2 Sheets—Sheet 1

P. W. PORTER.

Magazine-Gun.

No. **8,210.**

Patented July 8, 1851.

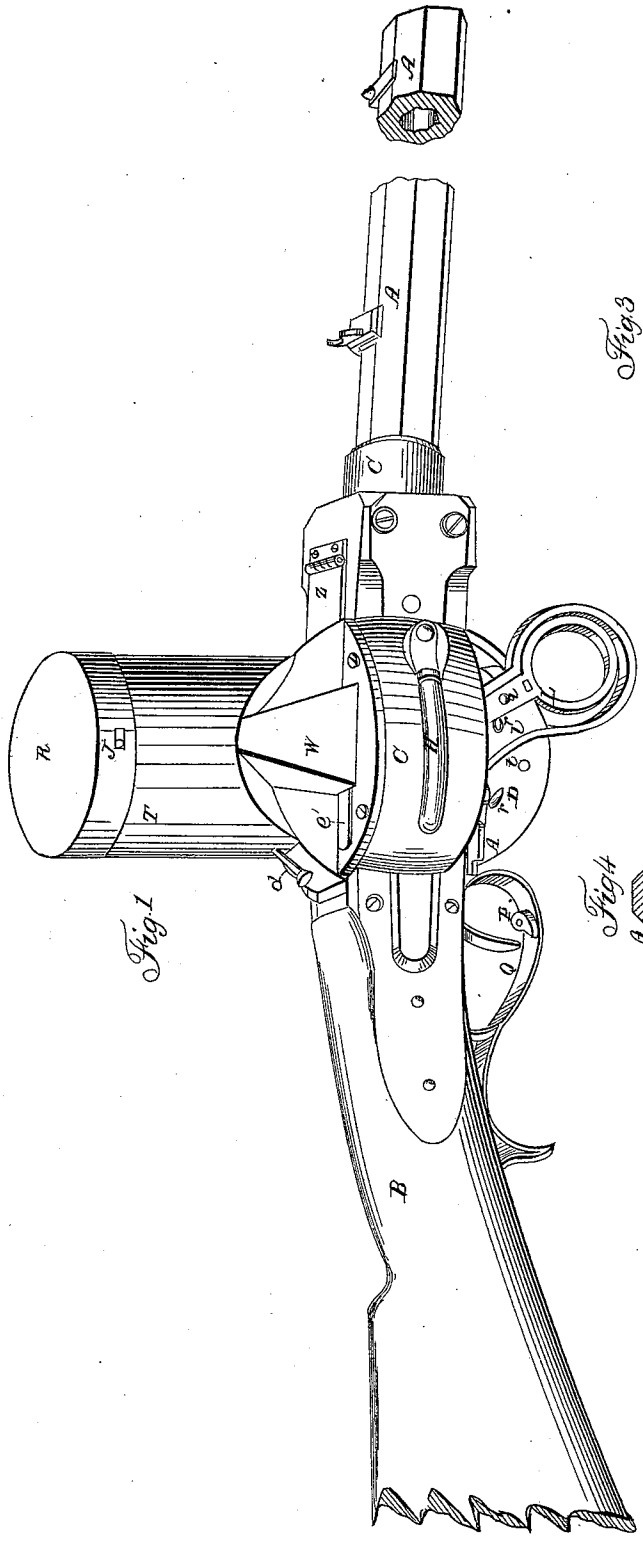

Fig. 1

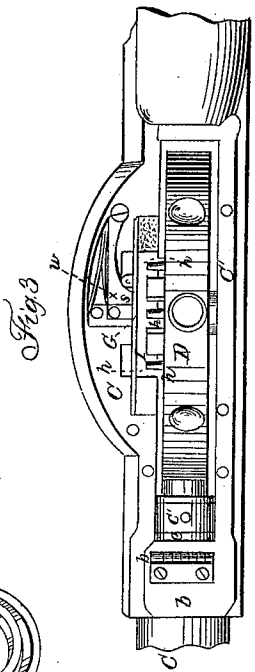

Fig. 3

Fig. 4

