

6. *Trigger.*

To lie back as far as possible, and to be scored longitudinally to roughen the surface. The axis pin to be a screw and made of stronger wire.

7. *Sword.*

To be of the Elcho pattern, and the knob of spring to be rounded off.

8. *Safety Bolt.*

Indicator to be shifted to fit the bolt when not engaged with the action.

9. *Edges.*

All exterior sharp edges to be rounded off.

10. *Cleaning-rod.*

To be made of steel throughout, with a catch to hold under the top band by the spring of the rod itself. Head to be conical.

11. *Muzzle-stopper.*

The Committee have recommended a cover in place of a stopper.*

Programme for the Examination of Witnesses on the Character of the Mechanical Construction of the Martini-Henry Rifle.

The witnesses will be requested to direct their attention to the mechanical arrangements of the breech action and stocking of the rifle, and to state their opinions on the following points, viz:—

A. On the facility and economy of manufacture of the breech action, in its various parts, having reference not to small supplies of hand made rifles, but to large supplies produced by machinery, at the Government Small-Arms Factory, or at high-class private manufactories, under proper supervision.

B. On the simplicity and efficiency of the breech action generally, and of its fitness, as a whole, if introduced in rifles manufactured as above stated, to do its work in all climates with safety and regularity.

C. On the mechanical character of the various parts, viz:—

1. Of the falling block, and its power to resist the explosion of the charge without undue strain to any of the joints; and at what point or points the recoil would be transferred through the back part of the falling block.

2. Of the spiral spring and the striker, and if when combined and worked as proposed they are calculated to give an adequate and uniform blow to the detonating cap, without damage to the striker or liability in the spring to fracture or loss of power by use.

3. Of the working lever, whether it is properly placed, and if it has adequate power for its duty of lowering and raising the block, cocking the rifle as the block falls and rises, and working the extractor as the block falls, and keeping the block up to its place when firing; and whether this lever is likely to continue to do its work properly.

4. Of the centre pin upon which the lever works, and at the same time the tumbler and the indicator, whether such combined use of the one pin is desirable in the view

* Two other alterations were suggested by some of the witnesses—viz., the strengthening of the safety-bolt and an alteration in the form and substance of some of the screws. After consultation with the Superintendent Royal Small-Arms Factory, the Committee have come to the conclusion that it is unnecessary to accept these suggestions. The Superintendent Royal Small-Arms Factory recommended the substitution of brass for iron furniture, but after full consideration the Committee have determined not to adopt this recommendation.

of simplicity, efficiency, and permanence, and whether the accuracy of the indicator is permanently reliable.

5. Of the tumbler, sear, and trigger, whether in their combined action they are safe and strong, and capable of proper adjustment of their bearing surfaces, to such an amount of uniform and steady pull, whether large or small, as it may be desired to give, and whether the may be expected to retain such uniform and steady pull in use.

6. Of the safety bolt, as to its simplicity, efficiency, and permanence.

7. Of the cartridge extractor, and whether by its form and the way in which it is acted upon by the falling block, it is calculated to do its work properly and permanently.

8. Of the arrangement of all the parts of the breech action within a closed metal case, and whether such an arrangement is desirable or otherwise, having reference to compactness, strength, and protection from dust and wet.

9. Of the strength and permanence of the mode of stocking.

D. On the measure of importance of any defects which may be considered to exist, the way in which they would show themselves and after how many rounds, the facility if repair should become necessary by reason of such defect, to what extent any such defects, if theoretically assignable, would be likely to show themselves in rifles equal in character of work to the present Government rifles, well made and properly tested and inspected; how far any such defects may be inherent in the Martini action, and inseparable from it, or capable of correction without material change of design, by the fair substitution of some simple and well-known form of detail.

H. C. FLETCHER, Lt.-Colonel,
President of the Small Arm Committee.
War-office, 3rd December, 1870

LETTER FROM LT.-GENERAL THE RIGHT HON.
SIR W. MANSFIELD, G.C.B., G.C.S.I.

