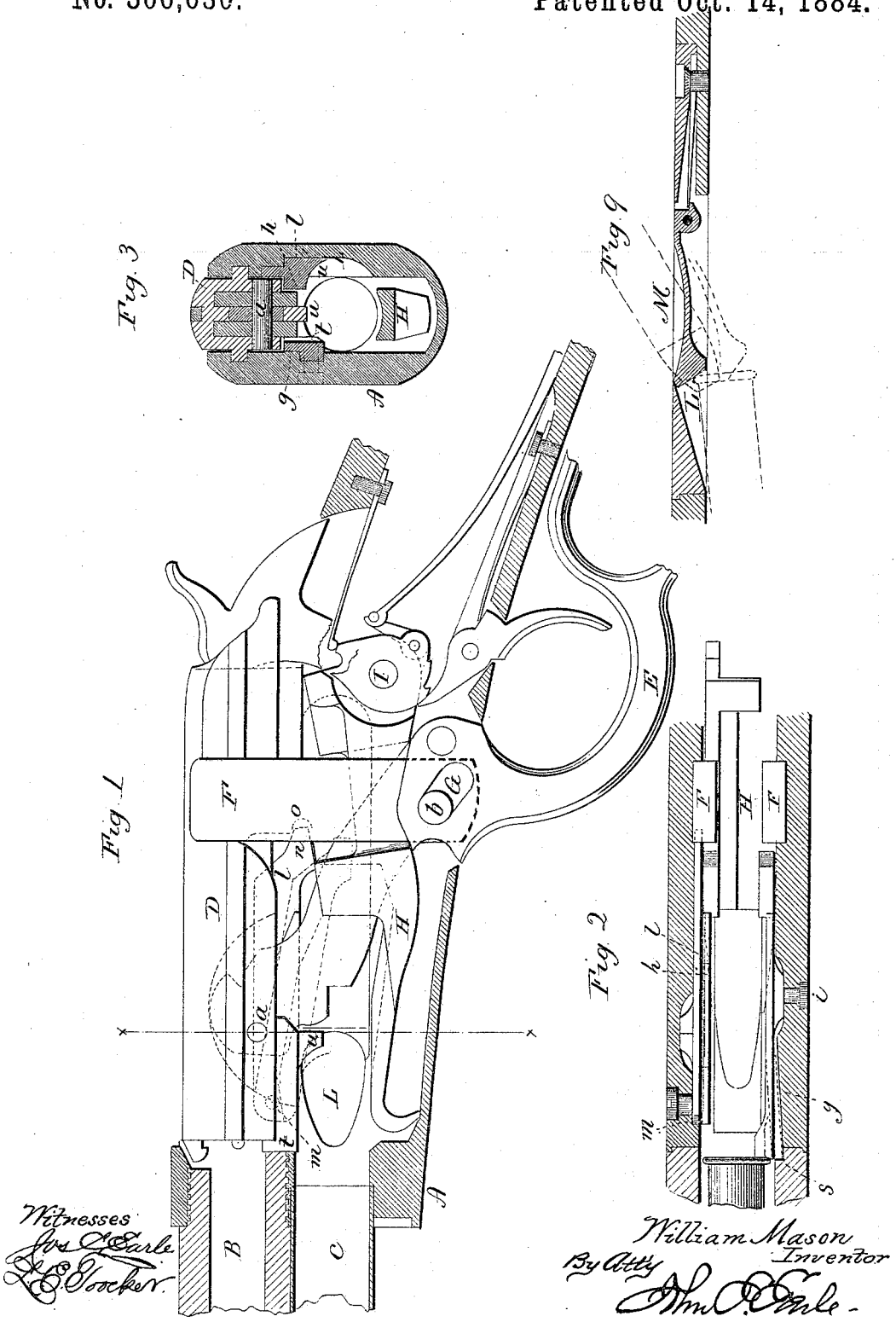
(No Model.) 2 Sheets—Sheet 1.

W. MASON.

MAGAZINE FIRE ARM.

No. 306,630. Patented Oct. 14, 1884.



(No Model.) 2 Sheets—Sheet 2.

