As the hammer and return-lever are of substantially similar form and their location is that of the usual hammer, the weapon is symmetrical in appearance and the working parts are largely under observation. In opening the breech or in firing the first shot the movement of cocking the hammer is as usual. The resistance to recoil of the breech-block, supported as it is by the return-lever and its spring and also by the firing-hammer, is sufficient to avert premature opening, although the breech-block is not positively locked at any time. The angle of engagement between the breech-block and the return-lever largely determines the resistance such lever will offer to the backward movement of the breech-bolt when a cartridge is fired.

I am aware that previous to my invention a movable breech-block has been used to cock the single hammer. I therefore do not claim this combination broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In automatic firearms, the combination, substantially as aforesaid, of the movable breech-block 3, the return-lever 1, and the firing-hammer 2, the upper forward face of the return-lever being recessed to receive the said movable breech-block, whereby the pressure of gases resulting from the firing of the cartridge, in driving the said breech-block to the rear, may force the said hammer and lever to their extreme rear position, the said recess, however, preventing a further rearward movement of the said breech-block, leaving the said return-lever as soon as the diminution of gases permits, to return the said breech-block to place, the said firing-hammer remaining cocked; until the said breech-block is in place.

2. In automatic firearms, the combination, substantially as aforesaid, of the movable breech-block 3, the return-lever 1, and the firing-hammer 2, the upper forward faces of the said hammer and lever being recessed to receive the said breech-block, together with the main sear 28 operated by the said return-lever and controlling the action of the said firing-hammer in accordance with the movements of the said return-lever together with a suitable reloading device operated by the said return-lever whereby the pressure of gases resulting from the firing of the cartridge, in driving the said breech-block to the rear, may force the said hammer and lever to their extreme rear position, thus stopping the further rearward movement of the breech-block, the said firing-hammer being retained in the said rear position by the said main sear 28, the said return-lever, however returning, as soon as the diminution of gas-pressure permits, the said breech-block, to its forward position, a fresh cartridge having been brought into the firing position by the said reloading device, the return-lever at the same instant disengaging the said main sear from the said firing-hammer, leaving the said firing-hammer free to fire the cartridge in position, thus making the action automatic.

3. In automatic revolvers, the combination, substantially as aforesaid, of the movable breech-block 3, the return-lever 1, the firing-hammer 2, the upper forward faces of the said hammer and lever being recessed to receive the said breech-block, the trigger-sear 14, the main sear 28, the rocker 6 having the rocker-sear lip 31 operating the said main sear, the said rocker also controlling the movements of the hand 8, the trigger 7, and the spring-catch 27 within the forward lower face of the said return-hammer; whereby the pressure of gases resulting from firing the first cartridge, in driving the said breech-block to the rear, may force said hammer and lever to their extreme rear position, the said trigger-sear holding the said firing-hammer cocked, the said return-lever, as soon as the diminution of gases permits, returning the said breech-block to place, and at the same time, depressing the said rocker against its spring, by means of the said spring-catch engaging the spring-catch lip 16, sufficiently to enable the said hand to engage the next lower cylinder ratchet-tooth, when, the said spring-catch passing out of reach, the said rocker is returned by means of its spring, thus carrying the said hand upward, and through the consequent revolution of the cylinder, bringing a fresh cartridge into the firing position, at which instant, the said rocker sear-lip disengages the said main sear from the said firing-hammer, leaving the same free to fire the said fresh cartridge—the said trigger having been held in the rear position—thus rendering the action of the firearm automatic, all substantially as set forth and for the purpose specified.

4. In automatic firearms, the frame, a longitudinally-moving breech-block therein, said breech-block having a vertical slot in its rear body, a hammer and a return-lever of substantially similar construction pivoted side by side in the frame and entering said slot in the breech-block as described, connections from the return-lever whereby the cartridge-feed mechanism is actuated, and usual connections for the control of the firing-hammer, all combined.

5. In an automatic revolver, the combination of the frame, cylinder, a longitudinally-moving breech-block in rear of the cylinder, a hammer and return-lever pivoted on the frame with front faces bearing against said breech-block, and connections from the return-lever by which the cylinder is rotated.

6. In an automatic revolver, the combination of the frame, cylinder, a longitudinally-reciprocating breech-block in rear of the cylinder, said breech-block slotted at its rear end,

a hammer and return-lever pivoted in the frame side by side and both entering said slot in the breech-block, and means connected to the return-lever for rotating the cylinder with a step-by-step movement.

7. In an automatic revolver, the combination of the frame, the cylinder, and a longitudinally-moving breech-block in rear of the firing-chamber of the cylinder, a lever pivoted in the frame and rocked by the rear movement of the breech-block, and connections from said lever by which the cylinder is rotated.

8. In an automatic revolver, the combina-

tion of a frame, cylinder, and breech-block reciprocating longitudinally in rear of the cylinder, a lever in the frame actuated in one direction by the recoil of said breech-block, and a spring by which the lever is returned, and means connected to said lever for rotating the cylinder.

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

AUDLEY H. STOW.

Witnesses:

S. F. WOODSON,
JAS. S. ALBERT.