

UNITED STATES PATENT OFFICE.

AUGUST WEISS, OF STRASBURG, GERMANY.

FLASH-POWDER.

SPECIFICATION forming part of Letters Patent No. 659,331, dated October 9, 1900.

Application filed August 1, 1898. Serial No. 687,435. (No specimens.)

To all whom it may concern:

Be it known that I, AUGUST WEISS, a subject of the German Emperor, residing at Strasburg, Alsace, Germany, have invented certain new and useful Improvements in Flash-Powder for the Taking of Photographs by Artificial Light, of which the following is a specification.

The object of the present invention is a flash-powder for the taking of photographs by artificial light, which does not fire when rubbed or struck, but ignites only at a high temperature, fulminates instantaneously, and produces a very bright and most effective photographic light of considerable actinic power.

The flash-powders hitherto used for photographic purposes are mixtures of magnesium or aluminium. Magnesium powders when ignited produce rays which are neither so bright nor of such actinic power as mixtures of aluminium, so that the latter are preferable as regards the action of the light. Nevertheless, it has not been possible hitherto to produce mixtures of aluminium which also fully effect their object as to rapidity of combustion. Moreover, all hitherto-known aluminium powders are extremely dangerous to handle, being caused to ignite by the least friction or the slightest concussion and throwing out during the combustion igniferous sparks in all directions. In consequence of these important drawbacks aluminium powders in spite of their great actinic power have not been adopted, and their practical applicability in connection with photography has been definitively denied by authorities on the subject. The mixture of aluminium which forms the object of the present invention proves the contrary and does not present these disadvantages. It is free from the drawbacks mentioned, as it will not ignite even if struck sharply with a hammer, but only at a high temperature—for instance, by means of the explosive substance of a lucifer match subjected to friction—but then ignites surely and quickly and fulminates instantaneously.

By means of the present invention accordingly the great actinic power of the aluminium light becomes applicable to the fullest extent

for photographic purposes and under the most favorable circumstances in opposition to the adverse opinions of photographic experts, and herein lies the new technical effect of the present invention. This effect is produced by the hitherto-unknown mixture of powdered aluminium and powdered perchlorate of potassium. The mixture is made in the usual manner, while the proportions of the constituents of the mixture differ considerably and are to be measured always according to the purpose in each particular case—that is to say, the proportions depend upon whether a moderately quick, quick, or very quick combustion is to be effected and the production of smoke more or less prevented.

Experiments made with this object have shown that mixtures of eighty-five parts of perchlorate of potassium with fifteen parts of aluminium, as well as forty parts of the former with sixty parts of aluminium, give useful results, so that all mixtures lying between these limits from eighty-five to forty parts of perchlorate of potassium, with corresponding parts (from fifteen to sixty) of aluminium, respectively, may be regarded generally as suitable for photographic purposes.

A suitable mixture which gives average effects in relation both to quickness of combustion and quantity of smoke resulting is one, for instance, composed of sixty parts of perchlorate of potassium to forty parts of aluminium.

Having now particularly described the nature of this invention, I declare that what I claim is—

As a new article of manufacture, a flash-powder for use in taking photographs by artificial light, consisting of a mixture of powdered aluminium and powdered perchlorate of potassium, in proportions substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUST WEISS.

Witnesses:

H. D. JAMESON,
A. NUTTING.