

UNITED STATES PATENT OFFICE.

WALTER N. HILL, OF NEWPORT, RHODE ISLAND.

IMPROVEMENT IN BLASTING COMPOUNDS OR DYNAMITES.

Specification forming part of Letters Patent No. **146,530**, dated January 20, 1874; application filed July 22, 1873.

To all whom it may concern:

Be it known that I, WALTER N. HILL, of Newport, in the State of Rhode Island, have invented a new and useful Composition of Matter for Blasting Purposes, of which the following is a full, clear, and exact description.

The most explosive compound generally used at the present time for blasting purposes is known as "dynamite;" and consists of a mixture of nitro-glycerine—a highly explosive substance—and an inert, finely pulverulent, and absorbent silicious earth, found in certain localities in this country and in Europe, which mixture, while possessing the explosive properties of nitro-glycerine, can be conveniently and safely transported and handled. My invention consists in the production of an improved dynamite, in which, instead of the natural silicious earth, I use an artificially-prepared silicious powder.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the same.

From a solution of any of the alkaline silicates, I precipitate, by means of any suitable acid, the silica contained therein. This precipitate is then washed with pure water and dried at a suitable temperature, and it may, in addition, be ignited. The product is a powder, consisting of pure silica in the most finely-divided form possible to be obtained inert, and highly absorbent. With this powder I mix nitro-glycerine, in quantity depending upon the explosive power which is desired for

the product; and the result is a granular powder of about the consistency and appearance of ordinary brown sugar, which can be safely and conveniently handled.

Owing to the perfect purity of the silicious powder, obtained as above described, and its very finely-divided form, it is capable of absorbing and holding a large quantity of nitro-glycerine—at least three times its own weight—without losing the granular form and becoming pasty; and, consequently, a dynamite of greater explosive power than is ordinarily manufactured can be obtained without correspondingly diminishing its capacity of being handled with safety.

The advantages of the dynamite, prepared as above described, over that prepared from the natural silicious earth are the ease and cheapness with which it can be manufactured in any locality, its great explosive power, and its comparative safety.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

A blasting-powder or dynamite, composed of a mixture of nitro-glycerine and a silicious powder, prepared by precipitation from solutions of the silicates, substantially as above described.

WALTER N. HILL.

Witnesses:

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