

# UNITED STATES PATENT OFFICE.

GEORGE W. GENTIEU, OF PEORIA, ILLINOIS.

## EXPLOSIVE.

No. 871,395.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed March 14, 1906. Serial No. 305,970.

*To all whom it may concern:*

Be it known that I, GEORGE W. GENTIEU, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Explosives; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to 10 which it appertains to make and use the same.

This invention relates to improvements in the manufacture of explosives, particularly to that class of explosives which give off very 15 little smoke in burning, and consists in the combination of ingredients, as is more fully set out hereinafter.

In the manufacture of my improved powder, I employ ammonium picrate, potassium 20 nitrate, sulfur, charcoal and hydro-cellulose. These are mixed in approximately the following proportions according to weight: ammonium picrate, twenty five percent; potassium nitrate, fifty two percent; sulfur, ten 25 percent; charcoal, six percent; and hydro-cellulose, seven percent. But these proportions may be varied somewhat for different uses,—as for example, when used in rifles the proportions here given are very effective. 30 When used in shot guns, the proportions of potassium nitrate and hydro-cellulose would be diminished and the ammonium picrate and charcoal increased.

In preparing this powder, I first weigh out the proper proportion of charcoal, hydro-cel- 35 lulose and sulfur, which being non-explosive, are finely pulverized together in a ball mill or tritulating machine. The potassium nitrate and ammonium picrate are ground or pulverized separately. The materials being in a 40 finely pulverized state and the proper proportion of each weighed out, the mixture is introduced in any suitable incorporating machine, ordinary rolling or wheel mills such as are used for black powder being suitable, and 45 the mixture incorporated until a suitable powder is produced, which is then placed in a hydrostatic press and pressed into cakes and these cakes are then broken up and granulated in the same manner that ordinary black 50 powder is made. After granulation the powder is dried at a temperature of from ninety to one hundred and twenty degrees Fahrenheit.

What I claim is:

A compressed granular explosive consisting of an intimate mixture of ammonium 55 picrate 25%, potassium nitrate 52%, sulfur 10%, charcoal 3%, and hydrocellulose 10%.

In testimony whereof I have affixed my 60 signature, in presence of two witnesses.

GEORGE W. GENTIEU.

Witnesses:

E. M. GILES,  
MARY E. COMEGYS.