

Jan. 18, 1944.

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2,339,263

MUZZLE ATTACHMENT FOR GUNS

Filed Feb. 6, 1941

Fig-1-

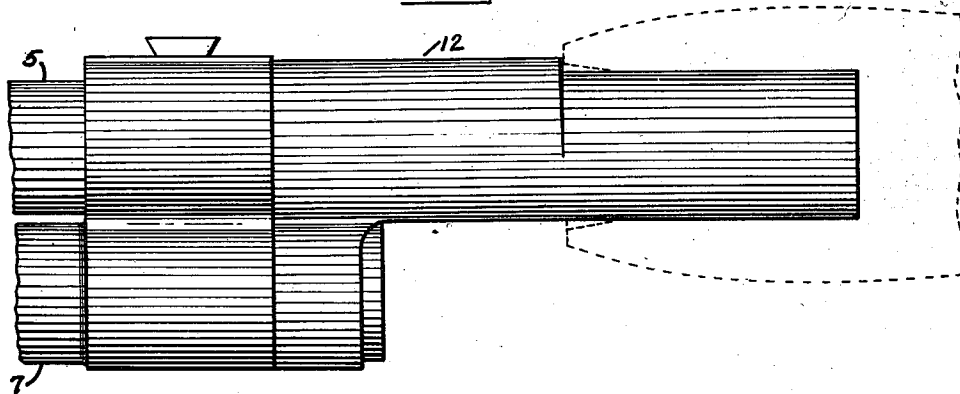
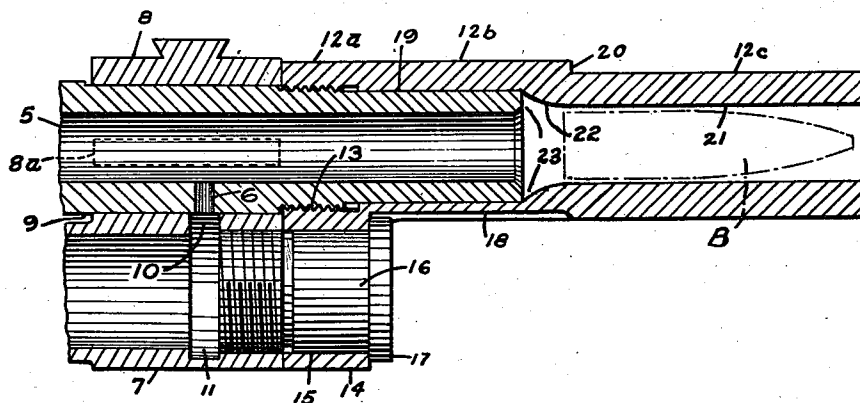


Fig-2-



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2,339,263

MUZZLE ATTACHMENT FOR GUNS

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Application February 6, 1941, Serial No. 377,601

3 Claims. (Cl. 42—3)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a muzzle attachment for guns and is particularly adapted for association with the muzzle of a gas-operated semi-automatic rifle.

The purpose of the invention is to provide a light and simple attachment which becomes a permanent part of the rifle but which may also serve as a discharger for a grenade. The necessity for a light weight attachment is paramount because one of the most serious problems in the design of a semi-automatic shoulder rifle has been the limitation of the weight to about nine pounds. The desirability of a permanent attachment which will not interfere with firing ball ammunition or with the functioning of the semi-automatic mechanism has been emphasized by the requirement that a rifleman be capable of discharging an explosive-carrying projectile at suddenly appearing targets such as tanks and airplanes, both of which are provided with armor.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Fig. 1 is a view in side elevation of the muzzle end of a rifle provided with the improved attachment.

Fig. 2 is a longitudinal sectional view.

Referring to the drawing by characters of reference there is shown the barrel 5 of a gas-operated firearm provided with a radially disposed gas port 6 which is located a short distance in rear of the muzzle.

