

UNITED STATES PATENT OFFICE.

FRANS GUSTAF ABEL BROBERG, OF EMPORIUM, PENNSYLVANIA, ASSIGNOR
OF ONE-HALF TO DAVID LUNDY WILDRICK, OF DOVER, NEW JERSEY.

BLASTING-POWDER.

SPECIFICATION forming part of Letters Patent No. 542,723, dated July 16, 1895.

Application filed September 11, 1894. Serial No. 522,749. (No specimens.)

To all whom it may concern:

Be it known that I, FRANS GUSTAF ABEL BROBERG, a subject of the King of Sweden and Norway, (but having declared my intention of becoming a citizen of the United States,) residing at Emporium, in the county of Cameron and State of Pennsylvania, have invented certain new and useful Improvements in Blasting-Powder; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in blasting-powder; and it consists, essentially, in preparing an intimate mixture of rosin, nitrate of soda and sulfur, so as to form a substitute for ordinary black powder.

In practice the ingredients are mixed together in or about the following proportions, by weight: Rosin, five or six per cent.; sulfur, eighteen to twenty per cent., and nitrate of soda, seventy-four to seventy-seven per cent.

In manufacturing the powder I preferably grind the nitrate of soda exceedingly fine, and after melting the rosin and the sulfur together and stirring well I incorporate most thoroughly the nitrate of soda and then granulate.

The rosin not only furnishes carbon and hydrogen to the mixture, but it also serves as a protective varnish to the nitrate of soda, and to a large degree prevents the same from deliquescenting.

The mixture is exploded by means of a fulminating-cap.

The mixture is found, in practice, to be very effective for blasting purposes.

The proportions of the ingredients may be varied at will, according to the character of the explosive to be manufactured.

I am aware that dynamite has been made

of nitrate of soda, resin, and nitro-glycerine, to which sulfur has also been added. I am also aware that an explosive has been made consisting of nitrate of soda, sulfur, resin and wood-tar. Both of these compounds differ from mine both in the ingredients used and in the character of the finished explosive in that my explosive is a free-running powder, which the other compositions are not. It is evident that tar or any other liquid or viscous ingredient could not be added to my explosive without detriment to the same.

It is evident that the nitrate of soda may be replaced by its well-known chemical equivalents—nitrate of potash, nitrate of barium, &c.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States; is—

1. In the art of making explosives, the improvement which consists in melting sulphur and resin and adding to this mixture, while in a melted state, dry pulverized nitrate of soda, and agitating the mixture until the particles of nitrate of soda are thoroughly covered with the mixture of resin and sulphur, as and for the purposes described.

2. As a new explosive, a free running powder, consisting of nitrate of soda, resin, and sulphur, substantially as and in the proportions described.

3. As a new explosive, a free running powder consisting of particles of nitrate of soda coated with a mixture of resin and sulphur, as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANS GUSTAF ABEL BROBERG.

Witnesses:

FRANKLIN HAUSLER,
JOHN J. HEINKLE.