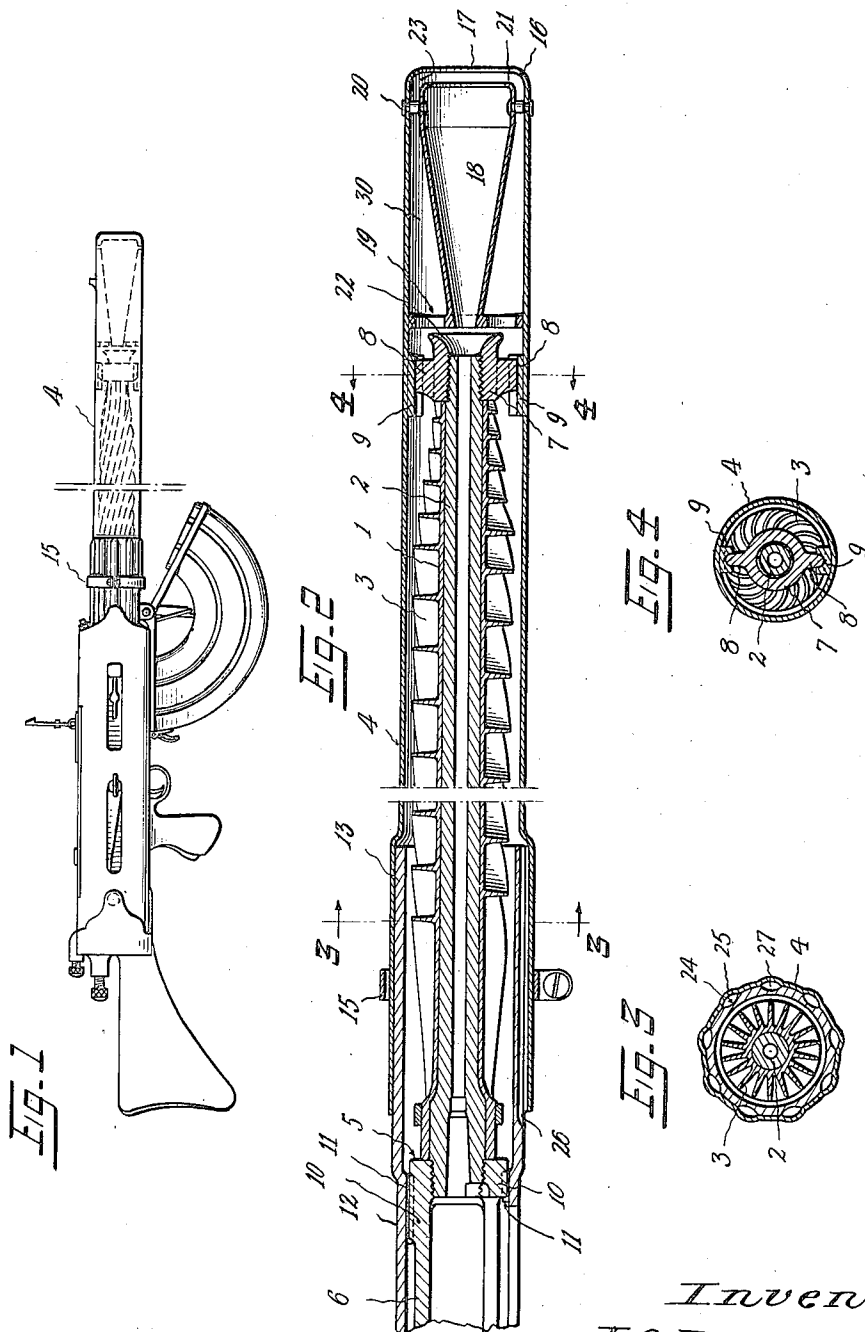


J. C. R. McCrudden.
MACHINE GUN.
APPLICATION FILED JUNE 4, 1921.

1,406,404.

Patented Feb. 14, 1922.



Inventor
J. C. R. McCrudden,
By Marks & Clerk
Attys.

UNITED STATES PATENT OFFICE.

JOHN CHARLES REGINALD McCrudden, OF HURSTVILLE, NEAR SYDNEY, NEW SOUTH WALES, AUSTRALIA.

MACHINE GUN.

1,406,404.

Specification of Letters Patent. Patented Feb. 14, 1922.

Original application filed June 19, 1920, Serial No. 390,153. Divided and this application filed June 4, 1921. Serial No. 475,069.

