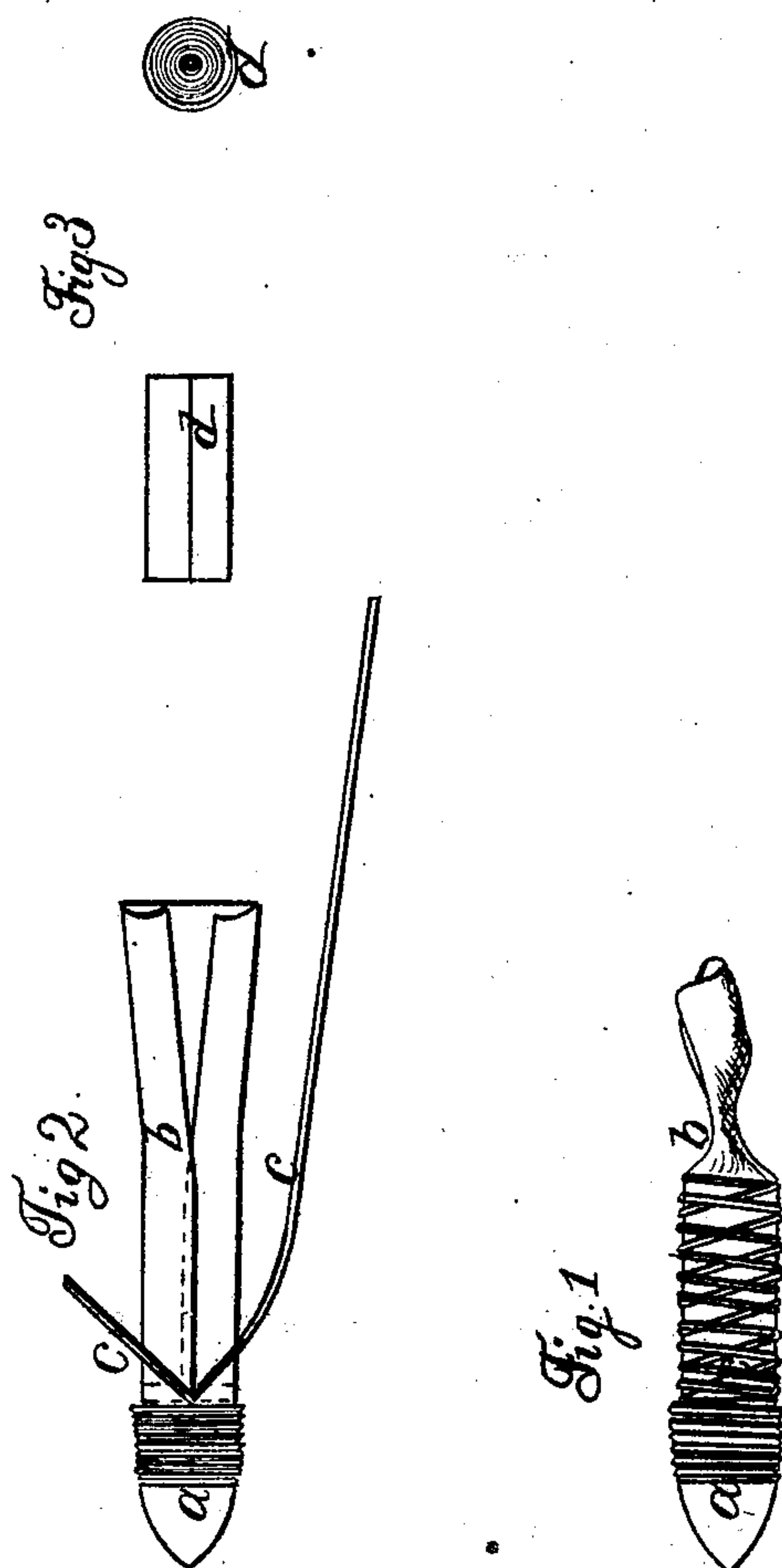


GOMEZ & MILLS.
Cartridge.

No. 21,253.

Patented Aug. 24, 1858.



