

THE BREECH LOADERS AT WIMBLEDON.

[From the London (England) Telegraph.]

At a period when England, in common with every civilized country, is rapidly converting her muzzle-loaders to breech loaders, and casting about to find an improved model for the small arm of the future, such a competition as that at Wimbledon last week for military breech-loaders possesses more than ordinary interest. Two rounds a minute, with good aim, was about the average of fairly trained men with the Enfield muzzle-loader, firing as rapidly as possible. To judge from the results of the practice at Wimbledon, eight or nine rounds per minute ought, in the future, to be about the average rate of the fire of British infantry when dealing with an enemy at sufficiently close quarters to make rapid firing effective. The scores of the past week have shown that in the hands of experts, much more rapid firing and admirable shooting can be got out of the weapons, a few of which it is now proposed briefly to describe.

First in order of merit for combined rapidity and accuracy is undoubtedly the "Henry" breech loader, by Mr. Alexander Henry, the famous inventor and well known gun maker, of Edinburgh. It is difficult, nay, almost impossible, to convey an accurate idea of the beautiful mechanism and solid principles involved in most of these breech-loading rifles, without the aid of drawings. It must suffice, therefore, to point out the distinctive general features. In the Henry rifle the barrel is above the small of the butt, with a strong iron open-ended chamber in the rear. The stout iron breech-block works vertically through the body of the gun by means of a movable trigger guard, on the plan first generally seen in this country in the American Sharp's rifle. The lock is of the ordinary description, and cocked in the usual way; but the hammer acts directly on the piston working in the breech-blocks, by which the central fire cap of the cartridge is exploded. This rifle is eminently strong and safe, for it cannot be discharged until the breech-block is securely locked in its place. Assuming the rifle to have been discharged, the mode of loading is first to cock the hammer, and then pull down the trigger guard. This opens the breech and ejects the empty cartridge case; insert the cartridge, pull up the trigger guard, and the gun is ready to fire. Some admirable shooting was made with this rifle, which was the only one using the heavy charge of 85 grains of powder. Mr. Oswald, of Perth, with his .577-gauge Henry, twice in succession, got off 40 rounds in three minutes, and on one occasion scored 106, taking the first prize in the extra series for rapid firing. Mr. Farquharson, with the .451 Henry, won the first prize in the first stage of the Duke of Cambridge's prize, at 200 yards; and Mr. McRae won the Duke's prize (£50) itself with the same rifle, 7 shots at 800 yards, making 20 points, in a gale of wind, with military sights.

The Snider rifle, which came off second for honors, being now pretty generally in the hands of the infantry, does not require any very lengthened description. The breech-block which carried the piston for exploding the cartridge is hinged on the right side of the gun, on a bar which admits of its being moved backwards. The rifle

being cocked, and a cartridge being inserted in the rear end of the barrel, the breech-block is turned over to the left, where it is caught and locked by a spring stud. After being fired the stud is released, the chamber turned over to the right and drawn backwards along the bar. The latter motion works the extractor which draws the empty case into the shoe, from which it has to be either picked out by hand or thrown out by tilting the gun. The latter mode is that usually adopted in rapid firing, but as the breech block is in the way of the case when it falls out of the shoe, in the hands of an untrained or awkward man, a considerable amount of shaking and twisting, especially with inferior ammunition, takes place before this operation is effected. The splendid score of 133 marks in five minutes at 500, and several excellent scores at 200, were made by two excellent shots carefully trained to show the capabilities of the arm. This obvious defect in what is otherwise an unquestionably sound, safe, good gun, has led to two modifications of the system, both of which possess great merit. The first is by Colonel Boucher, a gentleman who has paid much attention to rifles and projectiles, and whose views on gunnery practical experience has found to be sound. He hinges the breech block on the opposite side, and works the extractor separately by the finger. The extractor prevents the breech block from falling over while the gun is being slightly tilted to get rid of the empty case. In the hands of Sergeant Bolt, of the Royal Marines, this rifle proved itself a highly efficient weapon.

Armorer-Sergeant Warry, of Chatham, showed another exceedingly ingenious modification of the Snider principle. His breech block is also hinged on the left side. The act of opening perfectly extends the case, and fixes the breech block till the empty case is tilted clear of the shoe. It was tried by one of the Hythe staff sergeants, and found to work perfectly; after having been examined and approved by such excellent judges as General Hay, Earl Spencer, and Captain Fairclough.

