

UNITED STATES PATENT OFFICE.

JONAS E. BLOMÉN, OF STANHOPE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE JOVEITE MANUFACTURING COMPANY, OF VIRGINIA.

HIGH-POWER EXPLOSIVE.

SPECIFICATION forming part of Letters Patent No. 530,063, dated November 27, 1894.

Application filed March 12, 1894. Serial No. 503,340. (No specimens.)

To all whom it may concern:

Be it known that I, JONAS E. BLOMÉN, a citizen of the United States, residing at Stanhope, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in High-Power 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.

My invention relates to improvements in high-power explosives, and it consists essentially in mixing together a suitable hydrocarbon derivative, an oxidizing agent and a suitable material for rendering the mixture sufficiently sensitive to be detonated or exploded. The hydrocarbon or its derivative should be of such a nature as to form a coat or varnish to the oxidizing agent by which the hygroscopic properties of the latter may be greatly reduced if not altogether remedied. For this purpose I have found rosin and nitro-naphthalene suitable hydrocarbon derivatives, both being well adapted for the purpose specified.

In preparing the explosive, the hydrocarbon derivative is melted, the oxidizing agent is mixed into the melted material, and then the sensitizing agent is added. For the latter purpose small proportions of the phenol-derivatives or charcoal alone have been found well suited; or the phenol-derivatives may be used together with charcoal and sulphur or the charcoal alone. For the oxidizing agents any of the nitrates or chlorates may be employed, but I prefer nitrate of soda on account of its greater cheapness; its hygroscopic properties being largely remedied by the hydrocarbon which acts as a coating or varnish to keep out the moisture of the atmosphere.

The phenol-derivatives and the nitro-naphthalenes used are preferably the crude nitro-derivatives consisting of mixtures of substances having various degrees of nitration.

In the nitroderivatives of phenol used in this process there is generally contained from ten per cent. to twenty-five per cent. of trinitrophenol the remaining constituent being a mixture of mono and dinitrophenol.

I have found the explosive manufactured in accordance with the following formulæ to give good results.

First, nitro-naphthalenes, eight per cent.; nitrate of soda, seventy-six per cent.; nitro-phenols, sixteen per cent.; total, one hundred per cent. 55

Second, nitro-naphthalenes, eight per cent.; nitrate of soda, fifty-eight per cent.; nitro-phenols, thirty-four per cent.; total, one hundred per cent. 60

Third, rosin, four per cent.; charcoal, four per cent.; sulfur, eight per cent.; nitrate of soda, seventy-four per cent.; nitro-phenols, ten per cent.; total, one hundred per cent. 65

These proportions may be varied to suit the various requirements of the explosive. Thus the relative proportions of nitro-naphthalenes, or other hydrocarbon derivative, and of the sodium nitrate, or other oxidizing agent, may be varied from one to eight to one to four, respectively, dependent upon the degree of nitration of the hydrocarbons and of the component parts of the mixture, and also upon the nature and purity of the hydrocarbons and their derivatives or of the oxidizing agent. 70 75

I do not wish to limit myself to any exact proportions of the herein described substances, or their equivalents, but 80

I claim broadly as new—

1. A high power explosive consisting of an oxidizing agent, a mixture of phenol-derivatives and other hydrocarbon derivatives, charcoal, and sulfur, substantially as described. 85

2. A high power explosive consisting of a mixture of nitro-naphthalenes, an oxidizing agent and a mixture of nitro-phenols.

3. A high power explosive consisting of a mixture of nitro-naphthalenes, nitrate of soda, and a mixture of nitro-phenols, substantially as described. 90

4. A high-power explosive consisting of a mixture of nitro-naphthalenes, an oxidizing agent, a mixture of nitro-phenols, and charcoal, substantially as described. 95

5. A high-power explosive consisting of a mixture of nitro-naphthalenes, an oxidizing agent, a mixture of nitro-phenols, sulphur and charcoal, substantially as described. 100

In testimony whereof I affix my signature in presence of two witnesses.

JONAS E. BLOMÉN.

Witnesses:

JOHN C. WILSON,
PERCY C. BOWEN.