

J. W. COCHRAN.

Cartridge.

No. 27,428.

Patented March 13, 1860.

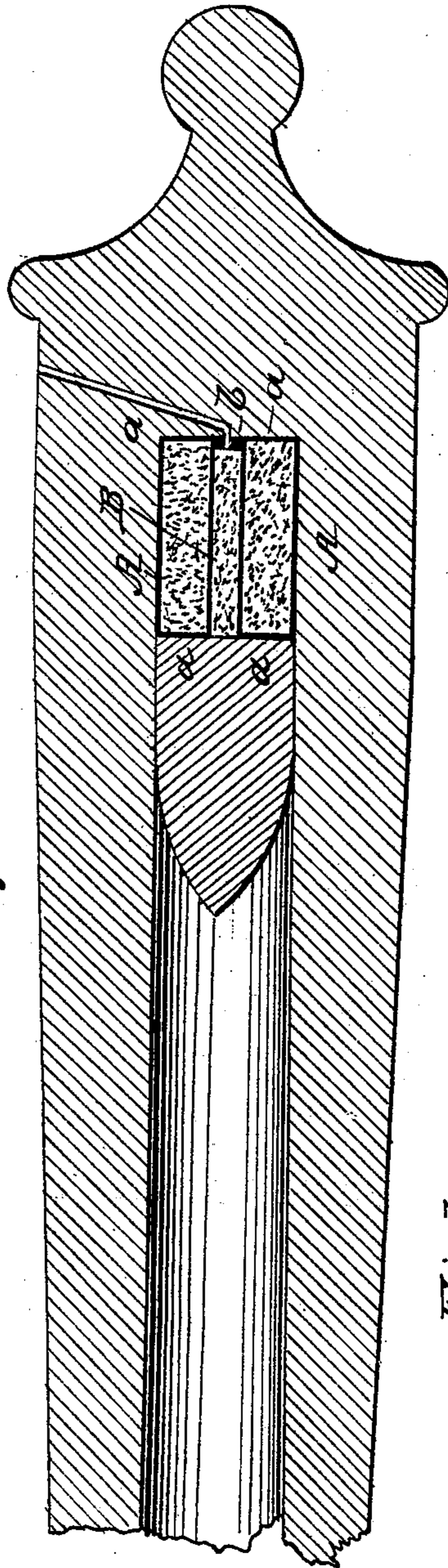
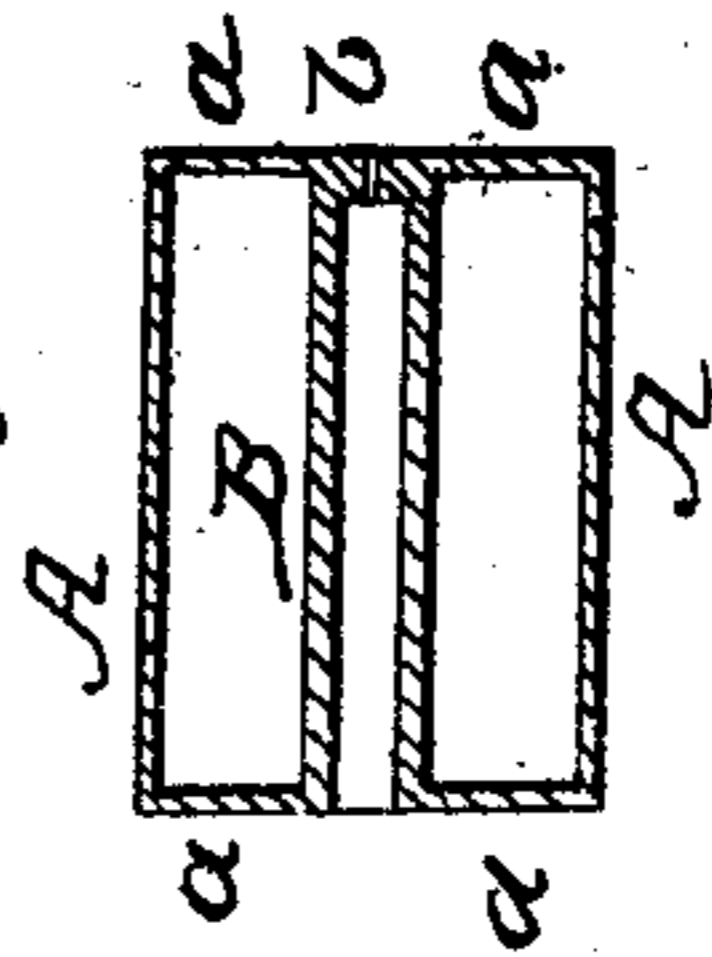


Fig. 3

Fig. 2.



Fig. 1



Witnesses  
Charles W. Hughes  
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# UNITED STATES PATENT OFFICE.

JOHN W. COCHRAN, OF NEW YORK, N. Y.

## IMPROVEMENT IN CARTRIDGES FOR FIRE-ARMS.

*Specification forming part of Letters Patent No. 27,428, dated March 13, 1860.*

*To all whom it may concern :*

Be it known that I, JOHN WEBSTER COCHRAN, of the city, county, and State of New York, have invented a new and useful Improvement in Cartridges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a central longitudinal section of the case of a cartridge constructed according to my invention. Fig. 2 is a transverse section of the cartridge charged. Fig. 3 is a central longitudinal sectional view, exhibiting the cartridge and a projectile in the chamber of a cannon.

Similar letters of reference indicate corresponding parts in the several figures.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the outer shell of the cartridge, of cylindrical form, and B is a cylindrical tube passing through the center thereof, and united therewith by the heads *a a*, which close the large annular chamber that is formed between the said tube and the outer shell. The rear end of the tube B is entirely closed up by stout metal, with the exception of its being provided with a central vent, *b*, through which the charge of powder in the small chamber formed by the interior of the tube B is reached by the fire of the priming of the gun. The front end of the said tube B is closed by a piece of paper or thin metal. The outer shell A and the heads *a a* are made of tin-plate or other thin sheet metal, and the tube B of stouter metal—as, for instance, a piece of gas-tubing of such size that the charge of powder in the outer annular chamber is several times larger than that contained in the inner cylindrical one—*i. e.*, the tube B.

This cartridge is placed in the gun before the projectile, in the usual manner, with the

vent *b* toward the breech, and when fire is applied to the priming it reaches the small charge in the tube B, the force of whose explosion is sufficient to overcome the inertia of and start the projectile, and the gas resulting from its explosion, operating between the base of the projectile and the front plate *a* of the shell of the cartridge, produces a rupture of the said plate, and the fire entering the annular chamber causes the explosion of the main charge, which then acts with its full force upon the already-started projectile, without straining the breech of the gun, and with greater force than when the whole charge of a cartridge is exploded at once, and partly spent in overcoming the inertia of the ball.

Instead of having the larger chamber, containing the main charge, outside of the smaller one, it may be made within it, by making the inner tube so large as to leave but a very narrow annular space between it and the outer shell of the cartridge. In this case the smaller charge within the annular space will be fired first, and the larger charge in the inner tube fired by the explosions of its chamber by the force of the explosion of the smaller charge in the outer chamber, the operation being precisely the reverse of what it is in the cartridge represented, though the principle of action and its effects on the projectile will be precisely the same.

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

The employment within the cartridge of two distinct charges of powder, substantially as herein shown and described, so that one of said charges will explode and start the projectile before the other charge is ignited, all as specified.

J. W. COCHRAN.

Witnesses :

CHAS. M. HUGHES,  
MICH. HUGHES.