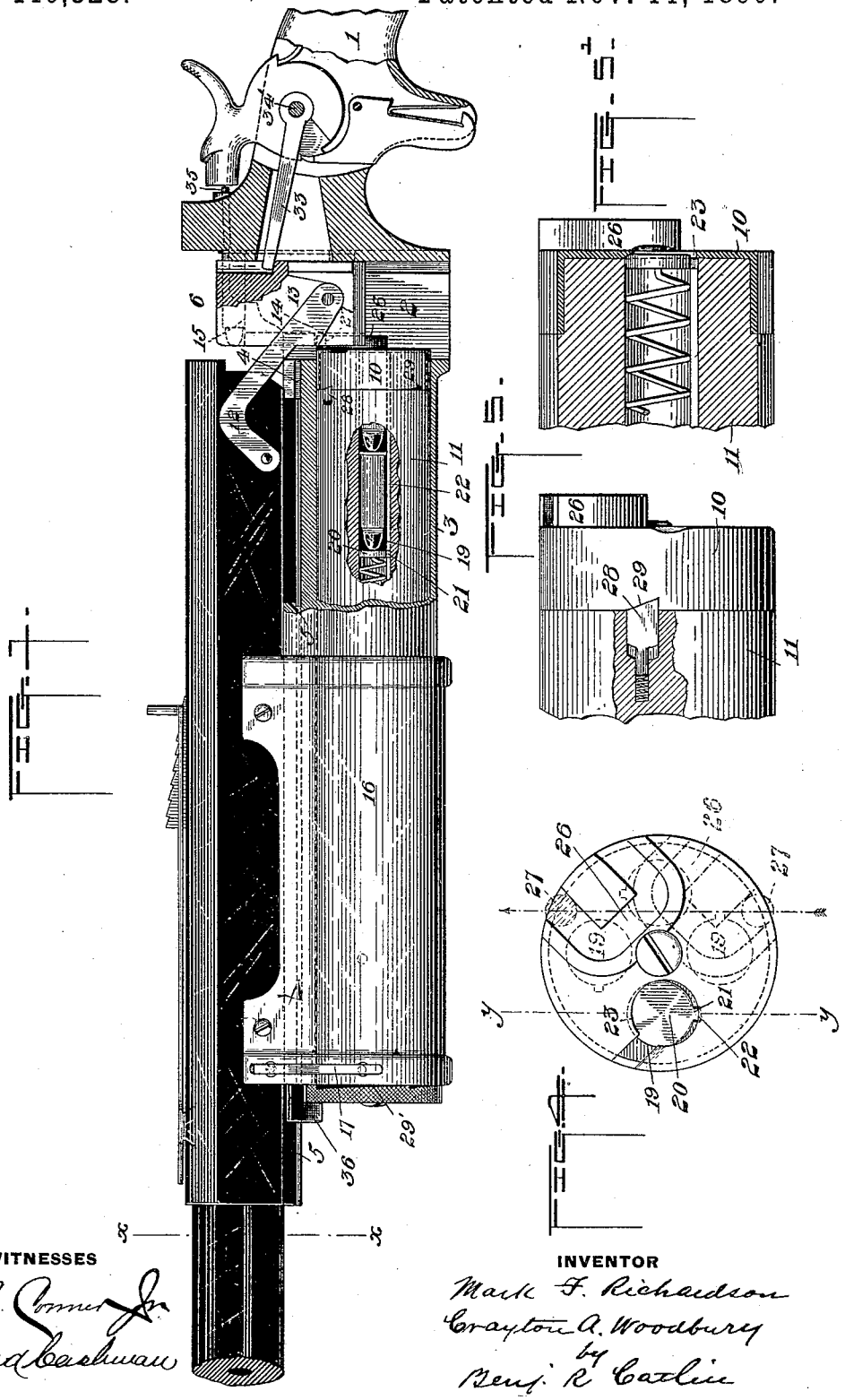
(No Model.) 2 Sheets—Sheet 1.

M. F. RICHARDSON & C. A. WOODBURY.

BREECH LOADING GUN.

No. 440,328. Patented Nov. 11, 1890.



