

## Improved Conical Repeater.

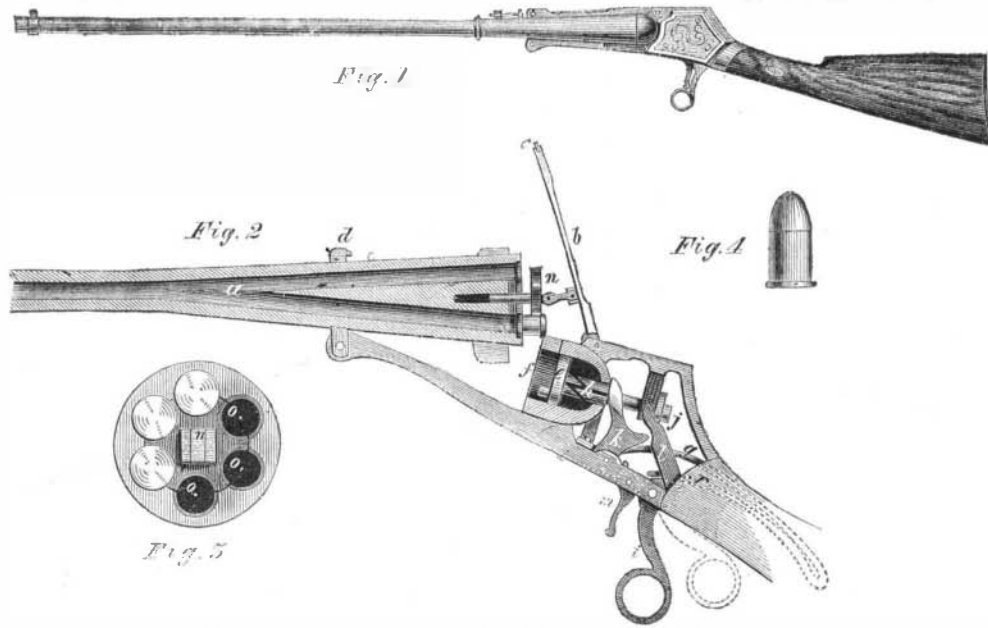
This firearm is one of the most remarkable novelties of our time. The importance of a rapid repeater, which should possess greater range and accuracy of aim than the pistol, has been so generally known, that much study has been bestowed upon the subject by inventors. But none of the constructions that have been offered to the public have met with much favor, on account of the danger to the left hand when grasping the barrel in the position of aim. At each discharge of a repeater which employs a revolving cylinder, there is a flash thrown out between the cylinder and barrel, which will cause the explosion of chambers not in line with the barrel, if they have not been loaded with great care, by forcing the ball in so as to be perfectly tight. The opening also causes a loss of power; and the dirt thrown on the cylinder frequently impedes the rotation. In the pistol these defects have been disregarded, as the weapon when fired is at arm's length, and the danger to the person using it is but slight.

To overcome these objections, the inventors of the arm illustrated here, employ a cone instead of a cylinder; the chambers, which make an angle of about five degrees with the axis of the barrel, converge and all lead into the barrel at one common point. There is, therefore, no escape of gas, no danger to the left hand, and no clogging of the machinery. The cartridge used is the improved metallic-case, waterproof now most in favor; so that the soldier need no longer tax his care to "keep his powder dry," as it is impossible to get it wet. Owing to the simplicity of its construction, the "conical repeater" can be made for a less price than any two-handed repeater now before the public.

Fig. 1 of the annexed cuts is a perspective view of this arm, and Fig. 2 is a vertical section of the chambers, and lock in the open position for loading. The barrel is enlarged in conical form at the lower end, and the bore divides at *a* into six branches, which diverge to the breech at an angle of about 5 degrees. The cartridge is represented at Fig. 4 attached to the shot. It consists of a cylinder of exceedingly thin copper filled with powder, and having a little percussion powder placed in the bottom. When the breech is raised nearly, but not quite, in the position shown in Fig. 2, one of these cartridges with the shot is slipped into each of the six branches of the bore, and the breech is then closed in the manner represented in Fig. 1, ready for firing; the lever, *b*, having a spring-catch, *c*, at its end, which catches under the hook, *d*, to hold the parts in place. The cartridge, having the fulminating powder in its end, is discharged by simply giving it a blow; and the lock of this gun, by which the several cartridges are struck in succession is novel, simple and ingenious. The short cylinder, *e*, is driven forward by the main spring, *g*, striking the projection, *f*, against the cartridge immediately in front of it, and as this cylinder is drawn back, it is turned one-sixth of a revolution, bringing the projection, *f*, opposite to the next cartridge. This turning is effected by the inclined grooves in the small cylinder, *h*, to which the cylinder, *f*, is secured; a stationary pin entering these grooves for this purpose. The cylinder, *h*, is drawn back by means of the bent lever, *i i*, the lower part of which is carried forward for this purpose, the upper end thus acting on the button or head, *j*. This same motion draws back the upper part of the tumbler, *k*, and thus bends the main spring, *g*, down into position to throw the cylinder, *h*, forward, and the force of the spring is further increased by drawing back the lower end of the lever, *i i*, thus pressing up the second or lower leaf, *l*, of the main spring. The tumbler is held in its back position by a catch on the trigger, *m*, and the gun is discharged by pulling the trigger in the usual manner. Unless the trigger is pulled, the cylinder, *h*, is no

rotated, so that merely cocking the piece without firing it does not carry the discharging projection, *f*, away from the cylinder in front of it. The disk, *n*, represented in Fig. 3, is introduced for the purpose of withdrawing the cartridge case after the explosion. It passes into the breech before the gun is loaded, and the semicircular notches, *o o o*, in its edge, are of such size as to allow the body of the cartridge to pass through them, but not to admit the passage of the enlarged rim around its bottom. Consequently when this disk is drawn back by the raising of the lever, *b*, the cartridge cases are pulled out of the breech as shown in Fig. 2. The lever, *b*, is depressed sufficiently to carry the disk, *n*, into the breech before the gun is loaded.

