

UNITED STATES PATENT OFFICE.

EDWARD A. L. ROBERTS, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN EXPLOSIVE COMPOUNDS.

Specification forming part of Letters Patent No. 120,776, dated November 7, 1871.

To all whom it may concern:

Be it known that I, EDWARD A. L. ROBERTS, of Titusville, in the county of Crawford and State of Pennsylvania, have made a new and useful Improvement in Explosive Compounds; and I hereby declare the following to be a full and exact description of the same.

There is a class of violently-detonating liquid compounds, such as nitro-glycerine and other similar nitrogenized liquids, that, from the enormous force exerted by them when exploded, have promised to be exceedingly useful in the arts. The great drawback to their use has, however, been the danger attending their use. Nobel and others mixed them with plaster, clay, sand, sawdust, cotton, and similar solid materials, of both mineral and vegetable origin; but, owing to the little force with which the explosive liquid adheres to these materials, they only partially remedy the difficulty above mentioned. I have discovered that by combining nitro-glycerine with asbestos or mineral fiber a highly useful compound is produced. Asbestos, from its fine fibrous nature, has strong capillarity; and the nitro-glycerine, when mixed with it, is thoroughly absorbed in large quantity, and is retained in combination when so combined. The nitro-glycerine is not liable to accidental explosion. When exploded in a proper manner the full force of the nitro-glycerine is exerted.

The following description will enable any one skilled in the art to make and use my invention.

The asbestos is prepared by disintegrating,

cleaning, and calcining, so that it is a clean, soft, fine, fibrous powder, entirely free from vegetable or animal matter. With this prepared asbestos powder nitro-glycerine is then combined by gradually incorporating the two materials, so that the mass contains from twenty-five to seventy-five per cent. nitro-glycerine, according to the strength of powder to be made. For part of the asbestos powder may be substituted clay, plaster, infusorial silica, chalk, &c. Other kinds of powder, if of sufficient permanence, may also be mixed with the compound, or with the asbestos alone, such as common gunpowder, white gunpowder, nitro-cellulose, and the like. The fibrous asbestos serves to retain the liquid explosive material, and forms a bond of union for all the other materials.

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

1. The improved explosive compound herein described, produced by combining nitro-glycerine or other highly-explosive liquid with mineral fiber or asbestos, substantially as set forth.

2. The combination of nitro-glycerine, asbestos, and infusorial earth or silica, as set forth.

3. The combination of asbestos and solid explosive compounds, such as herein described, with or without the addition of nitro-glycerine.

EDWARD A. L. ROBERTS.

Witnesses:

C. EDWARD KANT,
H. A. CHADWICK.

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