

UNITED STATES PATENT OFFICE.

PAUL WARD AND EDWARD MAMMATT GREGORY, OF LONDON, ENGLAND.

EXPLOSIVE.

SPECIFICATION forming part of Letters Patent No. 454,239, dated June 16, 1891.

Application filed June 5, 1890. Serial No. 354,383. (No specimens.)

To all whom it may concern:

Be it known that we, PAUL WARD and EDWARD MAMMATT GREGORY, subjects of the Queen of Great Britain and Ireland, and residing at London, in the county of Middlesex, England, have invented an Improved Priming and Detonating Composition, of which the following is a specification.

Our invention relates to the adaptation of a composition suitable for priming to the purposes also of detonation by the addition of a further ingredient to the composition, thus providing a novel, cheap, and effective detonating material, and one manufactured at a minimum risk, suitable for use in any fuse or for similar purposes.

We form the chief basis of our explosive composition by the admixture of the ingredients, as follows: powdered coke, two pounds; amorphous phosphorus, one pound; pure chlorate of potash, seventy-five pounds, with the addition of benzole, chloride of carbon, or acetate of amyl. The amorphous phosphorus and chlorate of potash are ground separately in a mortar or other vessel under one of the above fluids. The amorphous phosphorus is then submerged with either of the above fluids. Chlorate of potash is then added and the two ingredients are ground together under sufficient fluid to keep the mass from clogging. When this has been done for a suitable time, coke is then added in powder and the whole is again ground for a short time. This forms an excellent priming composition, and by the addition thereto of paraffine or common tallow oil the powder will be enabled to cake together after the grind-

ing-fluids have evaporated. This reduces its sensitiveness to friction or percussion without detracting from its explosive violence or its sensitiveness to an electric current, and thus constitutes an excellent detonating composition.

We have found that the detonating effects of this compound are most pronounced when it is detonated by the previous explosion of a priming composition occurring at the closed end of a fuse and detonator-case, where the compression of the gases from the exploding priming composition causes intensely rapid combustion and consequent detonation in the detonating-charge.

The manufacture, as above described, of this detonating composition is much less dangerous than where the usual fulminate of mercury is employed, and the addition of paraffine-oil to the composition serves also to prevent oxidation of the ingredients when stored.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is—

A detonating composition consisting of powdered coke, amorphous phosphorus, chlorate of potash, and paraffine-oil, substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

PAUL WARD.
EDWARD MAMMATT GREGORY.

Witnesses:

RICHARD A. HOFFMANN,
CHARLES H. CARTER.