

UNITED STATES PATENT OFFICE

JAMES COAD, OF HUMBOLDT, MICH., ASSIGNOR OF TWO-THIRDS HIS RIGHT
TO EUGENE G. ST. CLAIR AND GEORGE A. ST. CLAIR, OF SAME PLACE.

IMPROVEMENT IN BLASTING COMPOUNDS.

Specification forming part of Letters Patent No. 175,929, dated April 11, 1876; application filed
March 25, 1876.

To all whom it may concern:

Be it known that I, JAMES COAD, of Humboldt, in the county of Marquette and State of Michigan, have invented certain new and useful Improvements in Blasting Compounds; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same.

Hitherto great danger has attended the manufacture and use of nitro-glycerine, its compounds, and substances having like characteristics. Having experimented in the preparation and use of the foregoing, I have discovered that a composition consisting of specially-prepared nitro-glycerine combined with natural-decayed wood or equivalent vegetable fiber, in the same state or condition is comparatively safe to handle, while the explosive effect of nitro-leum is retained. The compound which I prepare may be exploded with primer or cap of fulminate of mercury or other violent ignitant, either when frozen or in its natural state. Different grades of explosives or explosive power may be obtained, by varying the proportion of the constituents, without departing from my invention. To prepare the nitro-glycerine, which I use as one of the principal constituents, I take three-fourths ($\frac{3}{4}$) of one part of common glycerine of commerce, to which I add nine and one-fourth ($9\frac{1}{4}$) parts of a mixture composed as follows:

Sulphuric acid of 66 per cent. Reaumer, sixty parts; nitric acid of 50 per cent. Rea-

mer, thirty-nine parts; chloride of sodium or common salt, one part. Mix thoroughly with the glycerine, and after reaction wash until the acid is thoroughly eliminated. This forms $1\frac{3}{4}$ pounds of nitro-glycerine.

I then take, to make a powder of the most powerful kind, the following, to wit:

Nitro-glycerine, seventy-five parts; niter, five parts; nature-decayed wood, twenty parts, and, after first pulverizing or comminuting the decayed wood and niter mix them thoroughly together and add the nitro-glycerine, slowly, until absorbed.

When a powder of less power than the above is desired, I use the following combination, to wit:

Nitro-glycerine, thirty parts; niter, fifty parts; nature-decayed wood, twenty parts. And for another class, nitro-glycerine, thirty parts; common blasting-powder, sixty parts; nature-decayed wood, ten parts.

The above powders can be made, if judged expedient, with a hot solution of niter in water instead of pulverizing it.

Having thus described the object and nature of my invention, I claim—

An explosive compound consisting of nitro-glycerine, as described, and decayed wood, substantially as set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

JAMES COAD.

Witnesses:

ANTOINE VAYTLIN,
JAMES O. ST. CLAIR.