

1,080,154.

Patented Dec. 2, 1913.

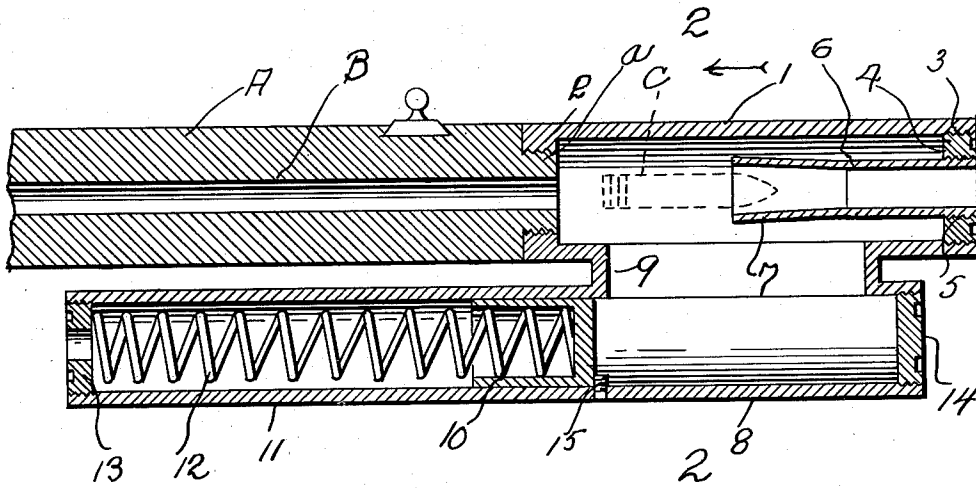


Fig. 1.

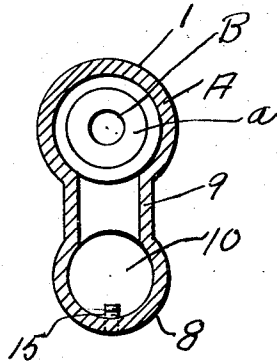


Fig. 2.

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Witnesses

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SILENCER FOR FIREARMS.

1,080,154.

Specification of Letters Patent.

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Application filed November 8, 1912. Serial No. 730,228.

To all whom it may concern:

Be it known that I, HERBERT P. MOORE, a citizen of the United States, residing at Norwalk, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Silencers for Firearms, of which the following is a specification.

My invention relates to devices adapted to be secured to the end of a muzzle of a fire arm and provided with means to permit expansion of the gases incident to the explosion of the arm and to permit emission of the gas in an expanded condition from the expansion chamber.

My invention furthermore, has for its object the provision of a spring plunger within the expansion chamber that recedes under the pressure of the gases of the explosion while the projectile is passing out of the silencer and that operates to push the gases out of the silencer following the projectile, the gases being in an expanded condition.

A still further object of my invention is to provide a device of the above character which will also serve as a recoil absorber and eliminate the kick usually accompanying the firing of a rifle or gun.

My invention will be described in detail hereinafter and illustrated in the accompanying drawings, in which,

Figure 1 is a longitudinal sectional view of the end fragment of a gun barrel showing my improved silencer in position thereon; and Fig. 2, a cross section on the plane indicated by the line 2—2 of Fig. 1, looking in the direction of the arrow.

In the drawings similar reference characters will be used to designate corresponding parts throughout the several views.

A indicates the muzzle end of a rifle or other fire arm that for the purposes of my invention is reduced as shown at *a* and threaded, said reduced portion being concentric with the bore B of the barrel.

My improved silencer comprises a cylindrical casing 1 having one of its terminals provided with an inwardly extending flange 2 that is threaded to engage the threads on the reduced extension *a*, or any other means of securing the flange 2 to the reduced portion *a* in the place of the threads as described, may be substituted as desired without changing the spirit of my invention, the object being to securely fasten the cylindrical portion 1 on the end of the barrel A.