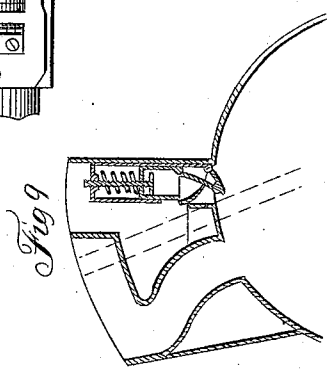

Fig. 9

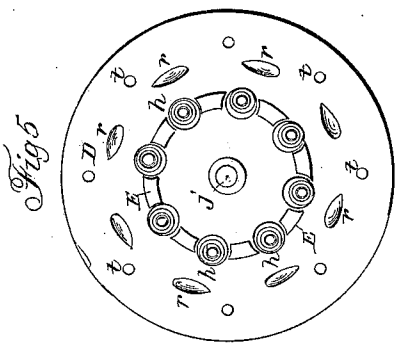

Fig. 5

2 Sheets—Sheet 2.

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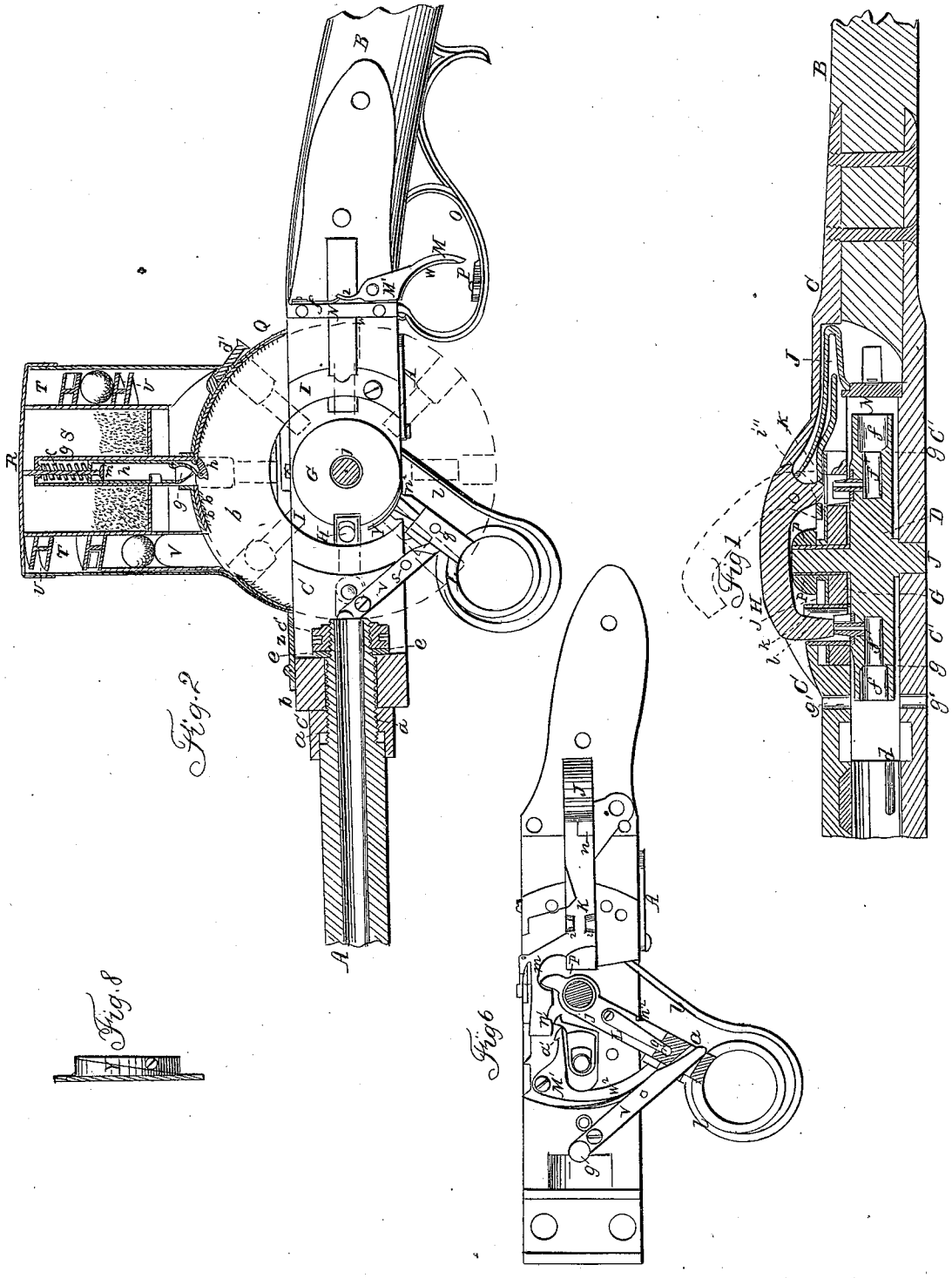

