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PROVISIONAL SPECIFICATION.

# Improvements in Bayonets, Lances and the like Weapons adapted for use in Tournaments and similar Military Exercises.

I, Ben Cowper Waddington, of 60, Overton Road, Hillsborough, Sheffield, in the County of York, Plumber and Gas Fitter, do hereby declare the nature of my said invention to be as follows:—

My invention relates to appliances by which the use of bayonets or lances when employed in military tournaments and exercises may be rendered harmless.

Hitherto a dummy weapon representing a rifle has been constructed with a button ended compressible projection provided with a helical spring so that when the dummy bayonet came in contact with an obstacle it was compressed inwards to an extent in proportion to the thrust, but in practice it has been found that sometimes the collapsible part of the weapon would stick and in consequence a severe blow resulting in personal injury would result.

The object of my invention is to obviate this defect and to provide the means by which weapons of this kind may be rendered harmless when in use, and the force or effectiveness of the thrust indicated, and as the application of my invention will be similar whether applied to a rifle or lance, a description of it as applied to a weapon representing a rifle will suffice.

For bayonet exercise, or what is called bayonet and sword drill, I find an old rifle can be used to advantage especially one that can be made with its safety fittings to closely approximate the weight of a service rifle and its bayonet, in which case I utilise the bore of the old barrel as a guide for the sliding and compressible portion which represents the bayonet together with its sliding or push rod and spring. The portion which projects from the end of the barrel and which represents the bayonet, is provided with a large safety button at its outer or pointed end and its inner end is connected to the previously mentioned slide or push rod. At a suitable distance between the muzzle and breech of the barrel I fix a plug through which the push rod will freely slide and between this plug and the inner end of the sliding bayonet I place around the said rod a helical spring, so that when the bayonet is forced inwards this spring is compressed and when released from external pressure the bayonet is forced outward to its full extent by the reaction of the said spring.

At the inner end of the slide or push rod I attach a sliding plug or piston, which, when the bayonet is fully compressed inside the barrel, is forced to the breech end. From the centre of this sliding plug or piston I form a bowed or cranked connection to another slide rod which has a tapered outer end and which, as it is forced outwards towards the shoulder end of the butt, passes over, by means of its inclined end, a succession of sliding pins or bolts which are provided at their upper ends with friction wheels carried in a light slotted frame through which slots passes a cross bar, by which cross bar the two side plates or frames of the indicator are held together and at the same time support the previously mentioned sliding bolts.

Between the bottom of the indicator case and the underside of the slotted frames, the sliding bolts are each provided with a helical spring, so that when the bolt is compressed by the action of the slide rod the lower end of the bolt is depressed through a hole in the bottom of the indicator case.

[*Price 8d.*]

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To the rear of each bolt I place a ratchet wheel which is carried on a spindle which projects through both sides of the indicator case and on one side through the face of a dial which is provided with a number of divisions marked with numerals from the unit upwards by which the force of the thrust is indicated. The slotted frame of the bolt is provided with a pawl which engages with the ratchet so that at every completed thrust the ratchet is turned one tooth in the same direction. The ratchet is prevented from turning back again by a second pawl or catch. The dials can be read from a slotted opening or a series of circular openings formed on the side of the butt, such openings being filled by glass, horn, mica or other suitable transparent substance and the outer end of each dial spindle is provided with a milled thumb screw by which any or all of the dials may be moved back to zero. This may be effected through the separate circular openings opposite each dial or through the elongated slot formed in the side of the butt or by the withdrawal of the indicator case bodily from its recess in the butt.

In order to prevent the dials being tampered with after the exercise is ended, the whole of the sliding indicator bolts can be depressed by the action of the slide rod and locked in that position without altering the dials, as the dials are only moved by the reaction stroke.

As an alternative of the dial arrangement herein described the lower or outer ends of the sliding bolts may be bluntly pointed, so as to prick or mark a circular or other form of moveable indicator card, which card can be withdrawn at the end of an exercise and the records read off under each division.

Dated this 26th day of April, 1911.

R. HEBER RADFORD, SON & SQUIRE,
Agents for the Applicant,
15, Saint James' Row, Sheffield.

## COMPLETE SPECIFICATION.

### Improvements in Bayonets, Lances and the like Weapons adapted for use in Tournaments and similar Military Exercises.

I, BEN COWPER WADDINGTON, of 60, Overton Road, Hillsborough, Sheffield, in the County of York, Plumber and Gas Fitter, do hereby declare the nature of my said invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to appliances by which the use of bayonets or lances when employed in military tournaments and exercises may be rendered harmless.

Hitherto a dummy weapon representing a rifle has been constructed with a button ended compressible projection provided with a helical spring so that when the dummy bayonet came in contact with an obstacle it was compressed inwards to an extent in proportion to the thrust, but in practice it has been found that sometimes the collapsible part of the weapon would stick and in consequence a severe blow resulting in personal injury would result.

