

THE EVOLUTION OF THE RIFLE

INVENTION OF THE PERCUSSION LOCK.

The percussion-cap or percussion-lock was invented by a Scotch Presbyterian clergyman named Forsyth, who was born on December 28, 1786, near Aberdeen. He was educated in the University of Aberdeen, and varied his clerical studies by dabbling in chemistry and mechanics. When shooting wild-fowl on a loch near the manse he noticed that many birds escaped unhurt by diving into the water the instant they saw the flash from the 'flint' fowling-piece. He obviated this by placing a kind of side cover over the lock, which obscured the view of the 'flash,' and eventually this developed into the percussion-lock.

It is only 'a flash in the pan' is now a trite saying, and people often use the phrase without noting its original meaning. The Rev. Forsyth remarked that when striking the flint with the trigger the powder in the little pan which exploded the charge in many cases was not ignited by the flint. It was, therefore, in 'may be' 20 cases out of a hundred only 'a flash in the pan.' Forsyth made his first percussion gun in 1805, and took out a patent in July, 1807. He was assisted in the specification by James Watt (the inventor of the steam engine). The Rev. Forsyth turned his venture into a company, and business was run under the superintendence of a practical gun maker, the inventor being associated with it till 1819. It seems to us now, in the light of the new improvements

In Implements of War.

a matter of wonder at the slowness of the British ordnance in rejecting an invention for which the quicker genius of the French, in the person of Napoleon, offered £20,000. It is true the British Government offered the Tower of London to Forsyth to complete his invention; but a succeeding Government ordered him to clear out of the Tower 'with his rubbish,' and he did not get a penny only his actual expenses for his year's hard work. And still his patriotism kept him from accepting Napoleon's offer, though he had to wait 24 years before his invention was tested at Woolwich. 22 years before a regiment was armed with it, and 34 before it was used in war. Besides, his name as the inventor of the percussion-lock, which made all breech-loading guns possible, might have sunk into oblivion had it not been for the action of his grand nephew, General Sir Alexander John Forsyth Reid, K.C.B., who published some short time ago a life of the inventor. It is said the oldest flint-lock in the Tower has the date 1611, and so slow did the ordnance proceed in adopting itself to the changes which now are of startling suddenness that the old weapon lasted almost without a scintilla of difference from the battle of Blenheim, in 1704, till the defence of Allahabad, in 1812.

It was not until the first Chinese war that the percussion-lock was used by the 2nd Battalion Border Regiment at the capture of Amoy, in 1841, over 75 years ago. What a wonderful difference it would have made for British generals in the Peninsula war if Forsyth had been allowed to complete the few things he was engaged on in the Tower. Waterloo would have been another Fontenoy had Napoleon overcome the patriotism of the inventor by his offer of £20,000.

The Evolution of the Gun

brought about changes in the barrel as well as in the body. A spiral or cork-screw grooving of the interior of the fire-arm in order to secure greater accuracy in shooting was known so far back as 1563, but nearly 200 years elapsed before 'the rifle,' as it was called, figured in the British Army.

In 1836 the Brunswick rifle was adopted, with bullets grooved, to fit corresponding grooves in the barrel. The percussion lock also supplanted the flint and steel. Then came along the needle gun, which Forsyth's invention occasioned. It was due to the inventive German genius named Johann N. Von Dreyse, and we all know that at the battle of Sadowa, in 1863, the Prussians, with the needle-gun, conquered the Austrians, now their devoted friends. It had been secretly adopted in the Prussian army in 1861. The French had a breech-loading rifle for the war of 1870, but the Ger-

mans had gone one better, as they are doing now, and had introduced the improvement into their artillery. Britain followed slowly in the small arm department by supplying a number of Lancaster rifles of 900 yards' range for service in the Kaffir war of 1846-62.

Then came Captain Minnie's expanding bullet, a pointed bullet, with flat hollowed case, which expanded into the rifling on being fired. In 1851 the English Minnie was introduced. Then came the Enfield rifle, which replaced the 'Minnie' in the Crimea. The success of

The Prussians' Needle-Gun.

demonstrated to the British the necessity of a breech-loader, and Mr. Snider converted the muzzle-loading Enfield into a breech-loader by simply cutting a piece out of the barrel, and putting a hinge on it, etc., in 1866. Two years later these served in the Abyssinian war. Then followed the Martin-Henry, or, more euphonically, the Martini-Henry, in 1871. This was the rifle of the Afghan, South African, and Egyptian campaigns. Improvements still went on, and we have the Winchester repeating rifle, invented by the Americans, and used by the Turks against the Russians in 1878. Six years later we see the Germans converting their Mauser into a magazine rifle, and in 1885 smokeless powder is invented, securing greater velocity and less 'fouling.' The British, after many experiments, adopted in 1891 the Lee-Metford magazine (repeating) rifle, holding eight cartridges, with Metford rifling, and a range of 3000 yards. Then cordite cartridges came into being in 1892. The Metford rifle was supplanted by the Enfield in 1896, giving the name of the Lee-Enfield, which, with a few improvements, has developed into the present army rifle, carrying 10 cartridges, which can be fired at the rate of 20 shots a minute, and carries three miles. The next improvements desired by inventors are—1st, automatic re-loading, so that all the soldier would be required to do would be to 'blaze away,' the cartridge being forced into its place by compressed air from the magazine, which would only require occasional re-filling; and 2nd, a silencer, which also may be worked with compressed gas, doing away with the report of the gun, and preventing recoil.

Kaikoura

(From an occasional correspondent.)

February 14.

For some time the Sisters of the Mission and lady friends had been actively engaged in preparing for a bazaar, the proceeds of which were to be devoted to the fund for extinguishing the debt on the new convent buildings. Their work terminated on Tuesday, December 22, when the bazaar was opened in the Drill Hall, there being a very good attendance of the public. Mr. Jas. Boyd, County Chairman, in declaring the bazaar open, congratulated the Sisters and the ladies on the splendid display of goods which they had provided.

An inspection of the stalls gave a good idea of the great amount of work done by the ladies in their labor of love. The hall was tastefully decorated with flags (kindly lent by Mr. C. Wilson), and various colored fans set off the stalls. In the evening action songs and dances were given by the girl pupils, under the direction of Mrs. J. O'Donnell, and a vocal item by Mr. B. Burland. Miss Burland acted as accompanist. The bazaar continued until December 26. Those in charge of the various stalls were:—Plain and fancy work—Mesdames B. and H. Mackle; assistants, Misses M. Mackle, Kerr, Kirby, and Curtin. Doll stall Mrs. J. Harnett; assistants, Misses V. and T. Garrett, R. Mackle. Produce—Mesdames Maddock and Kirby. Plain and fancy goods—Mrs. G. E. Parsons; assistants, Misses Bolton, Main, Hailes (2), Coakley, Parsons (2). Cigarettes—Misses D. and V. Kirby, A. Schroder, M. Boyd, and Mr. W. Hailes. Sweets, etc.—Mesdames McSwigan and White; assistants, Misses Miles, Louison, Keenan, Webster, White (2), Marshall, and Vangioni. Refreshments—Mesdames Stove and Whareham; assistants, Misses E. Mackle, Adair, Peoples, and Dee. Miss M. McSwigan was in charge of the bran tub.