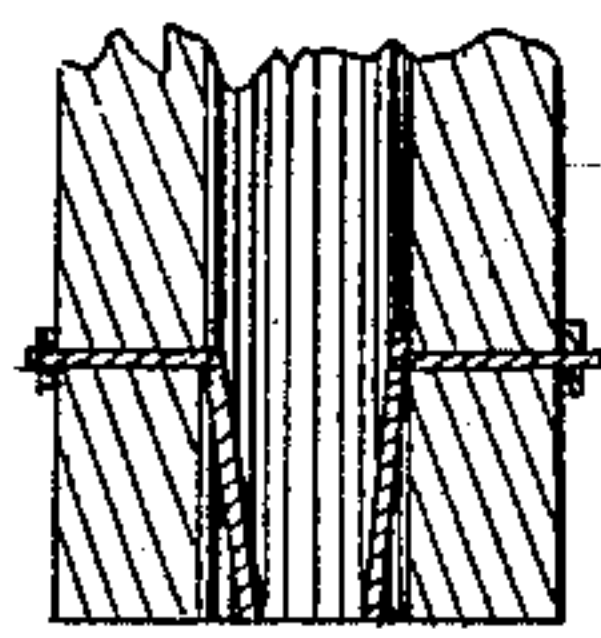


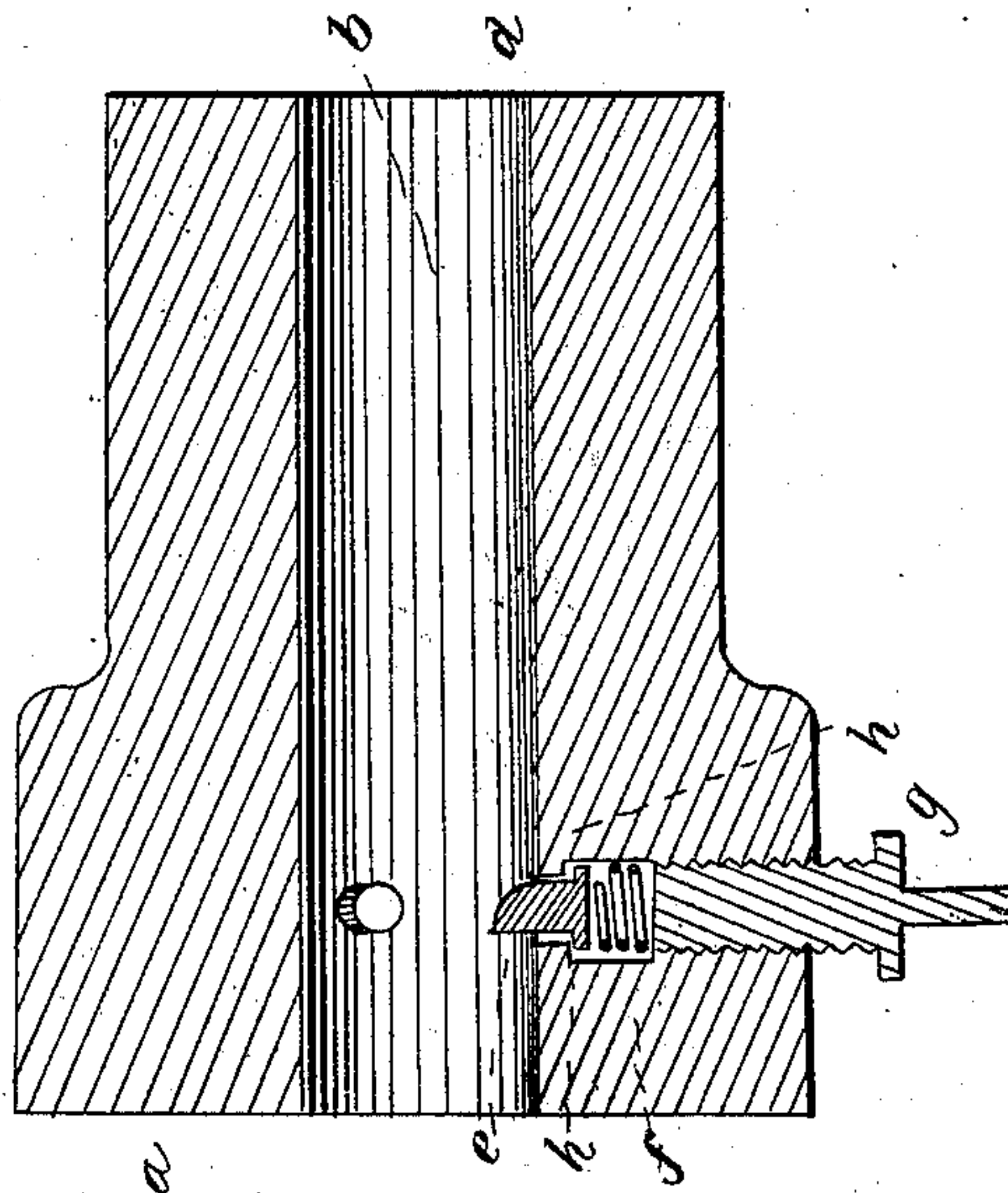
D. E. SOMES.  
Muzzle-Loading Ordnance.

