

# UNITED STATES PATENT OFFICE.

SILAS R. DIVINE, OF LOCH SHELDRAKE, ASSIGNOR TO REND ROCK POW-  
DER COMPANY, OF NEW YORK, N. Y.

## EXPLOSIVE COMPOUND.

SPECIFICATION forming part of Letters Patent No. 243,432, dated June 28, 1881.

Application filed December 7, 1880. (No specimens.)

*To all whom it may concern:*

Be it known that I, SILAS R. DIVINE, of Loch Sheldrake, Sullivan county, New York, have invented a certain Improvement in Explosive Compounds, of which the following is a specification.

It is the object of my invention to provide for employment, chiefly in blasting operations, a high explosive the ingredients of which can be separately manufactured, handled, and transported, and can be mechanically united, when required for use, by the consumer, whereby the danger usually attending the manufacture, handling, and transportation of ordinary high explosives is avoided.

My invention consists of an explosive compound composed of two ingredients—the one a solid, such as crushed or powdered chlorate of potash, and the other a liquid, such as nitrate of benzole—which are combined to form a high explosive by merely causing the mass of the solid ingredient to absorb the liquid ingredient, a combination which can be effected by the consumer at the time when and at the place where the explosive is to be used. These ingredients, being in themselves incapable of being exploded by percussion, can be with safety separately manufactured, handled, and transported to the consumer, who will have no difficulty in effecting their combination, because the operation of combining them is of so simple a character.

Either perchlorate or permanganate of potash may be used as the solid ingredient of my explosive, and other liquid nitro-compounds may be substituted for the nitro-benzole, the essential condition being observed that the liquid ingredient substituted shall possess a degree of fluidity which shall adapt it to be readily absorbed by the solid ingredient, so that the final act of preparing the explosive for use may be performed by merely bringing the two ingredients into juxtaposition and allowing the liquid ingredient to be absorbed by the solid ingredient.

In manufacturing my nitro-benzole I use the naphtha of commerce, and it will therefore be understood that my nitro-benzole contains some nitro-toluol and picric acid.

Four and one-sixth parts of chlorate of potash to one part of nitro-benzole I consider to constitute the theoretical proportions in which

the ingredients of my compound combine most effectively; but in order to somewhat diminish the sensitiveness of the compound to ignition by percussion I prefer to use from three to not exceeding four parts of chlorate of potash to one part of nitro-benzole.

In another pending application I have described a method for facilitating the employment of my explosive in blasting operations, which consists in providing the consumer with prescribed quantities of the solid ingredient contained in porous cartridge-shells or envelopes, which, when the final act of preparing the explosive is to be performed, may be immersed in the liquid ingredient for the purpose of permitting the liquid ingredient to be absorbed by the solid ingredient contained within the porous cartridge-envelope. This mode of uniting the ingredients affords a simple and convenient means of regulating their relative proportions, because, after complete saturation has been effected, the cartridge may be removed from the liquid ingredient, and the excess of the liquid ingredient may be removed from the cartridge by squeezing or wringing it by hand. It will, of course, be understood, however, that the ingredients of my explosive may, if desired, be mixed in measured proportions and in any convenient vessel.

Owing to the viscous condition assumed by my explosive compound when the ingredients are united, it is not liable to be accidentally exploded by tamping in the act of charging the drill-hole, and in this respect possesses an important advantage, greatly contributing to safety in its employment.

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

The explosive compound herein described, which consists of a solid ingredient, such as chlorate of potash, and a liquid ingredient, such as nitro-benzole, mechanically united, substantially in the proportions of from three to four and one-sixth parts of the solid ingredient to one part of the liquid ingredient, substantially as and for the purpose set forth.

SILAS R. DIVINE.

Witnesses:

WM. SCOTT DE CAMP,  
G. R. KIMBALL.

Corrections in Letters Patent No. 243,432.

It is hereby certified that in Letters Patent No. 243,432, issued June 28, 1881, upon the application of Silas R. Divine, for an improvement in "Explosive Compounds," the assignee, "the Rend Rock Powder Company," was erroneously described as of "New York, New York;" whereas it should read "a corporation created by authority of the laws of the State of New Jersey;" that the proper corrections have been made in the files and records pertaining to the case in the Patent Office, and are hereby made in said Letters Patent.

Signed, countersigned, and sealed this 15th day of November, A. D. 1881.

[SEAL.]

A. BELL.

*Acting Secretary of the Interior.*

Countersigned:

E. M. MARBLE,  
*Commissioner of Patents.*