UNITED STATES PATENT OFFICE.

P. W. PORTER, OF MEMPHIS, TENNESSEE.

IMPROVEMENT IN REVOLVING-BREECH FIRE-ARMS.

Specification forming part of Letters Patent No. **8,210**, dated July 8, 1851.

To all whom it may concern:

Be it known that I, PARRY W. PORTER, of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Repeating Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a view, in perspective, of one of my self-loading repeating-rifles, portions of the stock and barrel being removed to shorten the drawings. Fig. 2 is a central longitudinal section of the same with the disk-breech removed. Fig. 3 is a plan of the same with the magazine removed. Fig. 4 is a transverse section of the barrel. Fig. 5 is an elevation of the disk-breech. Fig. 6 is a side view of one of the side pieces of the breech with the lock-plate removed. Fig. 7 is a central horizontal section of the disk-breech and the parts adjacent thereto. Fig. 8 is a section of the lock-plate to show the cap-stripper. Fig. 9 is a vertical section of a modified form of magazine.

The principal parts of my gun are the barrel, the chambered breech, the lock, the magazine, and the stock; and although these parts are necessarily connected and some of the members of one act in combination with members of another, still I shall, as far as practicable, describe them severally in the order in which they are above enumerated.

The barrel A and the stock B of the gun are connected by two side plates or straps, C C′, which contain between them the breech D. These straps are surmounted by the magazine, and one of them contains the lock.

The barrel A consists of a straight tube, the bore of which is prismatic in contradistinction to the cylindrical bores ordinarily used. This prismatic bore is twisted, and its angles replace the ordinary rifle-grooves by means of which the ball in its passage through the barrel has the requisite rotary motion imparted to it. It is superior to the ordinary methods of rifling, because its angles do not clog with lead, and each succeeding ball forces before it any fragmentary remnant of the preceding one. The butt of this barrel has a screw, *a*, cut upon it, as shown in section at Fig. 2. A portion of the screw-threads are turned off to be passed through a cylindrical hole bored through a block, *b*, which is formed in one piece with the side plate, C′, and a second screw sufficiently small to pass freely through the cylindrical hole in the block *b* is cut upon the hindermost part of the butt. A flanged ring-nut, *c*, is fitted to the larger screw, and a plain ring-nut, *c′*, is fitted to the smaller one. A feather, *d*, is let into the cylindrical hole, and a corresponding groove is formed in the barrel, so that when the butt of the latter is passed into the cylindrical hole it can be moved lengthwise, but is prevented from turning.

In fitting the gun together the flanged nut *c* is first screwed onto the position in which it is represented in Fig. 2. The butt of the barrel is then inserted through the block *b*, a washer, *e*, is applied to it, and the hinder nut, *c′*, is screwed up. This latter nut acts as a jam-nut to secure the parts firmly together.

On an inspection of Fig. 2 it will be seen that the flanged nut is not screwed up to the shoulder upon the barrel, while the hinder extremity of the barrel is in close proximity with the cylindrical face of the disk-breech, whose position is shown in Fig. 2 by dotted lines. The object of this arrangement is to enable the user to set up the barrel toward the breech as its extremity wears away by use. This operation is easily effected by moving the nuts.

