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Major V Gardiner. 6th Gen. Turner 8 Oct. 1811

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Exmouth Devon Oct.r 7.th 1811.

Generals,

You will think it extraordinary to receive a letter from one who has not the honour of being personally known to You, but my excuse for this intrusion is, that, I know no one so zealously interested for the improvement of the British musket as Your self, which You have fully evinced by Your observations on the French and English Locks, proveing the inferiority of ours, to that of France, and by patrioticallly pointing out the remedy to obviate this alarming inferiority; for which every friend of His Country is infinitely obliged to You. So absolutely necessary is an equality of our Small Arms With those of our Enemy towards giveing a chance of succes in The Field

I also, have long endeavoured to accomplish this most desireable National Object, being convinced of Its being preparatory to any rational expectations which my Country can entertain of a prosperous termination of This eventfull War

I have tried to make British Small Arms more irresistable than at present they are, principally, by abridgeing the oppose method now practised of loading Them; in attempting which, I have, so far succeed, as to fire three shots by means of the method in the time now requised by the most expert Soldier to load and discharge his Musket onely twice, requireing much less animal exertion and address than is at present employd in the Opperation.

In August last I was at Plymouth Dock, superintending the alteration of One hundred Muskets to answer the above purpose, and as I have reason to believe, that any account of attempt of the kind (even tho' it should not meet with perfect succes) will be acceptable I will take the libirty to decribe It.

An Army Musket is primed in the usual manner with a propa-

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a poperly formed blank cartridge, and the remaining powder it contains is emptyed out of it into the barrel, which done, the paper is let fall on the ground, whilst the Musket is held in a vertical position by the left hand, a naked ball in the mean time is let fall down the barrel, and the musket is compleatly loaded; the ball would rest upon the powder, but for a small thin plate of Iron which has been previously brazed in the inside of the barrel, which stops the ball in its descent within an inch and a half from the upper surface of the powder, which is there fixed by the iron plate, which plate, being a little thicker next the powder than near the muzzel, acts like a wedge on the ball, which is there kept by it, and also prevented from tumbleing out when the musket is inverted.—

This wedge like plate of iron, is all the addition made to the two hundred muskets, which, I am told are to be sent to Portugal for approval or rejection, but tho' they have been finished more than five weeks, they are at Plymouth Dock yet, and I just now learn are ordered to be lodged in the Tower, for what reason I know not. I am sorry for it, because they possess two qualitys which I do not know that any muskets belonging to any Military power in Europe have.

Viz:d 1st They are capable of being loaded and discharged thrice in the time that our common Army Muskets can only be fired twice. I have indisputable authority for asserting this.—

2dly They have a superior point blank range to any other muskets — This circumstance is given them, by placeing the bullet one inch and half before the powder, agreeable to the well known Axioms and experiments of Engineer Robins, who says,

That the velosity or point blank range of a bullet is encreased, in proportion to the distance the ball has been placed before the powder in the barrel, and that this takes place with out encreasing the powder - and that this point blank range is augmented as long as the strength of the barrel can withstand the explosive effect of the powder, caused soley by the increased distance between it and the ball, previous to its discharge —

By this means, we can obtain the greater possible point blank range of a bullet, which the present strength of the British Barrel is capable of geveing with safety — The advantages of this increased range can onely be properly appreciated by Military Men accustomed to the various situations which Soldiers some time find themselves in —

At all events, This Axiom of Engineer Robins, appears to me, to open a large field for improvement in every kind of Artillery in which Gunpowder is employ'd, and that Military power will act with the greatest sagacity, who first takes the advantages it presents, which certainly are many, and important, and sure there never was a period in which they will be more acceptable than the present.

The onely objection which I could discover in the muskets in question, is, that, in firing them thirty times without intermission, they became so uncommonly hot, that three or four of the men employ'd in firing them with ball had their hand blistered by them; But I do not think it difficult to obviate this inconvenience; but if not at any rate, I can lessen this inconvenient heat, by diminishing the distance of the bullet from the powder, but than indeed the advantages which the point blank range gives, will be deminished —

I durst not remove the distance of the ball from the powder in the altered Muskets to the extent I wished for fear any of the barrels should not prove strong enough, for I knew, if any accident should happen, it would suppress my whole scheme, for it is inconceivable how many enemies there are to Innovation of every kind, let them be ever so salutary; therefore, for the present I must relinquish my favourite object in obtaining a great length of range, till a more convenient opportunity, when I am certain of pleasurely reflected on, its advantages will be found highly important

It is generally allowed, that the quickness of Fire from Infantry, contributes greatly to superiority in the Field - indeed I know of no modern Battles that have been decided by Cannon alone, the musketry of the Line ultimately determinates It Fredric the Great, had an high opinion of the effect of Field Artillery, but He never lost sight of the compelling power of small arms witness, the great attention he constantly paid to the rapid loading and discharge of his Soldiers muskets, his improvement in the iron ramrod, and the platoon exercise fully evinced, and which every Military power in Europe adopted: tho' I believe if the Musket here mentioned is accepted

is accepted, a ramrod will be found intirely useless for loading, serviceable onely in cleaning the barrel. for which purpose a light wooden one will be found most eligable.-

It may not be heine amiss to mention what Captain Tomson of the British Artillery says of Engineer Robins in a Treatise on Gunpowder and Fire Arms -

"Before Robins, who was in Gunnery what The Immortal Newton "was in Philosophy, the Founder of a new System deduced from "experiment and nature, the service of Artillery was a mere "matter of chance, founded on no principals, or at best on "erroneous ones - All Nations in Europe have joined in com= "=mendations of Mr. Robins, and adopted His Axioms -

The entire los of the use of my right hand and arme together with old age, and my being a great Cripple, I hope will apologize for my sending this scroll -

General,

I have the honour to be
most respectfully
Your most Obedient
and very humble servant -

V: Gardner -
Plate Major 16th Foot

To
Major General Turner &c.
Royal Invalid Barracks