

S. J. MACKIE, C. A. FAURE & G. FRENCH.
EXPLOSIVE COMPOUND.

No. 187,155.

Patented Feb. 6, 1877.

FIG: 1.

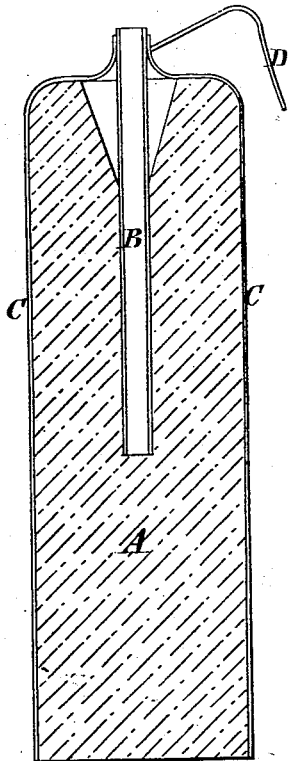


FIG: 2.

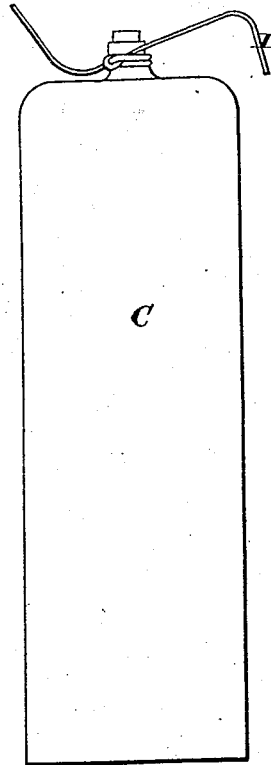
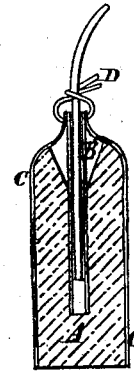


FIG: 3.



WITNESSES

Mrs A Skinkle
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INVENTORS

Samuel J Mackie
Camille A Faure
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By their Attorneys, Baldwin, Hopkins & Poynter.

UNITED STATES PATENT OFFICE

SAMUEL JOSEPH MACKIE, CAMILLE ALPHONSE FAURÉ, AND GEORGE FRENCH, OF FAVERSHAM, ENGLAND.

IMPROVEMENT IN EXPLOSIVE COMPOUNDS.

Specification forming part of Letters Patent No. **187,155**, dated February 6, 1877; application filed September 2, 1876.

To all whom it may concern:

Be it known that we, SAMUEL JOSEPH MACKIE, CAMILLE ALPHONSE FAURÉ, and GEORGE FRENCH, all of Faversham, in the county of Kent, England, have invented a new and useful Explosive Compound for Blasting-Charges for Mining, and for other purposes, of which the following is a specification:

We manufacture blasting-charges from an explosive compound produced as follows: Cotton or other materials converted into nitro-cellulose we reduce to an impalpable powder, or very fine state of division, and mix it intimately with nitrate of baryta and saltpeter, either with or without the addition of charcoal. The proportions we, by preference, use are twenty-five parts nitro-cellulose, eighteen and five-tenths nitrate of baryta, and six and five-tenths nitrate of potassium. The explosive compound thereby obtained is especially applicable for use as a blasting-powder.

It is essential that the cotton or other material converted into nitro-cellulose should be reduced to an impalpable powder, as stated above. The reduction of the converted fiber we effect by passing it between crushing-rollers, or we reduce it by edge-runners. In this way the fibrous nature of the cotton is entirely destroyed. We incorporate together the reduced gun-cotton with the nitrate of baryta and nitrate of potash, either in the dry or wet state. If gun-cotton simply pulped were used in the manufacture of our cotton-powder only a dangerous compound, open to explosion by mere friction, would be obtained, whereas an explosive made as we have de-

scribed is nothing more than combustible, is very insensitive to ignition by concussion or by friction, and may be burnt without any danger of explosion, while yet it can be detonated by high charges of fulminate.

The proportions given above are essential elements in the manufacture of the powder to insure safety, freedom from noxious fumes, and capability of being detonated only by high charges of fulminate, while it is also only open to ignition by the strongest friction, and when lighted is merely combustible, and may be burnt with perfect immunity from any danger of explosion. If the proportions are much departed from, safety would no longer be obtained. If the gun-cotton were increased there would be danger of explosion by friction and concussion. If the nitrate of baryta were increased, noxious fumes would remain after explosion.

What we claim is—

The explosive compound hereinbefore described, consisting of a mixture, substantially in the proportions specified, of nitro-cellulose, reduced to an impalpable powder, nitrate of baryta, and saltpeter.

SAMUEL JOSEPH MACKIE.
CAMILLE ALPHONSE FAURÉ.
GEORGE FRENCH.

Witnesses:

WILMER M. HARRIS,
*Articled clerk to Salem C. Harris,
of No. 17 Gracechurch street, Lon-
don, Notary Public.*

THOS. BROWN,
*Of same place, clerk to S. C. Harris,
Notary Public.*

Correction in Letters Patent No. 187,155.

It is hereby certified that in Letters Patent No. 187,155, issued February 6, 1877, for an improvement in "Explosive Compounds," the name of the last mentioned grantee, wherever it appears in said Letters Patent and in the specification and drawing attached thereto and forming a part thereof, was erroneously written and printed "George French" instead of "George Trench," the correct name of said grantee; that the proper corrections have been made in the files and records of the Patent Office, and are hereby made in said Letters Patent.

Signed, countersigned, and sealed this 26th day of July, A. D. 1881.

[SEAL.]

S. J. KIRKWOOD,
Secretary of the Interior.

Countersigned:

E. M. MARBLE,
Commissioner of Patents.