WITNESSES

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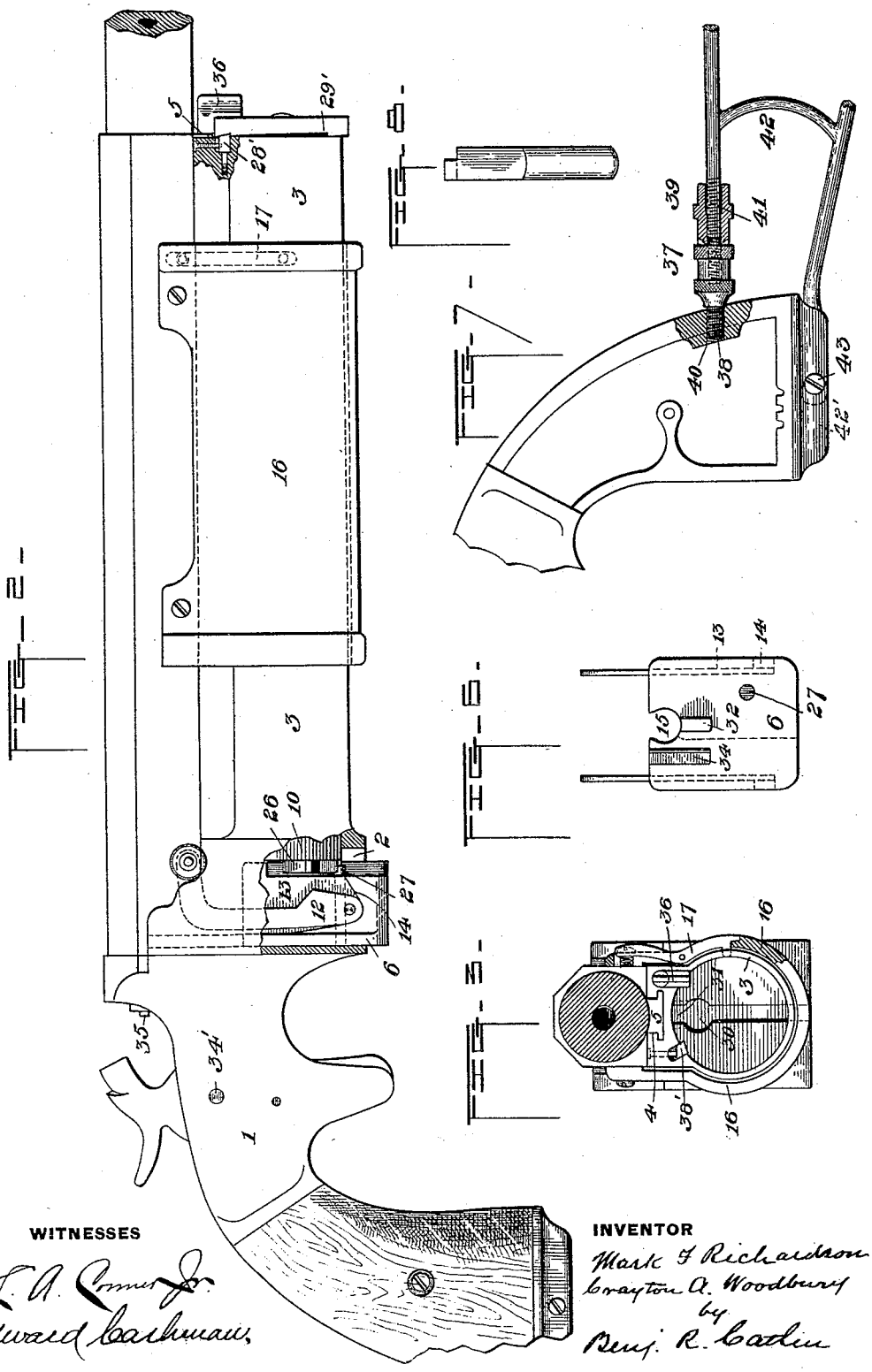

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UNITED STATES PATENT OFFICE.

MARK F. RICHARDSON AND CRAYTON A. WOODBURY, OF RUTLAND, VERMONT.

BREECH-LOADING GUN.

SPECIFICATION forming part of Letters Patent No. 440,328, dated November 11, 1890.

Application filed February 14, 1890. Serial No. 340,444. (No model.)

To all whom it may concern:

Be it known that we, MARK F. RICHARDSON, a resident of Rutland, in the county of Rutland and State of Vermont, and CRAYTON A. WOODBURY, a resident of Rutland, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Magazine-Guns; and we do hereby 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 pertains to make and use the same.

