

UNITED STATES PATENT OFFICE.

EDWARD J. WILLIAMS, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF
OF HIS RIGHT TO LEVERETT A. PRATT, OF SAME PLACE.

IMPROVEMENT IN EXPLOSIVE COMPOUNDS.

Specification forming part of Letters Patent No. **222,169**, dated December 2, 1879; application filed
August 20, 1879.

To all whom it may concern:

Be it known that I, EDWARD J. WILLIAMS, of St. Louis, Missouri, have made a new and useful Improvement in Explosive Compounds, of which the following is a full, clear, and exact description.

The aim of the present invention is to provide a blasting-powder of great strength, readily and economically made, in its use requiring but ordinary care, that can be fired with a fuse, that in firing leaves behind no obnoxious or deleterious gases, that can be tamped and easily transported, and which is not spoiled by moisture.

It consists in the composition formed of the ingredients and in the proportions substantially as follows: After being finely pulverized by being passed through a No. 80 sieve, take of chlorate of potash, three pounds; of prussiate of potash, one pound; of bichromate of potash, two ounces; of nutgalls, five ounces; of cannel-coal, two ounces; of starch, six ounces; also, take of crude coal-oil, five ounces.

Mix all these ingredients thoroughly in a suitable vessel and moisten with water to the consistency of dough. The powder is then grained by running it through, say, a No. 10 sieve, after which it is dried, preferably upon screens, and at a temperature of 90° Fahrenheit, when it is ready for use. It can be dried, however, at the ordinary atmospheric temperature.

The compound thus formed, being composed of articles easily obtained, and not requiring in its manufacture the use of any but the simplest mechanical appliances, and not involving necessarily the application of heat, can be readily prepared with ordinary skill and in any locality.

In using the powder it is fired in the same way as the ordinary black powder.

Several of the ingredients above named have heretofore been separately used; but the present compound is especially valuable in that the various ingredients coact very advantageously in readily forming a powder of great rending power, being as strong as the "heavy-grade" powders, so called, and at the same time being as safe to handle as the ordinary gunpowder.

The chlorate and prussiate of potash give strength to the powder. The bichromate of potash hardens and also strengthens it. The nutgalls are not only cheaper than ordinary tannin, but are superior thereto as a drier and as a generator of explosive gases. The cannel-coal gives body to the powder. The coal-oil acts as a fatty substance, enabling the powder to be tamped and to stand transportation, and also serving to increase the explosive force of the compound; and the starch unites the other elements, and is of itself a generator of explosive gas.

It will also be seen that none of the elements are of a gritty nature.

I claim—

The hereinbefore-described explosive compound, consisting of chlorate of potash, prussiate of potash, bichromate of potash, nutgalls, cannel-coal, starch, and crude coal-oil, in the proportions and combined in the manner described.

E. J. WILLIAMS.

Witnesses:

CHAS. D. MOODY,
L. A. PRATT.