

A. TILLMES.
Cartridge.

No. 222,332.

Patented Dec. 2, 1879.

Fig. 1.

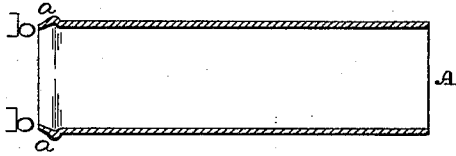


Fig. 2.

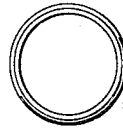


Fig. 3.

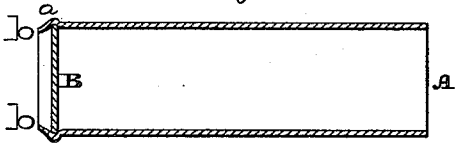


Fig. 4.

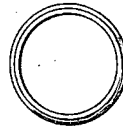


Fig. 5.

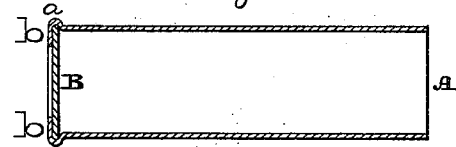


Fig. 6.

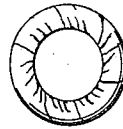


Fig. 7.

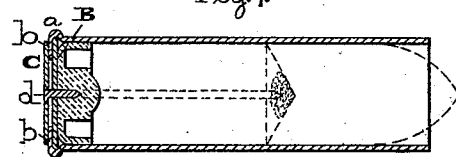


Fig. 8.

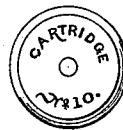


Fig. 9.

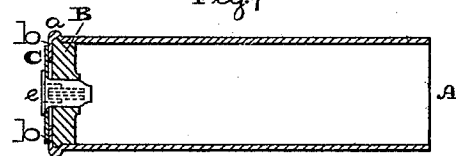


Fig. 10.



Witnesses:

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AUGUST TILLMES, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CARTRIDGES.

Specification forming part of Letters Patent No. **222,332**, dated December 2, 1879; application filed March 28, 1879.

To all whom it may concern:

Be it known that I, AUGUST TILLMES, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Cartridge-Shells, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figures 1, 3, 5, 7, and 9 are central longitudinal sections of cartridge-shells embodying my invention. Figs. 2, 4, 6, 8, and 10 are end views, respectively, of Figs. 1, 3, 5, 7 and 9.

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

My invention consists in forming a cartridge-shell of a paper tube, crimped near one end, and confining the base by springing it into the crimp, and, furthermore, sustaining it by folding the end of the shell against it, whereby a light, strong, and cheap shell is produced.

It also consists of a re-enforce, which also covers the folded end of the shell and outer face of the base as a finish.

Referring to the drawings, A represents a shell, which is formed of a tube of stout or strong paper, and crimped circumferentially near one end, as at *a*, the extreme end or projecting portion *b* adjacent to the crimp being left somewhat flexible.

B represents the base, consisting of a disk whose diameter is slightly less than the minor diameter of the crimp *a*. This disk is sprung into the crimp so as to snugly fit the same, and thus be securely held in position as the base of the shell. The projecting end *b* of the shell is folded over the base B, as in Figs. 5 and 6, thus providing additional means of holding or sustaining the base.

C represents a disk of paper, which is gummed or otherwise secured to the folded end *b* of the shell, and to the base B, if desired, thus covering said folded end and the base, as seen in Figs. 7, 8, 9, 10, and providing a re-enforce for the base end of the shell.

Through the disk C and base B is passed

the pin *d*, which pierces the fulminate or the cap-holder *e*, which directs the fire of the cap to the powder of the shell.

It will be seen that the shell A is formed entirely of paper, thus being light and cheap, and the crimp *a* and base B vastly strengthen the base portion of the shell, thus increasing the endurance of the shell without materially increasing its weight.

It will also be seen that the base is confined and supported by the crimp *a*, and, furthermore, sustained by the folded end *b* of the shell resting against the outer face.

The re-enforce C, secured to the folded end of the shell, assists in holding said end in position against the base B, and provides additional strength for the base end of the shell.

In Fig. 7 I show in dotted lines the fulminate at the rear of the ball and the pin *d* lengthened to reach the same, without, however, affecting the construction of the shell.

I do not claim a paper cartridge-shell without an exterior re-enforce, but otherwise somewhat resembling mine, that construction being shown in the patent to T. J. Powers, granted May 17, 1870, No. 103,079. Nor do I claim a paper cartridge having a cap-shaped re-enforce provided with an internally-beveled annular flange and a hollow exterior portion, the base of the cartridge being beveled to correspond to said beveled annular flange, that construction being shown in the patent granted to T. Cullen, January 7, 1868, No. 72,982; but

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

In combination with paper cartridge-shell A, having offset *a* and flange *b*, the flat unflanged disk-shaped exterior re-enforce C and the flat disk-shaped base B, said parts B and C being arranged and attached together so as to clamp said flange *b* between them.

AUGUST TILLMES.

Witnesses:

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