PATENT SPECIFICATION

Application Date: Oct. 11, 1920. No. 28,776/20. **173,883**

Complete Left: June 15, 1921.

Complete Accepted: Jan. 11, 1922.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Machine Guns.

We, Sir ARTHUR TREVOR DAWSON, Bart., a Commander, retired, in His Majesty's Royal Navy and Superintendent of Ordnance Works, Sir GEORGE THOMAS BUCKHAM, Knight, and CARL ALFRED LARSSON, all of Vickers Limited, Vickers House, Broadway, Westminster, in the County of London, and all subjects of the King of Great Britain, do hereby declare the nature of this invention to be as follows:—

This invention relates to machine guns particularly to guns of the Vickers automatic type.

According to the invention we provide an adjustable crank retaining device in order to delay the return of the crank, and the lock connected thereto, to the firing position, the adjustability of the device rendering it possible to vary the period of retention of the crank in order to effect any required reduction of the maximum speed of firing of which the gun would be capable if unprovided with the said device. For the purpose of the invention the device may be in the form of a spring controlled pawl pivoted to a cap on the mechanism casing cover and arranged in a position with its front surface sloping towards the rear. The said pawl may have a toe bearing against a screw or stud which is carried by the said cap and by means of which the angular position of the pawl can be altered as required in order to vary the period of retention of the crank as aforesaid, and also, if so desired, to bring the pawl out of the path of the crank so that the gun will then work in the usual manner and at maximum speed. During the angular movement of the crank on recoil it comes against the pawl and displaces the latter against the resistance of its spring which, when the crank clears the pawl, returns the latter to its original position and thereby retains the crank until the barrel has almost returned to its firing position at which time the crank (owing to the forward movement of the barrel) comes clear of the pawl and is thus released to move the lock forward to the firing position. In this manner we are able to avoid the disadvantages resulting from excessive speed of the lock relatively to the barrel which does not allow the barrel time to reach its firing position before the face of the lock is in line with the face of the barrel with the result that the extractor is prevented from rising, by the underside of the cam, and is delayed at the moment when energy is required for lifting and completing the operation of locking; also in an extreme case, the nose of the bullet may strike the face of the barrel before the extractor has dropped sufficiently to bring the cartridge in line with the bore.

Dated this 11th day of October, 1920.

HASELTINE, LAKE & Co.,
28, Southampton Buildings, London, England, and
55, Liberty Street, New York, N.Y., U.S.A.,
Agents for the Applicants.

[Price 1/-]

COMPLETE SPECIFICATION.

Improvements in or relating to Machine Guns.

We, Sir ARTHUR TREVOR DAWSON, Bart., a Commander, retired, in His Majesty's Royal Navy and Superintendent of Ordnance Works, Sir GEORGE THOMAS BUCKHAM, Knight, and CARL ALFRED LARSSON, all of Vickers Limited, Vickers House, Broadway, Westminster, in the County of London, and all subjects of the King of Great Britain, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to machine guns, particularly those of the Vickers automatic type, of the kind having a crank-retaining device comprising a member which is carried by a non-recoiling part for the purpose of engaging with a part moving angularly with the crank-shaft so as to delay the return of the crank and the lock connected thereto to the firing position, the said crank-shaft being pivoted to a part moving with the barrel.

According to the present invention the said member engaging with a part moving angularly with the crank-shaft is made adjustable so that it is possible to vary the period of retention of the crank in order to effect any required reduction of the maximum speed of firing of which the gun would be capable if unprovided with the said device. The said member may be in the form of a spring controlled pawl pivoted to a cap on the mechanism casing cover and arranged in a position with its front surface sloping towards the rear. The said pawl may have a toe that bears against a screw or stud carried by the said cap and by means of which the angular position of the pawl can be altered as required in order to vary the period of retention of the crank as aforesaid and also, if so desired, to bring the pawl out of the path of the crank so that the gun will then work in the usual manner and at maximum speed.

In order that the said invention may be clearly understood and readily carried into effect the same will now be described more fully with reference to the accompanying drawings, in which:—

Figures 1 and 2 are respectively a sectional side elevation and a plan of the rear part of the mechanism casing of a gun of the Vickers automatic type shewing a constructional form of the adjustable crank-retaining device according to the present invention, and

Figure 3 is a local section taken approximately on the line 3, 3 of Figure 1 and drawn to an enlarged scale.