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Fig. 5

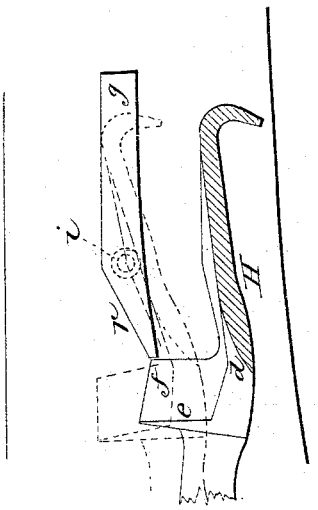


Fig. 8

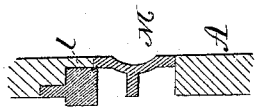


Fig. 6

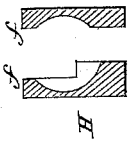


Fig. 7

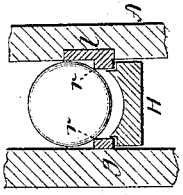
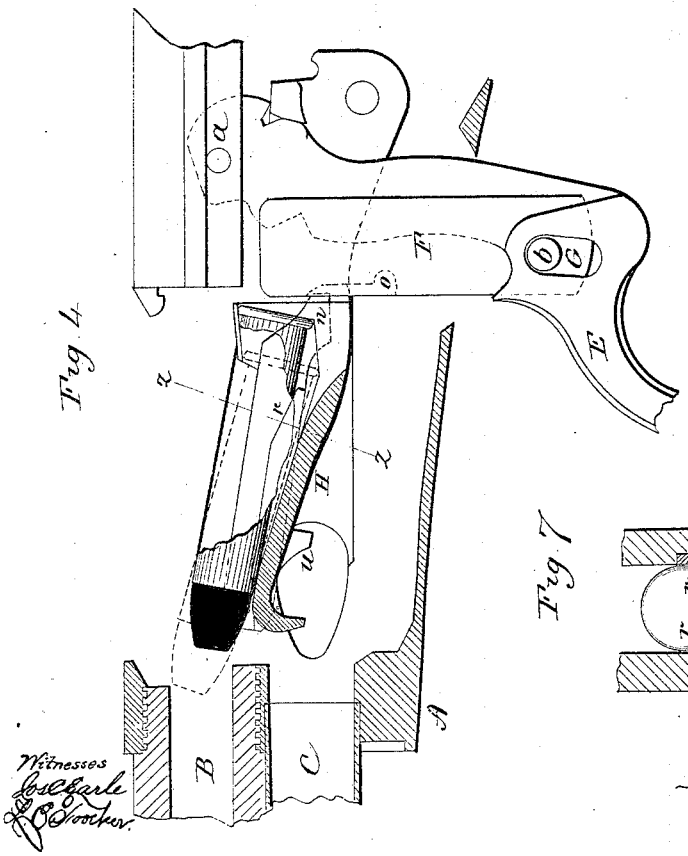


Fig. 1.



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UNITED STATES PATENT OFFICE.

WILLIAM MASON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 306,630, dated October 14, 1884.

Application filed July 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MASON, of New Haven, in the county of New Haven and State of Connecticut, have invented new Improvements in Magazine Fire-Arms; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a sectional side view showing the parts in their normal condition; Fig. 2, a sectional top view showing the top of the carrier and the guards in the sides of the receiver; Fig. 3, a vertical central section on line *x x* of Fig. 1, looking forward; Fig. 4, a longitudinal section showing the carrier raised and looking toward the side of the receiver in which the charging-opening is made; Fig. 5, a longitudinal section showing the carrier down and looking toward the opposite side of Fig. 4; Fig. 6, a transverse section at the rear portion of the carrier through the overhanging sides *f f;* Fig. 7, a transverse section on line *z z* of Fig. 4; Fig. 8, a transverse section through the charging-opening; Fig. 9, a longitudinal section through the charging-opening.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is arranged below the barrel, and in which the carrier is hung upon a pivot at the rear, so as to swing thereon in a vertical plane upward to transfer the cartridge to a position forward of the front face of the open breech-piece, and downward to receive a new cartridge. In the more general construction of this class of arms the breech-piece is arranged to move longitudinally toward and from the barrel, and so as to open the receiver over the cartridge resting on the carrier. In such an arm the upward movement of the carrier is necessarily made during the last part of the rear movement of the breech-piece, and consequently a sudden upward movement, and so sudden that unless some provision be made to retain the cartridge upon the carrier, it will be thrown from the receiver in such sudden upward movement of the carrier.

