May 3, 1949. E. GARRETT 2,468,926

FLASH HIDER FOR MACHINE GUNS

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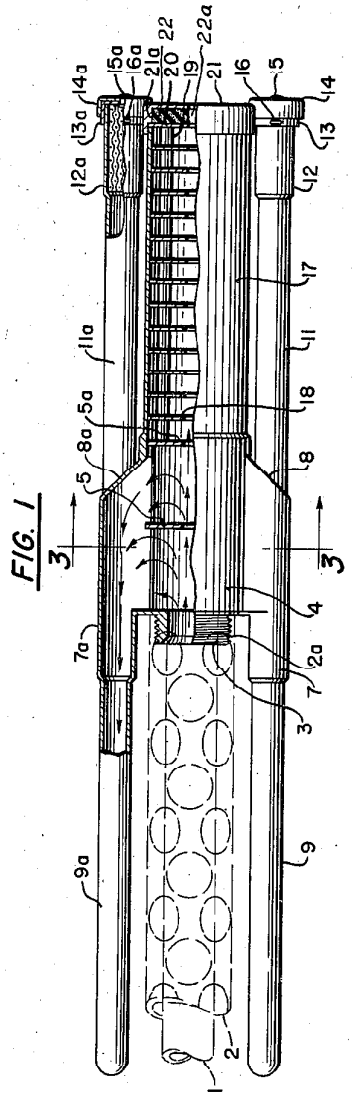

FIG. 1

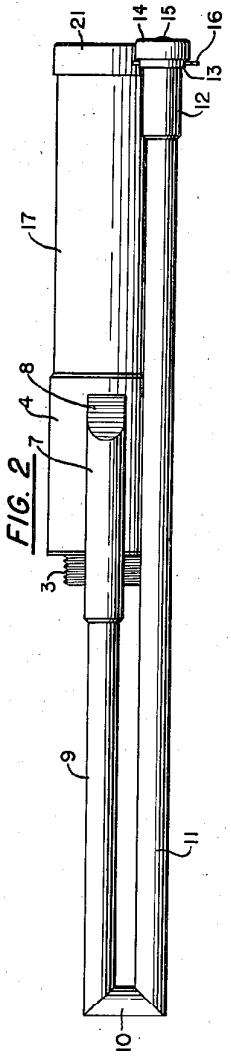

FIG. 2

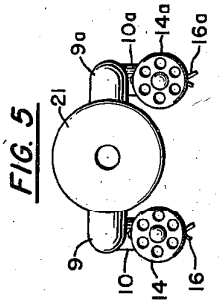

FIG. 5

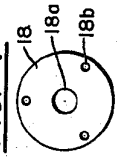

FIG. 4

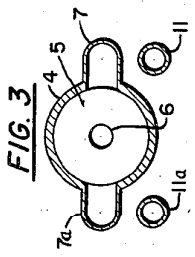

FIG. 3

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FLASH HIDER FOR MACHINE GUNS

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2 Claims. (Cl. 89—14)

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My invention relates to a flash hider for machine guns and the objects of my invention are:

First, to provide a flash eliminator which will smoother and conceal the flare of light from burning powder particles and propellant gases ordinarily occurring at the muzzle of a gun when fired, and by the same means to provide an effective silencer;

Second, to provide such a device without unduly increasing the length or weight of the gun or deleteriously affecting its balance;

Third, to provide such a device in a form allowing ease in assembly and dismantling of the gun for repair and servicing and allowing quick attachment in the field when the device is used as an accessory;

Fourth, to provide such a device in a form allowing adjustment for different ammunition and for different cyclic rates of operation of the machine gun; and

Fifth, to provide a device which will conform to requirements for armament such as simplicity and ruggedness, capability of being stored without deteriorating and not hazardous to personnel operating the device.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a fragmentary top view, partly in plan and partly in section showing the muzzle end of the gun barrel and gun barrel jacket to which my device is operatively secured; Fig. 2 is a side elevational view of my device; Fig. 3 is a cross sectional view of my device taken on a line 3—3 in Fig. 1; Fig. 4 is an elevational view of one of the baffle plates; and Fig. 5 is an end elevational view of the forward end of my device.