To all whom it may concern:

Be it known that I, JOHN CHARLES REGINALD McCrudden, a subject of the King of Great Britain and Ireland, residing at "Fleurbaix," Haig Street, Hurstville, near Sydney, New South Wales, Australia, have invented new and useful Improvements in Machine Guns, of which the following is a specification.

This invention relates to machine guns and consists in improved means for inducing a draft of air over the barrel of the gun for cooling it and in means associated with said draft inducing means for masking the explosion flash and muffling the explosion report.

This application is a division of the application filed by me on 19th June 1920, No. 390153.

In the accompanying drawing, Fig. 1 is a side elevational view of a machine gun embodying the present invention;

Fig. 2 is a sectional elevation showing the barrel, the radiator, and the flash trap and report muffler;

Fig. 3 is a transverse section on the line 3-3, Fig. 2 and

Fig. 4 is a transverse section on the line 4-4 Fig. 2.

A sleeve 1 (preferably constructed of aluminum) is slipped upon the barrel 2; this sleeve carries thin radiator fins 3, preferably helically disposed, between which and the radiator casing 4 a little circumferential clearance is left. The radiator assembly is locked on the barrel between the abutment formed by the forward end 5 of the breech body 6 and the clamping nut 7 which is screwed on to the barrel muzzle (Fig. 2). The nut 7 is formed with two or more wings 8 which set in slide guides 9 fixed in the radiator casing 4. The forward end of the barrel is maintained in axial alignment with the casing 4 by these wing pieces. Rearwardly the barrel and breech parts are supported on wing pieces 10 which run in slide guides 11 formed in the forward part of the body casing 12. The butt end of the radiator casing 4 is made slightly conical to fit tightly on the slightly tapered forward end 13 of the body casing 12 and is clamped thereon by a screw tightened band 15 so that said radiator casing 4 and

said body casing 12 together form a complete enclosure for the barrel and parts 55 thereon.

Forward of the carrier guides 9 in the radiator casing 4 the flash trap and report muffler device is contained. The casing 4 extends beyond the barrel muzzle a few inches, and the nut 7 forms a bell mouth for the barrel muzzle. The forward end of the casing 4 is flanged inwardly as shown at 16 leaving a central mouth 17 of considerably greater diameter than the barrel bore. Intermediate the muzzle bell and the casing mouth 17, an open end cone 18 is mounted with its rear narrow end slightly forward of the muzzle bell. This cone is centered and carried at its rear end by means of a spider frame 19, which is a push fit in the casing 4; around its forward end it is fixed in the casing 4 by rivets 20 or otherwise, so as to leave an annular space between it and the casing. The wide end of the cone is incurled slightly to form a circular lip 21. A clearance space 22 is allowed between the rear end of the cone 18 and the mouth of the muzzle bell; this clearance space is shorter than a bullet length in order that a bullet in passing into the cone 18 will substantially block the narrow mouth of the cone and cause the following gases to divert into the annular space 30 surrounding the cone, where they will expand; in passing forward these gases so expanded find exit through the annular lip space at 23 and induce a following draft of cold air through the apertures in the body casing rearward of the barrel and over the radiator. In passing through the annular space 30 the flash is extinguished. The incurling of the lips 16 of the radiator casing shields the dying flash from view at any point in line with the gun's direction.

On reference to Fig. 3 it will be noted that inward flutings 24 in the forward extension of the body casing 12 are located in alignment with outward flutings 25 in the butt end of the radiator casing 4, the passages formed by these flutes being open at the rear end (see 26 Fig. 2). These passages 27 admit a current of cold air from external atmosphere forwardly into the radiator space in the casing 4, air draught being established in the manner already de-

scribed by the induction of the gas draught passing out, that is, through the annular collar 30.

What I claim as my invention and desire to secure by Letters Patent is—

Air cooling and flash masking means for machine guns comprising a finned radiator fixed on the gun barrel, a tubular casing enclosing said radiator and extending forwardly thereof, air admission apertures in the rear part of said casing, a bell shaped muzzle on the barrel; a conical tube concentrically disposed in said casing with its smaller end contiguous to the muzzle but a short distance in advance of it, said tube

extending forwardly of the barrel muzzle within said casing clearance spaces around said bell and said conical tube, an incurled lip on the forward end of said casing shielding the annular clearance space around said conical tube, said lip adapted to inwardly deflect outgoing draft and to shield from view burning gases within said clearance space, and said conical tube at its narrow end being of slightly greater diameter than the barrel bore and at its forward end substantially greater in diameter than said bore.

In testimony whereof I affix my signature.

JOHN CHARLES REGINALD McCRUDDEN.