18, Grosvenor-gardens, Jan., 18, 1871.

Dear Lord Elcho,—I have inspected the new pattern rifle sword now lying at Messrs. Wilkinsons', in Pall-mall.

This sword unites the length of the old rifle sword to the cutting and chopping qualities of the Goorkha kookery, the lower end of the blade and the weight of the weapon being arranged after the manner of that best of all chopping knives.

If this weapon should come to be the regulation rifle sword for the whole of the infantry, a want will be supplied hereafter the existence of which has hitherto been a constant source of perplexity to British general officers in the field.

Thus, in addition to an excellent weapon, the soldier will find in this newly modelled sword an admirable tool with which to chop firewood for cooking purposes, to cut paths through jungle, to open a way through a thick fence, to fashion the branches of an abattis—in short, to do everything for which a good chopping knife is required.

In our campaigns we have often been exposed to great difficulties for want of such a device; besides that, when billhooks or axes have been rateably served out to troops and companies, a proportion only of the men has been furnished, those men have been thus uncumbered with extra weight and an extra implement requiring adjustment on their person.

But, further, it often happens amidst the circumstances of war that the billhooks and axes are not in the front when they are wanted, or that, if they are, they are so bad

and frail they go to pieces in the hands of the men using them.

This was reported to be the case in a campaign of which I had to arrange the details on the borders of Bhootan in 1865-66. I was obliged, consequently, to move the Government of India to buy, at considerable expense, native-made kookeries, and to serve those out to the troops in the place of the British-made billhooks which came from the arsenals. It is probable that these articles are now improved in the Indian arsenals, since the matter was brought prominently to the notice of Government. But I believe it to be true that, according to mechanical principles, a billhook, owing to its shape, can never be so good a tool for the purposes referred to as the kookery, the principle of which is adopted in the new pattern rifle sword. If, in addition to correctness of form, care be taken to put the best material into the rifle sword and to insure a perfect temper in the metal, the application of this weapon to the Army cannot fail to be a great and very practical improvement in the equipment of the British infantry soldier.—

Very truly yours,

W. R. MANSFIELD.

DOMINION FLAGS.

The various flags used by the Dominion are, of course, modifications of the glorious old flag under which we all desire to live, and have only slight distinguishing features as matters of convenience.

First. The flag of the Dominion is the British red ensign with the Union Jack in the upper corner, and having the arms of the Dominion on the side; this is the flag all vessels should use, and is proper for all occasions.

Second. Flag of the Navy, this is a blue ensign with St. Andrew's cross; and the arms of the Dominion in the centre of the cross; this flag is only intended for the war vessels of the Dominion, and merchant vessels should not hoist it.

Third. Flag of the Lieut.-Governor; a white ensign known as St. George's cross with the arms of the Province in the centre.

Fourth. Flag of the Governor General; same as the Lieut.-Governors, except that the arms of the Dominion take the place of the arms of the Province.

The two last flags should only be used by the officers designated.

PAPER WHEELS.—The Pullman Car Company is running a car on the Chicago and Northwestern road with what are called "paper wheels." The wheels have steel tiers and cast iron hubs, and the paper is introduced in the way of filling under the tiers for the purpose of deadening sound and diminishing the force of concussion. According to the National Car Builder the wheels have been running since July last under this particular car, and had been in use some four months previously. The paper device is said to be superior to wood for the purpose designed, being stronger and lighter, and free from knots, grain or sap. It does not expand or contract, but remains in the condition in which it is put in the wheels without liability of change. It is cheaper than wood and can be moulded, fire and water-proof by asbestos. It is as a substituted for wood, adapted to a variety of uses, especially in the way of ornamentation.

Vice-Admiral Pearce of the British navy died at his residence, East Stonehouse, Plymouth, March 23, after a lingering illness, aged seventy-seven.