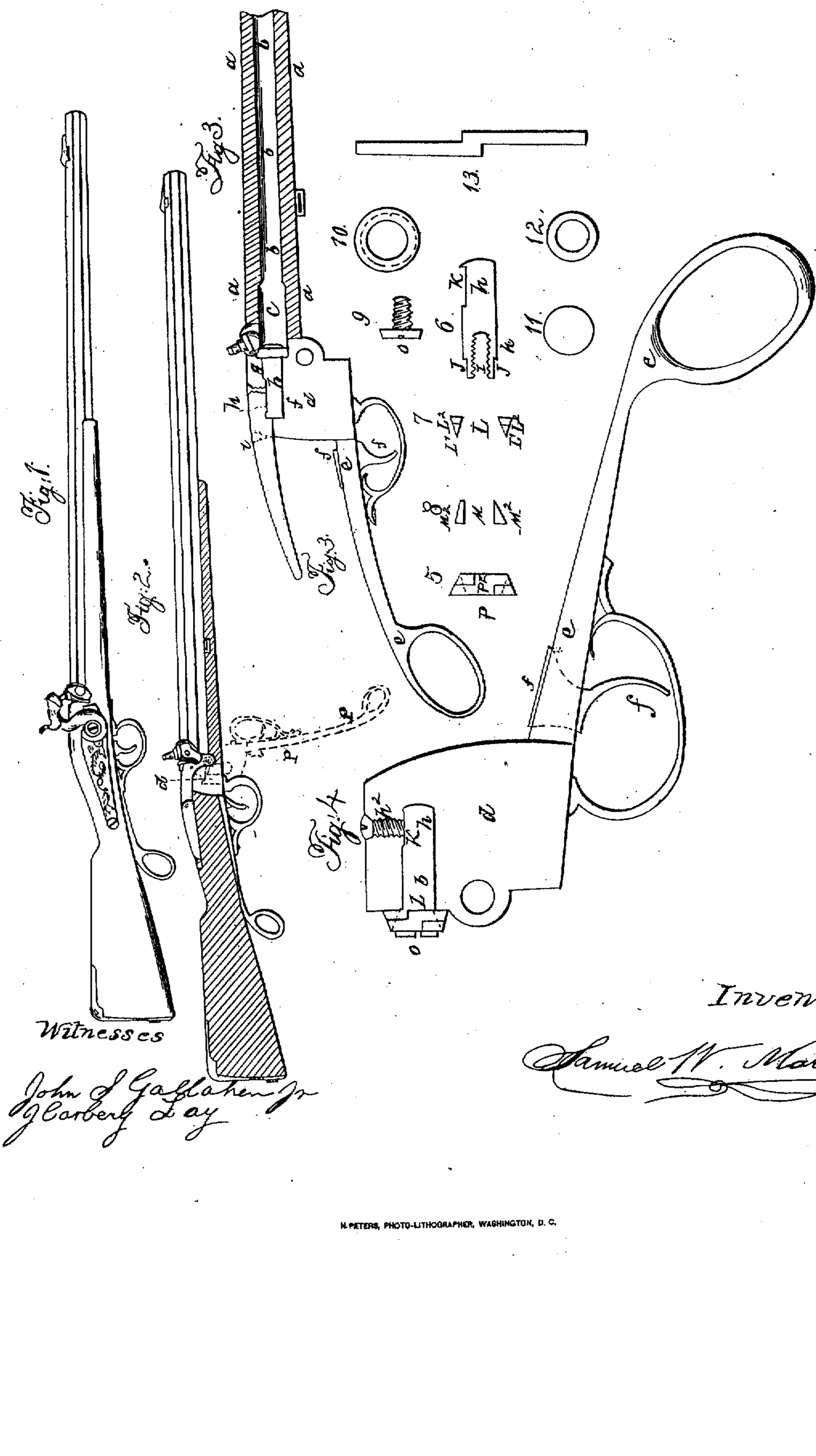
S. W. MARSH.

Breech-Loading Fire-Arm.

No. 26,362. Patented Dec. 6, 1859.



UNITED STATES PATENT OFFICE.

SAMUEL W. MARSH, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **26,362**, dated December 6, 1859.

To all whom it may concern:

Be it known that I, SAMUEL W. MARSH, of Washington city, in the District of Columbia, have invented and made certain new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 represents a rifle. Fig. 2 is partially a longitudinal sectional view of the rifle and stock with the hinged or jointed breech thrown down or opened out, as indicated by the dots. Fig. 3 represents a fragment of the barrel in section with the jointed or hinged breech and the breech-pin. Fig. 4 is a full-size representation of the hinged or jointed breech. Figs. 5, 6, 7, 8, 9 represent in detail the parts of the improvements hereinafter more fully to be explained.

The nature of my improvements consists more especially in the peculiar construction of the breech-pin of a fire-arm designed to prevent any escape of gaseous matter at the point of connection of the breech and the butt-end of the barrel.

