

UNITED STATES PATENT OFFICE

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IGNITER CHARGE FOR BLASTING CAPS

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This invention relates to an improvement in ignition charge for blasting caps, such as are used for firing commercial explosives, as for example, dynamites.

5 As is well known, certain blasting caps comprise a casing containing a combination of charges comprising an igniter, or easily ignited, charge superimposed over a base charge or an intermediate charge, the ignition of which is effected by the igniter charge, which is ignited electrically or by means of a fuse.

10 Heretofore various igniter charges and various base charges have been used in blasting caps, it being the object of those skilled in the art to provide an igniter charge which will be ignited or fired with a minimum of heat and which will be effective to ignite or fire a base charge or an intermediate charge over the

20 base charge and at the same time which will present a maximum of safety in loading and in subsequent handling of the cap. Now, it is the object of this invention to produce an explosive composition for use as

25 an igniter charge in blasting caps which will have a low critical firing current when used in an electric blasting cap, which will effectively ignite the customary base charges or intermediate charges, and which will present

30 a maximum of safety in handling. The composition in accordance with this invention includes essentially a ferricyanide, an oxidizing agent and a nitrated carbohydrate. The ferricyanide may be, for example, potassium ferricyanide, sodium ferricyanide, ammonium ferricyanide, or the like. The oxidizing agent may be, for example, potassium chlorate, potassium nitrate, barium nitrate, or the like, and the nitrated carbohydrate may be nitrocellulose, as nitrocotton, smokeless powder, etc., nitrostarch, or the like.

45 While the ingredients of the composition may vary widely in proportions, they desir-

ably will be in the proportions indicated in the following table.

	Per cent	
Ferricyanide	20-40	
Oxidizing agent	10-30	50
Nitrated carbohydrate	70-30	

As illustrative of a composition in accordance with this invention and adaptable for use as an igniter charge in blasting caps, for example, a satisfactory composition may be made according to the following formula:

	Per cent	
Potassium ferricyanide	30	
Potassium chlorate	30	60
Nitrocotton	40	

In making up the composition in accordance with this invention the several ingredients may be ground together in any suitable apparatus to form an intimate mixture, or separately ground and then intimately mixed in any suitable manner.

The composition in accordance with this invention will be found to be free flowing and hence readily loaded, to be readily ignited and effective for the ignition of the desired base charge, as for example, mercury fulminate, lead azide, diazodinitrophenol, etc. and, at the same time, to be substantially insensitive to friction and shock and hence to present maximum safety in loading and in handling of caps in which it is loaded.

It will be understood that in accordance with this invention the proportions of the ingredients of the composition may be widely varied without departing from the invention, the range and specific proportion being illustrative only, and that the use of the composition as an igniter charge with any base charge or intermediate charge suitable for the firing of commercial explosives is contemplated.

What I claim and desire to protect by Letters Patent is:

1. An igniter charge for blasting caps in-

cluding in admixture a ferricyanide, an oxidizing agent and a nitrated carbohydrate.

2. An igniter charge for blasting caps including in admixture a ferricyanide, an oxidizing agent and nitrocellulose.

3. An igniter charge for blasting caps including in admixture a ferricyanide, an oxidizing agent and nitrostarch.

4. An igniter charge for blasting caps including in admixture potassium ferricyanide, an oxidizing agent and a nitrated carbohydrate.

5. An igniter charge for blasting caps including in admixture potassium ferricyanide, potassium chlorate and a nitrated carbohydrate.

6. An igniter charge for blasting caps including in admixture potassium ferricyanide, potassium chlorate and nitrocellulose.

7. An igniter charge for blasting caps including in admixture a ferricyanide 20-40%, an oxidizing agent 10-30% and a nitrated carbohydrate 70-30%.

8. An igniter charge for blasting caps including in admixture potassium ferricyanide 20-40%, potassium chlorate 10-30% and nitrocellulose 70-30%.

9. An igniter charge for blasting caps including in admixture potassium ferricyanide 30%, potassium chlorate 30% and nitrocellulose 40%.

In testimony of which invention, I have hereunto set my hand, at Kenvil, N. J., on this 18th day of Dec., 1931.

LLOYD H. FISHER.