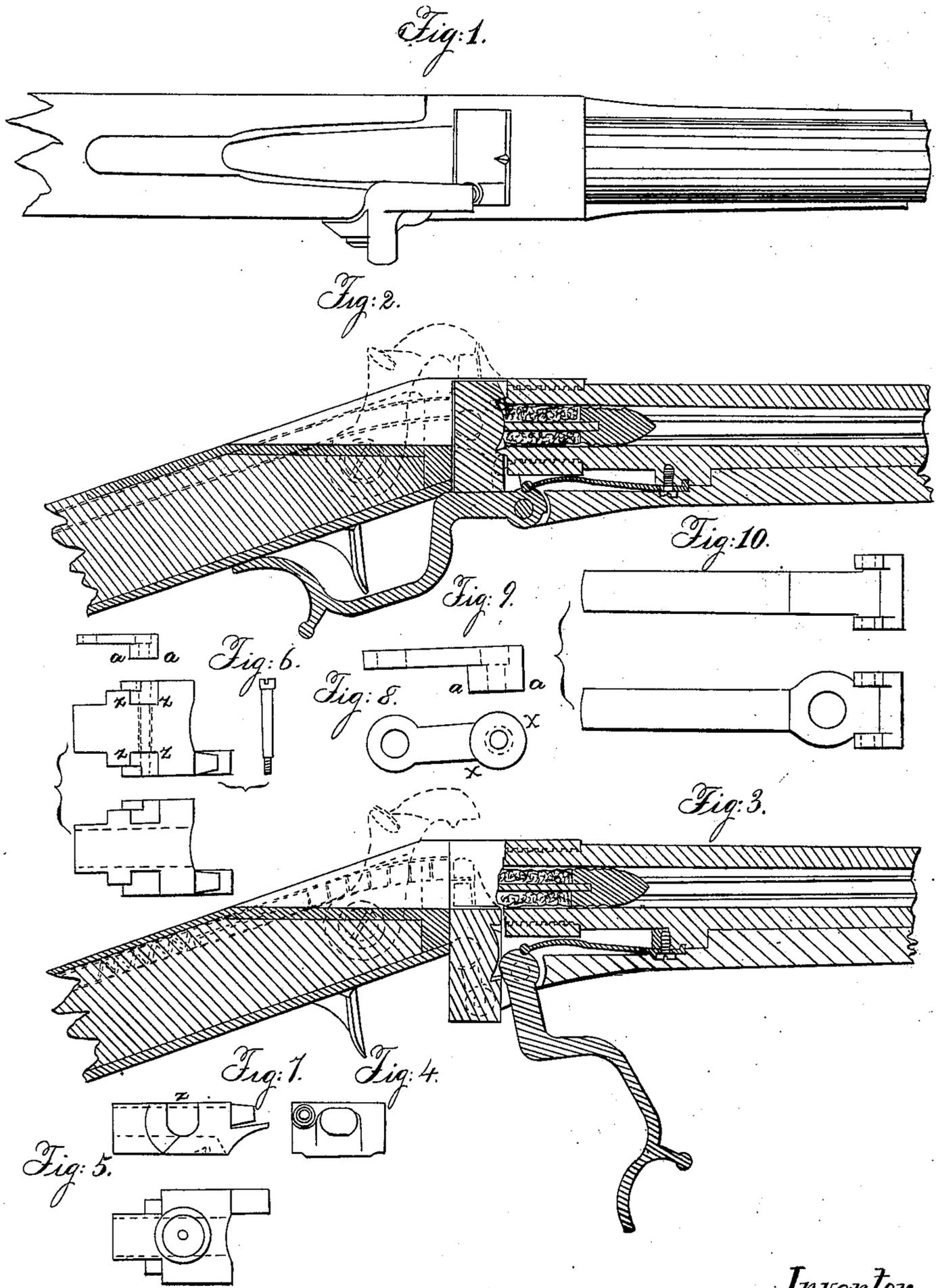


W. M. STORM.
Breech-Loading Fire-Arm.

No 24,414.

Patented June 14, 1859.



Witnesses.
John Whiting
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WILLIAM MONT STORM, OF NEW YORK, N. Y.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 24,414, dated June 14, 1859.

To all whom it may concern:

Be it known that I, WILLIAM MONT STORM, of the city, county, and State of New York, have invented certain improvements in what is known as "Sharp's Breech-Loading Fire-Arms," of which the following is a full and exact description.

In the said arm as now constructed the breech plug or wedge, in the act of opening or closing the breech, has to bear constant abrasion from its fitting snugly in front and rear in the mortise or receptacle in which it moves. This abrasion, aided greatly by the powder dirt deposited on its face where it fits against and closes the rear of the barrel, soon destroys the tightness of the joint, and the weapon then "spits" gas. Moreover, the wedge or breech-plug is frequently caused to adhere in its seat from rust or dirt to such an extent that the lever connecting with and operating the breech-plug is moved with great difficulty. I remove this defect by so constructing and connecting the lever and breech-plug through the agency of a link or links of different construction from those now employed in this weapon that in closing the breech the wedge moves up to its place loosely and without friction or resistance, even when foul or rusty, and then is moved forward horizontally (a slight distance) and pressed and firmly held against the rear of the barrel. Again, the "gas-check" of steel or other hard and elastic metal, as now employed is intended to tighten the joint by moving forward; but as it is behind the charge it does not so act sufficiently instantaneous and simultaneous with the explosion. I remedy this difficulty by the employment of a gas-check of plastic metal, that the explosion may tighten and impress it upon its seat on the rear of the barrel by the actual expansion or stretching—*i. e.*, plasticity—of the metal itself, no movement of it forward, as a whole, being necessary. I make these gas-checks of lead, cast in a corresponding recess formed in the bullet-mold belonging to the weapon, and their fitting in the wedge or breech-plug is such that they may be removed and replaced by fresh ones in a moment without trouble or cost. This is not necessary, however, until after each has endured several hundred fires. Another defect as relating to the use of this arm is that as the wedge cuts off the "tail" of the cartridge

