

UNITED STATES PATENT OFFICE.

JOSEPH PAUL RAMOND POCH, OF BRUSSELS, BELGIUM.

IMPROVEMENT IN EXPLOSIVE COMPOUNDS.

Specification forming part of Letters Patent No. 184,020, dated November 7, 1876; application filed June 25, 1872.

To all whom it may concern:

Be it known that I, JOSEPH PAUL RAMOND POCH, of Brussels, in the Kingdom of Belgium, a Spanish subject, chemist, have invented a new Explosive Compound for Blasting Purposes; and I do hereby declare that the following is a full and exact description thereof.

This invention relates to a new explosive compound for blasting purposes, which compound may be advantageously used in coal and other mines, and in quarries and tunneling as a substitute for gunpowder and other explosive agents now employed for blasting.

My new explosive compound, when fired, does not explode suddenly like gunpowder, but it ignites and burns away, fizzing like paper impregnated with saltpeter, emitting, with very little smoke, a large quantity of gas, which gas, being confined in the blasting-hole, presses on the sides thereof and splits and dislodges the mass of rock or other substance operated on.

To make my blasting compound, I use the following ingredients, by preference, in the proportions mentioned, though these proportions may vary according to the quality of the compound required: For one hundred parts, by weight, of my compound I take three parts, by weight, of spent tan; five parts, by weight, of wood sawdust; three parts, by weight, of nitrate of soda; three parts, by weight, of nitrate of baryta; six parts, by weight, of charcoal; twelve parts, by weight, of sulphur; sixty-eight parts, by weight, of saltpeter, all of which ingredients I use in a powdered state.

I dissolve the nitrate of soda and the nitrate of baryta together or separately in hot water, and when completely dissolved I add to the solution the tan and sawdust above mentioned, and I allow them to boil or evaporate till the tan and sawdust have absorbed all the liquid and the whole has become quite dry. I then add the other ingredients above mentioned and mix the whole together in a rotatory chest or cylinder, or other suitable mixing apparatus.

When properly mixed and prepared my compound is of a dark green color, and may be used for blasting in exactly the same way as

ordinary gunpowder without the risk of those dreadful accidents which frequently occur in this operation when an explosive compound is used.

When my compound is to be used in badly-ventilated galleries, I prefer, in the preparation of my said compound, to substitute for the twelve parts per centum of sulphur, hereinbefore mentioned, eight parts per centum of sulphur, and three parts per centum of gum lac, to which may be added, if required, two per centum of any suitable odoriferous substance.

When my said compound is to be used in galleries, the sulphur employed in its manufacture should be that kind of sulphur known as "roll" sulphur, which should be washed or boiled in water and then dried, and the sawdust may be used without the bath of nitrate.

This special compound possesses marked advantages. It is less dangerous than the ordinary blasting-powder and than those compounds which contain chlorate of potash, which are exceedingly inflammable and liable to be exploded by concussion. It contains nitrate of baryta, which, when the explosion occurs, unites with the sulphurous and sulphuric acids produced from the sulphur, and neutralizes their effect, so that the workmen are enabled to return soon to the mine without danger of suffocation.

It may be transported without danger, and even be subjected to pressure without danger of explosion, while it ignites readily and burns steadily.

I do not claim, broadly, an explosive compound having tan-bark or sawdust in its composition; but

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

A blasting compound, consisting of spent tan, wood sawdust, nitrate of soda, nitrate of baryta, charcoal, sulphur, and saltpeter, in about the proportions substantially as described.

JOSEPH PAUL RAMOND POCH.

Witnesses:

W. H. KIRKPATRICK,
B. S. KIRKPATRICK.