No. 39,592.

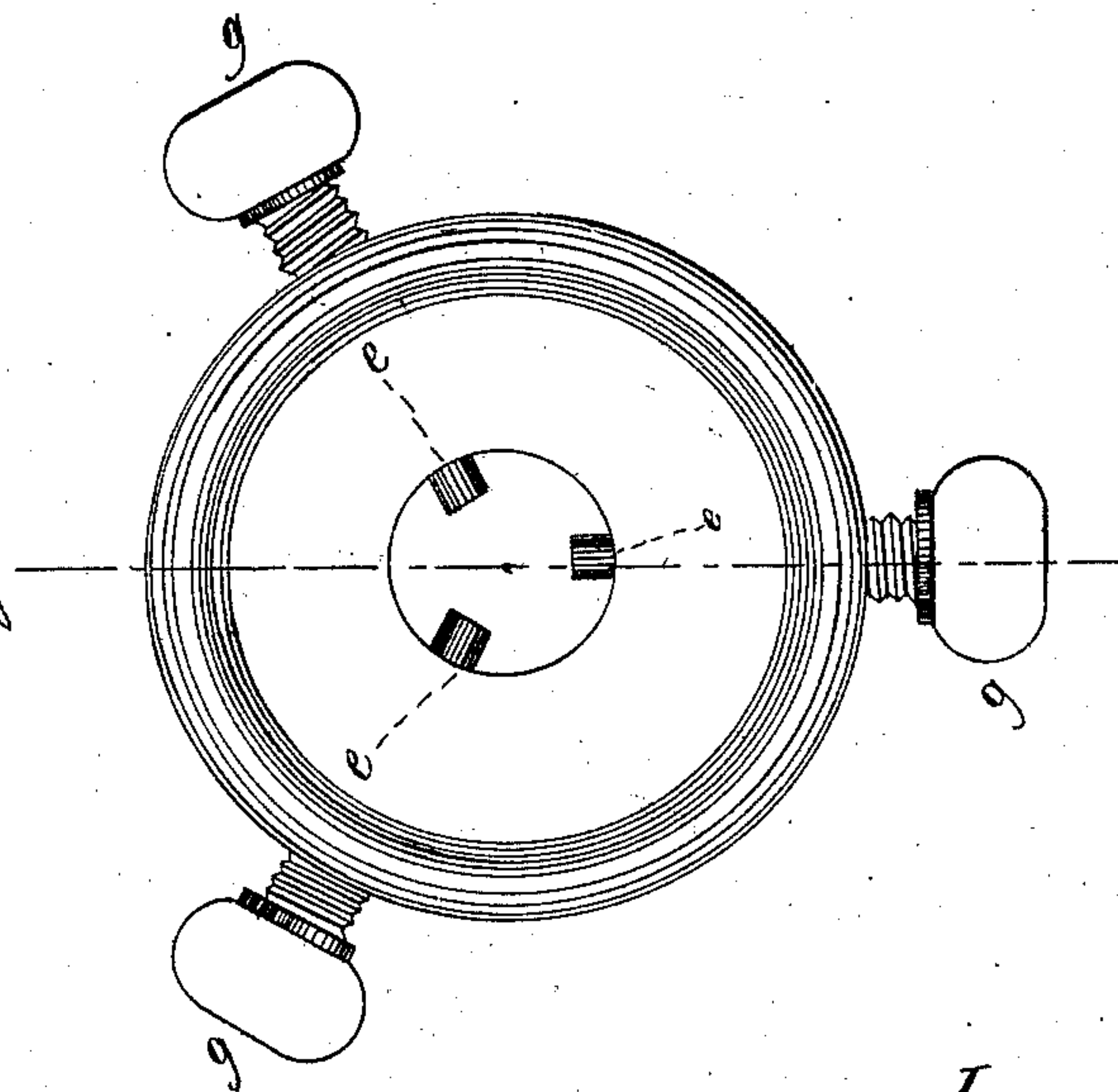
Patented Aug. 18, 1863.