The breech consists of a disk having horizontal journals secured to it, which turn in proper bearings formed in the side pieces or straps, C C′, which connect the barrel with the stock. This disk has a number of radiating cylindrical chambers formed in it, each of which is of sufficient capacity to receive a charge of powder and a bullet. These chambers, as shown in section at Fig. 7, are composed of two cylindrical sockets of different sizes. The inner, *f*, is the smaller, and receives the powder. The outer, *f′*, is sufficiently large to admit the ball, which is prevented from entering too great a distance by the ring-shoulder *g*, which connects the powder-chamber with that for the ball. One side of this disk-breech has a ring-flange, E, Fig. 5, projecting from it, in which spaces are formed to admit the nipples *h*. The latter are screwed into the side of the disk. This ring-flange is received in a ring-socket, I, formed in the plate G, which covers the lock of the gun. This socket is of such size, when compared with the ring-flange, that the cylindrical faces of the

latter bear upon the corresponding faces of the former, and thus form a strong journal, in addition to the smaller journals *j j*, to support the breech when the charge is fired.

The lock is secured to the side plate, C, which is thickened to form a case, in which the members of the lock are protected from injury by the entrance of dirt or the smoke and gases evolved by the combustion of the powder. It consists, mainly, of a hammer, H, by which the percussion-cap is exploded, of a mainspring, J, a sliding bolt, K, a lever, L, and two triggers, M M′, either of which may be used in firing, and which form the sears by means of which the hammer is retained cocked.

The hammer, as shown in section at Fig. 7, is constructed to move horizontally in contradistinction to the vertically-moving hammers generally used. It is pivoted in a socket formed in the protuberant part of the side plate, and its heel is forked, one portion, *i*, being borne upon by the moving extremity of the mainspring, while the other, *i′*, which is divided into two parts, is received in slots formed in the sliding bolt K. The head of the hammer acts upon the nipples *h* through a hole formed in the side plate, which is fitted with a thimble, *k*. The latter passes through the space in which the lock is contained, and conducts all the smoke and gases which may escape at the nipple to the outside of the side plate, thus preventing them from clogging the lock and from communicating fire to the succeeding charges. The mainspring lies in a socket formed in the side plate, C. It is secured at one extremity to the side plate by means of the cross-bar N, which connects the two side plates, and its free extremity bears upon the heel of the hammer.

The bolt K is constructed to slide in the socket of the side plate, C, and serves to impart the vertical movement of the lever L to the hammer H. It has a socket, *m*, in its lower edge, in which the toe of the lever L works, and also two notches, *n* n^1, to admit the extremities of the triggers, which act as sears. Its upper edge has a snug, *o*, secured to it, which moves in a slot in the upper face of the side plate, and actuates the cap-primer.

The lever L is pivoted upon a tubular pivot, *p*, which is secured to the lock-plate, and which serves as the bearing in which one of the journals *j* of the disk-breech turns. This lever performs a variety of functions, for by it alone the several operations of loading, priming, revolving the breech, and cocking the hammer are all effected, and by which also the firing of the gun may, when required, be effected. This lever is fitted with a spring, *l*, whose office is to restore the lower arm of the lever to its most forward position, in which it is represented in the several figures, whenever it has been drawn back by the hand of the operator.

In order to effect the revolution of the breech, the latter has a series of sockets, *r*, formed in its face, which correspond in number and relative positions with the number of chambers in the breech, and a spring-pin, *q*, is fitted in the adjacent face of the lever, which, as the latter is moved forward, catches in one of the sockets *r*, and as the lever is drawn back forces the disk to turn therewith. In moving backward the spring-pin bears against the perpendicular side of the socket; but in moving forward the pin passes over the inclined bottom of the socket, and is thus depressed into a recess in the lever, to enable it to pass over the face of the breech and engage in the next succeeding socket as soon as the lever is moved sufficiently forward.

In order to lock the breech in its proper position, and thus prevent it from moving back with the lever in its forward movement, a spring lock-pin, *s*, is secured to the side piece, C. This pin engages in one of a ring or series of sockets, *t*, formed in the side of the disk-breech whenever in the movement of the disk-breech one of its chambers is brought in its proper position with respect to the butt of the barrel, and locks it firmly in that position. It is necessary that this lock-pin should be disengaged from its socket before the disk-breech can be moved. To effect this a hole, *u*, is formed in the lever L to receive the extremity of the lock-pin spring *v*, and this hole is inclined in such manner that as the lever is moved forward the inclined extremity of the lock-pin spring, bearing against the side of the hole in the lever, is forced outward, thus withdrawing the lock-pin from its socket.

