

# UNITED STATES PATENT OFFICE.

HAROLD BOYD, OF BIRMINGHAM, ENGLAND.

## EXPLOSIVE.

SPECIFICATION forming part of Letters Patent No. 577,351, dated February 16, 1897.

Application filed November 27, 1896. Serial No. 613,554. (No specimens.)

*To all whom it may concern:*

Be it known that I, HAROLD BOYD, mining-engineer, a subject of the Queen of Great Britain, residing at No. 177 Bromsgrove Street, Birmingham, in the county of Warwick, England, have invented certain new and useful Improvements in Explosives, of which the following is a specification.

This invention has chiefly for its object to produce a powerful and safe blasting explosive that can be fired without a detonator and which after firing will not leave behind poisonous or noxious fumes, which are particularly objectionable when using ordinary blasting explosives in confined places.

For the purpose of my invention I employ the ingredients hereinafter mentioned, with which I mix a substance that is capable of absorbing any noxious gases evolved when the explosive is fired. I have found by experiments that the best substance to use with the ingredients herein stated is a hydrated oxid of iron, such as Irish bog ore, this substance being carefully dried and finely pulverized prior to its admixture with the other ingredients.

In manufacturing my explosive I employ the following ingredients in or about the proportions stated: nitrate of potash, seven parts by weight; commercial sulfur, three parts by weight; Irish bog ore, two parts by weight; nitrate of baryta, two parts by weight; picric acid, one part by weight, and wood-dust, one part by weight.

The aforesaid ingredients are mixed together in a dry state either by hand or mechanically, as is well understood by persons acquainted with the manufacture of explosives.

The explosive may be used in the form of loose powder or be compressed into cartridges according to requirements.

I wish it to be understood that I do not confine myself to the exact proportions of the ingredients above stated, as such proportions may be varied according to the strength of explosive required. The use of the said explosive is not confined to blasting purposes alone, as it may also be used for ballistic purposes.

I claim—

An explosive characterized by its capability of being fired without a detonator and of absorbing the noxious fumes or gases evolved on firing, and consisting of a mixture of nitrate of potash, sulfur, nitrate of baryta, picric acid, wood-dust and a fume absorbent such as dry pulverized bog ore or other hydrated oxid of iron.

In testimony whereof I have hereunto set my hand this 6th day of November, 1896.

HAROLD BOYD.

Witnesses:

ARTHUR A. BERGIN,  
WM. NULLERSH JACKSON.