

*N<sup>o</sup> 45,912. Patented Jan. 17, 1865.*

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CARTRIDGE-RETRACTORS FOR MANY-CHAMBERED FIRE-ARMS.

Specification forming part of Letters Patent No. 45,912, dated January 17, 1865.

### *To all whom it may concern:*

Be it known that I, WILLIAM C. DODGE, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Fire-Arms; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, which several figures will be hereinafter explained.

Similar letters indicate corresponding parts in each of the figures.

My invention relates to that class of fire-arms denominated "many-chambered," and in which metallic cartridges are now generally used.

It consists primarily in the simultaneous and rapid removal therefrom of the cartridge cases or shells, and in certain devices adapted to produce that result.

In such arms as usually constructed the cartridge-cases are removed singly, or one at a time, and in most cases by means of a rod or bolt separate or detached from the arm. In the great majority of revolving arms the cylinder has also to be removed or detached from the stock or frame to permit the removal of the cartridge-cases and the reloading of the arm. It is to remedy all these difficulties or objections that my invention is intended.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The principal device used in my invention is the retractor, which removes the cartridge-cases. This retractor consists of a metallic plate of any suitable form to adapt it to the arm to which it is to be applied, and which is so constructed as to fit snugly against or within that end of the barrels or cylinder in which the cartridges are inserted. It may be as simple disk, as shown at *a*, Figure 1, in which case it will be provided with perforations corresponding in number, size, and location with the chambers of the arm; or it may be in the form of a "spider" or smaller disk, with portions of its periphery cut away to correspond with the chambers, as clearly shown in Fig. 5. In the former case it will fit snugly against the flat end of cylinder B when in place. In

the latter case the end of the cylinder or barrels will be so recessed as to cause the outer face of *a* to come flush with the surface of the end of the cylinder or barrels, as shown in Figs. 2 and 3. This plate *a* is provided with a central stem passing into or through a hole bored longitudinally in the center of the cylinder or barrels. This stem *b* is clearly shown in Figs. 2 and 3, and its office is to support the plate *a* and guide it in its operations. On this stem *b* is usually mounted a spiral spring, *c*, for the purpose of automatically returning the plate *a* to its position when it has been pushed or drawn outward for the removal of the cartridge-cases.

Fig. 2, which is a longitudinal vertical section of a portion of the barrel and frame of a revolver with its cylinder B attached, shows the retractor *a*, with its stem *b* and spring *c* applied, with the end of the stem protruding from the front of the cylinder. This method of applying it enables the retractor *a* to be operated by pressing against the end of the stem *b* or the nut *d* thereon, as clearly shown. This represents my invention applied to a cylinder which is loaded in the usual manner at its rear end.

Fig. 1 is a perspective view of a revolver with my invention applied. In this case the cylinder B is loaded at its front end; and in order to permit the ready application and use of my invention, the barrel A is so hinged or pivoted that it can be swung to one side, out of the way of the retractor *a*, as clearly shown. In this case the cylinder B is secured in any suitable manner to the recoil-plate E or rear portion of the frame. The stem *b* may be made to protrude as in Fig. 2, but at the rear, instead of the front end of the cylinder; or it may be incased within the cylinder, as shown in Fig. 3, which will be hereinafter explained.

Where my invention is to be applied to revolvers whose cylinders are loaded at the rear the frame C, with the barrel A and cylinder B attached thereto, is to be so pivoted or hinged that it can be swung round or moved so as to bring the rear end of the cylinder clear of the recoil-plate E or other portion of the frame or stock. This, however, is only necessary in those cases where it is desired to operate the

retractor without detaching the cylinder from the frame. It is obvious that the retractor may be applied to all cylinders which are to be detached from the frame without thus hinging or pivoting the parts.

Fig. 3 represents a side elevation of a four-barreled fire-arm with the front broken away for the purpose of exhibiting the method of applying my invention to many-chambered arms whose barrels do not revolve.

