

I. M. MILBANK.

Improvement in Cartridges for Fire-arms.

No. 123,352.

Patented Feb. 6, 1872.

Fig. 1.



Fig. 2.

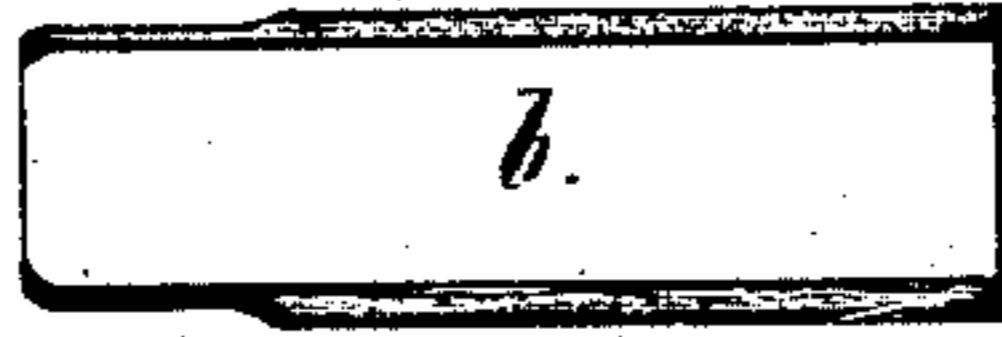
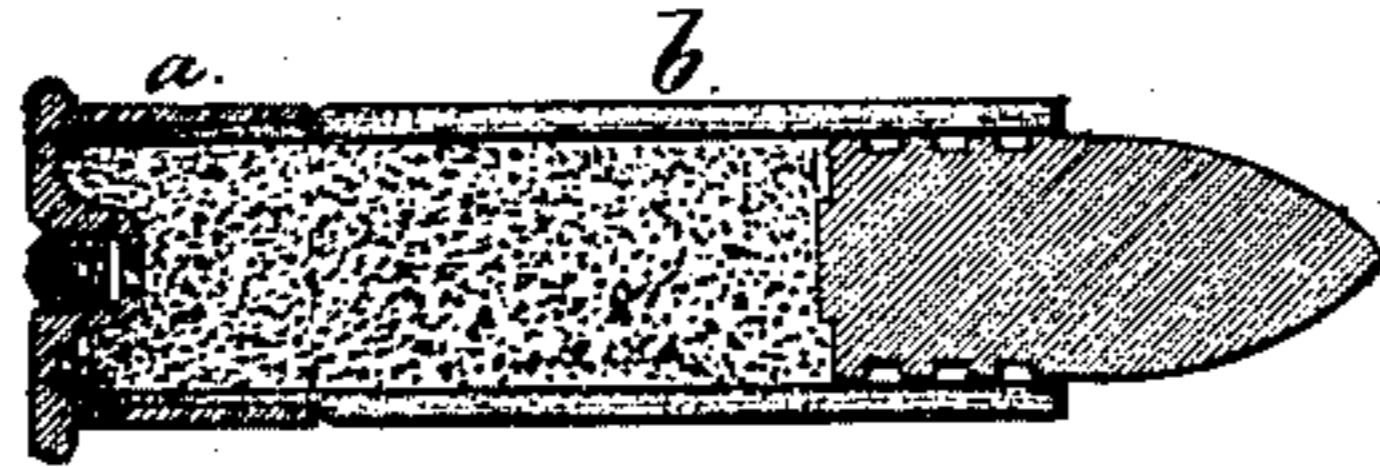


Fig. 3.



Fig. 4.



Witnesses,

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN CARTRIDGES FOR BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 123,352, dated February 6, 1872; antedated January 22, 1872.

To all whom it may concern:

Be it known that I, ISAAC M. MILBANK, of Greenfield Hill, in the county of Fairfield and State of Connecticut, have invented an Improvement in Cartridges for Fire-Arms; and the following is declared to be a correct description of the same.

Cartridges have been made with a paper case clamped between two portions of the base, such two portions being either two metallic cups, or else a metallic cup outside with a paper base inside. These cartridge-cases are difficult to manufacture and liable to be injured by moisture.

My invention is made for the purpose of facilitating the manufacture, rendering the case water-proof, and for insuring the rapid and complete ignition of the powder.

In the drawing, Figure 1 is a section of the base separately. Fig. 2 shows the paper case separately. Fig. 3 represents in larger size the primer for containing the fulminate in some of the different shapes that may be employed, and Fig. 4 represents the cartridge complete.

The base *a* is made of sheet metal in the form of a cup with a central opening for receiving the primer. This base *a* may have a flange, as shown, and be strengthened with solder within the same. The case *b* is made of paper in a cylindrical form, and the rear end is slightly reduced or tapered, so as to enter within the cup *a*, thereby allowing the exterior of the paper case and the cup to be the same size, or nearly so, for fitting the interior of the gun barrel. This paper case is prepared with a solution of silicate of soda or soluble glass for rendering the same water-proof, and causing the paper case to adhere to the metal cup.

I have discovered that this soluble glass will form an intimate union between the paper case and the metal, adhering equally well to both, so that the paper case will be broken before it can be separated from the metal; thereby all interior wads or cups are dispensed with; and, furthermore, under most circumstances, the paper cases can be prepared and varnished with said soluble glass and allowed to dry sufficiently for handling before being inserted into the metal cup, and will then adhere

to the metal sufficiently to effectually prevent the same separating by handling or use. This soluble glass may be used alone or with oxide of zinc, or other material mixed therewith.

This soluble glass when applied to the edges of the strip of paper out of which I prefer to make such cases causes the said edges to adhere very firmly; but if the paper case is manufactured in the form of a tube the said soluble glass is only required for rendering the case water-proof, and causing the same to adhere to the metal cup.

It has been heretofore usual to introduce in the priming-tube the fulminating material and adhesive varnish, and to effect the explosion by impinging said material between metallic surfaces. This is objectionable, because it is difficult to make primers adapted to all characters of central-hammer fire-arms.

I make the primer by introducing into a metallic tube detonating material mixed in a plastic state, with sand or powdered glass, in the proportion of from forty to seventy per cent. This mixture, when introduced into the metallic tube pressed, will form, when dry, a hard mass, and a varnish may be added.

The fulminate will be ignited very easily by a blow upon the metal of the tube, causing the particles of sand or similar material to grind upon each other, and the fulminate hence to be exploded. The particles of sand, as blown out by the fulminate, will penetrate the powder of the cartridge and make an opening for the flame to follow into all parts of the powder.

The metallic tube for the fulminate may be of any desired size or shape. I have shown in Fig. 3 the different forms most adapted for use.

The fulminate introduced in the tube will not be pressed out by the blow of the hammer, in consequence of the grains of glass wedging against the sides of the tube.

I do not claim a combustible anvil of plastic material inserted as an anvil to the fulminate; neither do I claim fine sand or powdered glass inserted upon the fulminate.

I claim as my invention—

1. A cartridge-case, made with a metallic cup-shaped base and paper cylinder, connect-

ed together and rendered water-proof by soluble glass or silicate of soda, as and for the purposes set forth.

2. The primer, consisting of the fulminate tube containing detonating material and grains of sand or equivalent material when mixed together and introduced in a plastic state, as and for the purposes set forth.

3. A priming-tube for cartridges, containing fulminate material without an anvil and pressed

into the tube in a sufficient mass to sustain itself against the blow that causes the ignition, substantially as set forth.

Signed by me this 30th day of June, A. D. 1871.

I. M. MILBANK.

Witnesses:

HAROLD SERRELL,
GEO. T. PINCKNEY.