

## THE BLACK ALPACA LADY.

## HIS WIFE'S MOTHER.

He stood on his head on the wild sea-shore,  
And danced with his hands a jig,  
In all his gesticulations, as never before,  
A madly hilarious gig.

And why? In that vessel which left the bay  
His mother-in-law had sailed  
To a tropical country some distance away,  
Where tigers and serpents prevailed.

He knew she had gone to recruit her health  
And doctor her rasping cough,  
But wagged himself a profusion of wealth  
That something would carry her off.

O, now he might look for a quiet life,  
And even be happy yet;  
Though owing to no end of neurotic wife,  
And up to his collar in debt.

For she of the spees and curled false front  
And the black alpaca robe,  
Must pick out a sailor to suffer the brunt  
Of her next daily trial of Job.

He watched while the vessel cut the sea,  
And bumpishly upped and downed,  
And thought if already she quailed and fled  
He'd consider the edifice crowned.

He'd borne the old lady through thick and thin,  
Till she'd lectured him out of breath;  
And now, as he gazed on the ship she was in,  
He howled for her violent death—

Till over the azure horizon's edge  
The bark had retired from view,  
When he leaped to the crest of a chimney,  
And pranced like a kangaroo.

And many a jubilant peal he sent  
O'er the waves which had made him free,  
Then cut a last eager estate and went  
Turning somersaults, homeward to tea.

—N. Y. World

## THE GATLING GUN.

The conspicuous absence from the Autumn Manœuvres of the newly-adopted "Gatling Battery" has been commented upon by more than one military critic, who only knew of its introduction into our Service without being aware that as yet it has no existence in England, with the exception of one American specimen which has lain, *perdu*, in the Control Department of the Woolwich Arsenal since autumn of last year, when it was submitted to a series of crucial tests before a select committee of which Col. Wray, C. B., R. A., was president; and one other which has been "on view" at the Crystal Palace during the last few months. It is this latter "Battery" or "Pellet-driver" we propose in the first instance to describe, as being more open to public inspection, and because the puzzled looks of spectators who examine the gun vacantly from time to time, and pass on in happy ignorance of its use or construction, prove that some account of it may be welcome to many.

The Gatling in question is one of the old or model specimens approved by the addition of a lateral arrangement so as to give it a sweep of twelve degrees. This traversing is effected, without moving the trail or changing the wheels of the carriage whereon the gun is mounted, by means of a cratchet actuated by a spring on a brass right and left screw, fitted with a shoulder in a recess to tighten or relax as required. When this latter screw is tightened, the apparatus forms part and parcel of the crank that revolves the gun; when lateral direction is undesirable, it is simply relieved. The barrels are ten in number, of 0.50 calibre, and of heavier metal than ordinary rifle-barrels. They are rifled rather rapidly, and are arranged parallel but separately around a central or main revolving shaft, and are held secure near the muzzle and at the breech by strong iron circular plates. In combination with the chambers of the barrels is placed a grooved "carrier" or chun-

nel block, and behind this again is an enclosed cylinder, in whose cavities the blocks work on a line with the axis of the barrels playing backwards and forwards like a weaver's shuttle, and performing their functions of loading and firing from their impingement on a stationary incline plane. There is a partition in the casing, through which there is an opening, and into which the main shaft (whereon are affixed the lock-cylinder, carrier, and barrels) is journaled. In front of the partition is placed a cam provided with screw surfaces. This cam is rigidly attached to the casing, and is used to impart a reciprocating motion to the locks when the gun is revolved. Each barrel is furnished with its own independent lock mechanism, consequently the locks revolve with the barrels, whilst at the same time, they each and all have the reciprocating motion indicated. Within the rear-casing are also situated the cocking-device and gear-wheels, the latter being simply a pair of ordinary cogged wheels, which, actuated by a crank in the operator's hand, set in motion the main shaft carrying with it the lock-cylinder, carrier, barrels and locks. The gun is loaded from a drum pivoted above the breech on a hinged hopper or brass curved plate, secured by a lock in the framework wherein the entire apparatus is firmly imbedded. The drum is furnished with sixteen divisions, holding twenty-five cartridges each, a small running weight being placed above the latter to keep them in proper position and facilitate the loading. The 400 cartridges thus contained can be discharged in a continuous stream within sixty seconds!

