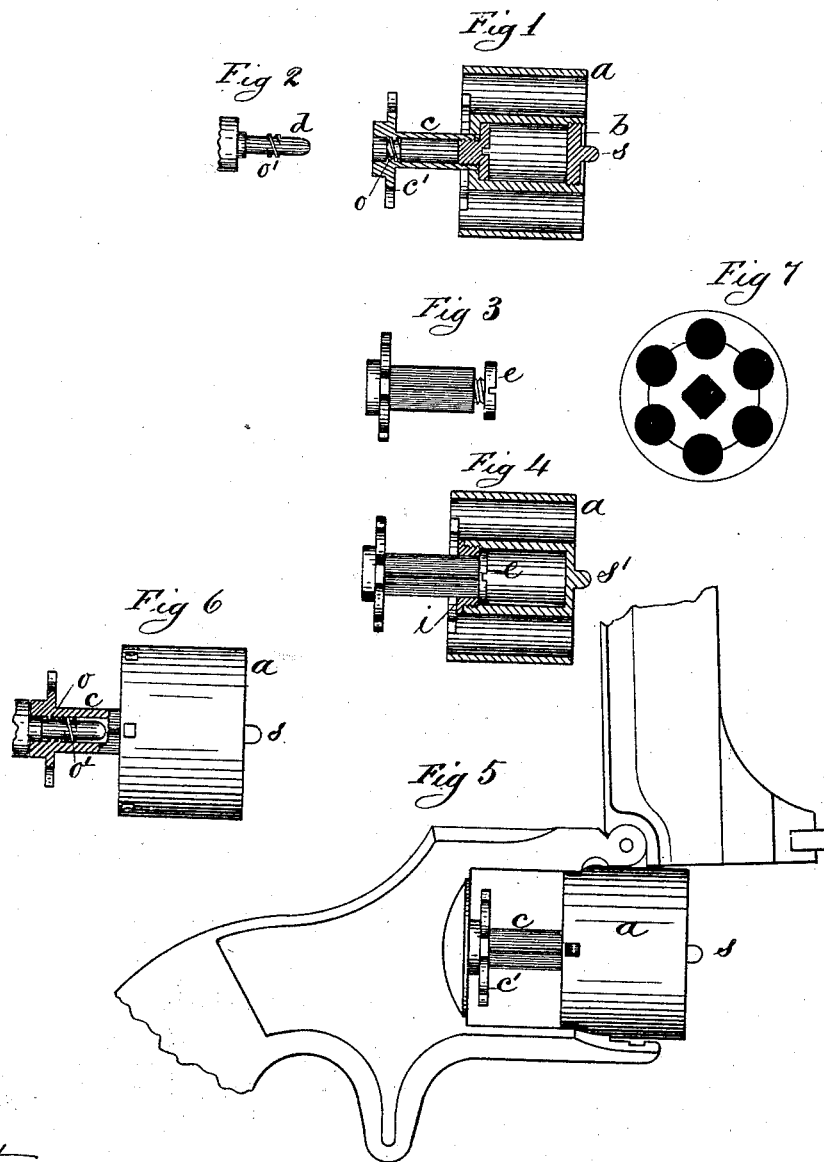


D. SMITH.
Revolving Fire-Arm.

No. 221,000.

Patented Oct. 28, 1879.



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IMPROVEMENT IN REVOLVING FIRE-ARMS.

Specification forming part of Letters Patent No. **221,000**, dated October 28, 1879; application filed July 29, 1879.

To all whom it may concern:

Be it known that I, DEXTER SMITH, of Springfield, county of Hampden, and State of Massachusetts, have invented new and useful Improvements in Devices for Operating Extractors in Revolving Fire-Arms, which improvements are fully set forth in the annexed specification and in the accompanying drawings.

The object of my invention is to so construct and apply the extracting devices to the cylinder of a revolving fire-arm, and to so make the cylinder that no gas from the discharged cartridges can blow back into the extractor-stem cavity in the cylinder, and so that the cylinder may be easily moved in the line of the base-pin longitudinally to operate the extractor, and be easily removed from said pin for the purpose of loading it with cartridges, and be replaced thereon with facility; and it consists in making the front end of the extractor-stem cavity in the cylinder gas-tight, or making the central portion of the front end of the cylinder between the cartridge-chambers solid, and forming the front bearing or journal of the cylinder of one piece therewith, and in so making the extractor-stem cavity and the end of the extractor-stem which operates therein that the cylinder may be moved freely forward thereon for a fixed distance while the extractor-stem is held back by the base-pin, and in forming on the base-pin and on the inside of the extractor-stem a short corresponding screw-thread, which operates as a stop to keep the cylinder on the pin, while it permits of placing the cylinder thereon or removing it therefrom by turning it slightly.