There are two triggers, M M′, the one M′ before and the other behind the lever L. The hinder trigger is that commonly used for tripping the hammer. It is composed of two arms, *w* w^1, which are secured to a shaft, *x*, pivoted in the side pieces, C C′. The one arm, *w*, extends through the lower side of the stock into the trigger-guard O. The other arm bears against the lower side of the sliding bolt, and when the latter is forced back by the lever to cock the hammer enters the appropriate notch *n*, and forms the sear to keep the hammer cocked until this sear is withdrawn by the application of the finger of the operator to the arm *w*. The arm w^1 is borne against the lower side of the bolt by the pressure of a spring, *y*, which acts upon a toe, *z*, projected upward from the longer arm of the trigger. The forward trigger, M′, which is pivoted in the socket in the side piece, C, has two arms. The one projects backward, and has a hook formed upon it, which, bearing against the lower edge of the sliding bolt K, engages in its forward notch, *n′*, when the bolt is moved by the lever to cock the hammer. The other arm, w^2, is curved downward, and its extremity is within the range of the lever L, so that as the latter is moved forward its front edge strikes the trigger, and, moving it, draws the hook *a′* of its upper arm out of the notch of the sliding bolt, thus releasing the bolt and allowing the hammer to be thrown upon the nipple by the force of the mainspring when the hinder trigger is moved. The forward trigger is used

for fast firing, in which case the hinder trigger is prevented from engaging its appropriate notch in the sliding bolt, and thus prevented from acting by a movable stop, P, which is pivoted to the trigger-guard, and can be set either to allow the hinder trigger to act or to prevent it from acting, as may be desired.

The magazine is mounted upon a curved hook or cap, Q, which is fitted to the upper side of the disk-breech, and is firmly secured to the side pieces, C C′, either by screws, as represented in the drawings, or by spring-keys which will admit of its easy removal. This cap is lined with soft leather *b*, which, bearing against the disk, packs it closely and prevents the entrance of smoke and dust.

The magazine consists of a cylindrical vessel, which contains the powder, the balls, and the percussion-caps in separate compartments, and is closed by a cover, R, which is secured to the magazine by bayonet-catches *f*, and is lined on the inside with leather or some other soft substance to pack the joints, and thus prevent the entrance of water. The powder is contained in a cylindrical compartment, S, occupying the center of the magazine. The sides of this compartment extend upward sufficiently to meet the cover R, so that when the latter is applied the powder is prevented from escaping. The powder-chamber is fitted with a charger, by means of which the requisite charges of powder are measured into the chambers of the disk-breech. This charger consists, mainly, of a stationary tube, *g*, secured to the bottom plate of the magazine, of a sliding tubular vessel, *h*, which fits the interior of the stationary tube *g*, and of a valve, *k*, which is pivoted to the orifice of the stationary tube. The stationary tube extends downward through an orifice in the breech-cap Q, and its valve *k* is so constructed that the cylindrical periphery of the disk-breech, passing beneath it, presses it upward to close the charger, and thus prevent the discharge of powder; but when any one of the chambers of the breech is beneath it, the valve opens downward into the chamber to allow the powder to escape. The valve is coupled by a link with the tubular vessel *h*, so that when the valve opens this vessel is depressed, and when the valve shuts this vessel is raised. The head of the vessel is pressed downward by a helical spring, *l*, and the interior of the vessel is fitted with an adjustable piston, *m′*, by means of which the bulk of the charge is regulated. The stationary tube *g* has an aperture in its side, and a corresponding aperture is formed in the adjacent face of the sliding chamber *h*, the two apertures being in such relative positions that they are opposite each other when the valve and the sliding vessel are raised, thus permitting the powder to pass into the sliding vessel, while as the valve opens the sliding vessel is moved past the aperture of the stationary tube, as shown at Fig. 2, and consequently the passage of powder from the powder-chamber to the charger is stopped or cut off, while the powder in the charger is dropped into the chamber of the breech beneath. The annular space between the powder-chamber and the exterior case of the magazine is sufficiently broad to admit a bullet. It is traversed by two helical partitions, which wind around the powder-chamber and are secured thereto, but are not made fast to the outer casings. These partitions form two winding or inclined passages, the larger, T, of which contains the balls, and the smaller, U, the percussion-caps. The larger passage terminates at the front of the magazine in a straight descending passage or spout, V, which delivers the balls into the chambers of the disk-breech. The longer extremity of this spout is inclined forward, as shown in Fig. 2, so that the ball which enters the chamber is pressed firmly therein by being borne against the inclined side of the spout as the chamber is passed beneath it. The smaller passage terminates at the lock side of the magazine in a tube, which descends within a casing, W, secured to the side of the hood or cap Q, which covers the disk-breech. This tube delivers the caps to the cap-primer, which is situated in a socket sunk in the upper face of the side plate, C.

