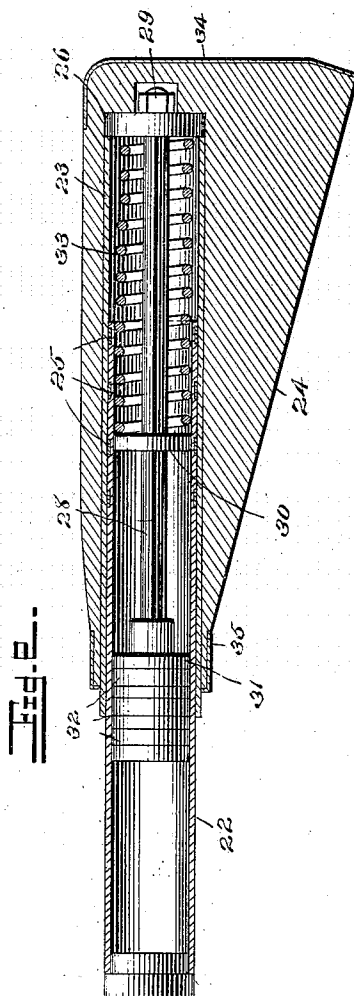


1,379,989.



Stuart V. Johnson

UNITED STATES PATENT OFFICE.

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RECOIL MECHANISM.

1,379,989.

Specification of Letters Patent.

Patented May 31, 1921.

Application filed March 12, 1920. Serial No. 365,334.

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

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, of the District of Columbia, have invented an Improvement in Recoil Mechanism, 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.

The subject of this invention is an ordnance device designed more particularly as a grenade thrower or gun.

Because of the weight of the grenade or projectile discharged from devices of this character, the recoil is so great that it is necessary to rest the stock or butt of the gun upon the ground or against some fixed support when firing the same. The shock due to the violent recoil will often break or split the ordinary wooden gun stock and, for this reason, metal stocks capable of being rested upon the ground were devised.

Resting the stock upon the ground when firing leads to inaccuracy of aim and the heavy metal stock makes the device an unwieldy and cumbersome weapon.

The present invention is designed to overcome these defects and to provide a light firearm, the stock of which may be rested against the shoulder when the firearm is being discharged.

To this end the invention consists, generally, in a grenade thrower provided with a recoil absorbing mechanism.

Specifically, the invention resides in a stock formed with telescoping tubular members held in normal extended position by a resilient element such as a coil-spring and provided with means for entrapping air within the members upon recoil to afford a cushioning effect to the shock of recoil.

With these and other objects in view, the invention resides 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 structure for carrying out the invention is illustrated 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; and

Fig. 2 is an enlarged detail view in vertical longitudinal section of the stock of the device.

Referring to the drawing by numerals of reference:—

The lock casing of an ordinary Springfield rifle is indicated generally by the numeral 10 and is provided with the usual trigger 10^a and the bolt 10^b.

The portion 10 has connected to the forward end thereof, in any desired and usual manner, a discharger 13. Connected to the rear end of the portion 10 is the stock of the device, which consists in the tubular member 22 closed at its forward end and adapted to telescope within a tubular member 23 secured in a recess or bore formed in the shoulder stock 24. Interposed between the tubular member 22 and the member 23 are suitable fluid checks, herein shown as split rings 25 which encircle the member 22 and are seated in annular grooves formed therein.

The rear end of the member 23 is closed by means of a disk 26 which is centrally apertured and threaded to receive the threaded end 27 of a rod 28 which rod is angular in cross-section. The rod may be locked in place by means of a lock-nut 29 which is threaded on the rearwardly extending end of the threaded portion 27. The rod 28 extends forwardly into the tubular member 22 and passes through an angular aperture formed in a wall or disk 30 secured within the member 22. By forming the rod 28 of angular cross-section and having it pass through a similarly formed aperture in the wall 30 the shoulder stock 24 and tubular member 23 are held against rotation with respect to the tubular member 22 thus retaining the members in proper alinement.

A piston 31 is connected by threading or otherwise to the forward end of the rod 28 and has a sliding fit within the tubular member 22. Fluid checks, such as the piston rings 32, may be interposed between the piston and the tubular member to prevent a too rapid escape of air or other fluid be-

yond the piston. The parts are retained in normal position by any suitable means such as a resilient element which is herein shown as a coil spring 33 which encircles the rod 28 and is confined between the disk 26 and the disk or wall 30. A plate 34 may be provided on the rear end of the shoulder stock 24 and a ferrule 35 may encircle the forward end of the shoulder stock to protect the same against injury.

From the foregoing description and an examination of the drawing it will be seen that I have devised a right-line stock of considerable strength and comparative lightness which will permit an ordnance device of this character to be fired from the shoulder of the operator.

In practice the device operates in the following manner:—

When a grenade is discharged, the recoil forces the tubular member 22 into the member 23 entrapping air within the member 23 and between the disks 26 and 30 and also within the member 22 and between the head of said member and the piston 31. This entrapment of air causes a cushioning effect and reduces the shock of recoil especially in view of the fact that there is a small amount of leakage of air. After recoil is complete,

the members are restored to normal position by the expansive force of the spring 33.

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

1. An ordnance device, including a discharger, and a stock for said discharger comprising a tubular member, a shoulder stock, a second tubular member secured in the stock for the reception of the first tubular member with a sliding fit, a piston connected to the second tubular member and having a sliding fit in the first tubular member, gas checks between the tubular members, gas checks between the first tubular member and the piston, and means for normally retaining the tubular members in extended position.

2. A gun stock, including a tubular member, a shoulder stock, a second tubular member secured in the shoulder stock for the reception of the first tubular member with a sliding fit, a piston connected to the second tubular member and having a sliding fit in the first tubular member and means for normally retaining the tubular members in extended position.

STUART P. JOHNSON.