

# UNITED STATES PATENT OFFICE.

ALGERNON K. JOHNSTON, OF MIDDLETOWN, CONNECTICUT, AND LORENZO DOW, OF TOPEKA, KANSAS.

## IMPROVEMENT IN ENVELOPES FOR CARTRIDGES.

Specification forming part of Letters Patent No. 33,393, dated October 1, 1861.

*To all whom it may concern:*

Be it known that we, ALGERNON K. JOHNSTON, of the city of Middletown, in the State of Connecticut, and LORENZO DOW, of the city of Topeka, in the State of Kansas, have invented a new and improved method and material for the manufacture of cartridges for guns, rifles, carbines, pistols, muskets, and all species of fire-arms, by which the gunpowder or other explosive material used is insured against dampness, and a compact covering for the same provided so highly combustible in its nature that it is consumed at the instant of the explosion of the cap, or whatever may be used as its equivalent in discharging the arm, thus preventing the necessity of tearing or breaking the covering of the cartridge in the process of loading, of which the following is a specification.

To make a covering for a cartridge that shall be highly inflammable and instantly combustible, we take paper, cloth, or other texture, and treat it with nitric acid, ( $\text{NO}_5$ ) or with nitric acid in combination with sulphuric acid, ( $\text{SO}_3$ ) or with any nitrate, alone or in combination, with sulphuric acid, as in the production of gun-cotton, after which the said paper or other substance used as its equivalent is treated with chlorate of potash ( $\text{KO, ClO}_5$ ) or with nitrate of potash, ( $\text{KO, NO}_5$ ) or other preparation affording oxygen for the purpose of more highly oxygenizing the preparation. The material for the covering being thus prepared in so far by these two processes, the cartridge may now be constructed with it, using gunpowder and bullet, in the usual manner.

We claim also to attain the same object of making a material for the covering of cartridges that shall be highly inflammable and

combustible by producing a texture from gun-cotton or other substance similarly prepared, by weaving the same or otherwise, and then submitting such texture to the process of oxygenation above described. Then, in order to render the cartridge compact and water-proof, or highly impervious to moisture, we coat the cartridges so constructed with collodion, or with a film of any substance obtained by dissolving cotton, flax, or other textile matter in the ether of some acid, either alone or in combination with alcohol.

If preferred, the covering prepared as above may be submitted to the latter process of coating before constructing the cartridge.

We claim also to attain the same object of rendering such covering compact and impervious to moisture by drawing the paper, or other texture prepared as above, through any ether, alone or in combination with alcohol, or by dipping the cartridge, after its construction as above, in ether, or in ether in combination with alcohol.

We do not claim the invention of the process of making gun-cotton, or its equivalent, nor any improvement in the usual mechanical method of manufacturing a cartridge, nor in waterproofing the same; but

We do claim as our joint invention—

As an article of manufacture, a cartridge the envelope of which is made of gun-cotton, paper, or other fabric, as above, subsequently treated, as described, by an oxygenizing-salt, and by a water-proof coating, as set forth.

ALGERNON K. JOHNSTON;  
LORENZO DOW.

Witnesses:

W. H. BOUGHTON,  
JULIUS R. POMEROY.