H. L. GARDNER.

REVOLVING FIRE-ARM.

No. 186,470. Patented Jan. 23, 1877.

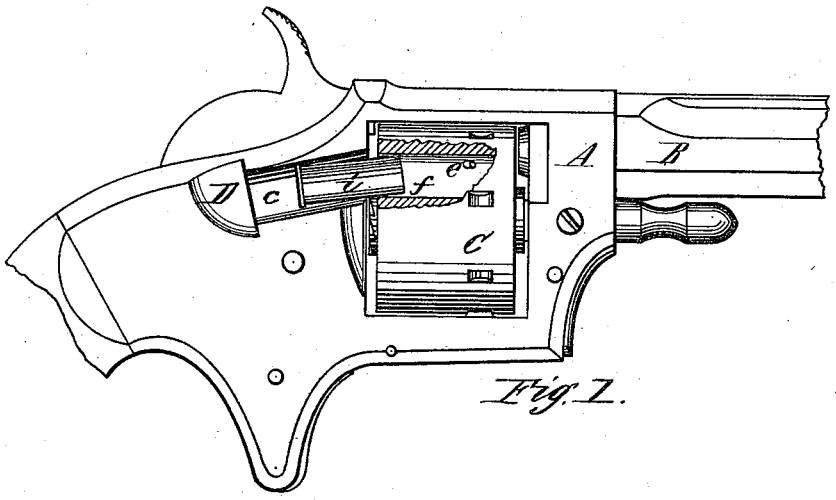

Fig. I.

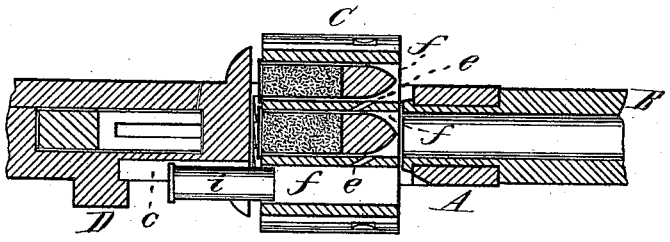

Fig. II.

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HENRY L. GARDNER, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN REVOLVING FIRE-ARMS.

Specification forming part of Letters Patent No. **186,470**, dated January 23, 1877; application filed November 3, 1876.

To all whom it may concern:

Be it known that I, HENRY L. GARDNER, of Springfield, in the State of Massachusetts, have invented a new and useful Improvement in Revolving Fire-Arms; and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

My invention relates to many-chambered revolving fire-arms; its object being to eject the empty shells automatically by discharging the arm, and without ejecting a loaded cartridge; and to this end my invention consists of a cylinder or barrel having two or more chambers, which are connected by a small hole or orifice, made in such manner that the gas generated by the explosion of the cartridge in one chamber will pass through said hole or orifice into the next chamber, and, if the cartridge therein has been exploded, force out or eject its shell, but will not affect the cartridge if it has not been exploded, as will be more fully hereinafter described.

Figure I is a side view of so much of a revolving fire-arm as is necessary to show the invention, with a part of the cylinder broken away to show the inside of the chamber to which the invention is applied; and Fig. II is a longitudinal section through the frame, the upper chambers of the cylinder, and the axis of the barrel.

In the drawings, A represents the frame of an ordinary revolving fire-arm, in the side of which, at the rear end of the cylinder, is made a recess, *c*, with a projection, D, behind that. C represents the cylinder, arranged to revolve by means of the ordinary mechanism, and provided with any number of chambers, *f*, which communicate with each other through the small hole or orifice *e*, which may be made either perpendicular to the axis of each chamber *f*, or obliquely thereto, as shown in Fig. II. I prefer the latter construction, because the force of the gas from the exploding cartridge is directed into the empty shell, the effect of which is to eject it with more certainty; but in either case the small hole or orifice *e* is made in such manner and in such position in the chamber that the gas escaping through said orifice shall strike against the side of the projectile, if the latter still remains in the chamber, and no effect will thereby be produced to force out or eject, at the rear end of the chamber, the loaded cartridge.

The operation of my invention is as follows:

Suppose all the chambers *f* of the cylinder to be loaded with cartridges, and when the first shell is exploded the gas from the explosion, as the projectile leaves the chamber, is forced through the orifice *e* into the next chamber; but as this next chamber contains a loaded cartridge, the force of said escaping gas is exerted directly against the side of the projectile, and there is no tendency to eject it or expel it rearward from its chamber. The cylinder is then rotated by the cocking of the hammer, bringing the next chamber into position to discharge the cartridge therein; and, as this is discharged, the gas therefrom is forced through the orifice *e* into the chamber containing the empty shell, which is now directly in front of the cavity *c* and projection D, and, as this gas enters the chamber in front of the shell, the latter is forced rearward out of the chamber, as shown in Fig. II, and the shell striking against the projection D, its rearward movement is stopped, and it falls to the ground. As each cartridge is discharged, and its empty shell ejected, another cartridge is immediately inserted from the rear each time the cylinder stops in its rotary movement, so that all the chambers are kept always loaded, and are loaded as fast as they are discharged.

I am aware that the gas from the explosion of one cartridge in a series of chambers has been used to eject an empty shell, by means of a device attached to the barrel or frame in front of the cylinder, whereby gas was conducted from the barrel into the front end of the next chamber; and I am also aware that more or less gas always escapes through the joint between the rear end of the barrel and the front end of the cylinder, into the chamber next to that which is in line with the barrel.

But the device used to conduct the gas from the barrel into the front end of the chamber just mentioned is open to serious objection, inasmuch as, when all the chambers are loaded, it is necessary to throw the gas-

conducting device out of gear or to one side; otherwise the gas entering the chamber in front of the projectile, the latter is liable to be thrown backward with sufficient force to injure the person using the arm. And this is more particularly liable to occur if the first cartridge is fired in any haste.

My invention entirely obviates this objection, because when the first cartridge is exploded, the gas therefrom is forced directly against the side of the projectile in the next chamber, and no force is therefore exerted to throw it rearward, or to expel it in either direction, so that the arm is perfectly safe, and no care is required in firing the first cartridge.

It is evident that the orifice *e* may be made in the front end of the cylinder and extend back and enter each chamber at a point in the rear of the conical part of the projectile, so that the gas which would escape from the barrel B would be forced back into said orifice and strike against the side of the projectile, as before described, as that is the chief point of the invention, viz: to prevent the gas from entering the chamber in front of the projectile, and forcing the latter back out of its chamber.

Having described my invention, what I claim as new is—

In a revolving fire-arm, a cylinder containing two or more chambers, *f*, into each of which is made an orifice, *e*, through which the gas is forced from the explosion of each cartridge, and enters each chamber at a point in the rear of the conical part of the projectile, substantially as and for the purpose described.

HENRY L. GARDNER.

Witnesses:
T. A. CURTIS,
G. H. BLANDEN.