*Fig. 2*



*Fig. 1.*



*Witnesses*  
*James C. Smith*  
*Lyander Hill*

*Inventor.*  
*D. E. Somes*



# UNITED STATES PATENT OFFICE.

DANIEL E. SOMES, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN FIRE-ARMS.

Specification forming part of Letters Patent No. 39,592, dated August 18, 1863.

*To all whom it may concern:*

Be it known that I, DANIEL E. SOMES, of Washington, in the District of Columbia, have invented a new and useful Improvement in Fire-Arms; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is to produce a gun or cannon of such a form and construction that when it is fired the ball shall be firmly held in the barrel until the maximum explosive force of the charge is attained, and that the ball shall then be instantaneously liberated, thus discharging it from the barrel with the maximum force of the charge. To accomplish this object I make a cannon of the form and construction shown in the accompanying drawings, in which—

Figure 1 represents a cross-sectional view, and Fig. 2 represents a longitudinal sectional view, of my cannon.

*a* represents the solid part, and *b* the bore, of a cannon having its breech, which is not fully shown in the drawings, at *d*.

*e e e* are bolts or slides projecting into the bore of the cannon, and having the ends thus projecting beveled to an inclined plane, with the face toward the breech of the gun, and inclined to such an angle that any solid substance passing through the bore from the breech to the muzzle of the gun with sufficient force and coming contact in with the bolts or slides will force them back out of the bore of the gun. These bolts are formed with solid heads, which rest upon the shoulders *h h h*. Springs *f f f* are inserted between the bolts and the gage-screws *g g g*. By means of the gage-screws the springs can be so adjusted as to cause the bolts *e e e* to resist any required force from the ball. The barrel in the vicinity of this apparatus must be re-enforced in order to make up for deficiency of strength caused by the aperture for the bolts, springs, and gage-screws.

With a gun thus constructed the object of my invention is realized in the following manner:

It is a well-known fact that all the gunpowder employed in charging fire-arms is never

ignited before the ball leaves the gun, and that the process of ignition is not by any means instantaneous. As a necessary consequence, a great deal of the force of the charge is lost by the escape of the ball from the barrel before the powder is fully ignited and its gases expanded; but in my improved gun the bolts or slides *e e e*, held in position by the stout spring *f f*, arrest the progress of the ball upon its first attempt to leave the barrel and hold it confined in that position until the powder is fully ignited and the maximum force of the charge is reached, when the ball passes the obstructing bolts or slides and leaves the barrel with increased force and velocity proportionate to the amount of force concentrated upon it as it passes the slides or bolts.

One advantage of a cannon thus constructed is in the smaller amount of metal required for a given caliber, as in guns previously invented the barrels are made of great length, in order that the ball may not be expelled from them before the powder shall have been fully ignited. In my improved gun, on the contrary, this is unnecessary, as the ball is prevented from leaving the barrel until the maximum force is attained by the opposing slides or bolts.

My improved gun may be made very short, and a part of the metal now required in other guns may be used to increase the size of mine. In other words, I make my improved gun shorter and thicker than others are made, and with the same weight of metal it will resist a much greater pressure from the charge.

I do not wish to confine myself to the use of the bolts or slides *e e e*, as shown in the drawings, but may use in their place springs of any form, which will at first impede the progress of the ball, and will afterward allow it, when actuated by the maximum force of the charge, to pass them; nor do I wish, when using the bolts or slides, as described above, to confine myself to the use of a spiral spring alone to hold them in position, but may use instead any form of spring or any elastic substance; nor do I wish to confine myself to the use of springs or other elastic substance attached to the gun, in order to act upon the ball, so as to resist its passage from the barrel; but I may attach such springs or elastic substance to the

ball, in order that it may act upon the barrel of the gun, it being so constructed as to produce the same result in either case.

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

1. The construction of a gun, so that, by means of springs or their equivalents, the ball or projectile shall be held at any given point of the barrel until any required force of the charge is exerted upon it.

2. The sliding bolts *e e e*, the springs *f f f*, and the gage-screws *g g g*, substantially as and for the purpose described.

D. E. SOMES.

Witnesses:

JAS. C. STROUT,  
LYSANDER HILL.