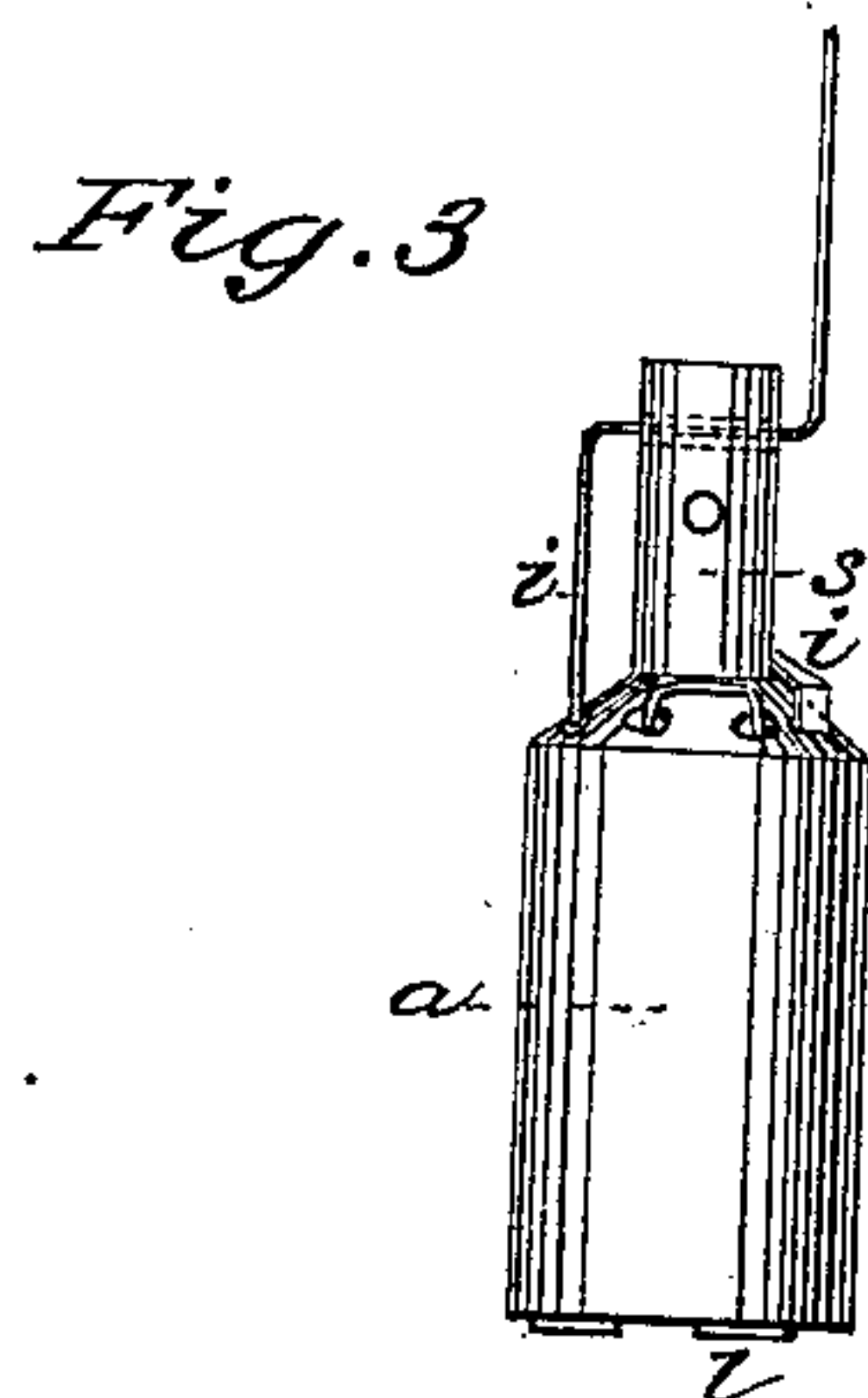
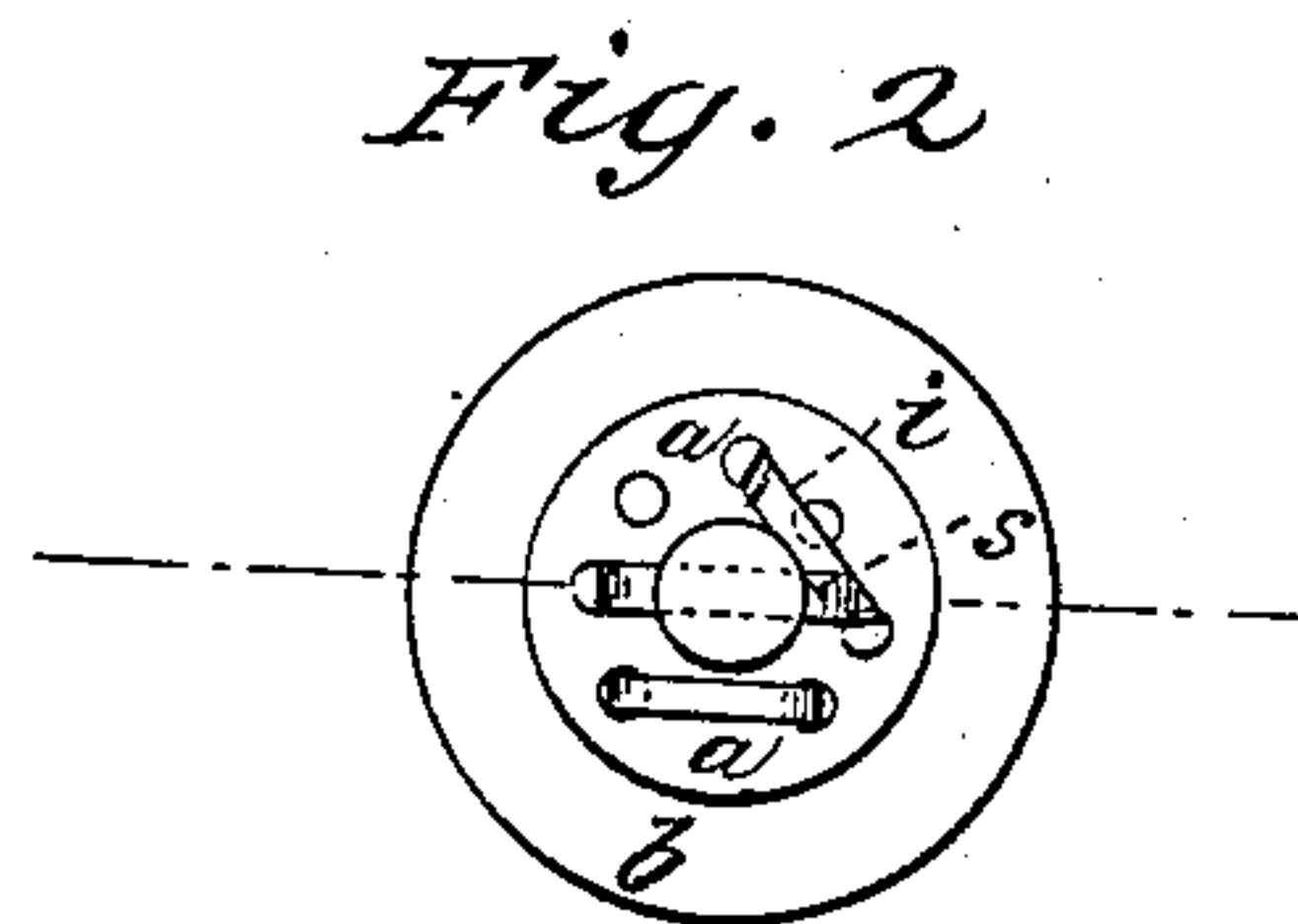
