

UNITED STATES PATENT OFFICE.

JAMES MADISON BROWN, OF UNAKA SPRINGS, TENNESSEE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL EXPLOSIVE CORPORATION.

PLASTIC CHLORATE EXPLOSIVE.

1,309,014.

Specification of Letters Patent.

Patented July 8, 1919.

No Drawing.

Application filed September 6, 1917. Serial No. 189,978.

To all whom it may concern:

Be it known that I, JAMES MADISON BROWN, a citizen of the United States, residing at Unaka Springs, in the county of Unicoi and State of Tennessee, have invented certain new and useful Improvements in Plastic Chlorate Explosives, and I do hereby declare the following to be a full, clear and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to plastic chlorate explosives and has for its object to improve the explosives of this nature which have been heretofore proposed.

With this and other objects in view the invention consists in the novel composition of matter hereinafter described and particularly pointed out in the claims.

In carrying out this invention I provide say sixty parts by weight of an alkali metal chlorate, moisten the same with water and reduce it to a finely divided condition. I next thoroughly mix the moistened chlorate with say eight parts by weight of a siccative oil such for example as linseed oil. I also take say twenty-two parts by weight of a vegetable flour, wheat flour being preferred, and work up the mixture of oil and chlorate into a plastic mass. In order to facilitate this latter operation I may add sufficient water from time to time to moisten the flour and to keep any chlorate crystals not covered by the oil in a moistened state. This said plastic mass may now be thoroughly kneaded to make a homogeneous mixture and thoroughly isolate and break up any chlorate crystals that may still remain. To the plastic mass thus produced I add say three parts of vaseline and thoroughly knead it into said mass whereupon I next add say two parts of magnesium carbonate and likewise incorporate it into said mass.

Lastly I add about five parts of nitroglycerin whereupon I may mold it into any desired shape for use, or I fill it into containers for shipment.

The linseed oil will be found to extract the water from each small particle of the mass it surrounds and at the same time to form around the same tough elastic envelops which prevent neighboring grains from con-

tacting with each other, and it thereby serves to prevent accidental explosions due to friction while not preventing intentional explosions due to primers. The added water prevents accidental explosions due to friction while working up the mass; the vaseline serves to maintain the mass in a plastic state; and the magnesium carbonate acts as a dope on the nitroglycerin to render the latter safer during handling, while at the same time improving the rock rending qualities of the explosive as a whole.

It will be observed that all the ingredients readily break up under the conditions of an explosion into gases with a minimum of solid residues.

I prefer to employ potassium chlorate, whenever the price of that compound permits, but of course, I can use when necessary, sodium chlorate or a mixture of potassium and sodium chlorates. In some cases I may even employ ammonium perchlorate, and especially when the explosive is to be used as a propellant.

It is obvious that those skilled in the art may vary the details of the process without departing from the spirit of the invention and therefore, I do not wish to be limited to the above disclosure except as may be required by the claims.

What I claim is:—

1. The herein described new explosive consisting of a chlorate of the alkali metal type; a drying oil; vegetable flour; magnesium carbonate; vaseline; and nitroglycerin, substantially as described.

2. The herein described new explosive consisting of substantially sixty parts of a chlorate of the alkali metal type; substantially eight parts of a drying oil; substantially twenty-two parts of a vegetable flour; magnesium carbonate; vaseline; and nitroglycerin, substantially as described.

3. The herein described new explosive consisting of sixty parts of an alkali metal chlorate; eight parts of linseed oil; twenty-two parts of wheat flour; two parts of magnesium carbonate; three parts of vaseline; and five parts of nitroglycerin, substantially as described.

In testimony whereof I affix my signature.

JAMES MADISON BROWN.