The prime object of my invention is to avoid such accidental throwing of the cartridge from the receiver; and it consists principally in constructing the carrier with its upper surface near the rear end inclined upward and rearward, combined with correspondingly-inclined overhanging sides, and so that as the cartridge passes onto the carrier the head end will ride up the incline at the rear end of the upper surface of the carrier and pass beneath the correspondingly-inclined overhanging sides, the said overhanging sides substantially taking a bearing upon the top of the cartridge forward of the head, and also in an arrangement of guides for conducting the cartridge onto and from the carrier, as more fully hereinafter described.

A represents the receiver, to the forward end of which the barrel B is attached, and beneath the barrel the magazine C, both opening into the receiver at the rear, the receiver constructed with the usual device for attachment to the stock; D, the breech-piece, arranged to move longitudinally in axial line with the barrel in the usual manner for opening and closing the breech. In this particular construction of arm the breech-piece is thus moved by the trigger-guard lever E, hung at its upper end to the breech-piece upon a pivot, *a*, and in rear of the pivot *a* the lever is in connection with vertical sliding bolts F through a stud, *b*, on the bolts, and a slot, G, in the lever. This arrangement of the lever, breech-piece, and locking-bolt is the invention of another, and does not require particular description in this application, further than to say that as the lever E is turned downward the first part of its movement draws the bolts F downward from corresponding notches in the breech-piece, the slot G permitting such first movement of the bolts, and then the lever turning upon the studs *b* of the bolts as a fulcrum, the breech-piece is turned backward from the position seen in Fig. 1 to that seen in Fig. 4.

H is the carrier hung at the rear upon a pivot, I, which in this case is the hammer-pivot. The carrier extends forward and so that when down, as seen in Fig. 1, its forward

end lies in line with the magazine, and so that the rearmost cartridge in the column in the magazine may pass onto the carrier. The upper surface of the carrier inclines downward and backward slightly to a point near its rear end, as at *d*, see Fig. 5. From that point to the rear abutment, *e*, the surface inclines upward.