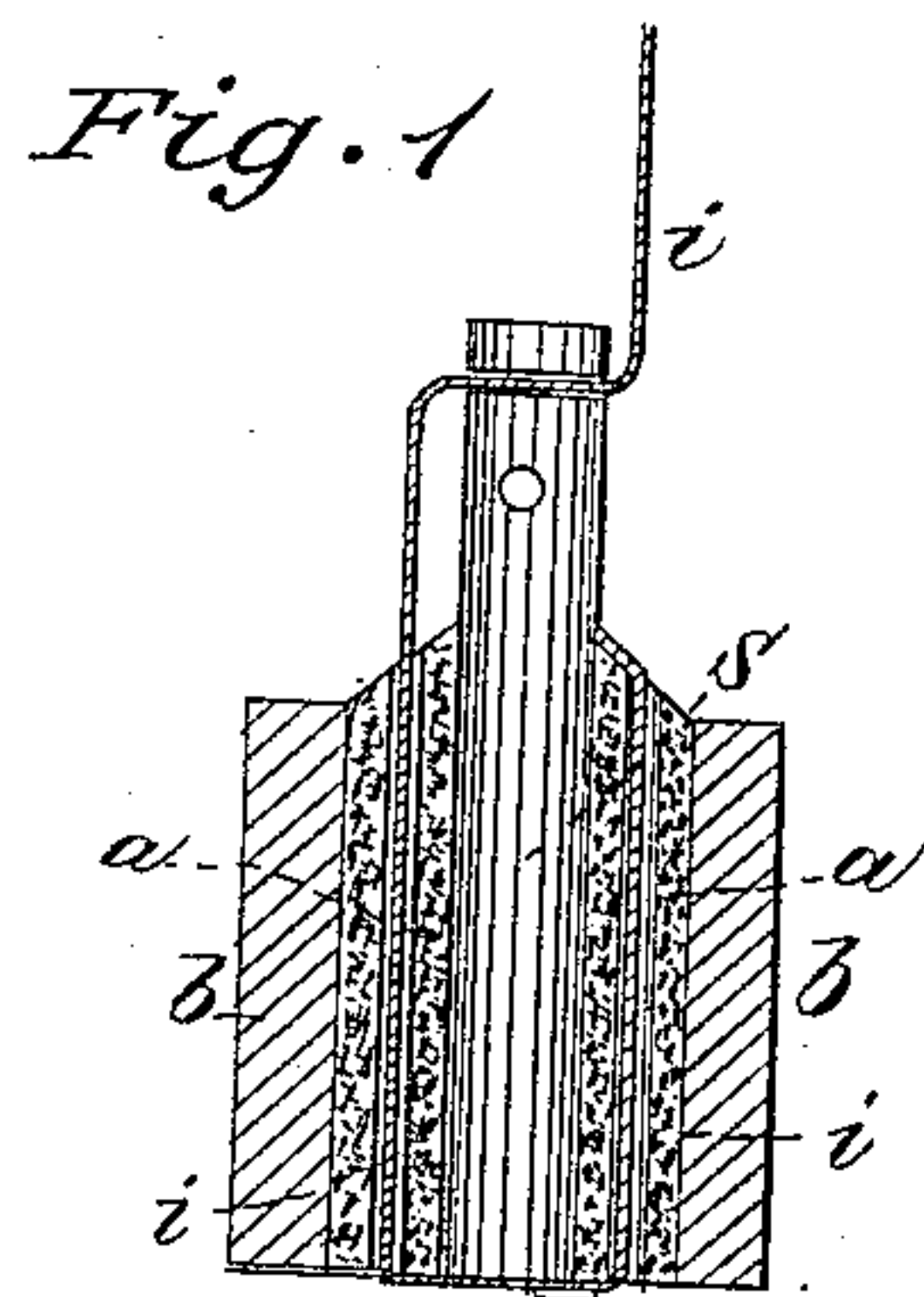