The object of my invention is to obviate this defect and to provide the means by which weapons of this kind may be rendered harmless when in use, and the force or effectiveness of the thrust indicated, and as the application of my invention will be similar whether applied to a rifle or lance, a description of it as applied to a weapon representing a rifle will suffice.

The nature of my invention will be better understood on reference to the accompanying sheet of drawings in which,

Fig. 1, is a side view of a dummy rifle fitted with a compressible bayonet.

Fig. 2, is a plan view of the same on the underside.
Fig. 3, is a side view of the indicator to an enlarged scale.
Fig. 4, is a similar view with one of the side plates and dials removed.
Fig. 5, is a plan view of the same.
Fig. 6, is an enlarged view of the bayonet, push rod and spring.
Figs. 7 and 8, are enlarged views of a catch or lock for securing the indicator case in position in the stock.

The same letters refer to similar parts throughout the several views.

For bayonet exercise, or what is called bayonet and sword drill, I find an old rifle can be adapted to advantage, especially one that can be made with its safety fittings to closely approximate the weight of a service rifle and its bayonet, in which case I utilise the bore of the old barrel as a guide for the sliding and compressible portion, *a*, which represents the bayonet together with its sliding or push rod, $a^1$, and spring, *b*, Figs. 1, 2, 3 and 6. The portion, *a*, which projects from the end of the barrel and which represents the bayonet, is provided with a large safety button, *c*, at its outer or pointed end and its inner end is connected to the previously mentioned slide or push rod, $a^1$. At a suitable distance between the muzzle and breech of the barrel I fix a plug, *d*, through which the push rod $a^1$, will freely slide and between this plug and the inner end of the sliding bayonet I place around the said rod a helical spring, *b*, so that when the bayonet, *a*, is forced inwards this spring is compressed and when released from external pressure the bayonet is forced outward to its full extent by the reaction of the said spring.

At the inner end of the slide or push rod I attach a sliding plug or piston, *e*, which, when the bayonet is fully compressed inside the barrel, is forced to the breech end. From the centre of this sliding plug or piston, *e*, I form a bowed or cranked connection, *f*, to another slide rod, *g*, which has a tapered end and which as it is forced inwards towards the shoulder end of the butt or breech, passes under by means of its inclined end, a succession of light slotted frames, *h*, carrying sliding pins or bolts, *i*, through which slots passes a cross bar, *j*, by which cross bar the two side plates or frames of the indicator, *k*, are held together and at the same time support the previously mentioned sliding bolts, *i*.

Between the top of the indicator case, *k*, and the top of the slotted frames, *h*, the sliding bolts, *i*, are each provided with a helical spring, *l*, so that when the bolts are lifted the springs are compressed by the action of the slide rod, *g*, and the tops of the bolts, *i*, are projected through holes in the top of the indicator case.

To the rear of each bolt I place a ratchet wheel *m*, which is carried on a spindle which projects through both sides of the indicator case and on one side through the face of a dial, *n*, which is provided with a number of divisions marked with numerals from the unit upwards and likewise a pointer which indicates the force of the thrust. The slotted frame, *h*, of the bolts, *i*, are provided with pawls, *o*, which engage with the ratchet wheels, *m*, so that after every completed thrust the ratchet wheels are turned one tooth in the same direction. The ratchet wheels are prevented from turning back again by pawls or catches, *p*. The dials can be read from a slotted opening or a series of circular openings formed on the side of the stock, such openings being filled by glass, horn, mica or other suitable transparent substance and the outer end of each dial spindle is sometimes provided with a milled thumb screw by which any or all of the pointers on the dials may be moved back to zero. This may be effected through separate circular openings opposite each dial or through the elongated slot formed in the side of the stock or by the withdrawal of the indicator case bodily from its recess in the stock.

In order to prevent the dials being tampered with after the exercise is ended, the whole of the sliding indicator bolts can be raised by the action of the slide rod, *g*, and locked in that position without altering the dials, (as the dials are only moved by the reaction stroke) by a slide, *q*, placed on the top of the

indicator, the slide being provided with a number of elongated orifices $q^1$, each provided with a horizontal pin, $r$, for engagement with holes formed in the sliding bolts, $i$. By this arrangement the indicating mechanism is disconnected and the bayonet can be actuated inwards and outwards without registering.

When the indicator case, $k$, is placed in the stock of the rifle as shewn in the drawings it is held in position at its front end by means of the slide rod, $g$, and at its rear end by a sliding catch or bolt, $s$, as shown in Figs. 1, 2, 7 and 8, so that on releasing this catch the indicator case can be readily removed from the rifle.

