UNITED STATES PATENT OFFICE.

HANS VON DAHMEN, OF VIENNA, AUSTRIA-HUNGARY.

PROCESS FOR COMPLETELY EXPLODING HIGH EXPLOSIVES.

No. 818,939. Specification of Letters Patent. Patented April 24, 1906.

Application filed May 2, 1905. Serial No. 258,506.

To all whom it may concern:

Be it known that I, HANS VON DAHMEN, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Empire of Austria-Hungary, have invented new and useful Improvements in Processes for Completely Exploding High Explosives, of which the following is a specification.

In my United States Letters Patent No. 689,577 it is stated that the aluminium explosives therein described can only be completely exploded by means of strong fulminate of mercury preparations. As, however, the employment of such highly-explosive bodies, especially in the case of hollow projectiles, is attended with considerable danger, I have conducted experiments with a view of replacing the said preparations by less dangerous or harmless materials. I have now ascertained that the explosives disclosed in my said Letters Patent can be caused to explode completely by means of gunpowder provided that they are inclosed in very strong resistant projectiles or in strong fuses screwed into the projectiles and that materials are provided which act as exciter to convert the explosive under high pressure into a gaseous state. Such materials as last mentioned may consist, for example, of a mixture of lead peroxid, sulfur, carbon, and potassium nitrate in the proportions of 4.5 to 1 to 2.5 to 5.5. Each of these several ingredients is very finely pulverized and then all intimately mingled in a mixing-drum, whereupon they are added to the explosive, consisting of ammonium nitrate, forty-five per cent.; di or tri nitrotoluene, 19.5; aluminium, twenty-two per cent. The resultant composition can now be pressed or granulated or may be used in pulverized form.

For filling hollow projectiles the composition should preferably be granulated. For filling fuses the powdered condition is preferable. In any case ignition is effected by means of gunpowder.

To ignite the explosives disclosed in my said Patent No. 689,577 by means of a fuse, the hollow projectile is first filled with the explosive and a tube or cylinder closed at one end filled with the powdered composition above described and firmly screwed to a suitable gunpowder fuse, then introduced into the hollow projectile.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The process of completely exploding aluminium explosives or all high explosives, picric acid, guncotton, &c., consisting in mixing the explosive with lead peroxid, sulfur, carbon and potassium nitrate and filling the whole into a strong container, and applying gunpowder thereto as igniter, substantially as described.

2. The process of completely exploding aluminium explosives or all high explosives, picric acid, guncotton, &c., consisting in mixing the explosive with lead peroxid, sulfur, carbon and potassium nitrate, placing the composition in a tube closed at one end, affixing a gunpowder-fuse at the other end of the tube, and inserting the fuse with the tube below into a projectile previously filled with the said explosive, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HANS VON DAHMEN.

Witnesses:

WOLDEMAR HAUPT,

HENRY HASPER.