Our invention relates to improvements in magazine fire-arms; and it consists in the construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation, partly in section. Fig. 2 is an elevation of the side opposite to that shown in Fig. 1. Fig. 3 is a section on line *x x* of Fig. 1, the magazine being removed. Fig. 4 is a view of the magazine-cap, on an enlarged scale. Fig. 5 is an enlarged sectional view of magazine-cap. Fig. 5′ is an enlarged section on line *y y* of Fig. 4; Fig. 6, a rear view of cartridge-carrier. Fig. 7 is a detail of pistol-grip and skeleton stock, and Fig. 8 is a detail view of sear.

The stock of the gun is indicated by 1, and it has extending entirely through it a vertical passage 2 near its rear end and a cylindrical longitudinal bore 3 in its lower side, the rear end of which communicates with the passage or opening 2. In the upper side of the stock is a longitudinal T-shaped groove 4, in which is fitted a similarly-shaped part 5 of the barrel, the connection being substantially as shown, so that the barrel and stock are held together, but not in a manner to prevent longitudinal movement of each with respect to the other.

6 denotes the cartridge-carrier, which is fitted in the passage or opening 2 and is adapted to play vertically therein. Said carrier has in its upper side a groove or recess 15, adapted to receive a cartridge, and in the front of the carrier, near one side thereof and at a suitable distance from its bottom, is a pin 27, engaging a cam-groove 26 on the cap 10 of the magazine 11. To the carrier, near its bottom, are pivotally connected two bent arms 12—one on each side—the opposite ends of said arms being pivoted to the barrel.

13 13 denote recesses formed in the sides of the carrier to receive said arms, and 14 14 are shoulders or stops at the bottom of the recesses, adapted to limit the movement of the arms about their pivots. The construction being as set forth, it is obvious that if the barrel be slid forward on the stock the carrier will be raised by the action of the arms, and that this sliding movement will be positively arrested when the arms strike the stops 14. These stops are so located that the arms raise the carrier to the exact point necessary to make its cartridge-receptacle 15 coincident with the bore of the barrel.

16 indicates a sleeve, which loosely embraces the stock and is fastened to the barrel, and which can be used when it is desired to move the barrel on the stock.

17 is a spring catch or detent normally engaging the sleeve to the stock, but which can be readily released to permit the sliding movement above specified by compressing the spring of the detent.

11 is a magazine, which may be provided with any convenient number of cartridge-chambers 19, and is fitted to the bore 3 of the stock. Each chamber is supplied with a coiled spring provided with a cap 20, having a rib 21 adapted to fit a groove 22, formed in the wall of the chamber. This rib prevents the cap and its spring from escaping through the opening 23 in the magazine-cover 10. The springs will be compressed by the introduction of cartridges into the chambers of the magazine and will tend to throw them out whenever the opening 23 of the magazine-cover is coincident with the chamber.

25 is a notch in the cover, adapted to facilitate the passage of the head of a cartridge.

26 is a cam in the face of the magazine-cover, which receives the pin 27, attached to the carrier.

28 is a spring-actuated stop that suitably engages the notches 29 on the cover to prevent its independent movement when the magazine is rotated. A similar detent or stop 28′ on the stock is arranged to engage notches 29′, formed on the head of the magazine to

prevent its movement in one direction when it is desired to move the cap independently.

The object of the cam 26 and the pin 27 is to rotate the magazine-cap sufficiently to cover a cartridge-chamber and uncover an adjoining one, which, having been effected by them, when the carrier has been raised by the sliding of the barrel thereupon as the carrier descends rotate the magazine and its cap in reverse directions, so as to bring the opening 23 opposite the cartridge-pocket 15 when the carrier has been lowered. The stop 28 arrests the rotation of the cover in one direction and 28′ arrests the rotation of magazine and cover in the opposite direction, the extent of these movements being each exactly equal to the circumferential distance between radii passing through the centers of adjoining cartridge-receptacles. A cartridge having been brought opposite the receptacle 15 in the carrier is pushed therein by a spring and its flanged base forced into the opening 30, from which extends a groove 31 with under-cut walls adapted to embrace the base. As the carrier is raised, the cartridge is carried up, its flange sliding in the aforesaid groove being pushed by a projection 32 on the carrier. When the carrier and cartridge are raised to the level of the bore of the gun, the shell of the cartridge which may have been just previously exploded will be ejected by the same operation.