In some cases I make the safety button, $c$, on the end of the bayonet, hollow, and provide it with a sponge which may be saturated with white or coloured fluid or other substance so that when it comes into contact with an obstacle it will leave a mark on the same.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In bayonets, lances and the like weapons adapted for use in tournaments and similar military exercises, the arrangement and combination of parts and appliances by means of which a sliding bayonet provided with a button can be compressed into a rifle barrel or like tube, without injury to the object with which it is brought into contact, and by which the force of the blow may be indicated and registered in the manner and for the purposes substantially as herein described and illustrated on the accompanying sheet of drawings.

2. In weapons as described in Claim 1, the arrangement and combination of parts and appliances by means of which the indicators which register the force of the blow may be locked in position and removed from the stock of the rifle for examination, and by the same means put out of gear, in the manner and for the purposes substantially as herein described and illustrated on the accompanying sheet of drawings.

Dated this 26th day of October, 1911.

R. HEBER RADFORD, SON & SQUIRE,
Agents for the Applicant,
15, Saint James' Row, Sheffield.

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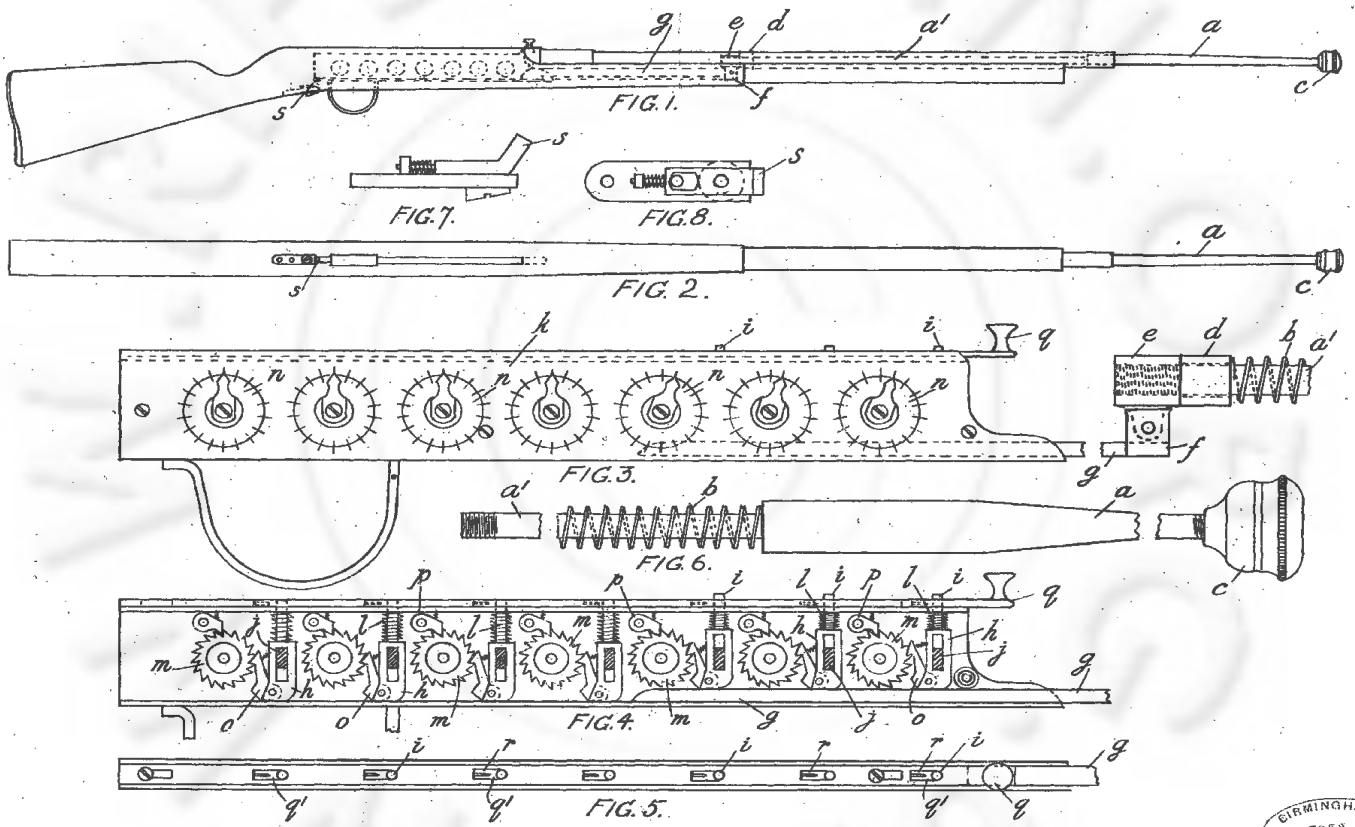
WADDINGTON'S Complete Specification.

( 2 SHEET )

[This Drawing is a reproduction of the Original on a reduced scale]

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