

There is but one variety of 12-pounders, it is a field gun of 8 cwt.

The 9 pounder of 6 cwt. has the same calibre as the 12-pounder, but fires a shorter projectile.

The 6-pounder of 3 cwt. is also a field gun. The three latter *natures* are the same in general design and rifling as already described, but the method of opening the breech for loading is different. In the screw breech loader the vent piece must be removed to insert shot and cartridge; in the field piece this is effected by reversing the screw which allows the breech piece to open by a hinge, the shot and cartridge being inserted the breech piece is swung back to its place, two or three turns of the lever tightens it home and the gun is ready for action; the vent piece is removeable whenever it may become necessary, but not whenever a shot is fired.

In the Wedge gun another arrangement prevails: a slit is cut through the breech from side to side, and the parts that close the bore are therefore inserted or withdrawn at the sides instead of at the top. It is said that by this arrangement the gun can be loaded more rapidly.

This arrangement is known as the *wedge and stopper* system, and may be described as follows: The stopper is made of iron or steel, has a projecting face to fit into the bottom of the bore, and on this a tin cup is placed to prevent the escape of gas; it has studs on the top and bottom which travel in guiding grooves cut in the slot, and it cannot be detached from the gun till the little stop pin is raised.

The wedge is made of iron, has a taper of one-half inch in its whole length to correspond with a similar taper at the back of the slot; a piece of iron formed into a handle at each end lies loosely across the wedge with a play of about 4 inches, so that it can be used like a hammer to loosen or tighten the wedge.

On the top of the breech is a *slide plate*, the motion of which backwards or forwards raises or lowers a *locking pin* passing through the metal of the gun into the slot. On the upper surface of the wedge is a small recess of about one inch in depth, and in such a position that when the wedge is in its place for firing the locking pin drops down into it and thus prevents any lateral motion of the wedge; until this happens the *slide plate* covers the vent and the gun cannot be fired. The hammer must also be returned into the slot as part of the recess for the locking pin is cut in its upper surface. When this operation is completed the wedge and stopper are immovable till the slide plate is again forced over the vent.

In order to load this gun the vent must be covered with the slide plate, by which the locking pin is raised up out of its recess in the wedge and hammer—the latter is then used to loosen and push out the wedge—the handle of the stopper is forced back and the latter pulled out at the side; the slot and

cartridge can now be inserted, the *tin cup* placed on the pin in the centre of the face of the stopper; the latter is pushed into place, the wedge sent home with a smart blow, and the hammer returned into the slot, the *slide plate* being drawn over all leaves the vent free.

There are two *natures* of wedge B. L. guns in the service, the 64 pdr. and the 40-pdr., both siege guns.

The heavy M. L. rifled ordnance from 7 to 12 inch are made of wrought iron coils over a steel tube with a solid end which is supported by a caseable screwed up against it through the breech; they are built on a variety of constructions, but the principle is the same, and the varieties consist in great part in the number, arrangement, and cost of the structure shrunk over the inner tube.

The varieties of the system from ARMSTRONG'S original conception appears to be that whereas he employed a solid forged breech piece and a large number of coils shrunk on and hooked together to prevent longitudinal separation; FRASER'S method is to form a breech coil over the inner tube composed of double coils welded to the trunnion to form a mass which is shrunk on in one operation, the muzzle being strengthened by a short tube formed of two coils united. A modification of this has a coiled breech piece under the breech coils which is therefore reduced in thickness.

We have already enumerated the different *natures* of this system in the service, and they are all rifled on what is called the Woolwich system, the *twist* of the grooves being alone uniform in the 7-inch gun, but increasing in the larger calibres. The projectiles have gun metal studs of equal size on the 7 inch, but on all the others the top studs are smaller than the bottom studs owing to the increasing twist.

The 64-pounder M. L. gun is an exceptional variety both in construction and rifling. There are four different constructions of this gun, first—the converted Armstrong 70 pdr.; second—Fraser B. construction; third—Fraser D.; those are *built up* guns rifled on the *shunt* system—which is that the grooves increase gradually in depth from the muzzle to the breech. The fourth is an 8-inch cast iron S. B., lined with a wrought iron tube and known as the *Palliser* construction.

All those guns fire the same projectile which have copper studs.

This whole question of M. L. rifled ordnance is in a state of experiment; nothing decisive has been achieved beyond the fact that a gun can be built up strong enough to resist the strain of a charge of 120 lbs. of powder, a pressure of 66 tons to the square inch, and throw a 700 lb. shot.

Its value as a weapon, accuracy of fire, and amount of work, have yet to be determined. The mechanical difficulties attending the operations of such a machine have not yet been overcome. The field is open for experiment and discussion.

We have always been of opinion that a trained soldier was the best possible authority on strategical movements, or even the selections of points *d'appui*, involving future or present military operations.

It seems, however, that the *Whig-Radicals* in England are really far greater geniuses than the world give them credit for. CHILDERS reconstructed the British Navy amidst the enthusiasm of the Manchester philosophers. CARDWELL is about to reconstruct the Irish portion of the new localised British army after another.

Our contemporary the *Broad Arrow* is evidently satisfied that the action of the military attorney is about to lead to important results, the most prominent of which is, evidently an *Irish row*, as the following extract will shew:

"It is rumoured that Mr. Cardwell will proceed at once to Ireland to consult with the Lord Lieutenant with reference to the depot centres about to be established. This will be an excellent opportunity for the War Minister to gratify the Home Rule M.P.'s, as the establishment of a depot centre in any town or district of Ireland is certain to be welcomed as a boon, and may perhaps evenuate in an occasional experiment like that of our Autumn Manœuvres. Irishmen, like Frenchmen, are rather fond of military display than otherwise, and we see no reason why they should not be gratified—always providing that Umpires are at hand to moderate their excess of zeal. Who knows that the hurly burly of the war game may not in time supersede the glories of Donnybrook? Seriously, there is no reason why the taste of Irishmen for a scrambling fight once a year or so should not be gratified, and at the same time idealised by the æsthetic advantages at the command of the authorities. The association of Ireland with the military glory of England is an historical fact, which it is high time should be handsomely acknowledged, and we know of no better way than the one suggested to please Pat when he is 'spilin' for a fight.'"

The most important military positions in the United Kingdom are to be found in Ireland; the selection of those as depot centres would necessarily be the work of a professional man, but the incapables of Whig Radicalism are fond of aping the vanity of the Deputies of the French National Convention, and with the same eminent success.

AN article on the practical application of *Logistics* in the last number of the VOLUNTEER REVIEW has received a singular illustration as to the manner in which its administration in the British Army cripples that service.

The *Broad Arrow* of the 14th September gives the following paragraph, and it must be recollected that the draft on the effective cavalry force reducing its strength by one-third is in addition to the second army of non-combatants employed by the Control System.

"A correspondent of the *Morning Post* recently stated that the three regiments of heavy cavalry attached to the Southern Army, engaged in the manœuvres, marched from their respective quarters with a