Patented Mar. 31, 1936 2,035,509

UNITED STATES PATENT OFFICE

2,035,509

PYROTECHNIC COMPOSITION

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No Drawing. Application December 6, 1934, Serial No. 756,260

1 Claim. (Cl. 52—23)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

The subject of this invention is a pyrotechnic composition.

A white light composition which has been extensively used consists of barium nitrate as an oxidizing agent, magnesium or aluminum or a mixture thereof as a metallic fuel, and paraffin or oil as a binding agent. The pyrotechnic characteristics of any particular composition are determined by the proportions and granulations of the ingredients.

I have discovered that increased brilliance and luminosity may be obtained by employing a mixture of nitrates instead of a single nitrate. As an example a composition containing 38% of barium nitrate and 7% of strontium nitrate gave a value of 174,600 candlepower per square inch as compared with a value of 114,300 candlepower for a composition containing 47% of barium nitrate.

This increase in illuminating effectiveness may be attributed to the higher oxygen content of the mixture, the corresponding increase in the percentage of metallic fuel which can be used, and the superimposition of the band spectrum of the strontium on the continuous spectrum of the products of combustion.

Salts of the alkali and alkaline earth metals have the same effect when used in conjunction with barium nitrate.

A preferred composition is as follows:

	Per cent
Barium nitrate	38
Strontium nitrate, anhydrous	7
Magnesium	52
Paraffin	3

The magnesium should pass through a 48-mesh sieve and be held by a 100-mesh sieve.

I claim:

A white-light composition consisting of barium nitrate 36 to 40 percent, strontium nitrate 6 to 8 percent, magnesium 50 to 54 percent, and paraffin 2 to 4 percent.

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