As the powder-chamber, with the helical partitions, are merely inserted into the outer casing, but are not secured thereto, they can readily be withdrawn therefrom, when the cover R is removed, for the purpose of repair or to remedy any derangement in the balls or caps which are contained in the passages T U.

The cap-primer consists of a small hammer, X, whose shank is pivoted to the side piece, and whose head is immediately opposite the highest nipple, *h*, when the disk-breech is at rest. The head of this hammer is moved laterally from its adjoining nipple by the snug *o* on the sliding bolt K, which acts upon a wedge-formed block *s* upon the hammer-shank, and when the trigger is pulled, and when consequently the sliding bolt moves forward, the hammer-head is pressed up against the nipple, which is now opposite its head, by a spring, *w*, which bears against its back.

In order to prevent the loss of bullets and of caps when the magazine is removed from the gun, the orifice of the bullet-passage is fitted with a sliding valve, *b′*, which lies upon the breech-cap Q, and can be moved by means of a valve-stem, *d′*, either to close the orifice or to leave it unobstructed. The orifice of the cap-tube is also fitted with a sliding valve, *e′*, which can be moved either to open or to close its orifice.

In order to strip the exploded caps from the nipples, an inclined spring-stripper, Y, Figs. 2 and 8, is secured to the lock-plate G within the circular socket in which the nipples are received. The point of this stripper extends close up to the lock-hammer and bears against the nipples, so that as the disk-breech is revolved each exploded cap is successively stripped off.

In order to allow the escape of smoke in firing, lateral apertures g' are made in the side pieces immediately adjacent to the joint of the barrel and breech. Ample space is also afforded for the escape of smoke both above and below the butt of the barrel between the side plates. In order to prevent the entrance of dust at the upper of these spaces, it is closed by a spring-shutter, Z, which rises to allow the smoke to escape, but is immediately passed down again onto its seat by its spring secured to its lower face.

When this fire-arm is to be used the valves b' e' are shut, and the powder, balls, and caps are introduced into their respective chambers in the magazine. The finger of the operator is then applied to draw back the lever L. By this movement the lever-pin q, acting upon the disk-breech, causes it to turn with the lever until the spring lock-pin s engages in its appropriate socket and locks the breech. As soon as this locking is effected the pressure upon the lever L is slackened, and it is moved forward by the action of its spring. As it reaches its most forward position its pin q engages with the next socket of the disk-breech, while the lock-pin s is drawn out of its socket by the action of the lever upon the inclined extremity of the spring v. As the disk-breech is turned by the lever L the chamber that was beneath the charger g is moved forward and a second one is moved to that position. In this movement the cylindrical space between the two chambers, passing beneath the valve k, moves it upward to close the orifice of the charger, and to move the sliding vessel h upward until the aperture in it corresponds with that in the stationary tube, thus allowing the powder from its chamber to pass into and fill the charger. As then the second chamber of the breech is brought beneath the valve k the latter, opening downward, allows the powder to drop into the chamber. By the movement of the lever the snug o, acting upon the cap-primer X, moves it outward, and the cap-valve e' is drawn back to allow the caps to move downward in their passage. As then the cock is let down in the usual manner, the snug, moving backward with the sliding bolt, allows the priming-hammer X to press against the lowermost cap, which is delivered by the cap-tube immediately opposite the adjacent nipple, and to force it upon the latter, thus priming the gun. The valve b' is now opened, and the lever L is again drawn back, by which operation the above-described movements are repeated, a second charge of powder and a second cap are applied to the disk-breech, and the chamber previously filled with powder is passed beneath the bullet-tube V, and a bullet drops into the enlarged portion of the chamber over the powder, and rests upon the shoulder g. A third movement of the lever L brings the loaded chamber of the breech opposite the butt of the barrel, while its appropriate nipple, with the cap thereon, is brought opposite the hammer of the lock, while at the same time a third charge of powder and a bullet are delivered to their respective chambers. If, now, the trigger be pulled, the charge in the chamber opposite the butt of the barrel will be fired, and a third cap will be applied by the cap-primer to its proper nipple. Every succeeding movement of the lever L will now bring a loaded and primed breech-chamber in a position to be fired by pulling the trigger, and the firing can be kept up as long as sufficient powder, bullets, and caps remain in the magazine, which in this instance is constructed to contain thirty rounds.

