

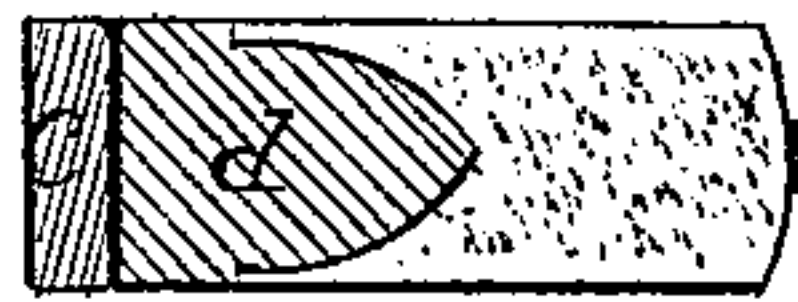
J. D. GREENE.

Cartridge.

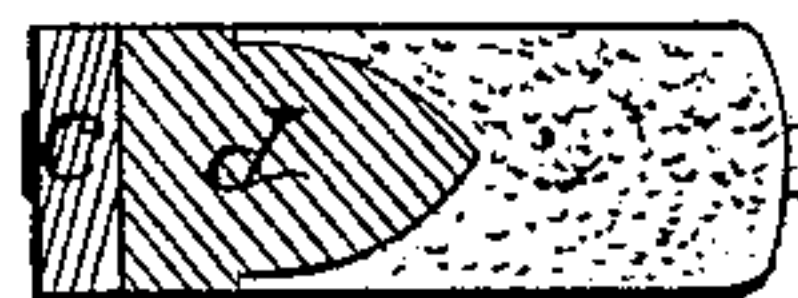
No. 18,143.

Patented Sept. 8, 1857.

*Fig. 2*



*Fig. 1*



# UNITED STATES PATENT OFFICE.

J. DURELL GREENE, OF CAMBRIDGE, MASSACHUSETTS.

## IMPROVEMENT IN CARTRIDGES FOR BREECH-LOADING FIRE-ARMS.

*Specification forming part of Letters Patent No. 18,143, dated September 8, 1857.*

*To all whom it may concern :*

Be it known that I, J. DURELL GREENE, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Cartridge for Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1 and 2 are sections through the center of the cartridge.

Efforts have been made to pack the joint of breech-loading fire-arms by placing the ball at the rear of the cartridge, that it may be forced by the discharge against the joint, and thus prevent the escape of gas, the ball being thrown forward to answer for the next discharge. It is found, however, that the ball, being forced against the rigid breech-pin by the explosion, is upset, and suffers an alteration of form which renders it difficult to force it forward previous to the introduction of the next cartridge. The attempt has also been made to effect the same end in a cartridge having its ball in advance of the powder, as usual, by placing a wad in the rear of the cartridge for the purpose of packing the joint at the instant of discharge, and is forced forward in advance of the next ball. The wad thus placed fails to pack the joint effectually, and, being in advance of the succeeding ball, interferes with the accuracy of the shooting.

My present invention has for its object the removal of these difficulties; and consists in placing the ball behind the powder, and a wad of felt, leather, or other suitable elastic material behind the ball. The ball thus placed forces the wad against the joint between the breech-piece and the barrel at the moment of discharge, and prevents the escape of gas at this point, while the elastic nature of the wad prevents the ball from upsetting, and enables it to be pushed forward with ease.

To enable others to understand my invention, I will proceed to describe the manner in

which I have carried it out, and the construction and operation of my cartridge.

In the accompanying drawings are represented sections through the cartridge, in which *a* is the ball; *b*, the powder in advance of the ball; *c*, a wad of felt, leather, or other elastic material which is secured behind the ball. This wad may be placed within the paper case, as in Fig. 1, or it may be secured to the outside of the case after the cartridge is made, as in Fig. 2.

The operation of this cartridge is as follows: It may be employed in many of the breech-loading guns now in use, by inserting the nipple into the barrel at a point slightly in advance of the ball. The force of the explosion drives the ball against the wad, which is thus pressed against the joint, and all escape of gas at this point is avoided, while the elasticity of the wad tends to diminish the recoil of the piece, and effectually prevents the upsetting of the ball. The ball and wad are now forced forward sufficiently far to allow another cartridge to be introduced behind them, and upon the explosion of this cartridge the first ball is discharged, the one belonging to the cartridge remaining behind, as before, to pack the joint. Thus each cartridge, as it is exploded, discharges the ball and wad belonging to the previous one. The balls may be forced forward to admit the fresh cartridges, either by the succeeding cartridge itself, as it is introduced, or by a piston having a sufficient motion in the direction of the axis of the gun; the latter I deem the preferable method; but as the details of the gun which I employ form no part of my present invention, they will not be further described.

What I claim as my invention, and desire to secure by Letters Patent, is—

The within-described cartridge, having the ball behind the powder, and a wad behind the ball, operating in the manner set forth.

J. DURELL GREENE.

Witnesses:

SAM. COOPER,

THOS. R. ROACH.