UNITED STATES PATENT OFFICE.

MAX BIELEFELDT, OF WITTENBERG, GERMANY.

EXPLOSIVE.

SPECIFICATION forming part of Letters Patent No. 650,225, dated May 22, 1900.

Application filed August 19, 1896. Serial No. 603,254. (No specimens.)

To all whom it may concern:

Be it known that I, MAX BIELEFELDT, doctor of philosophy, a subject of the German Emperor, residing at Wittenberg, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Explosives; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Various explosives which contain sodium nitrate and potassium nitrate are characterized by the fact that they can be exploded by the mere flame of a fuse. This circumstance renders explosives of that kind, of which "blasting-niter" or "blasting-saltpeter," "blasting-powder," and "lithotrite" are the most important representatives, especially suitable for many mining operations, while they have also the advantage of being very cheap. Those explosives have, however, the disadvantage of readily becoming moist and of not being sufficiently powerful for many purposes. Both of these drawbacks are obviated by the new explosive, the manufacture of which forms the subject of the present invention. The constituents of this explosive are sodic saltpeter, potassic saltpeter, sulfur, coal-tar, and bichromate of potash. The quantitative proportions of these constituents may vary according to the requirements in each case, the sole condition being that sodium nitrate should form the chief component of the constituents of the explosive which give off oxygen. Instead of coal-tar, or together with it, there may also be employed resins and also fatty drying oils, lacs, and varnishes. For the potassium bichromate may also be substituted other bichromates and also chromates, permanganates, and manganates.

For the production of a particularly effective explosive the following proportions of ingredients have been found suitable: sodic saltpeter, one hundred parts; potassic saltpeter, 7.2 parts; sulfur, 14.5 parts; coal-tar, 21.7 parts; potassium bichromate, 1.4 parts.

The process is carried out as follows: The ground or otherwise comminuted constituents after being mixed together are more or less compressed between heated plates or rolls. When the pressure is sufficiently great, the simultaneous heating may be omitted, especially when the mixture has been previously moistened or when adhesive agents have been employed. By this means there is obtained a coherent mass which can be further treated in any desired manner.

The advantage of the explosive produced as above described over blasting-niter, blasting-saltpeter, blasting-powder, and lithotrite consists in its great resistance to moisture and also in its considerably-higher blasting or bursting action, which can be increased up to one and a half times that of the older explosives with considerably-better gaseous explosion.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

1. An explosive compound consisting of sodium nitrate, potassium nitrate, sulfur, coal-tar, and potassium bichromate, all compressed as described.

2. An explosive compound consisting of sodium nitrate, potassium nitrate, sulfur, coal-tar and potassium bichromate, the proportion of sodium nitrate being greater than the aggregate of all the other ingredients, all compressed as described.

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

MAX BIELEFELDT

Witnesses:
A. DU BOIS-REYMOND,
J. EPHRAIM.