

# UNITED STATES PATENT OFFICE.

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PROCESS OF MAKING A DENSE STABLE COMPOSITION CONTAINING ALKALI PEROXID.

1,000,701.

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No Drawing.

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*To all whom it may concern:*

Be it known that I, EDUARD THOMANN, a citizen of the Swiss Confederation, and resident of Zurich, Switzerland, have invented certain new and useful Improvements in Processes of Making a Dense Stable Composition Containing Alkali Peroxid, of which the following is a specification.

It has often been proposed to utilize the oxidizing qualities of the alkali peroxids. One of the principal applications of these oxidizing substances is to use them as a washing powder in combination with soap. There are however great inconveniences connected with this application owing not only to the hygroscopic properties of the peroxids but also owing to their rapid decomposition when brought in contact with the water and owing to the inflammability of any organic matter which should come in intimate contact with the same. To obviate these inconveniences it has been proposed to store a measured quantity of peroxid in an air tight compartment arranged in the packet of soap powder so that this peroxid comes in contact with the soap only at the moment when the box is destroyed so that its contents may be used. There have further been made cartridges filled with peroxid and embedded in soap powder. The cartridges are of a material which partly or completely melts as soon as it comes in contact with the water, particularly with hot water, so that the contents of the cartridges flow out when the lye is being prepared. It is obvious that thus considerable quantities of active oxygen are lost owing to the rapid decomposition of the peroxid.

This invention relates to a process for the manufacture of a dense stable composition containing alkali peroxid which can be exposed to the moistness of the air, or be brought in contact with organic matter without any danger of decomposition. With this object in view after the inorganic substances have been melted, an alkali peroxid is admixed with the same so that after cooling the said mixture forms a compact and rather heavy mass. This mass, if put in water, regularly emits hydrogen peroxid owing to the slow dissolution of its elements and as no local excessive heating can be produced, this composition can be used without any danger of explosion in hot water and even in boiling water. Contrary to what happens with the light peroxid inclosed in car-

tridges and which floats upon the water when it gets out of the envelop, the mass produced according to this invention rests always upon the bottom of the bucket so that the gaseous emanations are forced to traverse the liquid entirely before they can escape whereby the absorption of the gases by the water is greatly facilitated. The bleaching liquids thus obtained are well saturated with active oxygen and they are consequently very effective.

The improved process can, for example, be carried out in the following manner:— 12 parts of nitrate of potassium are molten, preferably, on the open fire; 10 parts of an alkali peroxid are added to the molten nitrate of potassium under continual stirring so that a quiet fusion of the mass is obtained; the product is poured into molds of convenient shape, to be broken to pieces after it has cooled. The mass obtained is whitish, homogeneous, hard and without pores. Other nitrates can be substituted for the nitrate of potassium and compositions of two or more nitrates may be used.

The proportion of peroxid can vary according to the oxidizing effect to be obtained. This proportion can mount up to 50% of the final product without prejudicing the perfect fusibility and the intimate mixture of the final product.

The product can be wrapped in paper or tissue. The wrapper could be impregnated for example, with an alkali nitrate, with resin, stearic acid, olein or other organic acids, in order to effect the dissolution of the envelop simultaneously with the decomposition of the peroxid. In other cases, where a neutral reaction of the solution is indispensable, the addition of an acidic substance, for example bisulfate of potassium, sulfate of aluminium, boric acid and the like is effected by plunging the composition into molten nitrate to which one of the herebefore mentioned acid substances has been previously added, said molten nitrate forming a coating.

The new process not only serves for preparing an efficacious substance to be used with washing powder, but further for preparing a substance which is adapted to act as an oxidizing reagent upon any materials in solution or in aqueous suspension.

I claim:—

1. An improved process of manufacturing a heavy mass comprising an alkali

- peroxid in unalterable form serving for washing, bleaching and for oxidizing in general, consisting in admixing an alkali peroxid with a molten nitrate, in pouring the mixture in molds for cooling and in breaking up the solid mass which is ready for use and which slowly decomposes when brought in contact with water in regularly emitting hydrogen peroxid.
- 10 2. An improved process of the manufacture of a heavy mass comprising an alkali peroxid in unalterable form, consisting in melting 12 parts of nitrate of potassium, in admixing with the same 10 parts of an alkali peroxid under continuous stirring, in leaving the mixture to cool and in breaking up in pieces the hard dense mass obtained.
- 15 3. An improved process of the manufacture of a heavy mass comprising an alkali peroxid in unalterable form, consisting in melting 12 parts of a nitrate then admixing with the same 10 parts of an alkali peroxid under continuous stirring, in leaving the mixture to cool, in breaking the mass to pieces and in coating the pieces with a solution containing substances capable of neutralizing the alkali, substantially as described and shown and for the purpose set forth.
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In witness whereof I have hereunto set my hand in the presence of two witnesses.

EDUARD THOMANN.

Witnesses:

ARTHUR J. BUNDY,

AUGUST RÜEGG.