A is part of the mechanism casing of the gun A^1 is the rear hinged cover which, in the example shewn, is connected by longitudinal pivots to one of the side plates of the mechanism casing in the manner described in the Specification of our Patent Application No. 172,068 and A^2 is the hinged back block, B is a part of the crank, C is the aforesaid spring controlled pawl pivoted at c to a cap C^1 on the cover A^1 and C^2 is the screw or stud which is carried by the cap C^1 and by the adjustment of which the angular position of the pawl C can be varied by the co-operation of this screw or stud with a toe C^3 of the pawl. During the angular movement of the crank on recoil, the part B comes against the pawl C and displaces the latter against the resistance of its spring which, when the crank clears the pawl, returns the latter to its original position and thereby retains the crank in the position shewn in full lines in Figure 1 until the barrel has almost returned to its firing position at which time the part B of the crank (owing to the forward movement of the barrel) comes clear of the pawl as shewn by chain lines in Figure 1 and is thus released to move the lock forward to the firing position. By reason of this invention we are able to avoid the disadvantages resulting from excessive speed of the lock relatively to the barrel which does not allow the barrel time to reach its firing position before the face of the lock is in line with the face of the barrel with the result that the extractor is prevented from rising by the underside of the usual cam and is delayed at the moment when energy is required for lifting and completing the operation of locking; also in an extreme case the nose of the bullet may strike the face of the barrel before the extractor has dropped sufficiently to bring the cartridge in line with the bore.

Having now particularly described and

ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A machine gun provided with a crank-retaining device comprising a member which is carried by a non-recoiling part for engaging with a part moving angularly with the crank shaft so as to delay the return to the firing position of the crank and the lock connected thereto and which is made adjustable for the purpose specified.

2. A machine gun provided with a spring controlled pawl which is arranged in the path of part of the crank and is adapted to be adjusted into different operative angular positions, substantially as described.

3. A machine gun provided with an adjustable crank-retaining device having its parts constructed arranged and adapted to operate substantially as hereinbefore described with reference to the accompanying drawing, for the purpose specified.

Dated this 15th day of June, 1921.

HASELTINE, LAKE & Co.,
28, Southampton Buildings, London, England, and
Park Row Building, 15, Park Row, New York, N.Y.,
Agents for the Applicants.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1922.

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

Fig. 1.

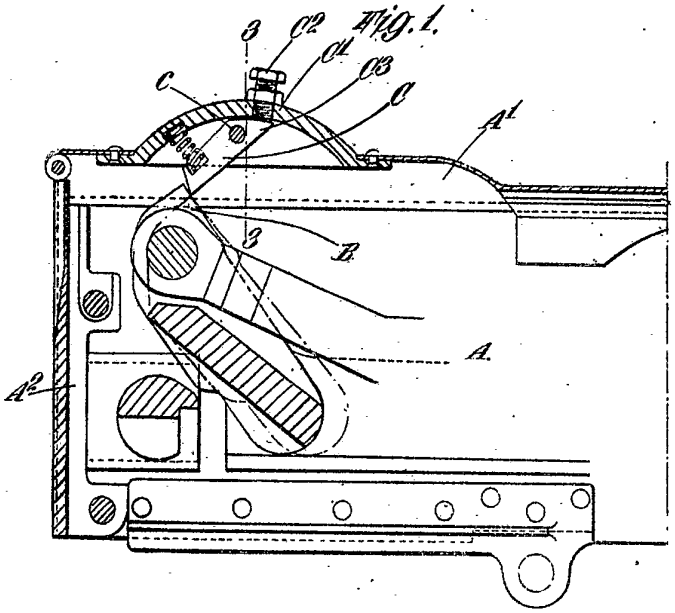


Fig. 2.

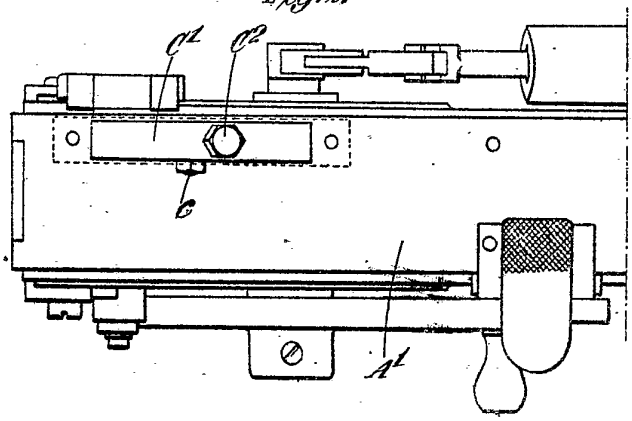
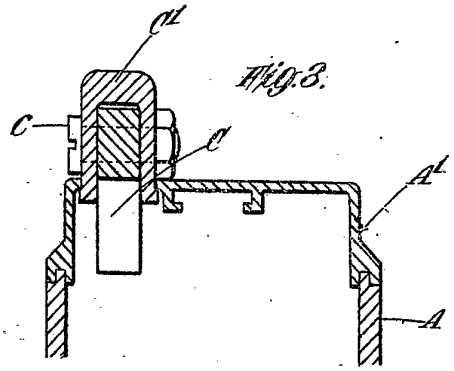


Fig. 3.



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