Edwin Gomez

William Mills

Witness

Samuel H. Penell

Thomas G. Harold

UNITED STATES PATENT OFFICE.

E. GOMEZ AND W. MILLS, OF NEW YORK, N. Y.

IMPROVEMENT IN CARTRIDGES FOR FIRE-ARMS.

Specification forming part of Letters Patent No. 21,253, dated August 24, 1858.

To all whom it may concern:

Be it known that we, EDWIN GOMEZ and WILLIAM MILLS, of the city and State of New York, have invented, made, and applied to use, certain new and useful Improvements in Cartridges for Fire-Arms, Cannons, and other Purposes; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a side elevation of our cartridge complete. Fig. 2 is a similar view of the ball, casing, and string, ready to receive the roll of explosive material, Fig. 3.

Similar marks of reference denote the same parts.

Cartridges have heretofore been formed of explosive material contained in cases of explosive material, as well as non-explosive paper, &c.; and cartridges have also been formed of explosive paper or similar material. Our invention, therefore, does not relate to either of the foregoing devices, but consists in a means for distributing the force of an explosive compound over a sufficient extent of surface to prevent the arm exploding. Our invention also relates to a means for removing the paper or case of the cartridge from the barrel of the fire-arm.

In Letters Patent granted to us on the 15th day of September, 1857, a composition is set forth as especially adapted to the manufacture of trains and safety-fuses; but this, if applied in the same manner as gunpowder in cartridges, is found to be so sudden in its explosion and so concentrated in its action as to be dangerous and liable to burst the fire-arm. The same may be said of fulminate of mercury and other compounds. To avoid this concentrated action of the said explosive materials we distribute the same over a larger extent of surface, and thereby remove all liability to injure the piece, by the use of alternate layers of explosive material and paper, or equivalent non-explosive substance; and to remove the said paper or other material and prevent its clogging the piece, we make use of a winding of string attached to the base of the ball, which draws out the said paper and other refuse matter, leaving the gun entirely clean.

In the drawing, *a* is the ball, of an elongated or conical shape; *b* is a paper or similar case, one end of which is attached by the string *c* to the base of the ball. *d* is the explosive material in layers, with paper or equivalent material intervening, which is to be inserted within the case *b*, and then the string *c* is wound around the cartridge, as seen in Fig. 1, the ends of the string being tied together at the base of the ball.

In cases where the explosive compound can be dissolved or made into the form of a paint, as is the case with our said patented compound, we prefer to lay the same onto sheets of paper with a paint-brush, then cut said sheets up into strips and roll the same up as seen in Fig. 3; and where paper is used for the case *b*, we prefer that the string *c* be attached to the end next the ball by turning the paper over the string and gumming or pasting the same.

This cartridge, when in use, has the following peculiar properties: The intervening paper forms a filling that causes the given amount of explosive material to occupy more space, and consequently lessen the sudden action of the explosive compound on the barrel. The paper also, being slightly elastic, aids in relieving the barrel, and also aids in making a tight joint with the breech-piece in breech-loading guns. Any smoke or soilage from the explosive material is principally retained within the paper, thus keeping the gun clean.

The winding of string *c*, or its equivalent, draws out the paper or refuse matter, leaving the gun clean for another cartridge. The winding of string prevents the paper or other material becoming embedded in the grooves of rifled barrels.

When said cartridge is greased, or similarly prepared, it is preferable on account of keeping the barrel in better order, and also preventing the string or casing becoming ignited by the explosion.

We do not claim cartridges formed of explosive paper or other material, and we do not limit ourselves to any particular explosive compound made use of in our cartridge; but

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The manner herein specified of forming cartridges for fire-arms, and other purposes.

by alternate layers of explosive material and paper, or similar substance, for the purposes and as specified.

2. The winding of string or equivalent material, attaching the case to the base of the bail, for the purpose of removing said case and any refuse matter from the barrel, as described and shown.

In witness whereof we have hereunto set our signatures this 24th day of June, 1858.

EDWIN GOMEZ.
WILLIAM MILLS.

Witnesses:

LEMUEL W. SERRELL,
THOMAS G. HAROLD.