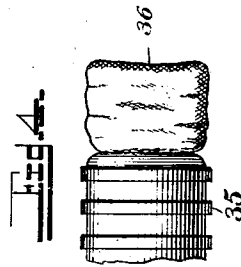
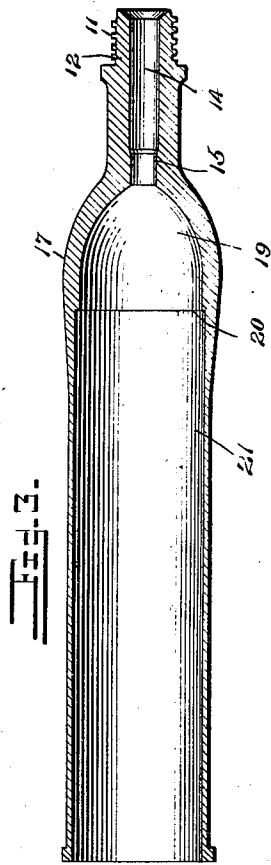
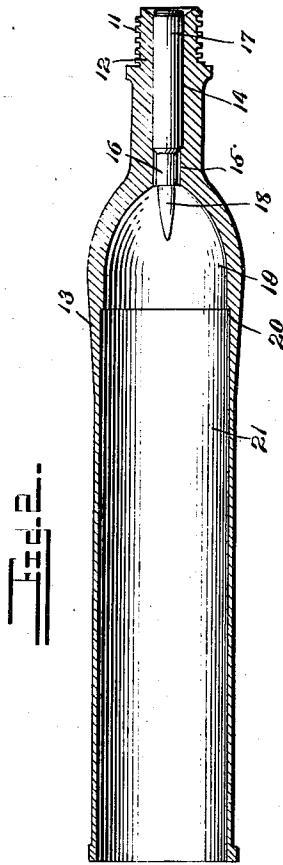
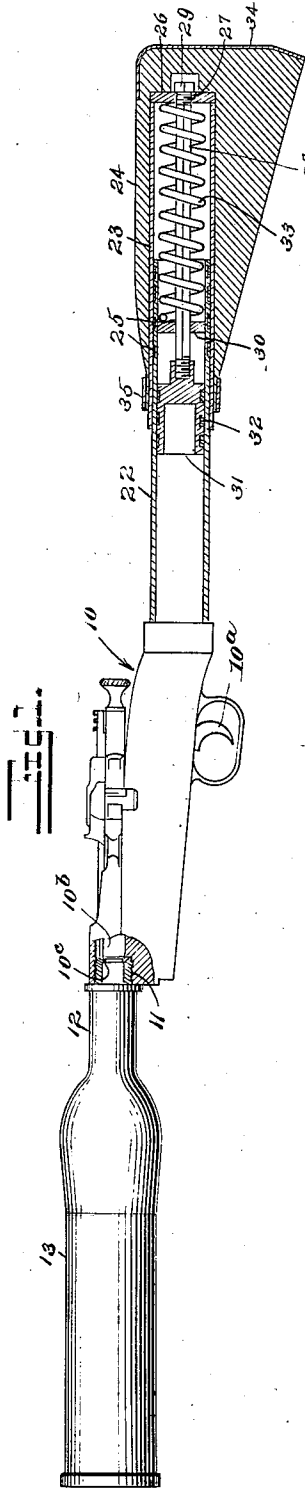


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GRENADE THROWER.
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GRENADÉ-THROWER.

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To all whom it may concern:

Be it known that I, STUART P. JOHNSON, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented an Improvement in Grenade-Throwers, 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 of any royalty thereon.

The subject of this invention is an ordnance device intended, primarily, as a grenade thrower or gun.

In providing a device of this character, it is well to so design it that standard forms of ammunition may be used so as to avoid a multiplicity of explosive units to be distributed to and used by troops. It is also desirable from a standpoint of economy to utilize, where possible, parts of other discarded devices.

In grenade throwers heretofore designed, the foregoing points have been considered and provided for and are likewise provided for in the present design:

It will be evident that it is more efficient and permits of great range to have a solid grenade which will prevent, to some extent, the escape of gas thereabout or there-through and so utilize the full expansive force of the gases of explosion in propelling the grenade.

Because of the weight of the missile to be propelled, a violent recoil is experienced in this form of ordnance device which has necessitated resting the stock or butt of the device on the ground or against some fixed support. Firing under such circumstances necessarily means that accuracy of aim is very slight.

The present invention aims to overcome the foregoing objections or defects and this is accomplished, broadly, by providing a grenade thrower constructed to permit gas to escape from a service cartridge and exert very little propelling force upon the bullet, while at the same time, exerting an even and effective pressure upon the grenade, to-

gether with means for absorbing the shock due to recoil.

Specifically, the invention consists in a discharger adapted to be fitted to a lock-case or middle portion of a firearm, and having a cartridge chamber formed to permit expansion of the neck of the cartridge-case and having a straight lined stock and a recoil absorber associated therewith.

With these and other objects in view, the invention consists in the novel arrangement and combination of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

A practical embodiment of the invention is shown in the accompanying drawing, wherein—

Figure 1 is a view in side elevation, partly in section, of an ordnance device constructed in accordance with my invention;

Fig. 2 is a detail view in longitudinal section of the discharger, showing a cartridge in place therein;

Fig. 3 is a similar view of the discharger, with the cartridge removed;

Fig. 4 is a fragmentary view in side elevation of a grenade adapted for use with the device.

