

UNITED STATES PATENT OFFICE.

DAVID M. STIRTON, OF CASCADE, BRITISH COLUMBIA, CANADA.

EXPLOSIVE COMPOUND AND PROCESS OF MANUFACTURING THE SAME.

995,579.

Specification of Letters Patent. Patented June 20, 1911.

No Drawing.

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To all whom it may concern:

Be it known that I, DAVID M. STIRTON, citizen of the Dominion of Canada, residing at Cascade, in the Province of British Columbia, Canada, have invented a new and useful Explosive Compound and Process of Manufacturing the Same, of which the following is a specification.

This invention relates to an explosive of that class wherein chlorate of potash is the oxidizing agent and this ingredient is combined with a novel material to provide a granulated powder that renders the explosive safe to use and that is withal inexpensive.

The invention also comprises the process by which the ingredients are prepared and mixed.

The invention is particularly described and claimed in the following specification.

The ingredients which comprise the compound are approximately as follows: chlorate of potash 44 per cent., dried potato pulp 55 per cent., and coloring matter 1 per cent.

In the preparation of this explosive the following course is pursued: For one pound of the explosive take about 21.12 ounces of raw potato which after being thoroughly cleaned is ground to a pulp that will pass through a sieve of three hundred perforations to the square inch. This pulp is then dried to fifty per cent. of its original weight and to the concentrated pulp is added and mixed twelve hundredths of an ounce of blue anilin dye. This dye is added merely as a distinctive coloring matter and is inert so far as the explosive properties of the compound are concerned. To this mixture is added 8.80 ounces of chlorate of potash and the whole is thoroughly mixed, then passed through a granulator and dried. The dried product is then placed in a revolving cylinder with finely powdered commercial graphite which forms a fine coating over the granules which is found to have a waterproofing and anti-friction character. The graphite has been found to confer the required waterproofing character in itself but if found necessary a small quantity of petroleum may be added to it in the proportion of twenty parts by weight of refined petroleum to eighty parts of graphite.

I do not desire to be confined to the exact

proportion of the ingredients hereinbefore given which are based on an assumption of seventy-five per cent. of moisture in the raw potatoes and further the proportion of chlorate of potash to the potato pulp may be varied according to the nature of the explosive required, the proportions given being for a serviceable explosive for rock blasting. It is safe to manufacture and to handle and can be fired either by electricity, by fuse or by detonator.

While the granules of the finished explosive will retain their form under ordinary handling before pressure or friction enough can be imparted to them to cause ignition they will disintegrate: in other words the consistency of the granules and the nature of their coating renders the powder plastic under pressure and yielding rather than resisting so that the friction of applied pressure does not develop an igniting heat.

The use of a dried raw potato pulp I believe to be novel and confers advantages in the consistency of the finished product.

I claim:

1. As an explosive compound, the association of chlorate of potash with raw potato pulp, the same being granulated and the granules covered with a water-proofing and anti-friction material.

2. As an explosive compound, the association with approximately forty-four per cent. by weight of chlorate of potash with fifty-five per cent. of dried raw potato pulp and one per cent. of coloring matter and water-proofing and anti-friction coating of the granules.

3. The process of manufacturing explosives which comprises taking raw potatoes, cleansing the same, grinding the same to a pulp, subsequently drying the pulp to concentrate the same to about 50 per cent. of its original weight, adding to said concentrated pulp chlorate of potash and thoroughly mixing the mass, then granulating the mass and subsequently drying the same.

4. The process of manufacturing explosives which comprises taking raw potatoes, cleansing the same, grinding the same to a pulp, subsequently drying the pulp to concentrate the same to about 50 per cent. of its original weight, adding to said concentrated pulp chlorate of potash and thoroughly mixing the mass, then granulating

the mass and subsequently drying the same, and then tumbling the dried product with graphite to coat said dried product.

5 5. A process for the manufacture of an explosive, said process comprising the partial drying of raw potato pulp until its weight is reduced by one-half, the addition thereto of chlorate of potash in the approximate proportion of eight and eighty hundredths ounces of chlorate of potash to ten
10 ounces and fifty-six hundredths of the partially dried pulp, the granulation and drying of the product and the polishing of the granules and coating them with a material
15 having water-proofing and anti-friction qualities.

20 6. A process for the manufacture of an explosive, said process comprising the partial drying of raw potato pulp until its weight is reduced by one-half, the addition thereto of the required proportion of chlorate of potash, the granulation and drying

of the product and the coating of the granules by tumbling with finely powdered commercial graphite.

25 7. A process for the manufacture of an explosive, said process consisting in the partial drying of raw potato pulp, the addition thereto of a blue anilin dye and after thoroughly mixing the addition of the required
30 proportion of chlorate of potash which must be thoroughly incorporated in the compound, the granulation and drying of the product and the coating of the granules by
35 tumbling with finely powdered commercial graphite.

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

DAVID M. STIRTON.

Witnesses:

ANGUS CAMERON,
J. W. SPAULDING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."