33 indicates a loosely-pivoted cocking-pin playing in a slot in the wall of the vertical passage 2.

34 is a groove in the carrier that receives an end of the pin, and the bottom of said groove bears upon the pin to actuate it to partially cock the hammer, so that the firing-pin 35 will be moved back and not interfere with the ejection of a cartridge-shell on the ascent of the fresh cartridge. The pin 33 is provided with an opening, through which screw 34′ passes, and its end lies preferably in a depression in the hammer, the sear being notched, as shown at 33′, to permit the pin to extend by it in the plane of said depression.

36 is a button pivotally secured to the stock and arranged to lock the magazine in its receptacle when desired.

37 is a device having a screw 38 and a screw-socket 39, the former being adapted to enter screw-socket 40 in a pistol-grip and the latter to receive the screw-threaded end 41 of the skeleton 42 of an extension-stock. The socket 39 and screw 41 have sufficient extent to permit the combined nut and screw-bolt 37 to be run back on the skeleton sufficiently to allow the screw-threaded end 41 to be entered in socket 40 and screwed home without disconnecting 39 and 41. The other arm of the skeleton is fitted to groove 42′ in the butt of the pistol-grip and secured by screw 43, or the parts may be secured in any convenient manner.

The operation of our improved devices may be described as follows: When the opening 23 in the cap 10 registers with the uppermost chamber of the magazine and with the recess of the cartridge-elevator, the spring in said chamber of the magazine forces the rearmost cartridge into the recess and causes its base to enter opening 30, ready to become engaged in the groove 31. When the barrel is moved forward, the carrier is caused to move upward, and raises the cartridge in the groove 31 to the level of the bore of the barrel, the base of the cartridge sliding in the groove and being retained therein by the under-cut walls thereof. As the carrier moves, it causes the magazine-cap to rotate a quarter of a revolution to bring the opening 23, opposite the next magazine-chamber. When the barrel is returned to its rear position, the carrier is lowered, and the magazine, together with the cap, is turned a quarter of a revolution and a fresh cartridge pushed into the carrier, the cartridge previously carried up being held in proper position by the flange of its base in the groove until it is entered in the barrel ready to be fired. Each ascending cartridge ejects the shell of its predecessor, as explained, the firing-pin being pushed out of the way, the hammer having been put at half-cock by the pin 33.

Having thus described our invention, what we desire to claim and secure by Letters Patent is—

1. The combination of the gun-barrel and its stock having a longitudinally-sliding connection and the sleeve embracing the stock and fastened to the barrel, substantially as described.

2. The combination of the gun-barrel and its stock having a longitudinally-sliding connection, the sleeve embracing the stock and fastened to the barrel, and a spring-detent connecting the sleeve and stock, substantially as described.

3. The magazine having a cartridge-chamber provided with a groove in its wall, a spring located in said chamber and provided with a a cap having a rib fitting said groove, and a magazine-cap having an opening and a notch to facilitate the passage of a cartridge, the rib being adapted to prevent the passage of the spring and its cap through said passage, substantially as described.

4. In a gun, the combination of the cartridge-carrier and means for moving it vertically to bring its cartridge-receptacle in coincidence with the bore of the gun with the cocking-pin extending into the path of the carrier and also engaging the hammer, and said hammer, whereby the latter is partially cocked to remove it from the firing-pin that the latter may be moved from the path of the carrier, substantially as set forth.

5. The combination of the grooved stock, the barrel shaped to fit the stock-groove and move lengthwise therein, the cartridge-carrier movable in a vertical passage at the rear of the barrel, and the bent arms pivotally secured to both the carrier and the barrel,

whereby the lengthwise movement of the barrel in the stock raises or depresses the carrier, and means for operating the barrel, substantially as described.

6. The gunstock provided with a passage to receive the cartridge-carrier and having a groove with an opening to receive the base of a cartridge, in combination with the cartridge-carrier movable in said passage and provided with a projection extending into said groove and adapted to lift or support the base of the cartridge when the carrier rises, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

MARK F. RICHARDSON.
CRAYTON A. WOODBURY.

Witnesses:
HENRY H. SMITH,
DANIEL P. PEABODY.