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UNITED STATES PATENT OFFICE.

DANIEL B. WESSON AND CHARLES A. KING, OF SPRINGFIELD, MASS.

IMPROVEMENT IN REVOLVING FIRE-ARMS.

Specification forming part of Letters Patent No. 128,991, dated July 16, 1872.

To all whom it may concern:

Be it known that we, DANIEL B. WESSON and CHARLES A. KING, both of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Revolving Fire-Arms; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a vertical longitudinal section of the barrel and a portion of the frame of a revolving fire-arm having our invention applied. Fig. 2 is a side view of our invention. Fig. 3 is a plan view of the top. Fig. 4 is a reverse plan view. Fig. 5 is a side view, showing the spring-hook released from the cam. Fig. 6 is a plan view of the spring-hook. Fig. 7 shows a plan and sectional view of the cam or disk for securing the extractor-collar to the barrel; and Fig. 8 shows a plan and side view of the spring used to give the proper friction to the said disk.

Our invention relates to a method for preventing the cylinder of a revolving fire-arm, known in the market as the "Smith and Wesson Revolver," from becoming displaced in the operation of forcing out the empty cartridge-shells from the cylinder; and it consists of a spring or piece secured to the upper and rear part of the barrel, or within a recess made therein, said spring or piece having a hook or point at its rear extremity, which projects downward; and said spring or piece is moved in a vertical direction with reference to the arm, by means of a cam, which is pivoted to the rear part of the barrel and just above the spring, so that the projecting point or hook thereon may be thrown down into the rear of the cylinder to prevent the cylinder from moving to the rear when extracting the empty shells; or said point may be thrown upward from the rear of the cylinder by the movements of said cam. Our invention also consists of a revolving disk having an annular flange thereon, which disk is pivoted to the arm beneath the barrel, said flange having a notch or groove made therein, so that by inserting the extractor in its socket and down past the groove or notch and then moving or rotating the disk upon its pivot, its annular flange may enter a groove made in the movable collar upon the spindle of the extractor and thus prevent the extractor from being entirely thrown out, and, in connection with a spring upon said spindle, causing the extractor to move quickly back to its position after forcing out the empty cartridge-shells from the cylinder.

That others skilled in the art may be able to make and use our invention, we will proceed to describe its construction and mode of operation.

In the drawing, A represents the upper and rear part of the barrel of the arm terminating in the two projections *x*, as seen clearly in Figs. 2, 3, and 4, having a space, D′, between, shown more clearly in Fig. 4, and the latch D is secured to the rear part of the barrel by means of the two ears D″, which extend forward upon the outside of each part *x*, and which are pivoted thereto by means of the pivot *b*. A curved slot, *i*, is made in the upper and rear part of the barrel, and a pin, *i′*, is firmly secured in the ears D″, which pin extends across from one ear to the other and operates in said slot whenever the latch is raised or depressed. A recess, *e*, is made in the lower side of the part A, and a spring-hook, *s*, is secured therein by means of the screw *s′*. A cam, *a*, is pivoted between the parts *x* by means of a pin, *c*, extending through said parts, and the upper part of said cam may form the back sight of the arm, as shown at *a′*, the lower part of the cam impinging against the spring *s* and forcing its point or hook *f* at the end down to the rear of the cylinder. A small bent spring, *o*, is placed within the recess *e* above the spring *s*, the lower arm of the bent spring resting upon the spring-hook *s*, and the upper arm bearing against the small pin *i′*. This bent spring operates to keep the rear end of the latch always depressed, when the rear end of the barrel is locked to the post B upon the frame. A hole, *z*, is made beneath the barrel and parallel with it, of a size to admit the spindle *v′*, having the spiral spring *v* thereon, said spring bearing against the collar *n″*, which is free to slide upon the spindle *v′*. Immediately beneath the longitudinal hole *z*, and in the lower side of the arm, is made an annular recess, *m*,″ into which is secured, by means of

the screw or pivot m, the disk m'. This disk, shown in plan and section in Fig. 7, has an annular flange, n', fitting into said annular recess m'' in such manner as to turn or rotate upon its pivot m. A notch or groove, n'', is cut out of the annular flange n', and a friction-spring, g, shown in Fig, 8, is secured beneath the disk m', so that said disk shall be prevented from turning too easily when secured in place.

The operation of our invention is as follows: When the upper part of the cam a is in a horizontal position, with the back sight a' in proper position upon the barrel to be used, the lower part of said cam impinges upon the top of the spring-hook s, pressing its point f down in the rear of the cylinder C, whether the barrel A is locked to the frame or not, so that the cylinder cannot be moved to the rear; but if it is desired to move the cylinder, the back sight a' is thrown upward either with the finger or some convenient instrument, so that the lower part of the cam shall be moved off from the spring-hook s; and the spring or piece is so formed and attached to the part A that when it is released from the cam its free end immediately springs upward, raising the point or hook f from behind the cylinder.

The operation of the cam does not interfere with the movements of the latch D, as the lower arm of the bent spring o rests upon the piece s, while the upper arm bears against the pin i' and operates to keep the latch D in a horizontal position or parallel with the barrel.

The disk m' is secured to the arm beneath the barrel, and if it is turned upon its pivot into a position with the notch or groove n'', directly beneath the hole z, the cylinder C and extractor may then be easily removed from or put into place; but if the cylinder and extractor are put into place with the annular groove in the collar n directly over the annular flange n', and the disk m' be then turned upon its pivot so that the flange n' enters the groove of the collar n, then the cylinder and extractor cannot be removed; and when the extractor is forced out, in the operation of removing the empty shells from the cylinder, it is brought quickly back into place again by the operation of the spiral spring v, which bears against a collar or shoulder upon the extreme end of the rod or spindle v'.

The operation of this device is similar to that produced by the screw now used, which passes through the lower part of the arm and into the annular groove of the collar n; but the disk as herein described is not so liable to work loose, and is much more convenient to operate, as it may be turned with the thumb and finger either way; whereas the screw requires the use of a screw-driver. A part of the periphery of the disk may be checked or made rough, if desirable, so that it may be grasped more firmly in turning it.

The form of the cam may be varied, of course, without departing from the principle of its operation. Instead of using the form of the cam as shown at a, a hole might be made through the parts x, and a screw or pin formed like a cam by having one side made flat, or a portion removed, so that by turning the screw or cam a part of the revolution the spring-hook s would be depressed or relieved, as the case might be.

This might be equally as operative as the form of cam shown in the drawing, and we do not, therefore, desire to be limited to this particular form of cam; and we believe we are the first to have used a hook attached to the rear part of the barrel for the purpose of retaining the cylinder in place while expelling the empty cartridge-shells therefrom.

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

1. The spring-hook s, secured to the rear part of the barrel A, and operated by a cam, for the purpose of securing the cylinder C to the barrel while expelling the empty shells, substantially as set forth.

2. We claim the pin i', in combination with the barrel-catch D and the bent spring o, substantially as described, for the purpose of holding the catch closed.

3. We claim the disk m' with the flange n' thereon, in combination with the grooved collar n, for the purpose of securing the extractor to the barrel, as described.

4. We claim, in a revolving fire-arm, the hooked piece s secured to the rear part of the barrel A, in combination with the cylinder C, and the ejector for the purpose of facilitating the ejection of the empty shells.

DANIEL B. WESSON.
CHARLES A. KING.

Witnesses:
T. A. CURTIS,
CLARENCE BUCKLAND.