
**A Popular Introduction to Rifled Ordnance, by an
Artilleryman**

Introduction Popular

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Author: Introduction Popular

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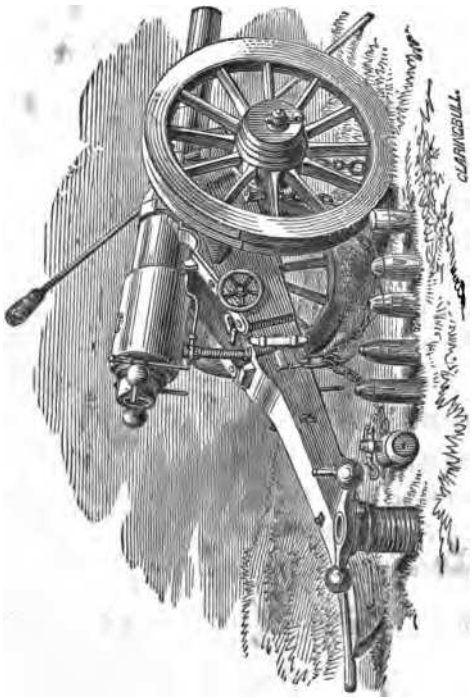


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40-POUNDER BREECH-LOADING GUN.

A
POPULAR INTRODUCTION

TO

RIFLED ORDNANCE,

FOR THE USE OF LEARNERS OF THE
ART OF GUNNERY.

BY AN ARTILLERYMAN

WOOLWICH :

BODDY AND CO., MILITARY PRINTERS, ARTILLERY PLACE.

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BODDY AND CO., MILITARY PRINTERS, ARTILLERY PLACE.

BREECH-LOADING GUNS.

It would be tiresome and would answer no useful purpose to enter into a minute description of our Rifled Guns. An artilleryman is not a gun-founder. His business is more particularly with the working of the gun after it has been made. As it is impossible, however, for an engineer to be a competent workman unless he knows the names and uses of the different parts of the engine he is in charge of, so in the same manner, it is impossible for an artilleryman properly to perform his duties unless he has a general knowledge of the construction of the guns which are entrusted to his care. It is proposed, therefore, in these pages to supply such a general description of our Rifled Guns, their Projectiles and Fuzes, as shall include all the chief points which it is really necessary for an artilleryman to know, while on the other hand it should exclude all such details as appear properly to concern only the manufacturer.

We shall begin this description with our breech-loading guns, because, although it is true that muzzle-loading rifled guns are now coming much into fashion, it must not

be forgotten that there are at present upwards of 3,000 breech-loading rifled guns in use in the service, and that for many years to come these will doubtless continue to form an important part of our armaments. It will be observed, moreover, that although in the one case the projectile is put in at the breech and in the other at the muzzle, the principles upon which both guns are constructed, the principles upon which they are sighted, and the leading features of their different projectiles, are in nearly all respects identical. It will be found, therefore, that when we have made ourselves acquainted with all that is necessary to be known about our breech-loading guns, we shall have comparatively little more to learn in order to be equally at home among the muzzle-loaders.

The part of the Armstrong gun which is usually most attractive to a person examining it for the first time is the breech-closing arrangement. We naturally feel curious to see how a gun can be made as open at the breech as it is at the muzzle and yet be closed again before every round so as to be almost as secure as if it had been a muzzle-loader. The way in which this is effected is very simple.

The gun, as already observed, is completely open at the breech. A schoolboy's popgun is not a more complete tube from end to end than is the Armstrong gun. To load the piece, therefore, it is only necessary to pass the bullet and cartridge in at the open end in the breech. The charge is pushed forward into its place in the barrel, and the breech is then ready to be closed up. To effect

this two articles are employed. The first is the round block of metal called the vent-piece. If we examine this article we shall observe that it is bevelled off in front somewhat like the bung of a cask. It is in fact a stopper for the gun. When required for use it is dropped down through a hole or slot cut in the upper part of the breech. The bevelled side is of course turned to the front, and fits into the breech end of the barrel. When properly in its place therefore it closes up the barrel in nearly the same manner that a stopper closes up the mouth of a bottle.

It does not concern us particularly to know exactly of what material the vent-piece is made. As a matter of fact, perhaps, there may be no harm in our knowing that it was originally made of steel; then of wrought iron; then again of steel tempered in oil, and latterly of Marshall's iron. What chiefly concerns us however to know is, that the latest pattern (as shown by the date stamped upon it) should always be used in preference to any pattern of an earlier date, and that if any one of an old pattern with flat back should chance to be met with, it is on no account to be used as it does not take sufficient hold in the slot, and is liable therefore to be blown out.

Another matter which concerns us is the peculiar shape of the vent. It will be observed that it does not descend in a straight line like the vents of our smooth-bore guns. It is formed like the letter L, that is to say, it descends in a vertical line to about the centre of the vent-piece, and then

turns off at right angles straight to the front. The point at which it comes out corresponds as nearly as possible with the axis of the piece. The object of making the vent in that form was to keep it near the centre of the metal so as to weaken the vent-piece as little as possible, and also to cause the cartridge to be ignited at the base so as to secure the advantage of what is called "central fire." A vent of that form, however, has the disadvantage of being very liable to become clogged up with oil, &c. A tube should therefore be fired through it to clear it before commencing practice. It is also liable to wear very much, and to gutter at the angle owing to the check which the rushing gas sustains in turning. Its condition at that point requires therefore to be occasionally ascertained by means of a small probe. If much guttered the vent-piece must be condemned, as the copper bush of the vent does not extend to that point, and there is no remedy for the weakened iron.

Another matter about the vent-piece which we have to notice is the copper ring on its face. This copper ring, it will be observed, is let into the part which presses against the edge of the barrel. It is not screwed into its place, it is only pressed in. The reason for placing a copper ring on that place is, that it is a part which is liable to become sooner worn out than the rest, and it is an advantage therefore to be able to detach and replace it when necessary. As it becomes worn or dented it can be refaced with the implements supplied to the battery for the purpose, and when no longer repairable it may be knocked off and

a new ring substituted. The copper ring should at all times have a smooth surface, as any dent or bruise upon it might cause an escape of gas which would eat into the metal and speedily render the piece unserviceable. The bevelled part may be planed down until its outer edge and the edge of the iron meet; and the flat face may be planed down until it is flush with the iron. It will generally be found that the copper ring requires refacing at the end of about every 100 rounds, and that it requires to be renewed at the end of about every 300 rounds.

The back of the vent-piece is also a part which we must not overlook. It is important that it should be kept perfectly smooth and true, as any burr or upsetting of the metal on it would make the breech-screw act untruly against it, and probably cause the vent-piece to fracture. It should be occasionally tested with a straight edge to see that there are no inequalities upon its surface.

The cross-head on the vent-piece is a part with which we have more concern than may at first sight appear. It is not put on merely to give a hold for the shackle. If we examine it attentively we shall observe that its under edges have been carefully rounded off so as to form an exact fit for the edges of the slot in the gun. The object of that arrangement is that the vent-piece when dropped into the slot may be suspended by the cross-head in a true position for being screwed up. Great pains have been taken to ensure its accurate adjustment, and it is of importance therefore when working the gun to let the cross-head do its own work. If the vent-piece is allowed to