E. GOMEZ.
Exploding Compressed Powder.

No. 99,665.

Patented Feb. 8, 1870.



Witnesses:

Chas. H. Smith
Geo. D. Walker

Inventor:

Edwin Gomez

United States Patent Office.

EDWIN GOMEZ, OF NEW YORK, N. Y.

Letters Patent No. 99,665, dated February 8, 1870.

IMPROVEMENT IN EXPLODING COMPRESSED POWDER.

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, EDWIN GOMEZ, of the city and State of New York, have invented and made a new and useful Improvement in Firing Compressed Powder, or other explosive material in a compressed or solid mass, and the following is declared to be a correct description thereof.

Gunpowder has heretofore been made up into cylindrical and other shapes, for cartridges, in order that the powder may not explode instantaneously, but the explosion follow up the ball and compressed powder of the cartridge as they move along in the barrel.

Compressed powder, and other explosive material in a compressed or solid state, are not adapted to blasting-purposes, nor to torpedoes, where a sudden explosion is required, because the firing of the said material is a rapid combustion, rather than an explosion.

In order to obtain a rapid, powerful explosion, the explosive material has generally been made to assume a loose or open condition, such as that of the grains of gunpowder, and the smaller the grains, the more rapid the explosion. These well-known properties of explosives have rendered it necessary to resort to the costly and dangerous expedient of granulating the composition, and drying the same.

My invention consists in an improvement in the firing of compressed powder, or other substances in a compressed or consolidated condition, by means of intersecting or penetrating veins of rapidly-explosive and igniting material, of sufficient power to rupture or separate the mass, and cause the flame to penetrate the various portions of such mass, and ignite the same, at many portions, simultaneously, or nearly so, in order that the entire mass may be reached and ignited, and explode instantaneously.

In the drawing—

Figure 1 is a section of the compressed powder *a*, within a mould, *b*, and showing also the penetrating veins;

Figure 2 is a plan of the same; and

Figure 3 is an elevation of the cylinder of compressed powder.

The veins, running into and through the compressed explosive material, are formed of explosive material, such as set forth in Letters Patent No. 18,199, granted September 15, 1857, or any rapidly-exploding material possessing sufficient power to tear apart or separate the mass, and furnishing a body of flame that is sufficiently dense to ignite the material to be exploded by the penetration of such flame.

The veins may be made by the insertion of wires into the plastic mass, the same being withdrawn when the mass has consolidated, and the openings filled with such quick-firing explosive; or such quick-firing explosive may be enclosed in a folded strip of paper, or other material, as at *i*, or be placed between the layers of paper in a roll, as shown at *s*; and the two may be connected by a piece of fuse leading to a nipple or cap, or other point of ignition.

It will be evident that this manner of igniting gunpowder, or other material in a compressed consolidated state, is of great importance, because it remedies the difficulties heretofore experienced in exploding such materials, and renders them fully effective. The plastic mass is usually entirely safe in handling, and can be pressed into a mould, a torpedo-case, a bomb-shell, a cartridge-case, or other receptacle, and the veins of quick-firing material be introduced, as aforesaid; and when the mass consolidates or dries, the said veins are in place, or can be inserted, so as to ignite instantly the whole mass when fired.

I claim, as my invention—

The vein of quick-firing explosive material, combined with, and introduced through the consolidated mass of explosive material, substantially as and for the purposes set forth.

Dated December 10, 1869.

Witnesses:

CHAS. H. SMITH,
GEO. T. PINCKNEY.

EDWIN GOMEZ.