

UNITED STATES PATENT OFFICE,

JACQUES VISSEAU, OF LYON, FRANCE.

PROCESS FOR THE MANUFACTURE OF INCANDESCENT MANTLES.

995,740.

Specification of Letters Patent. Patented June 20, 1911.

No Drawing.

Application filed January 18, 1910. Serial No. 538,611.

To all whom it may concern:

Be it known that I, JACQUES VISSEAU, citizen of the French Republic, residing at Lyon, in France, have invented a new and useful Improved Process for the Manufacture of Incandescent Mantles, of which the following is a specification.

This invention relates to an improved process for the manufacture of incandescent mantles. The usual process employed for the manufacture of said mantles for use with gas, petrol vapor, or the like, consists in impregnating threads or fabrics of cotton or other textile or artificial material with a solution of nitrates or other salts of refractory earths and after drying, decomposing said nitrates or salts by heat. When very fine threads or fabrics are used for obtaining supple mantles, the decomposition by the heat of the basic acid, disintegrates the molecules of oxid which no longer have sufficient cohesion to produce a strong mantle.

The process according to the present invention consists in burning a fiber or fabric on which is fixed, instead of a salt, a hydrated peroxid obtained by the action of hypochlorites on a solution of salts of refractory earths. Commercial nitrate of thorium, containing 48% of oxid is an indefinite and always acid composition and the reaction of hypochlorites on rare earths is only effected in an almost neutral solution. It is consequently necessary that the bath of the salts of refractory earths contains as little free acid as possible.

In the improved process I soak the threads or fabrics in a bath composed as follows: After having prepared a solution which contains for example 22 parts of commercial nitrate of thorium, I incorporate 10 parts of hydrate of thorium of the formula $\text{Th}(\text{OH})_4$ which dissolve by reason of the free acid contained in the solution. I then rapidly pass the filaments, properly dried, into a bath of chemically pure hypochlorite of soda of about 25° measured on the chlorometer. Immediately afterward the filaments or the like are washed in dis-

tilled water and the alkaline salt formed. The filaments are then dried at a suitable temperature; whereupon they are ready to be incinerated.

Other methods of carrying out the process are as follows:—

(1) The solution of hypochlorites can be incorporated before the impregnation with the salts of refractory earths.

(2) By precipitating only the nitrate of thorium by the hypochlorite and in adding after washing and drying, nitrate of cerium in the form of a soluble salt. The small quantity of nitric acid which is disengaged during the incineration does not affect the strength of the mantle.

(3) By adding to the solution of hypochlorites any mineral or organic salt or base which could facilitate the precipitation of the peroxid hydrates. For example, one can add to the solution of hypochlorites a small quantity of acetate of soda which facilitates the complete precipitation of the nitrate of cerium by the hypochlorite.

(4) By employing alone or simultaneously any organic chlorated composition having the same properties of oxidation. Certain chlorated organic compounds have the property of decomposing in the presence of water, giving rise to hypochloric acid capable of entering into a chemical reaction analogous to that which forms the subject of the invention. An example will be cited, namely, a solution of dichlorid in ether, ligroin or carbonic disulfid $\text{C}_6\text{H}_5\text{ICl}_2$ obtained by the action of chloral on iodobenzol is decomposed in the presence of water into ethyl iodid $\text{C}_2\text{H}_5\text{I}$, iodobenzene $\text{C}_6\text{H}_5\text{IC}$ and hypochloric acid HClO .

What I claim as my invention and desire to secure by Letters Patent of the United States is:

1. A process of manufacturing incandescent mantles, consisting in impregnating a base with a solution of salts of refractory earth comprising nitrate and hydrate of thorium, and passing said impregnated base into a bath of hypochlorite of soda.

2. A process of manufacturing incan-

descent mantles consisting in impregnating a base with a solution of salts of refractory earth comprising nitrate and hydrate of thorium, drying the base, passing same into a bath of hypochlorite of soda, then washing in distilled water and finally again drying the base so treated.

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

JACQUES VISSEAU.

Witnesses:

GASTON JEANNIAUX,
THOMAS N. BROWNE.

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