Similar characters of reference refer to similar or identical parts and portions throughout the several views of the drawings.

The end of the gun barrel 1 is shown inside the gun barrel jacket 2, a non-recoiling part of the machine gun, to which I secure my device by means of a hollow muzzle adapter 3 which is externally threaded to engage the internally threaded end portion 2a of the gun barrel jacket and the muzzle end of the gun barrel is supported in the bearing portion of said muzzle adapter 3 in such a manner that said trunnion

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functionally replaces the front gun barrel bearing nut, which before the attachment of my device to the machine gun, supported the muzzle end of the gun barrel within the gun barrel jacket.

Integral in construction with said muzzle adapter is the cylindrical expansion chamber 4 into which the burned propellant gases emerge behind the projectile or bullet and in expanding some of the inertia and heat of these gases is expended. Baffle plates 5 and 5a, centrally perforated to allow passage of the bullet and arranged in spaced relation and welded to the walls of chamber 4, turn these expanding gases outwardly into the two laterally disposed bleeder tubes 7 and 7a which terminate at the forward ends in angularly disposed end plates 8 and 8a which also serve as baffles directing the gases towards the rear. The gases, thus deflected are led rearwardly through the tubes 9 and 9a, downwardly through the tubes 10 and 10a and forwardly through the longer tubes 11 and 11a which terminate in the filters 12 and 12a. The novel features of these filters include cylindrical expansion chambers partially closed by perforated end plates 13 and 13a, Fig. 1, and similarly perforated caps 14 and 14a secured thereto by short axis pins 15 and 15a, the degree of registration of the perforations in said plates and caps being adjustable and the end plates 13 are locked against rotation by the cotter keys 16 and 16a. This adjustment provides for control of the back pressure exerted by the gases on the recoiling portions of the gun thus controlling to a considerable degree the cyclic rate of fire.

The central portion of my device forward of the chamber 4 includes a cylindrical expansion cylinder 17 constructed integral with the walls of said chamber and housing a baffle assembly comprised of a plurality of baffle plates 18 which are round flat discs perforated centrally to allow passage of the projectile as at 18a and also perforated as at 18b, as indicated in Fig. 4, to allow the mounting of these discs in spaced relation on three rods 19, the assembly being adapted to be inserted into the cylinder 17 from the forward end thereof. A single free baffle plate 20 similar to the baffle plate 5 is inserted at the end of this assembly and the cap 21 internally threaded to engage the externally threaded end portion of the cylinder 17 is screwed on till the shoulder 21a of the cap forces the baffle 20 inwardly clamping the rods 19 between said baffle 20 and the baffle 5a so that the baffle assembly is held rigidly. A replaceable sponge or pad 22 of heat-resistant re-

silient material is inserted between said baffle plate 20 and the cap 21 and provided with a central opening 22a for the bullet exit and serves to silence the weapon and at the same time to smoother any sparks which may have followed the bullet through the series of baffles.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a flash hider for a machine gun, in combination a primary expansion chamber, baffle plates centrally perforated to allow passage of a bullet and transversely disposed to and rigidly secured within said chamber to deflect propellant gases outwardly, and a pair of oppositely disposed bleeder tubes each substantially three times the length of said primary expansion chamber communicating with said chamber to lead said gases rearwardly and then forwardly.

2. In a flash eliminator for a machine gun, in combination a primary expansion chamber, cane plates centrally perforated to allow the passage of a bullet and rigidly secured within said chamber to deflect propellant gases outwardly, bleeder tubes each substantially three times the length of said primary expansion chamber communicating with said chamber to lead said gases rearwardly and then forwardly, a secondary expansion chamber integral and co-linear with said primary expansion chamber, and a plurality of centrally perforated spaced baffle plates rigidly secured within said secondary expansion chamber and a plurality of rods secured to said baffle plates for supporting and reinforcing the same.

EMIL GARRETT.

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