UNITED STATES PATENT OFFICE.

GUILLIAM H. CLAMER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE AJAX METAL COMPANY, OF SAME PLACE.

PROCESS OF MAKING BICHROMATES.

SPECIFICATION forming part of Letters Patent No. 574,391, dated January 5, 1897.

Application filed April 6, 1896. Serial No. 586,441. (No specimens.)

To all whom it may concern:

Be it known that I, GUILLIAM H. CLAMER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in the Manufacture of Alkaline Bichromates; and I do 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.

My invention relates to the manufacture of the alkaline bichromates; and the object of my improvement is to provide a cheap and simple process of making the normal chromates of potassium or sodium from which the bichromates are manufactured.

To make a chromate of potassium, I take about an equal quantity, by weight, of powdered chrome-iron ore, nitrate of potassium, and hydrate of potassium, mix the three articles thoroughly and fuse them together in a suitable vessel, keeping the mass stirred and in a liquid condition until all of the ore is oxidized and the chromium oxid has been converted into chromic acid and formed the alkali chromate, which is then run into molds and allowed to cool.

To make chromate of sodium, the pulverized ore is mixed with nitrate of sodium and hydrate of sodium and the mass treated in the same manner as when making chromate of potassium. To form the bichromate, the normal chromate is broken into pieces and dissolved in a quantity of water sufficient to take up the soluble compounds. This liquid is then allowed to settle and is afterward siphoned off from the sediment, a suitable acid, such as sulfuric, added, and the liquid again siphoned off to separate it from the precipitated silica and alumina. It is then evaporated in any suitable vessel until the alkali bichromate crystallizes. The quantity of alkali nitrate and caustic alkali used in this process may vary somewhat, as the ore contains more or less of the oxid of chromium. Instead of mixing the ore, the alkali nitrate, and the caustic alkali all together in the first instance the powdered chrome ore may be first mixed and fused with a quantity of alkaline nitrate less than would be required to completely oxidize the ore. After this has been cooled and again powdered it is then mixed with a caustic alkali and a sufficient quantity of alkali nitrate to complete the oxidation of the ore, the caustic alkali and alkali nitrate being first fused in a suitable vessel and the powdered ore and nitrate added thereto gradually in small quantities, the mass being kept fused and stirred until the ore is completely oxidized and the desired alkali chromate formed.

Having thus described my invention, what I claim as new, and desire to secure, is—

The herein-described process of making alkaline chromates which consists in fusing together powdered chrome ore and an alkali nitrate, and allowing it to cool, afterward powdering same and mixing with a caustic alkali and a sufficient quantity of alkali nitrate to complete the oxidation of the ore, the caustic alkali and alkali nitrate, being first fused together in a suitable vessel and the powdered ore and nitrate added thereto gradually and the mass kept fused and stirred until the ore is completely oxidized, substantially as set forth.

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

GUILLIAM H. CLAMER.

Witnesses:
THOMAS D. MOWLDS,
J. H. RHOADS.