It will be understood that the six cartridges are in-



## MORRIS AND BROWN'S CONICAL REPEATER.

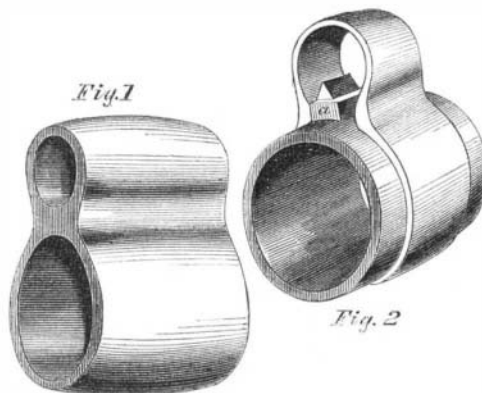
troduced at one opening of the breech, when the gun is ready to be fired, as rapidly as any revolver.

The patent for this invention was granted through the Scientific American Patent Agency, January 24, 1860, and further information in relation to it may be obtained by addressing the inventors, Messrs. Morris & Brown, 107 Fulton street, New York.

## SILVER'S RIFLE SIGHT PROTECTOR.

The accompanying engraving, which we take from the London *Mechanics' Magazine*, illustrates a new guard for rifles, recently invented by Messrs. Silver & Co., of Bishopgate. It is intended for a protection to the foresight of the rifle, not only from accidental injury, but, what is far more important, from the rays of the sun when firing.

It is so formed that when in use it allows the foresight to be seen without shadow in the tube of the protector. To explain this we must refer to the engraving.



A is the sight protector, as seen when not in use; B is a view of the same position on the barrel of the rifle; C being the sight as shown shaded from the light.

A much simpler shade than this for the fore sight of a rifle has long been in use in this country. It consists merely of a piece of Russia sheet iron bent into semi-cylindrical form, so as to grasp the rifle with a moderate force by its own elasticity.

## Rifleman's Belt Rest.

A patent has been taken out in England lately by W. R. Taylor, of Oxford, for a peculiar construction of rifleman's belt, to be used as a rest when firing. A strong piece of india rubber is introduced into a part of the belt to render it elastic, and that part of it nearest the left elbow is made slightly wider, and has a small opening in it. When firing, the point of the left elbow rests in the opening of the belt, and the arm which supports the rifle thus exerts a downward strain upon the belt. This, the patentee states, prevents the muzzle being thrown up when the charge explodes, and also gives steadiness to the aim of the marksman.

## Holcomb's Electro-Magnet.

By the list of claims on another page, it will be seen that a patent has been issued to A. G. Holcomb, of this city, for an improvement in electro-magnets. This is based on a curious discovery made by him, by which, owing to the superior power of the magnet, the operators can dispense entirely with the relay battery. By connecting the cones of an electro-magnet with a permanent steel magnet, a force is developed greatly in excess of the sum of the forces of the permanent and electro-magnetism when used separately. Take, for instance, an electro-bar magnet,—pass a current of electricity through the helices sufficient to give it an attractive power equal to one ounce; then place in combination with it the north

pole of a permanent steel magnet that has a magnetic power of ten ounces. The united power, however, instead of being eleven, which would be the sum of the two, would be twenty-three. As this gain is effected without additional cost, a fact established by numerous experiments, this discovery will go far in advancing electro-magnetism in the scale of useful motors, and will be exceedingly useful for telegraphic purposes, particularly for long lines.

## American Rifled Muskets.

All the army rifled muskets which we have examined appear to have too light barrels. In this feature they resemble the Enfield rifle. We are aware that a certain length of rifle, with bayonet affixed, is necessary for charging and receiving charge; but an improvement may be effected without reducing the total length of rifle and bayonet combined. Take three inches from the length of barrel, and add the weight of metal that would thus be removed to the diameter of the barrel; this will increase its strength, insure more accuracy of aim, and enable the soldier to handle it more easily. The bayonet may be increased in length three inches without adding a single ounce to its weight; and by using the very best of metal its strength will not be diminished.

## Grand Test Exhibition of Fire-arms.

We shall publish in our next issue the particulars of the proposal of the Illinois State Agricultural Society to have a grand national exhibition and test of firearms, and the list of premiums which this society proposes to award.

STEAM SUPERHEATING.—All the benefits obtained from superheating steam by passing it through tubes in a furnace before it is admitted into the cylinders, is stated to be obtained by keeping steam in a jacket surrounding the cylinder, and maintaining it at a temperature somewhat above that which operates the piston. It has been found in practice that the very dry steam which is produced in the tubes running through a furnace cuts the cylinders and packing. The London *Engineer* states that steam-jacketing has lately been introduced into the British navy, and has been applied to two vessels, the *Gibraltar* and *Atlas*. "In commercial steamers jacketed cylinders are being extensively adopted."