UNITED STATES PATENT OFFICE.

ARTHUR EICHENGRÜN, OF ELBERFELD, GERMANY, ASSIGNOR TO FARBENFABRIKEN OF ELBERFELD CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PYROTECHNIC COMPOUND.

SPECIFICATION forming part of Letters Patent No. 710,047, dated September 30, 1902.

Application filed February 3, 1902. Serial No. 92,458. (No specimens.)

To all whom it may concern:

Be it known that I, ARTHUR EICHENGRÜN, doctor of philosophy, chemist, residing at Elberfeld, Germany, (assignor to the FARBENFABRIKEN OF ELBERFELD CO., of New York,) have invented a new and useful Improvement in Pyrotechnic Compounds; and I hereby declare the following to be a clear and exact description of my invention.

My invention relates to new products suitable for the manufacture of pyrotechnic compounds to be used as fireworks, flash-lights for photographic purposes, signal-lights, Bengal fires, &c.

Hitherto pyrotechnic compounds of the class to which those discovered by me belong were made by adding to metallic powders which have a strong affinity for oxygen, and are therefore easily combustible and the combustion of which produces a light of great intensity rich in actinic power, such as magnesium or aluminium, substances which easily give off oxygen, such as chlorate of potash, nitrate of potash, persulfate of potash, perchlorate of potash, &c. Mixtures of this kind, however, possess the disadvantages of being explosive and of giving off large quantities of smoke and dust, the generated gases in some cases being even of a noxious character.

I have now found a process of making pyrotechnic compounds which do not possess the above bad qualities and the combustion of which produces at the same time great luminosity.

The process for manufacturing these new products consists in mixing very finely ground metallic magnesium, aluminium, &c., with the peroxids of calcium, manganese, or magnesium.

In carrying out my process practically I can proceed as follows: One part of finely-ground magnesium is intimately mixed with one part of finely-ground manganese peroxid.

In order to produce colored-light effects for signaling or for Bengal fires, &c., the above new compounds may be mixed with substances generally used in pyrotechnics for colored lights, such as nitrate of strontium, &c. If it is desired to produce a compound the combustion of which should be slow, the substances usually employed for this purpose, such as gypsum, may be added to the above new compounds.

The new pyrotechnic compounds may also be mixed with some binding material, such as starch, glue, dextrin, gum-arabic, shellac, collodion, &c. With such mixtures sheets of paper or sheets of other substances, sticks or stalks of wood or of other substances can be coated.

When my new pyrotechnic compounds are in the form of a dry powder, they may be ignited by strewing them on the ground or on a suitable open receptacle, or they may be packed in a metallic or other box and then be ignited.

Having now described my invention and in what manner the same is to be performed, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described new pyrotechnic compound being a mixture of magnesium with manganese peroxid, substantially as described.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

ARTHUR EICHENGRÜN.

Witnesses:
OTTO KÖNIG,
T. A. RITTERSHAUS.