Another rifle which attracted much notice at Wimbledon, from its simplicity, strength, and apparent adaptability for military purposes, was the Joslyn, an American invention, firing the copper case rim-fire cartridge. This system consists of a breech cap hinged on the left side of the barrel, the fore part or recess of which fits over a metal ring formed on the end of the barrel, and a projection on the lower part of the breech cap fits a corresponding recess cut in the shoe, into which the barrel is screwed. The cap is held, when closed, by a knob bolt on the right hand side, and is still further secured by the locking of the hammer after the piece is fired. The extractor, which is a simple slide without springs of any kind, is worked by a wedge-cam, attached to the hinge in such a manner that, upon opening the breech, motion is given to the slide, and the cartridge is completely ejected. This rifle won the second and third prizes at 500 yards, and the third prize at 200 yards, and is one of the nine now under trial at Woolwich.

The Witney rifle involves a new system of breech-loading. Its first appearance was at Wimbledon, where it practically demonstrated its efficiency. The breech arrangement consists of a bolt or plunger, moved to and fro by means of a powerful lever and fulcrum. The act of loading is performed by grasping a thumb-piece attached on either side of the lever, and by raising the lever perpendicularly to the barrel. Two very powerful flanges are lifted from either side

of the bolt, which at the same time is with drawn from its recess at the rear end of the barrel; the cartridge is then dropped into a "slot," from which the lever has been lifted in front of the bolt; the palm of the hand is now used to press upon the upper part of the lever, which has the effect of forcing the bolt back into the recess, driving the cartridge up into the barrel. At the same time the gun is cocked by means of a detent beneath the bolt, which catches a piston as the bolt is driven forward. The flanges before mentioned, entering into the side of the bolt, take the recoil and securely lock the breech by one motion. By pulling the trigger the detent is released, and the piston is driven forward by a spiral spring to fire the cartridge. By repeating the motion the empty cartridge case is withdrawn by means of extractors placed on either side of the bolt, and is thrown out by means of a small lever attached on the side of the stock. G. H. Daw's central fire cartridges were used with this rifle, the merit of which is proved from its having successfully carried off five of the prizes at Wimbledon, though in the hands of men quite inexperienced in its manipulation.

Soper's single action breech-loading rifle was also favorably tried at Wimbledon. The breech piece of this rifle is formed of a block of steel, having the striking pin mounted inside the block so as to work freely without any spring. The breech piece works up and down in a vertical slot in the breech of the rifle. It is secured to a lever fixed at the bottom of the lock, which is placed in the centre of the stock. The stock is also secured to the lever—in such a manner that both are worked together—by a swivel. This is furnished with a projection and a recess suitable for working the ejecting lever, so that by one motion of the lever the breech is lowered, the lock cocked and the old cartridge is thrown out of the rifle. The trigger is mounted on the lever, and has no connection with the sear until the breech is placed home, when upon the pressure of the safety trigger with the middle finger of the right hand, the rifle is ready to be discharged by the pressure of the fore finger on the trigger in the ordinary manner. It will thus be seen that the rifle can in no case be fired by accident, yet when loaded is always at full cock, and ready for immediate use. For cleaning purposes the lock and breech piece can be taken out by withdrawing two screws in a few moments, though the rifle may be fired several hundred times without this being required. Though by no means slightly, this rifle in practice at Wimbledon fired 32 rounds in three minutes, making a score of 75 marks. From the construction of this arm, the barrel being above the stock, the simplicity of the movement, and the unfailing way in which the empty case was ejected, it can be loaded and fired with great rapidity without being removed from the shoulder. Sergeant Gostage and Mr. Soper himself fired in this way, and, without pretending to be first class shots, made excellent scores, both at 200 and 500 yards.

Several of the rifles exhibited borrow largely in principle from the Mont Storn, of which the Ordnance select committee reported that it was the best capping breech loader that had been under trial. In this rifle, it will be remembered, the chamber was hinged on the barrel at the fore end, and was secured in its place for firing by a bolt worked with a hammer. This safe principle has been followed in three rifles exhibited at Wimbledon, namely, the Albini and Braendlin, the Fosberry and the Selwyn. The last named rifle, advocated by Captain