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DEVICE FOR VARYING THE AMOUNT OF RECOIL IN FIREARMS

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FIG. 1.

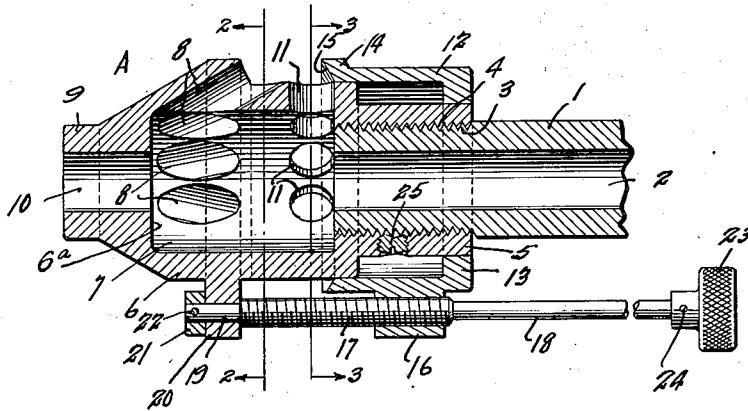


FIG. 2.

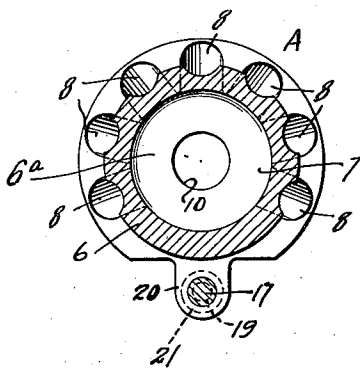
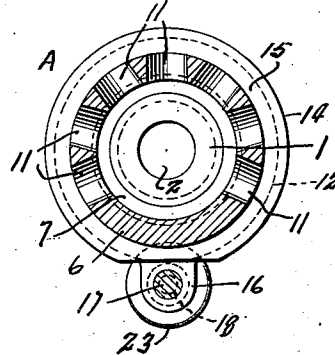


FIG. 3.



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DEVICE FOR VARYING THE AMOUNT OF
RECOIL IN FIREARMSRobert H. S. Hughes, Baltimore, Md., assignor of
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4 Claims. (Cl. 89—14)

This invention relates to a device for controlling the recoil of guns adapted to fire projectiles so that a high percentage of recoil may be eliminated and the percentage of recoil elimination may be lessened as desired to the point of practically no recoil elimination. It may be desirable to have a relatively high recoil elimination for some types of guns, whereas with other types the recoil elimination should be small, and the device of my invention provides for controlling the percentage of recoil elimination as well as means for regulating the amount of blast resulting from the discharge of the gun.

In the accompanying drawing:

Fig. 1 is a longitudinal central section through my device showing it attached to the muzzle end of a gun barrel, a portion of the barrel being also shown in central longitudinal section;

Fig. 2 is a transverse section through the device, taken on the line 2—2 of Fig. 1 and

Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

In the drawing 1 indicates the muzzle end of a gun barrel, 2 indicates the bore of the barrel and A indicates the recoil controlling device as a whole. The body 6 of the device is formed with a cylindrical gas chamber 7 and with a collar 5 at one end which forms an inlet to the chamber and a means for attaching the device to the gun barrel. The barrel is externally threaded as shown at 3, and the collar has internal threads 4 which engage the threads on the barrel. A seal port 10 extends from the forward end of the gas chamber through a cylindrical part 9 at the forward end of the body, the seal port being in axial alignment with the collar and also with the bore of the barrel when the device is mounted on the barrel. An annular shoulder 6^a extends from the inner end of the seal port to the side wall of the chamber, and a plurality of discharge ports 8, in an arcuate series, extend rearwardly and outwardly from the forward part of the chamber adjacent said shoulder. A plurality of baffle ports 11, in a similar series, extend through the side wall of the chamber, at the rear of the discharge ports, in a plane substantially perpendicular to the axis of the inlet opening and seal port, whereby the gases passing from the baffle ports will intercept the gases passing from the discharge ports. It is to be noted that in the drawing the discharge ports are arranged around the top and sides of the body and that there are no ports in its lower part, and that the baffle ports are similarly arranged. When the device is mounted upon a gun barrel it is held in this position by a

set screw 25 which extends through the collar 5. The omission of ports on the lower side of the device is to lessen the downward blast, which is desirable when the gunner is shooting prone.