In Fig. 3, *a a a a b b b c* represent a sectional fragmental part of a barrel of a rifle without the stock part attached. At *d* is indicated the head or jointed part of the breech, which is hinged onto the butt-end of the barrel. *e e* is the lever part of the breech, and *f* the trigger. This head part of the breech is formed with a bore or cavity, *g g*, of suitable dimensions, into which is fitted to correspond an adjustable breech-pin, *h h*, the construction of which pin is as follows:

In Fig. 6 is represented a cylindrical pin, *h h*, formed with a bore having a thread cut therein, as at I, a shoulder formation, J J, and an oblong flat place filed near the butt-end, as indicated at K.

At Fig. 7 is indicated a sectional view of an expanding ring or collar like formation of required size, and shaped with an inside bevel or slope or conical bore, L, and an outside sloping or bevel circumference, L^1 L^1, the sloping outer and inner circumferences converging from one side or edge of the ring at the same angle and meeting together, forming a sharp edge, as at L^1 L^1, of the diameter indicated at 11. This expanding ring or collar has a rectilinear split around the circumference entirely through the thickness of metal, almost severing the ring into two equal parts, except a small amount of uncut metal, as shown at P^1 P^2, Fig. 5, thus forming an expanding slip-ring which, if opened out, would present the elongated shape as in Fig. 13. This ring or collar, Figs. 5, 6, 10, 11, I term the "female expanding ring or collar." In Fig. 8 is indicated a second or smaller non-expanding ring with straight bore M, fitted to correspond with the end J J of the pin *h h*, and shaped with an outside conical or sloping circumference, M^2 M^3, the full size or greatest diameter indicated at 12, and conforming to the inner sloping circumference of the expanding female ring, Fig. 7.

At *o*, Fig. 9, is represented a screw with suitable flat head and bevel edge.

The four specified parts being formed as required, the male ring is inserted into the conical bore L of the female expanding ring 7, thus forming a compound collar or ring, which is fitted over the hollow end J J of the breech-pin *h h*, when the screw O, Fig. 9, is screwed into the end L of the pin, thus forming a compound expanding detachable-headed breech-pin, as shown at *h h*, inserted in the cavity of the jointed lever-breech, Fig. 4. This pin is prevented from falling out of the cavity by the holding-screw h^3, extending down into the niche K, admitting at the same time of play or adjustability in the cavity of the jointed lever-breech.

The jointed breech *d* is attached to the butt-end or breech of the barrel of the gun, as in Figs. 2, 3. The end of the bore of the barrel is beveled to correspond in shape with the head L of the pin *h h*.

In the use of my improvements the hinged or jointed lever-breech is opened or turned down, as indicated at the dots P P, Fig. 2. The cartridge is inserted in the opening or cavity formed at the end of the barrel by the turning down of the lever-breech. The cartridge or charge thus being deposited in the cavity, the lever-breech *d e e* is thrown back in position as indicated in Fig. 3, in the act of which the head of the pin *h h* forces the cartridge or charge into the bore of the barrel at *c*, Fig. 3, when the charge may be exploded.

The advantages which I claim for my improvements are as follows: By constructing an adjustable breech-pin with a screw-like connection part, O, Fig. 9, combined with a detachable head-connection or male ring, Fig. 8, and an expansive adjustable female ring or collar, Figs. 5, 7, the female ring is made more or less adjustable to the bore of the barrel through the agency of the tightening-screw O, Fig. 9. Thus, should the female expansive ring lose any of its temper and become less flexible, and thereby not fit closely to the bore of the barrel, and not of itself perform the desired office, the tightening-screw O, Fig. 9, and wedging head or male ring, Fig. 8, press or wedge up against the inner circumference of the female ring or collar, and thus expand the circumference thereof outward, making the connection air-tight. Again, too, I dispense with a second split expanding ring, and instead make one ring perform the office that heretofore has required two or more expanding rings. In a patent granted to B. F. Joslyn, July 1, 1856, a solid cone-shaped pin is employed with two split rings placed one against the other, instead of one within the other, and consequently the rings must necessarily of themselves be formed to fit as tight as possible to the inside of the breech part of the barrel. Then, again, the disadvantage in using two or more split or expanding rings, as in Joslyn's patent, is that there is great liability of the rings not possessing the same inherent flexibility or temper, in which case the perfect closing of the cavity or chamber in rear of the barrel surrounding the rings could not be brought about. Joslyn's rings as they are applied relative to each other do not possess in themselves any accommodating adjustability, and it is with great difficulty the two rings can be tempered so as to act with a uniform simultaneous flexibility, expansive and contractile. None of such objections and imperfections of operation pertain to my compound expanding detachable-headed breech-pin.

Having described the nature, construction, and operation of my improvements, and having shown the difference between B. F. Joslyn's solid-headed double-ring breech-pin and my improvements, what I claim as new, and desire to secure by Letters Patent of the United States, is—

The construction and application of a detachable-headed breech-pin, *h h* I J K, Fig. 6, with a split female expanding ring or collar, L, Fig. 7, and a non-expanding male collar or ring, M, Fig. 8, and a detachable adjusting screw-head, O, Fig. 9, forming a compound expanding detachable-headed breech-pin, as shown complete at *h h* L O, Fig. 4, substantially as described and set forth.

SAMUEL W. MARSH.

Witnesses:

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