At the rear portion, or from the abutment forward, the sides of the carrier extend up, and are turned inward to form overhanging sides *f f*, the space between these sides in transverse section corresponding substantially to the size and shape of the head of the cartridge. The inner curve of these overhanging sides is inclined upward parallel with the incline from the point *d*, and as seen in Fig. 6. As the cartridge passes from the magazine onto the carrier, the flange or head rides upon the upper surface toward the rear until it arrives at the point *d*, the body of the cartridge resting near the forward end of the carrier, and as seen in broken lines, Fig. 4, the head readily passes beneath the forward end of the overhanging sides *f f*, and from the time the head arrives at the bend or turn *d* on the upper surface of the carrier its continued rear movement causes the head to ride up the incline until it reaches the abutment *e*, and such movement has carried the flange or head backward and upward beneath those overhanging sides until at the time the head reaches the abutment *e* the body of the cartridge forward of the head has come into substantial contact with the forward ends of the overhanging sides *f f*, and as seen in Fig. 4. In this condition the flange of the cartridge rests upon the upward incline near the abutment, the body of the cartridge rests upon the carrier forward, and the body of the cartridge has taken a bearing above upon the overhanging sides *f f*, and between the rear and forward bearings of the cartridge below, and so that the cartridge is substantially held upon the carrier. In this position, and when so held, if the carrier be raised, as seen in Fig. 4, the overhanging sides *f f*, holding the cartridge in substantially a firm grasp, prevent any possibility of the cartridge being thrown from the carrier. When raised, as seen in Fig. 4, the forward movement of the breech-piece, passing through a slot provided for it in the abutment, as seen in Fig. 6, strikes the head of the cartridge, and, as it forces the cartridge forward toward the barrel, the head rides down the incline at the rear, and so as to permit it to pass from under the overhanging sides *f f*, and as indicated in broken lines, Fig. 4, and, thus free from the device which held it upon the carrier, the cartridge passes on with the breech-piece and into its place in the barrel. As the rearmost cartridge in the magazine must follow the retreating breech-piece onto the carrier, it is liable to displacement, unless some provision be made to prevent. To this end I provide two guards, one, *g*, upon one side and one, *h*, upon the opposite side. (See Figs. 2 and 3.) The two guards *g h* extend into the receiver, as seen in Fig. 3, but so that the distance between the two is somewhat greater than the diameter of the body of the cartridge, but less than the diameter of the head of the cartridge. The one *g* is arranged in the side of the receiver opposite the charging-opening L, and, as seen in Fig. 5, it is secured by a screw, *i*, or otherwise, at some distance from its forward end, and from the screw or secured point *i* forward this guard is elastic, and so as to form a latch at the mouth of the magazine, the office of which will be presently described. The under side of this guard is in a line substantially parallel with the upper side of the carrier from its forward end to the forward end of the overhanging sides *f f*, and as seen in Fig. 5, and so that the flange of the cartridge upon that side will ride along the under side of the guard until it reaches the overhanging sides. Upon the opposite side the guard *h* is applied, but instead of being in a fixed or rigid position, as is the guard *g*, it is made a part of a lever, *l*, hung upon a pivot, *m*, near the magazine, the lever portion working in a recess in the inner surface of the receiver, as seen in Fig. 3, so as to leave only the guard portion *h* projecting into the receiver, as is the guard portion *g* upon the opposite side. The lever *l* extends to the rear, its nose, *n*, entering a notch, *o*, in the vertical locking-bolt F, and so that it may partake to a certain extent of the movement of the lever F. The guard *h* is shaped as shown, so that when the bolt is drawn down, as seen in Fig. 4, the under side of the guard will correspond to the under side of the guard *g*, and, like the guard *g*, terminates at the overhanging side *f* upon that side of the carrier, and so that its under side forms a guide for the cartridge into the carrier. The lever *l* is brought into this down position in the first movement of the lever E, and by the first part of the descent of the bolt F on that side its rear end comes to a bearing in its recess, as seen in broken lines, Fig. 1, when it has reached its proper position with relation to the carrier, and at that point the nose escapes from the notch *o* in the bolt, permitting the bolt to descend independent of the lever. The rear end of both guards upon their upper sides is inclined forward and upward, as at *r*, (see Figs. 4 and 5,) and which inclines stand in the path of the cartridge-head, as seen in Fig. 7, and so that as the cartridge is moved forward, and after it passes from beneath the overhanging downwardly-inclined sides *f* of the carrier, it rides up the inclines *r* to raise its head end from the carrier and bring it into line with the barrel. The forward end, *s*, of the spring-guard *g* when free projects inward, and so as to stand within the line of the magazine, and as seen in Fig. 2. On the under side of the breech-piece, at its forward end, is a downward projection, *t*, which, as the breech-piece is closed, rides upon an incline on the inner side of the spring-guard latch *g*,