If the charges are to be fired with great rapidity, the main trigger M is withheld from engaging in its appropriate notch by moving the stop P. Hence the hammer will be held cocked by the forward trigger alone, which, as before stated, is disengaged by the lever L in its forward movement, and consequently a charge will be fired as fast as the lever can be moved backward and forward until the powder, balls, and caps are exhausted.

In order to prevent the accidental movement of the lever L in carrying the gun, a latch, A, is pivoted to the lower side of the side plate, C, and, when the gun is to be used, is turned back, as shown in Figs. 2 and 6; but when the gun is not to be fired this latch is turned forward until its forward extremity engages in a suitable notch, n^2, formed in the lever, thus locking the latter in its most forward position and preventing its movement.

The fire-arm above described is constructed to prime with percussion-caps; but percussion-pills may be used in this implement by substituting pill-tubes in place of the nipples.

The magazine, if attached to the gun by keys, as before stated, may be removed and carried in the pocket until it is wanted for use; and when but few rounds are to be fired I prefer to employ a smaller flat magazine, such as is represented in section at Fig. 9. If the butt of the barrel wears away by long use, the barrel must be set up toward the breech by turning the nuts.

The sights are secured to the barrel, as at B B′, in such positions that the gunner sights along the side of the cap of the disk-breech, which thus acts as a guide to his eye and enables him to take sight quickly.

Having thus described my self-loading repeating fire-arm, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with a cocking-lever, I claim the two triggers M M′, arranged and operating in such manner that the tripping of the hammer can be effected either in the ordinary manner by pulling a trigger or by the return movement of the cocking-lever.

2. I claim the combination of the sliding bolt K with the cap-primer X, the two being so arranged that as the hammer is tripped by pulling the trigger a cap is applied to one of the nipples of the chambered breech, by which means the chambers are revolved by the back motion of the cock and capped by its forward

motion, the capping by this arrangement being effected in one-half the time in which it can be done by others heretofore devised.

3. I claim the construction of the cap and bullet passages, the powder-magazine, and the exterior case, in such manner that the bullet and cap passages and the included powder-chamber can be withdrawn from the exterior case which incloses them, to give free access to every part of said passages, and to facilitate the removal of obstructions therefrom, as described.

4. In combination with a revolving disk-breech, I claim a spring powder-charger, constructed and operated by the movement of the breech, as herein set forth.

5. In combination with a revolving chambered breech, I claim the stationary cap-stripper, constructed and operating as herein set forth.

6. In combination with a revolving-breech fire-arm, I claim the spring dust-plate Z, which permits the escape of smoke, but prevents the entrance of dirt.

7. I claim the forward inclination of the spout of the bullet-passage in connection with a turning breech, the two being so arranged that when the latter is turning the bullet dropped into the chamber is pressed against the inclined portion of the spout, and is by it forced down in the chamber of the breech, the inclined surface of the spout thus performing the office of a rammer.

In testimony whereof I have hereunto subscribed my name.

PARRY W. PORTER.

Witnesses:
H. L. PARHAM,
JOHN FOWLER, Jr.