

UNITED STATES PATENT OFFICE.

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SMOKELESS POWDER AND METHOD OF COMPOUNDING SAME.

SPECIFICATION forming part of Letters Patent No. 701,802, dated June 3, 1902.

Application filed March 8, 1902. Serial No. 97,295. (No specimens.)

To all whom it may concern:

Be it known that we, JAMES A. DENTON and JAMES H. PREAS, citizens of the United States, residing at Johnson City, in the county of Washington and State of Tennessee, have invented new and useful Improvements in Smokeless Powder, of which the following is a specification.

Our invention is designed for the production of an improved smokeless powder which has all of the advantages of the smokeless powders now in use and overcomes certain of the disadvantages therein, in that there is less danger of explosion by concussion or friction than in other explosives of a similar nature.

The invention resides in a novel composition of ingredients by which the powder is produced and in the method of compounding the same.

Our improved powder is made of the following ingredients in about the proportions named: chlorate of potash, two ounces; wheat-flour, one ounce; boiled linseed-oil, one-fourth ounce; chrome-yellow powder, one dram. The chlorate of potash which constitutes the explosive base is first mixed with the necessary quantity of linseed-oil, and the two are thoroughly ground together. The chrome-yellow powder, which serves as a coloring agent for the powder, is then mixed with the chlorate of potash and linseed-oil. Afterward the necessary quantity of wheat-flour, with sufficient water to make the mass of about the consistency of bread-dough, is added. These ingredients when all are combined are thoroughly mixed and commingled with each other, and the mixture is then allowed to dry. The same is afterward crushed or ground up into granulated form to constitute a commercial smokeless powder. This product explodes with equal force and penetrating effect to any explosive of a similar nature with which we are familiar, and the method of manufacturing the same is simpler and can be effected at less cost than those which have preceded it. Furthermore, there is less danger of explosion by concussion or friction than in any of the explosives of a similar nature that have preceded ours. The improved re-

sults in the final product as above set forth are due to the use of the linseed-oil and the preliminary mixture of the same with the chlorate of potash which constitutes the explosive base. This oil serves to coat the various particles of the chlorate of potash with a film which protects each of said particles against the abrasive and heat-producing effects of said particles on each other. The danger of accidental explosion is therefore reduced to a minimum. The linseed-oil also assists the chlorate of potash as an explosive medium. It gives density to, protects, and preserves the granules. It decreases the volume of vapor given off by absorbing the same. It aids in producing a quicker action of the powder. It aids in producing deeper penetration. It decreases the residuum from the explosion. It acts as a lubricant, thereby serving as a protection to the gun and enables such residuum as is formed to be readily removed. Furthermore, as it is a non-absorbent of moisture it naturally protects the powder from the effects of dampness.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A smokeless powder, consisting of chlorate of potash, wheat-flour and linseed-oil, prepared substantially as and in the proportions set forth.

2. The method of producing smokeless powder, which consists in grinding and mixing chlorate of potash and boiled linseed-oil with each other, incorporating therewith wheat-flour and water in sufficient quantities to obtain the mass in the consistency of bread-dough, thoroughly mixing these ingredients, drying the mass, and finally crushing or grinding the same to obtain the final product in a granulated condition.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

J. A. DENTON.
J. H. PREAS.

Witnesses:

H. H. DYER,
M. B. MCCARTT.