



WILHELM SCHMITZ, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 85,482, dated December 29, 1868.

IMPROVEMENT IN EXPLOSIVE CARTRIDGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILHELM SCHMITZ, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and improved Process or Fulminating-Combination for Making Explosive Cartridges without the use of gunpowder, and which can be exploded by percussion, concussion, or friction.

The nature of my invention consists in rolling paper tightly together, the size required to fit the calibre of the gun for which it is to be used, and cut in lengths to suit the gun. One end of this paper roll or cartridge is hollowed out, and contains a ball suited to the size of the gun. The other half of the roll is drilled out, and filled with the process or combination hereinafter described.

The advantage of my invention is that no amount of heat will explode the combustible matter contained in these cartridges, that this combination is more effective than gunpowder, and will drive a ball to a much greater distance.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and combination.

I roll together, as tightly as possible, a number of layers of paper, of sufficient thickness, and in suitable lengths, for the gun for which they are to be used. In one end of these paper rolls, I drill a hole about half way through, into which I pour the following combination or process, composed of amorphous phosphorus, one part, chlorate of potash, two parts, gum-arabic, three parts, water, one part, in the quantities and

proportions herein stated. In a few hours, this substance hardens, and assumes a solidified form.

The other end of this paper roll I hollow out, and fit into it a ball or slug, adapted to the calibre of the gun from which it is to be discharged.

I take strong linen paper, and saturate it in a solution, composed, in equal parts, of brimstone, coal-oil, and gutta-percha, of each one part, which I roll around the entire cartridge, and fasten the edges or seam of this wrapper or cover with a glue made of vinegar, one part; white glue, one part; gum-ammoniac, one part; glycerine, one-eighth part; alcohol, one-half part.

The covering of the cartridge with the linen paper, prepared and glued together as aforesaid, renders it completely water-proof.

The cartridge is made of paper, which, on account of its being rolled tightly together, and the compression from drilling the holes, is harder than wood, while it is comparatively of but little weight, and is discharged by being struck by a needle in the gun, which, coming in contact with the combustible matter, discharges it.

This combination may be used in the manufacture of percussion-caps, and other things requiring a fulminating-combination.

What I claim as my invention, and desire to secure by Letters Patent, is—

A combination of the articles above described, in and for the purposes set forth.

Witnesses: WILHELM SCHMITZ.

A. C. KLUCK,
D. I. VISSER.