

# UNITED STATES PATENT OFFICE.

CHARLES FELHOEN, OF NEW YORK, N. Y.

## IMPROVEMENT IN BLASTING-POWDER.

Specification forming part of Letters Patent No. **216,949**, dated July 1, 1879; application filed June 13, 1878.

*To all whom it may concern:*

Be it known that I, CHARLES FELHOEN, of New York city, county and State of New York, have invented a new and useful Improvement in the Manufacture of Gunpowder; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to a new and improved gunpowder, the advantages of which are, that it can be made much more rapidly than ordinary gunpowder, and without the intervention of expensive machinery and dangerous manipulation, and is stronger than ordinary gunpowder.

It is well known that the only purpose of graining and glazing ordinary gunpowder is to prevent the separation of its component parts, to prevent the absorption of moisture, and to insure a more rapid combustion.

The object of my invention is to accomplish these results without resorting to those expensive and dangerous processes.

For the purpose of my invention I employ seventy-five parts of saltpeter, twelve and one-half parts of sulphur, and twelve and one-half parts of charcoal, which are to be separately reduced to an impalpably fine powder and then intimately mixed.

To ninety parts of the above mixture I add and thoroughly mix ten parts of nitro-naphthaline prepared as hereinafter described. No special precaution or mode of mixing is needed in effecting the several mixtures.

Nitro-naphthaline belongs to a class of explosive substances, (nitrated hydrocarbons,) such as nitrate of ethyl and nitro-mannite, some of which are fluid and others solid, and which have not generally come into much practical use. Several of these bodies would answer my purpose. By preference I use nitro-naphthaline, it being the cheapest body.

The nitro-naphthaline I prepare by digesting, with or without heat, one part of naphthaline in four parts of nitric acid of specific gravity 1.40 for five days. The naphthaline is converted into a brown unctuous crystalline mass, which must be well washed with water to free it from all trace of acid, and then dried and pulverized.

By this means I obtain a mononitro-naphthaline containing a small proportion of dinitro-naphthaline.

I do not confine myself to the exact proportions either of the gunpowder or the nitro-naphthaline as herein set forth, but substantially as above stated.

The compound resulting from this process has the following properties: It does not explode from friction or concussion. It does not require a fulminate of mercury, gun-cotton, or nitro-glycerine to explode it; and though these agents may be used, it may also be exploded by the use of the common fuse. It burns more slowly than common gunpowder, but with much greater violence. Ignited in the open air it burns, but does not explode.

I find from numerous experiments that not less than ten per cent. of the nitro-naphthaline should be used. The quantity may be increased *ad libitum* to perform the offices required.

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

The herein-described composition of matter, consisting of niter, sulphur, and charcoal, in the usual proportions of gunpowder, mixed with nitro-naphthaline, substantially as described.

CHS. FELHOEN.

Witnesses:

PERCY B. BROMFIELD,  
RUSSELL B. DAVIS.