Referring to the drawings, which consist of seven figures, Figure 1 is a longitudinal section of a cartridge-cylinder and extractor-stem embracing my improvements. Fig. 2 is a side elevation of a base-pin adapted to operate in the extractor-stem, Fig. 1. Fig. 3 is a side elevation of the extractor and stem removed from the cylinder. Fig. 4 is a longitudinal section of the cylinder and a side elevation of the extractor and stem, showing a modified construction of the cylinder and of the method for securing the extractor-stem therein. Fig. 5 is a side elevation of a por-

tion of a pistol frame and barrel, showing the cylinder and extractor therein in the position in which they will be found after having been operated to extract the cartridge-shells. Fig. 6 is a side elevation of a cylinder and extractor in position on the base-pin, showing the extractor-stem partly in section. Fig. 7 is a rear end elevation of the cylinder.

In the drawings, *a* is the cylinder. *b* is the journal-screw. *c* is the extractor-stem. *c'* is the extractor. *d* is the base-pin. *e* is the extractor-stem screw. *i*, Fig. 4, is the extractor-stem nut. *s* is the journal. *o* is a screw-thread on the interior of the extractor-stem, and *o'* is a screw-thread on the base-pin.

Like letters refer to like parts in the several figures.

Fig. 1 shows one manner of constructing the cylinder and fitting the extractor-stem so that it works in its cavity therein without being exposed to any gas that may escape when a cartridge is fired.

In this construction the cylinder has a hole bored through the center, and then is counterbored for about the distance and to the size there shown, or of a suitable size to allow the head of screw *e* in the end of the extractor-stem to move freely back and forth therein. The portion of the first hole at the rear end of the cylinder is then formed square, to correspond with the form of the extractor-stem, and the front end is tapped to receive a screw. The other ordinary operations on the cylinder to fit it for use and to receive the extractor are performed in the ordinary manner.

The extractor and stem are made in the form shown, but with a short screw-thread, *o*, around the cavity in the stem, and with its forward end tapped to receive the screw *e*.

The base-pin is made to enter the cavity in the extractor-stem, and with a short screw-thread, *o'*, upon it, as shown.

Screw *b* has formed upon it the journal or bearing *s*, and is fitted, as shown, to screw tightly into the front end of the extractor-stem cavity in the cylinder.

The construction of the cylinder in Fig. 4 differs from that described above, and provides a way for forming the extractor-stem cavity in it, by boring into it from the rear,

but not clear through it, and thus allowing of the formation of the journal or bearing *s'* upon the front end of the cylinder, of one piece with it. Into the rear end of the cylinder, in Fig. 4, I fit a nut, *i*, made to slip over extractor-stem *c*, and against which, when screwed into the cylinder to secure the said stem, the head of screw *e* brings up when the cylinder is moved out.

The above-described modified construction (shown in Fig. 4) is not the invention of this application, but is reserved for a separate protection.

Fig. 6 shows the relative position of the two short screw-threads on the base-pin and in the cavity in the extractor-stem, they being located so that when the cylinder and its operating parts are inclosed in the pistol-frame, with the barrel in a position to fire, the thread on the cavity in the extractor-stem is passed beyond and to the rear of that one upon the base-pin, and with said screw-threads in this position the extractor-stem and cylinder cannot be removed from the base-pin except by turning them thereon to cause the threads to follow.

It will be easily understood from the drawings how the cylinder and extractor parts are assembled without further description.

The operation of my improvements is as follows, viz: To load the cylinder with cartridges, the barrel is turned up into the position shown in Fig. 5, and the cylinder is drawn forward into the position there shown. In so doing the screw-thread *o*, on the interior of the extractor-stem *c*, is drawn against that one on the base-pin, and by giving the cylinder a turn or two the parts become unscrewed one from the other, and the cylinder is released from the base-pin, and may be charged with cartridges, after which it may be replaced in the pistol by turning it upon the base-pin in an opposite direction to cause the said threaded parts to pass one by the other.

When it becomes desirable to eject empty shells from the cylinder, the movement of it forward, as shown in Fig. 5, effects that object, for the extractor is held back by the abutment of the two screw-threads one against the other, as above set forth, and the cylinder is thus drawn away from the shells, allowing them to drop.

By the foregoing it will be seen that there is perfect freedom for all requisite movement longitudinally of the cylinder, to allow of extracting the shells, while the extractor is firmly held back in the pistol-frame, but easily removed therefrom by slightly turning it on the base-pin; and also that provision is made in this improved construction of cylinder and extractor-stem for guarding the extractor-stem cavity in the cylinder from the introduction therein of any gas whatever from the fired charges, thus keeping those parts free from such obstruction as would result from the admission of said gas therein.

What I claim as my invention is—

1. The combination, with the base-pin of a revolving fire-arm provided with the screw-thread *o'* thereon, of an extractor-stem arranged to operate thereon, and having the screw *o* formed around the base-pin cavity therein, substantially as and for the purpose set forth.

2. The combination, with cylinder *a*, of screw *b*, provided with the journal or projection *s*, the extractor-stem *c*, provided with screw *e*, and having the screw-thread *o* formed on the base-pin cavity therein, and the base-pin *d*, having the screw-thread *o'* thereon, substantially as and for the purpose set forth.

DEXTER SMITH.

In presence of—

H. A. CHAPIN,
WM. H. CHAPIN.