a quantity of powder is left upon the top of the wedge, which must be thrown or blown off before firing, as otherwise it would be ignited from the fire of the cap and flash in the face of the manipulator. I avoid this by so arranging the wedge or breech-plug that a hole may be made through it from top to bottom, through which (if the wedge is arranged to cut the tail of the cartridge) the aforesaid waste powder will fall to the ground. If on shipboard, in which case it would fall upon the deck—a defect urged as a very objectionable feature in these arms for naval use—a plug can be inserted in the bottom of said hole through the wedge, and when the waste powder accumulates to a sufficient extent after repeated discharges, if ignited from the cap, it will flash directly upward and not laterally, and thus not in the least degree annoy the manipulator. Another defect as relating to the use of this arm is that the thumb-piece or horn of the hammer interferes with and sometimes injures the hand in the act of inserting the cartridge in haste. I avoid this by making the head of the hammer "crutch-formed," the horn projecting outward laterally. Another inconvenience arises from the fact that, as the chamber or receptacle in the rear of the bore or barrel for the cartridge becomes a little clogged by repeated firings, it is difficult to press the cartridge home, it being held by the flexible end or tail; and, further, in such cases a too large portion of the charge is cut off. The first difficulty may in a great measure be obviated by the employment of a loose stem or stick projecting from the center or base of the ball and within the cartridge and extending its entire length, as seen in the drawings. This gives rigidity to the cartridge, so that it may bear the pressure necessary to thrust it home without bursting the paper; and when such a cartridge is employed, the front of the wedge or breech-plug at its upper and forward corner may be so rounded off opposite the bore of the barrel that it will wedge against and press in the slightly-projecting rear of the cartridge without cutting it off, which would obviate the difficulty arising from the fact that the quantity cut off in the present method produces a material variation in the charge of powder, and thus in the force or accuracy of fire. If the wedge presses in the tail of the

cartridge entire, as there would in such case be no powder spilled, the hole through the wedge before described would be unnecessary. The employment of the perforated wedge arranged to shear off a trifle from the tail of the cartridge is, however, the most convenient method of the two, all things considered.

Figure 1 on the drawings is the top view of a portion near the breech of a Sharp's rifle as improved by me. Fig. 2 shows the same in central longitudinal section with the breech closed; Fig. 3, the same with the breech open. Fig. 4 is a top view of the perforated wedge or breech-plug; Fig. 5, the face view of same toward the bore of the barrel; Fig. 6, the reverse side of the same. Fig. 7 is a side view of the same. Figs. 8 and 9 are enlarged views of one of the links (two counterpart ones being employed) that connect the wedge or breech-piece with the lever-guard.

The "bosses" *a a* on the links project into corresponding recesses, *z z*, in the wedge or breech-piece.

It will be seen by the face view, Fig. 8, of the link that the boss thereon has two cam projections, *x x*, for a purpose presently described. The links just mentioned need not necessarily be attached to the breech-piece.

The dotted lines, Fig. 2, show the position of the links connecting the breech-piece and "lever-guard" when the breech is closed. When the links are in this position, the cam projections *x x*, before mentioned, jam one against the recoil-bearing behind the breech-piece, and the other forward against the bottom of the recess *z* in each side of the wedge, and in which the bosses *a* on the links fit. Thus the breech-piece is jammed firmly forward against the rear of the bore of the barrel, and so held. It will be seen on the reverse motion of the

lever, in opening the breech, that the breech-piece will be released from the pressure of the cam projections before there is any movement of the breech-piece itself, and then, the breech-piece being a loose fit in its receptacle, there is no abrasion, and can be no "sticking fast" of the breech-piece, however rusty or foul.

In Fig. 3 the dotted lines show the position of the links, &c., when the breech is open.

It will be observed that the relative positions of the lever and breech-piece are such, when the breech is closed, that the lever closes the bottom of the hole through the wedge. The lever may therefore be perforated, (see Fig. 10,) so that the powder cut from the tail of the cartridge may fall freely through.

The red lines in Fig. 3 show an arrangement by which the weapon may be made self-capping.

Having now fully described my improvements, what I claim, and desire to secure by Letters Patent, is—

1. Such an arrangement of the links, as described, and their connection with the breech-piece and lever that they shall jam forward and firmly hold the former against the rear of the bore of the barrel after it has ceased its motion transversely to the latter, and, vice versa, release the breech-piece (in opening the breech) before its movement commences.

2. The perforated breech-piece, in the manner and for the purpose described.

3. Arranging the horn or head of the hammer in the manner and for the purpose described.

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Witnesses:

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