A sleeve 12 for controlling the ports is slidably mounted on the body. As shown, this sleeve has an internal annular flange 13 which is slidable on the collar and the forward part of the sleeve is slidable upon the part of the body in advance of the collar. This forward part of the sleeve has an outwardly extending flange 14 and the forward face of the sleeve and flange slopes forwardly and outwardly from the body as shown at 15. The sleeve is adjustable forwardly and backwardly on the body by means of an adjusting rod 18 having a threaded portion 17 which extends through a threaded opening in a lug 16 depending from the sleeve and having its end portion 19 journaled in an opening in a lug 20 depending from the body 6. A collar 21, secured to the part 19 by a pin 22, prevents endwise movement of the adjusting rod. A knob 23, secured to the rear end of the rod by a pin 24, is provided for turning the rod to adjust the sleeve.

Recoil elimination results from the discharge of the products of combustion through the discharge ports 8, and the resulting reaction against the shoulder 6^a. If the sleeve is adjusted to its rearmost position, leaving the baffle ports and discharge ports open and unobstructed, the result, when the gun is fired, will be a maximum of recoil elimination and a substantial reduction in blast against the gunner. If the sleeve is moved forward to the position shown in the drawing, where the discharge from the baffle ports will be directed forwardly by the inclined lip on the sleeve, this will lessen the recoil elimination to a certain extent and also lessen the blast against the gunner. If the sleeve is moved to the position where the baffle ports are entirely closed and the discharge ports are left entirely open, recoil elimination will be further reduced and also blast against the gunner. If the sleeve is adjusted to its foremost position, closing the discharge ports, the baffle ports being closed, there will be practically no recoil elimination and no blast.

I claim:

1. A recoil controlling device for guns adapted to fire projectiles, comprising a body adapted for application to the muzzle end of a gun barrel, said body having a cylindrical gas chamber therein and having a cylindrical inlet opening at its rear end adapted to receive the muzzle end of a gun barrel and a seal port at its forward end in

axial alinement with said inlet opening and a shoulder extending laterally from the inner end of the seal port to the side wall of the chamber, said device having a plurality of discharge ports extending rearwardly and outwardly from the forward part of the chamber, adjacent the shoulder therein, and having a series of baffle ports extending through its side wall in a plane substantially perpendicular to the axes of the inlet opening and seal port whereby the gases passing from the baffle ports intercept the gases passing from said discharge ports.

2. A recoil controlling device for guns adapted to fire projectiles, comprising a body adapted for application to the muzzle end of a gun barrel, said body having a cylindrical gas chamber therein and having a cylindrical inlet opening at its rear end adapted to receive the muzzle end of a gun barrel and a seal port at its forward end in axial alinement with said inlet opening and a shoulder extending laterally from the inner end of the seal port to the side wall of the chamber, said device having a plurality of discharge ports extending rearwardly and outwardly from the forward part of the chamber, adjacent the shoulder therein, and having a series of baffle ports extending through its side wall in a plane substantially perpendicular to the axes of the inlet opening and seal port whereby the gases passing from the baffle ports intercept the gases passing from said discharge ports, and a member adjustable on the body to close and open the baffle ports.

3. A recoil controlling device for guns adapted to fire projectiles, comprising a body adapted for application to the muzzle end of a gun barrel, said body having a cylindrical gas chamber therein and having a cylindrical inlet opening at its rear end adapted to receive the muzzle end of a gun barrel and a seal port at its forward end

in axial alinement with said inlet opening and a shoulder extending laterally from the inner end of the seal port to the side wall of the chamber, said device having a plurality of discharge ports extending rearwardly and outwardly from the forward part of the chamber, adjacent the shoulder therein, and having a series of baffle ports extending through its side wall in a plane substantially perpendicular to the axes of the inlet opening and seal port whereby the gases passing from the baffle ports intercept the gases passing from said discharge ports, and a sleeve adjustable longitudinally of the body to close and open the baffle ports, said sleeve having its forward end flaring forwardly and outwardly from the body.

4. A recoil controlling device for guns adapted to fire projectiles, comprising a body adapted for application to the muzzle end of a gun barrel, said body having a cylindrical gas chamber therein and having a cylindrical inlet opening at its rear end adapted to receive the muzzle end of a gun barrel and a seal port at its forward end in axial alinement with said inlet opening and a shoulder extending laterally from the inner end of the seal port to the side wall of the chamber, said device having a plurality of discharge ports extending rearwardly and outwardly from the forward part of the chamber, adjacent the shoulder therein, and having a series of baffle ports extending through its side wall in a plane substantially perpendicular to the axes of the inlet opening and seal port whereby the gases passing from the baffle ports intercept the gases passing from said discharge ports, and a sleeve adjustable longitudinally of the body to close and open the baffle ports and discharge ports, said sleeve having its forward end flaring forwardly and outwardly from the body.

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