

Aug. 27, 1940.

R. H. S. HUGHES

2,212,686

RECOIL CONSTRUCTION

Filed April 27, 1937

FIG. 1.

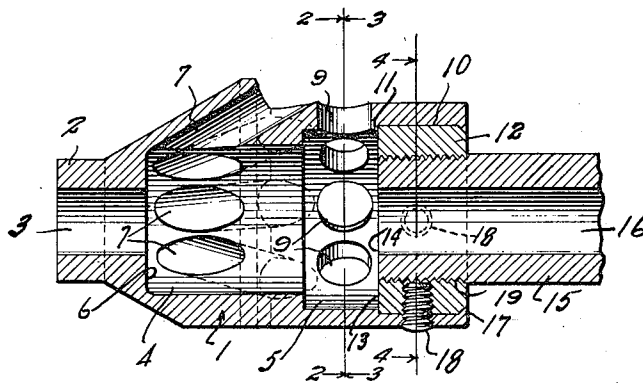


FIG. 2.

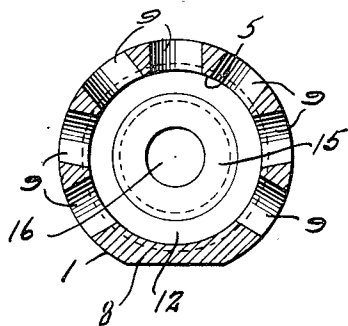


FIG. 3.

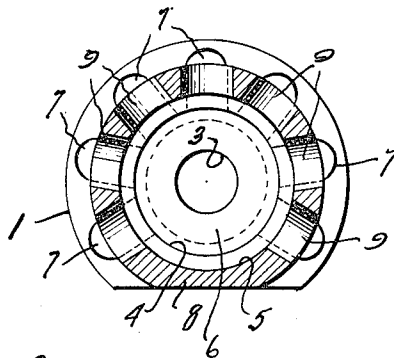
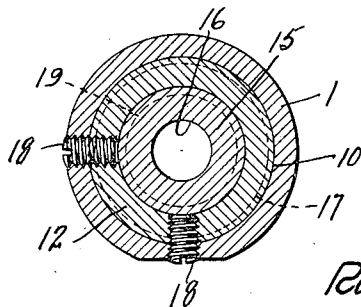


FIG. 4.



Inventor.
ROBERT H. S. HUGHES

By *Semmes & Semmes*
Attorneys

UNITED STATES PATENT OFFICE

2,212,686

RECOIL CONSTRUCTION

Robert H. S. Hughes, Baltimore, Md., assignor
of one-half to Milton Roberts, Baltimore, Md.

Application April 27, 1937, Serial No. 139,274

1 Claim. (Cl. 89-14)

My invention relates to control of recoil and is particularly adapted for the control of recoil of firearms of all sizes, though its application is not exclusively in this field.

5 An object of the invention is to provide a construction which is simple and strong, easy to manufacture, repair, and replace.

A further object of the invention is to provide a construction which can be readily adapted to various sizes of firearms without necessitating complete redesign of the recoil.

10 With these and other objects in view, which may be incident to my improvements, the invention consists in the parts and combinations to be hereinafter set forth and claimed, with the understanding that the several necessary elements comprising my invention may be varied in construction, proportions and arrangements, without departing from the spirit and scope of the appended claim.

15 In order to make my invention more clearly understood, I have shown in the accompanying drawing means for carrying the same into practical effect without limiting the improvements in their useful applications to the particular constructions which, for the purpose of explanation, have been made the subject of illustration.

Referring to the drawing:

20 Figure 1 is a longitudinal sectional view taken through my recoil control and through the muzzle of the firearm.

Figure 2 is a view taken along the line 2-2 of Figure 1, looking in the direction of the arrows.

25 Figure 3 is a view taken along the line 3-3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a view taken along the line 4-4 of Figure 1, looking in the direction of the arrows.

30 Referring to the drawing, I have shown a recoil control having a body 1 which is provided with an extension 2 which has in it a seal aperture 3 through which the bullet discharged from the firearm is adapted to pass.

35 The body 1 is provided with a combustion chamber 4 and a combustion chamber 5 of larger diameter than the combustion chamber 4, and located to the rear of the combustion chamber 4. In the combustion chamber 4 is provided a gas shoulder 6, against which the gasses are adapted to expand. The expanding gasses are discharged rearwardly through rearwardly extended main ports 7, which are formed in the body 1 and which tend to minimize the recoil of the firearm. These ports 7, as is readily apparent from an inspection of Figure 3, are not

adapted to completely encircle the body 1, but there is a blank space 8 left at the bottom. This arrangement of ports tends to minimize "climb."

40 Since the ports at the top of the body 1 exert a downward moment of force against the body 1, and hence the muzzle of the firearm, "climb" is minimized, for there are no complementary ports at the bottom of the body to exert an upward movement of force.

45 The combustion chamber of larger diameter 5 is provided with auxiliary ports 9 which are directed substantially at right angles to the axis of the bore of the firearm. These ports 9 are shown to be in fore and after alignment with the main ports 7. The ports 9 increase the efficiency of the recoil mechanism, tending to eliminate blast and objectionable noise. The body 1 is provided with an aperture of greater diameter than the combustion chamber 5. This aperture I have indicated by the numeral 10. There is provided a shoulder 11 where the aperture 10 terminates at its front end.

50 An adapter collar or ring 12, which may be designated an insert member, is press fitted into the aperture 10 and has its front end 13 lying against the shoulder 11.

55 It is to be noted that the front end of the insert member 13 is approximately even with the front end 14 of the muzzle of the firearm 15, the bore 16 of the firearm 15 terminating at approximately the same point with respect to its fore and aft position as the front 13 of insert member 12.

60 The staggered apertures of the combustion chamber 4, the larger combustion chamber 5, and the aperture 10, permit the device to be easily constructed, since the boring out of the device does not require any hooked tools, and the operation is a simple one. Where the device may be die cast, the metal of the body, for instance, in the neighborhood of the aperture 10, if the aperture 10 is bored, will tend to have gas pockets form therein. The insert device 12 will cover these gas pockets and tend to strengthen the device and prevent any objectionable weakness. The press fit of the insert 12, and the fact that the insert 12 is held in position by simply swaging the end 17 of the body 1 down over the insert 12, permits a very simple and strong construction.

65 The body 1 is held in place by means of one or more set screws 18, which pass through the body 1, and insert member 12, and contact the outside of the muzzle of the firearm. These set screws hold the recoil control firmly in position. The insert member 12 is provided with internal screw threads 19, which are adapted to cooperate with

external screw threads formed on the muzzle of the firearm.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claim.

I claim:

A recoil controlling device for guns adapted to fire projectiles, comprising a body, means for securing the body to the muzzle of a gun and in line with the bore thereof, said body when so secured having an inlet port in alignment with the bore of the gun, said body having a cavity in communica-

tion and alignment with the inlet port and consisting of two coaxially aligned cylindrical chambers of different diameters, the one of larger diameter being adjacent the inlet port, said body having a seal port in alignment with the inlet port and the bore of the gun and extending from the forward end of the body to the forward end of the chamber of smaller diameter, said body having an arcuate series of discharge ports extending outwardly and rearwardly from the forward part of the cylindrical chamber of smaller diameter adjacent the forward wall thereof, said body also having an arcuate series of baffle ports extending thru the side wall of the cylindrical chamber of larger diameter between the inlet port and the outer ends of the discharge ports.

ROBERT H. S. HUGHES.