T. T. S. LAIDLEY.

Powder for Cannon.

No. 199,723. Patented Jan. 29, 1878.

Witnesses.

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THEODORE T. S. LAIDLEY, OF UNITED STATES ARMY.

IMPROVEMENT IN POWDER FOR CANNONS.

Specification forming part of Letters Patent No. **199,723,** dated January 29, 1878; application filed October 1, 1877.

To all whom it may concern:

Be it known that I, THEODORE T. S. LAIDLEY, of the Army of the United States, have invented a new and useful Improvement in the Mode of Making Gunpowder for Great Guns; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms a part of this specification.

This invention has for its object the making of gunpowder into cubic, or nearly cubic, grains, with the edges and corners removed, and perforated with a hole running through the middle of two opposite sides.

I am aware that gunpowder has been pressed into prismatic-shaped grains, with a cylindrical hole running through the middle of the bases. Each prism is necessarily formed separately, and the operation is slow and expensive; besides, the density of the different grains, depending upon conditions which cannot be fulfilled with uniformity, will vary to an injurious extent, and thus affect its rate of burning and its propulsive force.

To make my improved gunpowder, I take two bronze plates planed with a series of parallel arris, marking the size of the grain, and bored with lines of holes parallel, and at equal distances from each other. The arris on the bottom plate are at right angles to those on the top one, and the holes in both plates correspond. A steel pin, slightly tapering, fits snugly into each hole in the bottom plate, and just enters the top one. The pins and surfaces of the plates are dusted over with black-lead, to prevent the adhesion of the powder. The powder, meal, or soft grains, containing the proper amount of moisture, is filled in between the plates placed in the press-box, which will contain a number of similar plates similarly disposed. The whole are subjected to the required pressure by means of a strong hydraulic press, the pins being forced, as the pressure increases, farther into the holes in the plate prepared to receive them. When the required density has been obtained, the plates are removed and the pins withdrawn from the press-cake, which is then broken up into cubes, with a hole through the middle of each, in the usual way, and the grains tumbled in barrels, to wear off the sharp angles. As a number of cakes has been thus subjected to the same pressure, and a large number of grains formed from each cake, the density of the powder formed at one pressing will not vary greatly, and as great density as is desired can be readily given, while the cost of manufacture, as compared with other perforated powder, is much reduced.

What I claim as my invention is—

Gunpowder consisting of cubical grains, each grain being perforated centrally through two opposite sides, and having the angles rounded off, substantially as described, and for the purpose specified.

T. T. S. LAIDLEY.

Witnesses:

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