Sept. 29, 1925. 1,555,026

J. B. ROSE

MUZZLE BRAKE

Filed April 26, 1924

Fig. 1.

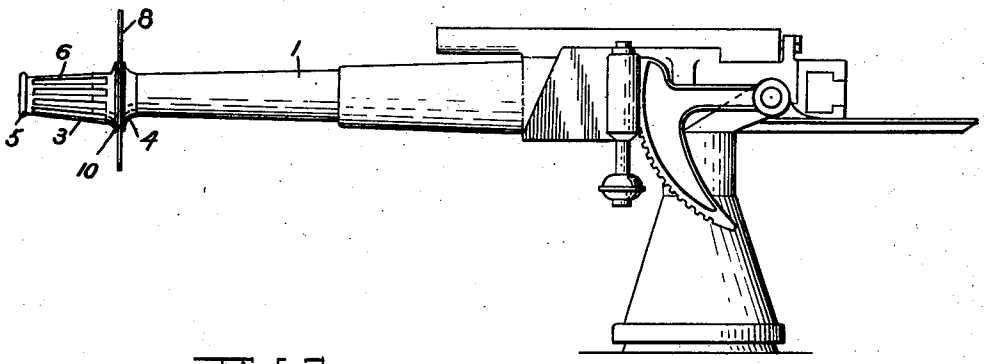


Fig. 2.

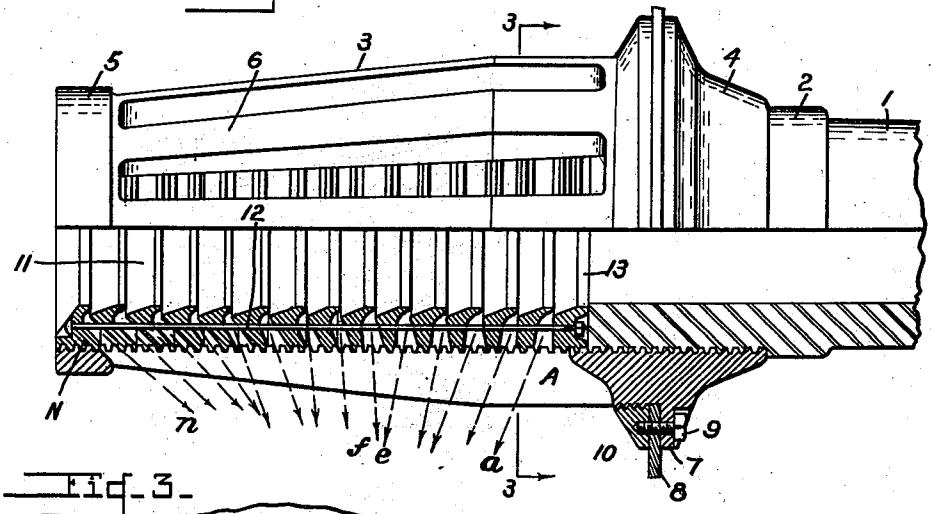
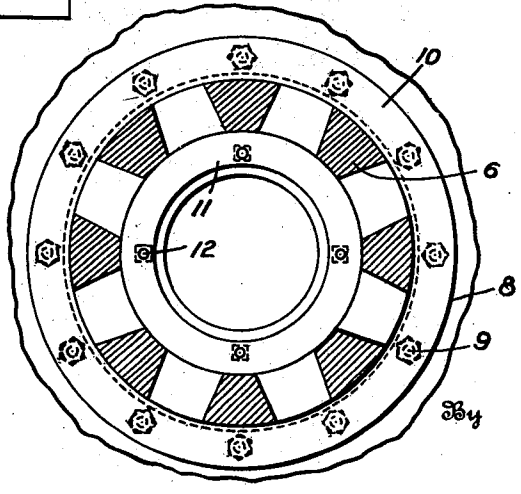


Fig. 3.



Inventor

J. B. Rose

By W. N. Roach

Attorney

Patented Sept. 29, 1925. 1,555,026

UNITED STATES PATENT OFFICE.

JOHN B. ROSE, OF WARRENTON, VIRGINIA.

MUZZLE BRAKE.

Application filed April 26, 1924. Serial No. 709,264.

(GRANTED UNDER THE ACT OF MARCH 3, 1883; 22 STAT. L. 625.)

To all whom it may concern:

Be it known that I, JOHN B. ROSE, a citizen of the United States, and a resident of Warrenton, county of Fauquier, and State of Virginia, have invented an Improvement in Muzzle Brakes, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment to me of any royalty thereon, in accordance with the act of March 3, 1883.

My invention relates, in general terms, to muzzle brakes for guns, which are designed to check the energy of recoil by utilizing the gases generated upon discharge of the piece. More particularly my invention resides in the provision of means for dissipating the gases in any desired direction.