The inner surface of the other terminal of the cylindrical portion 1 is threaded as shown at 3 to receive a ring 4 having its outer and inner surfaces threaded, the outer threaded surface being adapted to engage the threads 3 while the inner threads 5 are adapted to engage the threaded outer portion of a tubular member 6 that extends inwardly of the cylindrical casing 1 substantially one-half of its length and is directly in alinement with the bore B of the barrel A to permit egress of the projectile indicated at C, the projectile when emerging from the end of the barrel jumping across and passing out through the tube 6. In order that there may be no hindrance or obstruction to the course of the projectile, I prefer that the hole in tube 6 be a trifle larger than the bore of the gun, the rear end of tube 6 being flared outwardly as shown at 7 to insure entrance of the projectile C into the tube 6.

Secured below the cylindrical chamber 1 is a tubular chamber 8 that is connected with the cylindrical chamber 1 by means of the connecting casing 9, the interior of the cylindrical casing 1, the tubular casing 8 and the connecting casing 9 comprising an expansion chamber for the gases of the explosion emitted from the end of the gun barrel following the projectile C during an explosion of the arm.

In order to provide for the expansion of the gases in the expansion chamber heretofore described, I provide a slidable plunger 10 within an extension 11 of the tubular casing 8 and also provide an expansible coil spring 12 engaging said plunger at one of its terminals while its other terminal is engaged by an annular plug 13 secured in the rear terminal of the rear extension 11 of the tubular casing 8. The forward terminal of the tubular casing 8 is also provided with a screw plug 14 that permits of removal of said plug 14 for the purposes of draining out the tubular casing 8.

15 indicates a screw stop mounted in the tubular casing 8 that engages the plunger 10 to limit its outward movement under the impulse of the spring 12.

In operation, it will be apparent that after the explosion of the fire arm the projectile when leaving the outer end of the muzzle will leap across the space between the muzzle and the inner terminal of the tube 6 and pass out through said tube. In the meanwhile, the gases of the explosion following the pro-

jectile C will be retained within the expansion chamber formed by the cylindrical casing 1, the tubular casing 8 and the connecting casing 9, being held back and caused to
 5 diffuse through said chamber by the projectile C while in the tube 6, and will momentarily depress the plunger 10 against the resistance of the spring 12 to permit of further expansion of the gases of the explosion
 10 within the expansion chamber. Then as soon as the projectile C leaves the outer terminal of the tube 6 the expanded gases will pass out through said tube 6, and because of their expanded condition will make little or
 15 no noise as the result of the firing of the arm. At the same time, a large percentage of the carbon incident to the explosion of a gun powder, if the gun powder is of the black smoke species, will be deposited upon the
 20 interior of the expansion chamber and the expanded gases that escape from the outer terminal of the tube 6 will be substantially colorless. It will be also seen that the expansion of the gases within the chamber at
 25 the time the projectile is leaving the muzzle of the gun will force the plunger 10 downwardly in opposite direction to the direction of the explosion, and the gases expanding
 30 against the opposite wall will materially decrease the effect of the shock caused by such explosion.

Having thus described my invention, what I claim is:—

35 1. A silencer comprising a cylinder, a plug adapted to fit the end of said cylinder, an

inwardly projecting tube extending through said plug and into the cylinder, the inner end of the tube being flared, a cylinder parallel with the first mentioned cylinder, a plunger
 40 slidable in the second mentioned cylinder, plugs removably secured in the ends of the second mentioned cylinder, one of said plugs having an aperture therein, a spring interposed between the apertured plug and the plunger, means to attach the whole to a
 45 fire arm, and a stop intermediate the ends of the second mentioned cylinder adapted to limit the movement of the plunger.

2. A gun silencer and shock absorber comprising a cylinder, a plug secured within the
 50 cylinder, a tube extending through said plug and into the cylinder, a second cylinder parallel with the first mentioned cylinder and having a passage communicating therewith, a plunger slidable in said second cyl-
 55 inder, plugs removably secured in the ends of the second cylinder, one of said plugs having an aperture therein, a spring adapted to abut the apertured plug, and seat within a recess in the plunger, a stop inter-
 60 mediate the ends of the cylinder adapted to limit the movement of the plunger, and means to attach the whole to the barrel of a fire arm.

In testimony whereof I affix my signature in presence of two witnesses.

HERBERT P. MOORE.

Witnesses:

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CLARA E. MOORE.