

UNITED STATES PATENT OFFICE.

GEORGE TRENCH, OF FAVERSHAM, COUNTY OF KENT, ENGLAND.

METHOD OF BLASTING.

SPECIFICATION forming part of Letters Patent No. 393,798, dated December 4, 1888.

Application filed February 27, 1888. Serial No. 265,443. (No specimens.)

To all whom it may concern:

Be it known that I, GEORGE TRENCH, a subject of the Queen of Great Britain, residing at Standard House, Faversham, in the county of Kent, England, have invented certain new and useful Improvements in the Method of Blasting, of which the following is a specification.

My invention relates to the method of blasting used in coal-mines or other places in which the blasting-charge is surrounded by fire-extinguishing material to prevent firing the gases in the mine when the explosion occurs.

The object of my invention is to attain this result more efficiently, while avoiding the disadvantages and expense incident to the use of a water-tight envelope—such as metal or rubber; and these ends I attain by employing a new method, in which I first bore a hole, then insert the blasting-charge, then envelop the charge in an improved fire-extinguishing powder, and then explode the charge, thus effecting the blasting, but preventing the ignition of the gases in the mine by reason of the gases generated by the fire-extinguishing powder.

The subject-matter claimed is hereinafter specified.

The powder which I employ consists of sawdust saturated with a solution containing alum, sal-ammoniac, and common salt, in about the following proportions:

	Per cent.
Alum.....	5.1
Sal-ammoniac.....	1.7
35 Salt.....	10.2
Water.....	83.0
	100.0

This solution is incorporated with the sawdust in about the proportion of two parts of solution to one part of sawdust, three-fourths of one per cent. of black-lead being added. This powder is stored for use in a damp state, so that it binds together when exposed to

pressure. It is thus easily consolidated around the blasting-charge.

The bore-hole may be made in the usual way. A small portion of the fire-extinguishing powder is then rammed into the bore-hole and the blasting-charge rammed down upon it. The fire-extinguishing powder is then rammed around the blasting-charge, and when the fuse is put in position the fire-extinguishing powder is rammed around the top of the charge.

It will be understood that the tamping of the charge and other details of the blasting operation are conducted as heretofore. When the explosion takes place, the fire resisting and extinguishing powder is disseminated and extinguishes any fire that may be caused by the explosion.

There is great advantage in employing a powdered composition instead of water or jelly-like substances, as the powder is separated more readily and is more completely distributed. Again, the powdered composition may be rammed around the blasting-charge without the interposition of water-proof linings, &c.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

The method of blasting consisting in making a bore-hole, inserting the blasting-charge therein, ramming around the blasting-charge sawdust or like absorbent powder saturated with a solution of alum, salt, and sal-ammoniac, or an equivalent salt solution, and then firing the charge in the bore-hole when thus surrounded with the said powder.

GEORGE TRENCH.

Witnesses:

GEO. J. B. FRANKLIN,

W. J. NORWOOD,

Both of 17 Gracechurch Street, London, E. C.