To attain the maximum effect, devices of this character have been so constructed that the full force of the gases are diverted against the brake in such a manner that the force of resistance will be exerted as nearly parallel as possible to the direction of recoil. Consequently, the released gases will be projected along the line of recoil and will seriously embarrass the crew which is serving the gun. Since the successful application and practical operation of a device of this character is dependent upon the effect of the gases on the gun crew it is necessary in order to secure a maximum operating efficiency to so control the final disposition of the escaping gases that the recoil brake will not only be effective but that the gun crew will not be seriously hampered.

By proper adjustment of the size, shape, and disposition of the gas exits, I create a resultant movement of the gases after expulsion which will deflect them in any desired direction.

To these and other ends, my invention consists in the construction, arrangement and combination of parts, described hereinafter and pointed out in the claims forming a part of this specification.

One embodiment of my invention is illustrated by way of example in the accompanying drawings, in which,

Fig. 1 is a side elevation of a gun employing my muzzle brake;

Fig. 2 is a side elevation of the muzzle brake, partly in longitudinal section to show the arrangement of the deflecting elements; and

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2.

In the drawings in which like characters of reference designate like or similar parts,

1 indicates the barrel of a gun, having an enlarged portion 2, which is screw threaded to receive a muzzle brake 3. The muzzle brake 3 is cylindrical in shape and comprises an attaching collar 4, a front collar 5, and a plurality of spaced connecting ribs 6 to permit lateral expansion of the gases generated by explosion. The attaching collar 4 is formed with an annular flange 7 against which is seated a baffle plate 8 secured by means of screw bolts 9. A ring 10 threadedly mounted on the attaching collar 4 abuts against the baffle plate 8 and receives the terminal portion of the screw bolts 9. The elements of the muzzle brake 3 are internally threaded to receive a series of spaced baffle plates 11 mounted on tie rods 12 and anchored in a base ring 13, which rests flush against the face of the muzzle.

The baffle rings 11 are formed with a bore slightly larger than the bore of the gun so as to permit free passage of the projectile and they are further provided with concave rear faces of variable degree to receive the impact of the gases and to govern the direction of expansion. The forward face of each ring is of irregular convexity so as to more readily direct the escaping gases into the concave face of the next preceding ring.

The convex and concave faces of these rings are so formed and designed that the gases directed by a few of the rearmost rings will diverge forwardly, while the gases directed by the remaining rings will diverge rearwardly, it being preferable that the gases escaping from between the rearmost rings have the least divergence of any of the forwardly diverted streams of gas, while the gas escaping from between the foremost rings will leave the least divergence of any of the rearwardly directed streams of gas; the object being to leave the resultant rearward movement of the gases sufficiently divergent to avoid injury to the gun crew and gun mount, while at the same time securing a sufficient rearward

direction of the gases to provide a useful breaking force.

In operation, the force of the explosion generates gases which follow the projectile through the bore of the gun. These gases upon flowing from the muzzle of the gun impinge upon the baffle rings A to N and escape through the spaces between the ribs 6. The direction of exit of the gases is shown by arrows *a* to *n* and is controlled by the degree of concavity of each particular ring. It will thus be seen that the gases following the direction *a* to *e* will move forwardly of the gun crew while the gases following the direction *f* to *n* will be diverted rearwardly towards the crew. By this arrangement the resultant movement of the gases after emission from the muzzle brake may be so controlled that their final dissipation will not seriously affect the crew operating the gun.

By proper adjustment of the size, shape and disposition of the baffle rings, it is possible to create a resultant movement of the gases in any desired direction.

Having thus described my invention, what I claim is:

1. A muzzle brake for guns comprising a casing and a plurality of spaced baffle rings, the rings nearest the gun muzzle having forwardly directed exits and the more remote rings having rearwardly directed exits.

2. A muzzle brake for guns comprising a casing and a plurality of spaced baffle rings, the majority of which, being forwardly situated rings, are adapted to emit gases in a rearwardly divergent direction, and the remainder being rearwardly situated rings and adapted to emit gases in a forwardly divergent direction.

3. A muzzle brake for guns comprising a casing formed with a plurality of spaced ribs and a set of baffle rings mounted on rods and adapted for threaded engagement within the casing.

4. A muzzle brake for guns provided with spaced discharge ports, the forwardly situated ports adapted to discharge gases in a rearwardly divergent direction, and the rearwardly situated ports adapted to discharge gases in a forwardly divergent direction.

5. A muzzle brake for guns provided with spaced discharge ports arranged to direct the escaping gases along converging lines, whereby a resultant movement of the gases will be had in a direction to clear the gun crew.

JOHN B. ROSE.