UNITED STATES PATENT OFFICE.

LÉON THOMAS, OF PARIS, FRANCE.

CHLORATED EXPLOSIVE.

No. 826,389. Specification of Letters Patent. Patented July 17, 1906.

Application filed November 27, 1905. Serial No. 289,367.

To all whom it may concern:

Be it known that I, LÉON THOMAS, engineer, a citizen of the French Republic, residing at Paris, Department of Seine, France, have invented certain new and useful Improvements in Chlorated Explosives, of which the following is a specification.

This invention has for its object to provide chlorated explosives easy and safe to manufacture.

The extreme sensitiveness of explosive mixtures containing potassium chlorate is an objection which it has been sought to overcome by various means; but the processes hitherto in use are lengthy and expensive and sometimes exceed the desired effect, the said processes being generally based on the coating of the chlorate with mineral or vegetable fats—such as oils, tars, paraffins, or resins—either alone or mixed with other combustible or exciting materials by simple juxtaposition or by dissolution.

Used alone the coating materials attenuate the sensitiveness of the chlorate to such an extent that the explosive mixture explodes only with difficulty under the shock of the fulminate and the decomposition is incomplete or even impossible if the charge, though small, is arranged so as to form a row of cartridges, as is usual in mining operations. The inflammability, however great it may be, is never such that the simple ignition of the charge can alone be depended on, and the combustion is too slow. The result is the same and the manufacture often more complicated if exciting materials be used with the coating material, the coating material acting as a damping obstacle and preventing the reaction of the excitant from taking place. On the other hand, several of these exciting materials—such as sulfur in the free state or in combination, picric acid, and raw tar—are liable, owing to their natural or acquired acidity, to eventually cause sudden and spontaneous decompositions.

The improvement constituting my invention obviates these disadvantages and consists as follows: First, melt in a vessel heated by steam or hot water a solid nitrated derivative of toluene—such as paranitrotoluol, dinitrotoluol, trinitrotoluol, or a mixture of these bodies, which may be liquid; second, incorporate in the liquid thus obtained the chlorate or perchlorate of potassium or other chlorate or perchlorate in a finely-ground state; third, allow the mass to cool until crystallization takes place; fourth, to obtain it in pulverulent form sift this mass to the required size of grain. It may then be put up in cartridges in the usual or any suitable way.

The following formula gives an example of such explosives, the proportions of which may of course be varied according to requirements: dinitrotoluene, twenty-five per cent.; chlorate, seventy-five per cent.

What I claim is—

1. A process which consists in melting a solid nitrated derivative of toluene and incorporating in the liquid mass a chlorate salt.

2. An article of manufacture consisting of a mixture of a nitrated derivative of toluene and a chlorate salt.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LÉON THOMAS.

Witnesses:
PIERRE LEIKE,
EMILE KLOTE.