P. R. BRADLEY.

POWDER BAG.

APPLICATION FILED MAR. 22, 1918.

1,315,081. Patented Sept. 2, 1919.

Fig. 1.

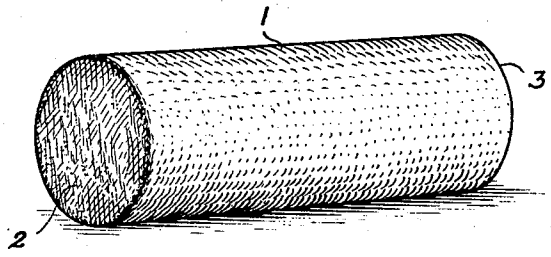


Fig. 2.

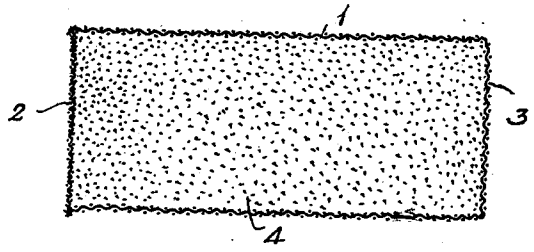


Fig. 4.

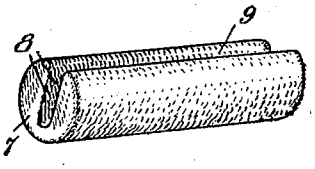
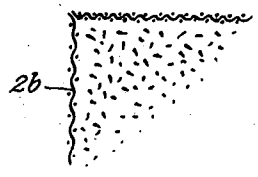


Fig. 3.



WITNESSES

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POWDER-BAG.

1,315,081. Specification of Letters Patent. Patented Sept. 2, 1919.

Application filed March 22, 1918. Serial No. 224,075.

To all whom it may concern:

Be it known that I, PARKER R. BRADLEY, a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Powder-Bag, of which the following is a full, clear, and exact description.

This invention relates to powder bags for use for the explosive charge for cannon or large guns.

At the present time powder bags are made of silk or equivalent material which will not blaze, flame or spark when fired from the cannon, but the disadvantage of this kind of bag is that the material is expensive and the supply limited.

The object of the present invention is to provide a substitute for silk powder bags which will not blaze, flame or spark and yet which will permit of rapid ignition of the charge from the flame of the primer, explosive cap or other ignition means, the substitute bag being of comparatively cheap fiber, such as cotton, jute, flax, linen or the like, which can be had in unlimited quantity in this country and can also be fabricated here.

The cotton yarn or cloth or other cheap fiber is rendered fireproof by ammonium phosphate solution or the equivalent, and according to one method the bag is made of this fireproof material throughout its entire structure.

For a more complete understanding of the invention reference is to be had to the following description and claims taken in connection with the accompanying drawing, which illustrates certain embodiments of the invention and wherein similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a powder bag;

Fig. 2 is a longitudinal section thereof;

Fig. 3 is a similar view showing the ignition end of the bag of an open weave; and

Fig. 4 is a perspective view of a cartridge of smokeless powder drawn on a considerably reduced scale compared with Fig. 1.

Referring to the drawing, 1 designates the body and 2 and 3 the ends of the powder bag which contains a charge of powder 4. The body of the bag is made of cotton cloth which is fireproofed in any suitable manner and with any suitable material so as to prevent the fibers from burning and becoming a menace in a powder magazine, turret or other place where an explosion might occur from a flaming bag. The bag or cartridge casing may be constructed wholly of cotton or other cheap cloth with an open mesh weave, or the bag may be constructed of cotton or other cheap cloth with a portion of the bag having an open mesh weave which will permit of the instantaneous ignition of the charge contained in the bag or bags. In Fig. 3 is shown a bag made of cotton or other cheap cloth and with its head or end 2^b constructed with an open mesh.

In the case of a smokeless powder bag such as shown in Fig. 4, not only the ignition end 7 may be made of silk, silk and cotton, or open weave cotton cloth, but the walls 8 of the flame channel 9 are also made of the same material, so as to permit the flame from the black powder bag in the gun charge to effectively ignite the entire mass of smokeless powder of the cartridge.

While I prefer to fireproof a woven fabric rather than a yarn, mainly on the ground that a fabric is more easily handled than a yarn, nevertheless, a yarn may be fireproofed and afterward woven into an open mesh fabric which will not require further fireproofing. In fireproofing the yarn or cotton, or other fabric, a bath is prepared containing a very small portion of ammonium phosphate or other fireproofing materials dissolved in a very large proportion of water yielding a liquid practically as fluid water. The bath is then gently heated and the yarn or the cotton or other cloth is then passed through this bath where it may pass between various rollers which will force the liquid into the innermost recesses of the fiber of the cloth or yarn. As an additional means of impregnating the cloth or yarn, the cloth or yarn when it emerges from the bath may be wound up in large rolls or reels and allowed to stand for a considerable time, so that through capillary attraction or otherwise, every innermost particle of the fiber composing the cloth or yarn may become impregnated with the fireproof solution. The cloth may be dried in any well known manner and

may be redried and retreated as often as may be desired, but always with great care that the mesh of the cloth be left open.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the article which I now consider to be the best embodiment thereof, I desire to have it understood that the article shown is merely illustrative and that such changes may be made when desired as fall within the scope of the appended claims.

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

1. A powder bag or cartridge casing which permits the normal passage of heat waves, the bag or cartridge casing being wholly fireproofed.

2. A powder bag or cartridge casing having its body portion formed of a woven fabric impregnated to render the same fireproof, the woven fabric having openings in its mesh to prevent interference with the ignition of the explosive charge contained in the bag or casing.

3. A powder bag or cartridge casing having its body portion formed of loosely woven fabric to provide an open mesh and impregnated to render the same fireproof.

4. A powder bag or cartridge casing having its body portion formed of loosely woven fabric of open mesh, said fabric being treated to render same fireproof and without closing said open mesh.

5. A powder bag or cartridge casing having its body formed of a fireproofed fabric with a portion having an open mesh to prevent interference with the ignition of the explosive charge contained in the bag or casing.

6. A powder bag or cartridge casing having its body formed of a fireproof material with a portion having openings to prevent interference with the ignition of the explosive charge contained in the bag or casing.

7. A powder bag or cartridge casing having its body formed of a fireproof fabric with a wall for a flame channel, the wall having openings therein.

8. A powder bag or cartridge casing having its body formed of a fireproof fabric with a wall for a flame channel, the woven fabric at the flame channel having an open mesh, for the purpose specified.

PARKER RICHARDSON BRADLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."