A represents the body of the arm, of which *o* are the barrels, usually bored in a single solid piece of metal. In the center, between the barrels, is bored a hole, *k*, which extends a proper distance to admit the introduction of the stem *b*, with its spring *c*, in case the latter is deemed necessary. A hollow nut, *y*, having a screw-thread cut on its periphery, is first slipped on the stem *b*. Then the spring *c* is placed on the stem and secured thereon by means of the nut *d* on the end of the stem *b*. This nut *d* is made of such a size as to fit accurately and yet move readily within the hole *k*. The hole in the nut *y* is also made to correspond in size with the stem *b*. By these means the stem *b* and plate *a* are accurately guided in their movements. After the nut *y*, spring *c*, and nut *d* have been placed upon the stem *b* the nut *y* is screwed into its seat at the mouth of hole *k*, whereby the retractor, with its stem and spring, is secured in its proper position and prevented from becoming detached. The opposite edges *z z* of the retractor-plate *a* are slightly roughened, and, if desired, may be allowed to project slightly beyond the sides of the barrels, as shown in Fig. 4, for the purpose of more securely and readily grasping it between the thumb and finger for operating it.

In all cases the stem *b* may be provided with a feather, and its seat with a corresponding groove, which will so guide the retractor-plate *a* in its return, after having been shoved or drawn out, as to cause its perforations or recesses to exactly coincide with the chambers of the arm; or any other mechanical device may be used, if desired, for the same purpose—as, for instance, one or more pins or studs may be secured to the under or inner surface of *a* and made to work in corresponding holes in the cylinder or barrels, or in grooves in the sides thereof.

It is also obvious that instead of the central stem, *b*, two or more stems may be attached to the plate *a*, near its outer edges, and made to work in corresponding grooves or holes in or near the periphery of the cylinder or barrels.

It is also further obvious that the plate *a* may be made in two or more parts, and so applied as to remove but a portion of the cartridge-cases at a time; but that would be but a modification of my invention, and one which I do not deem desirable, as it would increase the number of parts and consequently the cost of construction, and at the same time lessen the ease and rapidity of its operation.

In case the disk *a*, as shown in Fig. 1, is used, its periphery may be milled or otherwise roughened, or proper recesses may be cut in the sides of the cylinder or barrels, at the end where the plate *a* is applied, for convenience in grasping it when it is desired to operate it by drawing instead of pushing it out.

The operation is very simple, so much so as scarcely to require further explanation. After the arm has been discharged the cylinder or barrels is so moved in relation to the other parts of the arm as to expose its end containing the cartridge cases, when, by either pushing or drawing the retractor-plate *a* outward, all the cases, whatever their number, are simultaneously and instantly ejected from the arm. By this means the arm is instantly prepared for reloading with the least possible loss of time, without detaching any of its parts from the frame or stock, and without the use of any separate rod, bolt, or other part for that purpose.

The advantages to be derived from this improvement in fire-arms are manifold. In the first place, as revolving arms are now constructed, the soldier or person using them is unable to discharge them more times than they contain loads, for the reason that the process of removing the cartridge-cases is so slow and tedious, and for the further reason that the cylinder has generally to be detached entirely from the arm, and some separate device used for the removal of the cartridge-cases. So great is the difficulty of performing this operation in the case of mounted men, who more than all others use revolving arms, and so imminent is the danger of loosing or dropping some of the detached parts, that usually in battle no effort is ever made to reload the arm after it has been once emptied of its charges; and in case the arm is to be used in the dark, as often happens both with soldiers and civilians, the difficulties here mentioned are greatly increased, whereby valuable lives are oftentimes lost and the efficiency of the arm greatly lessened. By my invention all these difficulties are at once removed, the efficiency and value of the arm largely increased, and that, too, without adding perceptibly to its weight, bulk, or expense. The invention is simple, readily applied, not easily injured or disarranged, and not interfering in the least with the compactness or beauty of the arm.

I do not intend to limit myself to the mechanical details or devices herein described, as it is obvious that they may be greatly varied or others substituted without departing from the spirit of my invention; but,

Having thus described my invention and various methods of applying and utilizing the same, what I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The ejection simultaneously of two or more cartridge-cases from a many-chambered

fire-arm in the manner and by the means substantially as herein set forth, whether the chambers be stationary or revolving, and whether loaded at the front or rear.

2. The retractor *a*, provided with the stem *b* and spring *c*, or their equivalents, in combination with the cylinder or barrels of a many-chambered fire-arm.

3. Providing the retractor *a* with a stem

which is made to extend through the cylinder or barrels and project at either the front or rear end thereof, for the purpose of being operated as shown and described.

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Witnesses:

R. D. O. SMITH,  
ANDREW WHITELEY.