and forces it into a recess in the side of the receiver, as seen in broken lines, Fig. 2, but when the breech-piece is withdrawn the rearmost cartridge follows the breech-piece onto the carrier, the nose *s* of the spring moving inward, so as to serve as a stop for the next cartridge, and as seen in Fig. 2. The guard on the charging-opening side is made movable, first, that it may not interfere with the introduction of cartridges through the opening in the receiver into the magazine, and, second, that it may prevent that opening interfering with the rear movement of the cartridge from the magazine onto the carrier. The charging-opening, L, is provided with a cover, M. The receiver is cut away upon the under side to extend the opening forward for the insertion of the cartridge, and as seen in Fig. 9. The cover necessarily projects into the opening and so that its forward end will form a shoulder in the opening. The cover is thrown outward—that is, closed by a spring—as shown. When a cartridge is inserted, the cover is depressed by the nose of the cartridge, as seen in broken lines, Fig. 9, but so soon as the head of the cartridge has passed beyond the cover the cover flies outward. The cartridges are introduced against the pressure of the spring in the magazine, hence the last cartridge introduced does not reach entirely into the magazine, but must pass back onto the carrier. As the cover returns the head of the cartridge is liable to be caught against the forward end of the cover, as seen in broken lines, Fig. 9, and which will prevent the cartridge from passing rearward behind the cover onto the carrier, as it should do, and would there stand and clog the operation of the arm were not some device introduced to prevent it. To prevent such clogging, a downward projection, *u*, is made on the under side of the guard-lever, *l*, and which, when the lever is up, does not interfere with the opening, but as the lever descends this projection *u* drops into the opening L forward of the cover, and it being inclined upon its inside acts as a wedge to strike the cartridge resting against the end of the cover and throw it from engagement with the cover, so that it may properly pass onto the carrier. The downward movement of the guard-lever *l*, occurring, as it does, before the breech-piece or the carrier commences its movement, releases the cartridge before it can interfere with the working of any part of the arm. The guard-lever *l*, in its down position, stands behind the cover, as seen in Fig. 8, and so as to prevent the cover from being turned inward except when the mechanism of the arm is in the proper condition for the introduction of cartridges to the magazine.

In that class of arms in which the charging-opening is forward of the rear end of the magazine, or is below, or in such position that the cartridges are introduced when the carrier is raised, the two guards *g h* may be both in a fixed position, the movement of the one guard *h* only being necessary when the charging-opening is made upon the side of the receiver.

The downward projection *u* on the movable guard may be omitted; but I prefer to use it for the reasons specified.

The upwardly-inclined rear portion and correspondingly-inclined overhanging sides may be employed without the guards. I therefore do not wish to limit this construction of carrier to the combination of the guards therewith. Neither do I wish to be understood as limiting either the peculiar construction of the carrier or arrangement of the guards to any particular breech-piece and mechanism for operating it.

I claim—

1. In a magazine fire-arm substantially such as described, the carrier hung at the rear and so as to swing up and down in a vertical plane, constructed with the rear portion of its upper surface inclined upward toward the abutment, and also constructed with correspondingly-inclined overhanging sides, substantially as and for the purpose described.

2. In a magazine fire-arm substantially such as described, the combination of a carrier hung at the rear and so as to swing up and down in a vertical plane, with guards *g h* on the inner sides of the receiver, distant from each other greater than the diameter of the body of the cartridge, but less than the diameter of the head, the under surface substantially parallel with the upper surface of the carrier, the rear end of the upper surface inclined upward and forward, substantially as described.

3. In a magazine fire-arm substantially such as described, the combination of a carrier hung at the rear and so as to swing up and down in a vertical plane, the receiver constructed with a charging-opening at one side, a spring latch-guard, *g*, upon the side opposite the opening, its under side in line substantially parallel with the upper surface of the carrier, its forward end or nose, when free, projecting over the rear open end of the magazine, its upper surface inclined upward and forward, the lever *l*, hung upon the opposite side of the receiver and near its forward end, constructed with the guard *h*, corresponding to the latch-guard *g*, upon the opposite side, the said two guards distant from each other greater than the diameter of the body of the cartridge, but less than the diameter of the head, the free end of said lever in connection with the operative mechanism of the breech-piece, and substantially as described.

4. In a magazine fire-arm substantially such as described, the receiver constructed with a magazine-charging opening through its side, a cover for said opening hinged to swing inward, the lever *l*, constructed with a guard, *h*, and hung upon the side of the receiver in which is the charging-opening, the said lever

constructed with a downward projection, *u*, to enter said opening forward of the cover, substantially as and for the purpose described.

5. In a magazine fire-arm substantially such as described, the carrier H, hung at the rear and so as to swing up and down in a vertical plane, said carrier constructed with its upper surface inclined upward at its rear end toward the abutment, and said carrier also constructed with overhanging sides *f f*, and with the guards *g h*, substantially as and for the purpose described.

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