As shown in Patent No. 2,287,032 of June 23, 1942, to John C. Garand, a gas cylinder 7 adapted to receive a portion of the gases of explosion for actuating a piston is provided with an integral band 8 which is slidably mounted on the barrel and held against rotational displacement by ribs 8a. The band 8 when mounted on the cylindrical portion 9 of the barrel covers the gas port 6 in the barrel. The common wall of the gas cylinder and its integral band is formed with a gas inlet 10 which is continuous with an internal annular groove 11 and which, when the cylinder is assembled to the barrel, is in alignment with the gas port 6.

A tubular retaining member 12 having its rear portion 12a formed internally with threads 13 for mounting on the barrel until it is in engagement

with the band holds the gas cylinder in place. The retaining member includes a depending lug 14 which engages the front end of the cylinder and it is provided with an aperture 15 which is in alignment with the open front end of the cylinder. A plug 16 inserted through the aperture 15 is threaded in the front end of the cylinder to form a removable closure therefor as well as a coupling for connecting the cylinder to the retaining member 12 which is fixed to the barrel. When the plug is in place it serves to hold the retaining member against rotational displacement. A head 17 on the plug is adapted to engage the front face of the lug 14 and a groove 18 is provided in the under side of the retaining member to accommodate the head.

The retaining member is of appreciable length and has an intermediate portion 12b with a bore 19 closely fitting on the muzzle end of the barrel. The intermediate portion is externally eccentric to a point a short distance in front of the muzzle and at its junction with the imperforate cylindrical front portion 12c it establishes a shoulder 20. The bore 21 of the front portion is slightly larger than the bullet B, shown in dotted lines in Fig. 2. It will be understood by those skilled in the art that the amount of clearance between the bullet and bore 21 is not critical, and that this clearance need only be enough to prevent contact of a slightly wobbling bullet with the bore.

Between the bore 19 and the bore 21 there is a forwardly converging bore 22 providing an annular chamber 23 positioned directly in front of the barrel. The length of this chamber is less than the bearing length of a bullet when a live round is fired. The gases following the bullet enter this chamber and have their rotational flow broken up so that they provide a straight piston action behind the bullet when passing through the bore 21. The momentary retardation of the gases in expanding into the chamber 23 prevents emergence of the gases ahead of the bullet and gives a relatively uniform pressure in the gas port 6.

The cylindrical front portion 12c comprises a tubular support for externally or internally mounting a grenade indicated in dotted lines in Fig. 1 and having a socket conforming to the front portion or a stem insertable therein. The grenade is projected by means of the gases from a blank cartridge, the reaction being on the axis of the gun barrel and thereby avoiding any tendency to bend the barrel.

I claim:

1. In a firearm, a barrel having a gas port, a gas cylinder mounted on the barrel, a retaining member threaded on the barrel and having a depending apertured lug, a plug mounted in the lug and threaded in the gas cylinder, said retaining member having an externally eccentric intermediate portion fitting on the barrel and a cylindrical front portion extending forwardly of the barrel and establishing a shoulder at its junction with the eccentric intermediate portion, said retaining member having a bore with a forwardly converging portion establishing an annular chamber directly in front of the barrel.

2. In a gas-operated firearm, a barrel, a grenade projecting attachment comprising a tubular member threaded on the muzzle end of the barrel and having a front grenade-receiving portion extending forwardly of the barrel, said member

having an open end bore of uniform diameter with a forwardly converging portion establishing an annular imperforate chamber entirely within the bore and directly in front of the barrel, for breaking up the rotational flow of the ammunition gases.

3. In a firearm, a barrel, a grenade-projecting attachment comprising a tubular member fixed on the front end of the barrel and having an imperforate front grenade-receiving portion extending forwardly of the barrel, the grenade-receiving portion having an open end bore of uniform diameter slightly greater than the bore of the barrel and with an annular chamber entirely within the bore and directly in front of the barrel, said chamber having a length less than the length of the bearing of a bullet adapted for passage through the barrel.

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