

UNITED STATES PATENT OFFICE.

WALDEMAR BRUNO, OF BERLIN, GERMANY.

PROCESS FOR THE MANUFACTURE OF INCANDESCENT MANTLES.

1,035,527.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, WALDEMAR BRUNO, a subject of the King of Prussia, and resident of 10 Liebenwalderstrasse, Berlin, German Empire, chemist, have invented a new and useful 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 and has for its object to obtain the illuminating salts in the form of oxalates on the fibrous material previous to incinerating the mantles. It has been found that by this means mantles can be obtained of excellent quality both as regards elasticity and firmness against tension and shock.

In carrying out my invention, the nitrates of the illuminating salts are converted into hydroxids, peroxids or their hydrates by treating with suitable alkalis or with hydrogen peroxid, or the like in the usual manner. The hydroxids, peroxids, or their hydrates are then converted into oxalates by subsequent treatment with a solution of oxalic acid. If desired however, the fibrous material may, as usual, be firstly treated with ammonium oxalate so as to give thorium-ammonium-oxalate and thereafter treated with oxalic acid to yield the ordinary oxalates.

Mantles prepared in the foregoing manner yield, at incandescent heat, an ash structure which possesses exceptionally good characteristics and is of excellent tenacity.

In order that the invention may be more clearly understood, the following process is given by way of example:—The fibrous material constituting the mantles is firstly saturated, in known manner, with soluble illuminating salts or nitrates and is thereupon treated in known manner with alkaline solutions, such as ammonia so as to convert the salts into the corresponding hydroxids. If desired however, the ammoniacal precipitation may be replaced by the well known hydrogen peroxid precipitation so as to convert the salts into the corresponding peroxids or their hydrates. Ammonium oxalate may also be added, if desired, to the precipitant in order to form double oxalates at this stage. The mantles are then washed to remove the soluble salts and are thereupon immersed in a moderately concentrated

(e. g. a 10 per cent.) solution of oxalic acid. The mantles are then dried and washed. The unburned mantles contain the illuminating salts as pure oxalates and, on incineration, yield a pseudo-morphous structure, consisting of oxids, of extraordinary elasticity and firmness.

I claim:—

1. A process for the manufacture of incandescent gas mantles from fibrous material, which consists in impregnating the fibrous material with illuminating salts, converting said salts into the corresponding oxygen compounds and thereafter converting said compounds into the corresponding oxalates previous to incinerating the mantles by treating said oxygen compounds with a solution of oxalic acid.

2. A process for the manufacture of incandescent gas mantles from fibrous material, which consists in impregnating the fibrous material with illuminating salts, converting said salts into the corresponding hydroxid compounds, and thereafter converting said compounds into the corresponding oxalates previous to incinerating the mantles by treating said hydroxid compounds with a solution of oxalic acid.

3. A process for the manufacture of incandescent gas mantles from fibrous material, which consists in impregnating the fibrous material with illuminating salts, converting said salts into the corresponding hydrated peroxid compounds and thereafter converting said compounds into the corresponding oxalates previous to incinerating the mantles by treating said compounds with a solution of oxalic acid.

4. A process for the manufacture of incandescent gas mantles from fibrous material, which consists in impregnating the fibrous material with illuminating nitrates, treating the nitrates with a de-nitrating agent and converting the resulting compounds of the illuminating nitrates into the corresponding oxalates by treating with a solution of oxalic acid previous to incinerating the mantles.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WALDEMAR BRUNO.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.