

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN EXPLOSIVE COMPOUNDS.

Specification forming part of Letters Patent No. 215,199, dated May 6, 1879; application filed
July 30, 1878.

To all whom it may concern:

Be it known that I, ADOLF DIECKERHOFF, of Vienna, Empire of Austria, now temporarily a resident of St. Petersburg, in the Empire of Russia, have invented a certain new and Improved Explosive Compound and Process for Manufacturing the same; and I do hereby declare the following to be a full and exact description thereof, which will enable others skilled in the art to which it appertains, or to which it is most closely connected, to make and use the same.

The object of this invention is to increase the explosive strength of gunpowder without increasing its liability to accidental ignition; and to this end the invention consists in combining or mixing gunpowder (or its essential elements taken in the same relative proportions as in gunpowder) with a small proportion (not over fifteen per cent.) of a precipitated alkaline picrate or picrates, substantially as I will now proceed to describe.

In the manufacture of my improved explosive I take any alkaline picrate, precipitate, or precipitates, such as sodium picrate, potassium picrate, or ammonium picrate, or any mixture of two or more thereof, precipitated from the mother liquor or liquors, and I combine said precipitate or precipitates with gunpowder in such proportions that one hundred (100) parts, by weight, of the explosive will contain from one (1) to fifteen (15) parts picrate precipitate and eighty-five (85) to ninety-

nine (99) parts gunpowder. The mixture forms an explosive having much greater energy than gunpowder, and it is far safer for handling, storage, and transportation, inasmuch as it requires a higher degree of heat for ignition, and does not explode by percussion.

Experience has shown that the charcoal of the gunpowder is not essential in this compound or mixture, the character and effect of the explosion being substantially the same whether it is used or not; wherefore I regard the mixture of the nitrate with the sulphur and the picrate, in the same general proportions as above stated, as the practical equivalent of the mixture above described.

The mode of compounding, graining, &c., is substantially the same as in the manufacture of gunpowder. Due care must be observed, however, in handling the picrate before its incorporation with the other elements.

Having thus described my invention, I claim as new—

The explosive mixture or compound herein described, consisting of sulphur, a nitrate or nitrates, and a precipitated alkaline picrate or picrates, compounded in the manner and in the relative proportions, substantially as set forth.

ADOLF DIECKERHOFF.

Witnesses:

W. W. ROWLEY,
JOHN C. CUMMING.