On the lower sides of the drum there are slight projections for revolving and locking it when loaded, an operation effected by the manipulation of the thumb and forefinger of the left hand while the right is engaged with the crank handle. On the base of the drum a couple of ribs are so fitted into the hopper, as to bring the opening of each division over the cavity down which the cartridges slide successively into the grooves of the channel block, where they are taken instant possession of by the locks, forced into the barrels, discharged by impact of the needle, and finally the empty cases are extracted and fall through an opening, or "shoot," into a canvas bag affixed for the purpose by one and the same movement. When the gun is being fired there are five cartridges at all times in process of loading and firing, and five of the cartridge-shells, after they have been fired, are in different stages of being extracted. In other words, so long as the gun is supplied with cartridges (and an empty drum can be replaced in a moment) the several operations of loading, firing, and extracting the cartridge-shells, are carried on "automatically, uniformly, and continuously." Notwithstanding all this the lock mechanism is extremely simple, consisting of four parts (1) the bolt, (2) firing-pin, (3) extractor hook, (4) spring. The extractor protrudes slightly beyond the bolt and runs into a slot in the base of the cartridge when forced into the barrel, and thus withdraws the case after the needle has exploded the charge, and as these cases can be loaded forty or fifty times without injury, the device seems profitable as well as ingenious. The several parts of the lock are of course made strong and durable, but should any portion of the mechanism get out of order, the casable plate in the rear of the gun is removable at pleasure, disclosing the gear wheels, divided from the cylinder by a diaphragm plate, wherein the main shaft is journaled, and upon the slight projection of which beyond this plate the wheel

itself is keyed. In the plate is a plugged hole for the purpose of reaching or taking out a damaged lock, when a fresh one can be inserted without delay. The exterior appearance of the "Gatling" is, we presume, sufficiently familiar to all our readers. At first sight it looks like a sectional or anatomical arrangement to disclose the mechanism of some monstrous cannon; a skeleton-like deformity rendered necessary to afford free circulation of air and radiation of heat during such rapidity and continuity of firing as the gun can accomplish. The barrels being thus isolated, too, make their expansion and contraction equal and uniform, and being open from end to end they can be easily kept clean.

Such then is the gun as seen at the Crystal Palace, but as many and important improvements have been added, and as the Gatlings shortly to be supplied to our Government from the Elswick Works are different in detail and construction, it may be well to enter more fully into the subject.

Let it once for all be understood that the Gatling calibre ranges from .42 to one inch; but for practical purposes the inventor has subdivided them into four classes as follows:—

The 1st or smallest size has ten steel-rifled barrels, and is made of any proper calibre to suit the rifle cartridges used by different Governments. Total weight, 3cwt.

The 2nd has similar barrels, but of .63-inch calibre, and discharges solid elongated leaden bullets weighing 3½ ounces.

The 3rd in exterior dimensions is precisely the same as the last named, excepts its calibre is .75, and it discharges a bullet weighing 4½ ounces. Weight of each gun, 5cwt.

The 4th is of one-inch calibre, is made with six, sometimes ten, barrels, and discharges solid projectiles weighing half-a-pound. A canister cartridge containing sixteen balls can be used with this gun. It also discharges explosive bullets with terrible effect. Total weight, 6cwt.

The larger guns are loaded from metal feed-cases, and can be fired at the rate of from 150 to 200 shots a minute, but we believe the use of feed cases will ultimately be discontinued in favour of the drum, protected by a steel mantlet. In the 2nd or .63-calibre gun, a noteworthy improvement has been experimentally introduced, designed to provide ready access to a damaged lock. A small worm wheel supersedes the use of cogged-wheels, and admits of the required space for the operation of repairing or inspecting a lock, without unscrewing the casable plate. Entrance is effected through an aperture cut in both casable and diaphragm plates, the perforation being closed from the outside by a plug. This plug carries at its front end a sleeve with a projecting arm, a slot being cut on the under side. When the plug is in position, this slot forms a continuation of a groove, cut in the end of the cam, in which a lug, formed at the end of each lock, revolves. When the lock is brought into line with the plug, by means of the crank-handle, the lug engages with the slot in the arm of the plug, which being withdrawn, the lock—guided in its passage by a tube—follows in due course. Nor is the gun disabled by the displacement of one or more of the locks, for the remaining barrels can be used quite as efficiently, but at all events, the several parts being interchangeable and spare ones always at hand, the loss of only a few moments is incurred while the substitution is being made.

This is a peculiar feature of the Gatling, rendering it second to none in a most essential particular, for machine guns are natur-