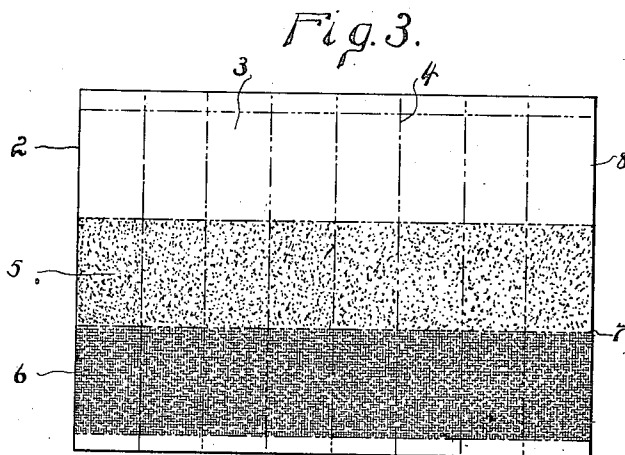
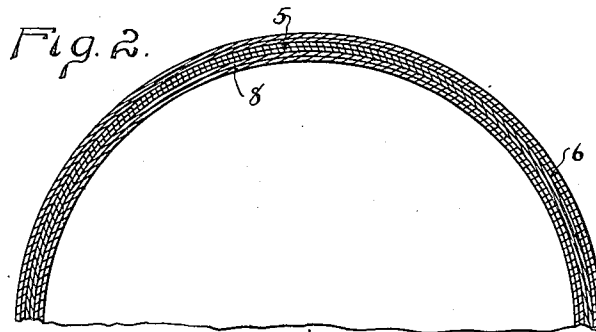
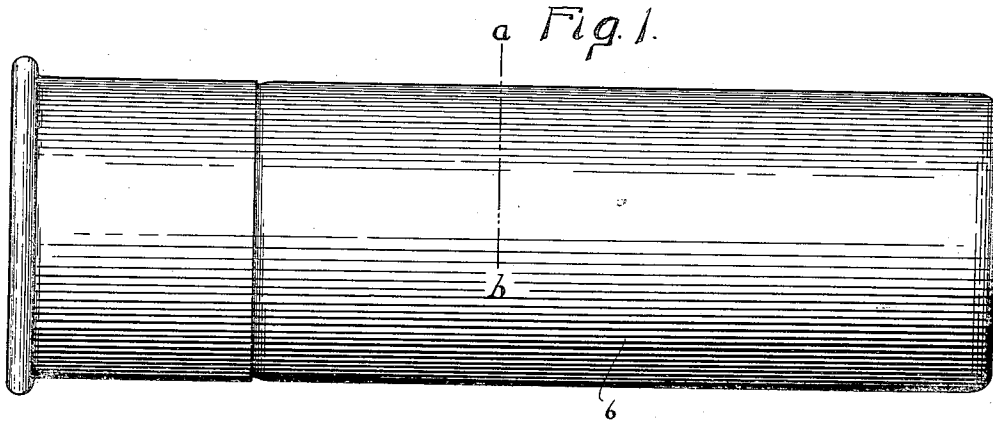


C. H. STEVENSON.
PAPER SHELL CARTRIDGE.
APPLICATION FILED AUG. 29, 1912.

1,057,591.

Patented Apr. 1, 1913.



Witnesses
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UNITED STATES PATENT OFFICE.

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PAPER-SHELL CARTRIDGE.

1,057,591.

Specification of Letters Patent.

Patented Apr. 1, 1913.

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To all whom it may concern:

Be it known that I, CHARLES H. STEVENSON, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Paper-Shell Cartridges; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a view in side elevation of a paper-shell cartridge constructed in accordance with my invention. Fig. 2 a broken view of the paper tube in transverse section, on an enlarged scale, on the line *a-b* of Fig. 1. Fig. 3 a plan view of such a sheet of paper as may be used in producing a long tube to be cut up into short lengths for use in the manufacture of paper-shell cartridges.

My invention relates to an improvement in that class of ammunition known as paper-shell ammunition, the object being to make such ammunition moisture-proof to better adapt it to be loaded with bulk smokeless powders which are extremely hygroscopic in their character, and therefore liable to undergo ballistic changes of a serious nature.

With these ends in view, my invention consists in a sheet of locally treated paper to be used in the manufacture of paper-shell cartridges as will be hereinafter described and pointed out in the claim.

In carrying out my invention as shown herein, the paper-sheet 2 used for the production of the long tube which is subsequently cut up into paper-shell cartridge lengths 3 on the broken lines 4, is fabricated with a moisture proof area 5 and a colored area 6, these areas meeting each other, but separating on a clear line of demarcation 7 so that the moisture-proof substance, whatever it may be, is not brought into conflict with the coloring substance, whatever it may be, and vice versa, whereby any opportunity for one substance to nullify or affect the other is avoided. The areas 5 and 6 are oblong in their character and extend from one side edge of the sheet 2 to the other, at a right angle to the width of the sheet, which is the direction in which it is coiled. As shown, the areas 5 and 6 each constitute

about one-third of the width of the sheet, each area being wide enough to form one or more coils with a slight overlap, the number of coils depending on the gage or diameter of the shells and the width of the sheet of paper.

I do not limit myself to any particular mode of producing the sheet 2 beyond producing it in such a manner that the areas 5 and 6 shall be incorporated with the sheet at the time of its fabrication at the mill, so that these areas will be truly integral with the very substance of the sheet. The moisture-proof substance employed for producing the moisture-proof area 5 will be selected according to circumstances. I may, for instance, use varnish compounded from the insoluble soaps of fatty oils such as aluminum oleate, the aluminum or calcium soap of linseed oil, etc., these soaps being dissolved in suitable solvents such as benzole or petroleum ether. After the long tube has been coiled, it may be water-proofed, if desired, though this is not essential to my invention.

My improved paper-shell cartridge will, on account of the presence in it of one or more integral interior moisture-proof protective coils, prevent the entrance of moisture to the powder in case the shells are stored in a damp place or prevent the powder from giving up its right proportion of moisture in case the shells are stored in a dry place, whereby the shells are prevented from undergoing undesirable ballistic changes due to the hygroscopic character of bulk smokeless powders.

If preferred, moisture-proof area 5 may constitute the inner portion of the sheet 2 and be separated from the colored area 6 by an untreated or neutral area 8, or the moisture-proof area may be spread over the entire sheet barring the area of coloration 6.

I claim:—

As a new article of manufacture, a sheet of paper for being coiled into tubes to be cut up into paper-cartridge shell-lengths, the said paper having coloration, moisture-proof, and untreated areas of which the coloration area forms the outer portion of the sheet so as to produce an exterior colored coil for the completed tube, and the moisture-proof area the intermediate portion of the sheet so as to produce an intermediate

moisture-proof coil in the interior of the tube and the untreated area the inner portion of the sheet so as to produce an untreated coil upon the interior of the tube in
5 which the moisture-proof coil is interposed between the exterior colored coil and the interior untreated coil.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

CHARLES H. STEVENSON.

Witnesses:

THOMAS C. JOHNSON,
DANIEL H. VEADER.