Referring to the drawing by numerals of reference:

The firing mechanism of an ordinary Springfield rifle is indicated generally at 10 and includes the trigger 10^a; and the bolt 10^b carrying the extractor 10^c. This portion 10 is cut off and threaded or tapped to intermesh with the threads 11 formed on the stem 12 of a discharger 13.

While I have shown and described the part 10 as identical with a similar portion of the Springfield rifle, it is to be understood that I am not confining myself to any particular style of rifle, nor indeed, to rifles alone, as the device may be adapted to a like portion of a shot gun or other fire-arm or may have a special lock and firing mechanism constructed for it.

The discharger 13 has formed, in the stem

12, a cartridge chamber 14 having a portion 15 of reduced diameter or bore and adapted to receive the neck 16 of the cartridge-case 17. The diameter of the portion 15 of the cartridge chamber is greater than that of the neck 16 of the cartridge so that the walls of this portion are spaced an appreciable distance from the outer surface of the neck 16. This allows the neck 16 to expand under the force of the gases formed by ignition of the powder and relieve the force tending to expel the bullet while allowing the gas to readily and uniformly fill the gas chamber and impinge upon the grenade.

The main body of the discharger 13 is formed with a gas chamber 19, into the rear of which the cartridge chamber opens, and with an annular shoulder 20 which defines the junction of the gas chamber with the grenade receiving bore 21. By providing such shoulder a seat is formed for the grenade which insures a proper positioning of the grenade to secure a gas chamber of uniform volume.

To the rear end of the portion 10 is secured, in any suitable manner, the stock which consists of a straight tubular member 22, closed at its forward end and adapted to telescope into a tubular member 23 positioned in a cavity or bore formed in the shoulder stock 24. Gas checks of any suitable form are interposed between the tubular members 22 and 23, those herein shown consisting of split rings 25 which encircle the tubular member 22 and which are seated in grooves formed therein.

The rear end of the tubular member 23 is herein shown as closed by a disk 26 which is centrally apertured and tapped to receive the threaded end 27 of a rod 28 which rod is preferably angular in cross section and is locked in place in the disk by means of a lock nut 29 threaded on the rearwardly extending end of the threaded portion 27. The rod 28 extends forwardly into the tubular member 22 passing through an angular aperture formed in a disk or wall 30 secured in the member 22 and has attached to its forward end, as by threading, as shown, a piston 31 formed with gas check rings 32 and adapted to be reciprocated with respect to the member 22. A resilient element such as the coil spring 33 which surrounds the rod 28 and is confined between the respective disks 26 and 30 serves to retain the tubular members in proper extended position. The shoulder stock 24 may be provided with the usual butt plate 34 and with a ferrule 35 which encircles the forward end of the shoulder stock and protects the same against injury.

While the device is usually used so that the gas formed by the explosion of the

charge of an ordinary service cartridge will propel the grenade or projectile it may, when a heavy grenade is used, have an extra charge inserted to secure the extra propelling force desired. Under these circumstances a grenade or projectile, such as that shown in Fig. 4, having the body 35 to the rear of which is attached in any convenient and desired manner a powder or explosive charge 36 may be used and inserted in place in the discharger 13. As will be seen, the extra explosive charge will be positioned in the gas chamber where it will be readily ignited by the explosion of the service cartridge. Should it be desired, the extra charge of explosive may be placed in the discharger before the grenade is positioned therein, the action then being the same as that just described.

In practice the device is operated in the following manner:

The grenade or projectile is placed in the discharger and comes to rest upon the annular shoulder 20. A service cartridge is inserted in the cartridge chamber in the usual manner. The firing mechanism is operated through means of the trigger to explode the charge in the cartridge. Upon explosion of the charge the neck 16 of the cartridge-case is expanded to the diameter of the portion 15 of the cartridge chamber, thus permitting the gases to escape about the bullet 18 into the gas chamber 19 and to impinge upon the grenade and expel the same violently from the discharger 13. The escape of the gases about the bullet so reduces the active propelling force upon bullet 18 that the bullet travels comparatively slowly through the discharger and for a short distance therebeyond and seldom, if ever, contacts the grenade so that with delicate grenade structures, no injury thereof is had by reason of the bullet coming in violent contact therewith.

The recoil due to the force of explosion causes the device to move rearwardly with respect to a shoulder stock forcing the tubular member 22 into the tubular member 23. This action will trap air between the disk 30 and disk 26 and also between the piston 32 and the head of the member 22, causing a cushioning effect and absorbing the shock of the recoil. The parts are restored to normal position by means of the expansive force of the spring 33. This absorption of the recoil permits the device to be fired from the shoulder, and hence, greater accuracy of aim is secured.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In an ordnance device, a discharger having a major missile bore, a cartridge chamber including a neck receiving portion

communicating with the bore, the diameter of the neck receiving portion being greater than the outer diameter of the neck of a cartridge.

5 2. In an ordnance device, a discharger having a major missile bore, a cartridge chamber and a gas distributing chamber be-

tween the major bore and cartridge chamber and in communication with each, the cartridge chamber having a neck receiving 10 portion of greater diameter than the outside diameter of the neck of a cartridge adapted for use therein.

STUART P. JOHNSON.