

UNITED STATES PATENT OFFICE

MAX OW-ESCHINGEN, OF VIENNA, AUSTRIA

PROCESS OF METALLIZING

No Drawing. Application filed December 3, 1929, Serial No. 411,398, and in Austria December 3, 1928.

It is already known to firmly apply good conducting metal coats to ebonite and other rubber articles in an easy and perfect manner, without causing any change in the shape of the finished article by a coating, etching and the like or without adding to the mass during the shaping of the article to be metallized substances which at a later stage render possible a metallization for instance by a reducing process.

It has been found that the principle applied in the case of ebonite articles can be readily applied in the case of a large number of articles if suitable solvents (swelling agents) and reducing agents are employed.

However in all cases care has to be taken, that the mass of the articles to be metallized is slowly swelling in the solvent of the reducing agent and the reducing agent is sufficiently soluble in the said solvent, but does not obstruct the swelling operation of the article to be metallized and that, after dipping the article into the reducing solution and subsequently drying the same, the original shape of the said article is not changed in any way and the article retains the reducing agent.

It has been found that in case of a satisfactory proportion between the solvent and reducing agent, the metal precipitates very quickly and dense as well as in such a thick layer on the material of the article, that it is not necessary to subsequently increase the effect by galvanic treatment. By simple rubbing of the metallized article, a high polish can be imparted to the same.

In case it is not desired to metallize the whole article, the places which are not to be covered with metal are covered with a coating, which does not obstruct the process of metallization, but is metallized and thus protects the part of the article below the same and can be readily removed with the non-required metal coating after the completion of the metallization with the result of sharp boundaries. Care has to be taken that the proper coating and solvent as well as reducing agent are chosen for the material to be metallized. For instance a cellulose ester lac

and in certain cases also an asphalt-lac can be used.

The following materials are well adapted for metallizing the articles formed therefrom:

Products of condensation of casein, for instance, with formaline, galalith; products of condensation of phenol, for instance with formaline, bakelite, as well as diverse mixed products of which at least one component can sufficiently be swelled up in the suitable reduction solution.

Example

A polished galalith-article is cleaned of fatty substances and immersed into a three to four percentage aqueous solution of hydroquinone. Now the article is well dried and placed into a reducible solution of a metallic salt (for instance silver). Firmly adhering metal is precipitated immediately. The article is perfectly metallized after repeating the process three times. The metal is highly polished by rubbing.

In case it is not desired to metallize (silvering) the whole article, the part which ought to remain free from metal are coated for instance with an acetyl cellulose lac.

The coat of lac is well metallized and can be readily removed by immersing the article with the metal coating in water.

I claim:—

1. Process of metallizing articles of condensation products of casein and albumin, consisting in first cleaning the article of fatty substances; then immersing the article in a 3 to 4% aqueous solution of hydroquinone; then drying the article and placing the same in a reducible solution of a metallic salt, thereby precipitating the metal.

2. Process of metallizing articles of condensation products of casein and albumin, consisting in first cleaning the article of fatty substances; then swelling by immersing the article in an aqueous solution of hydroquinone; then drying the article and placing the same in a reducible solution of a metallic salt, thereby precipitating the metal.

In testimony whereof I affix my signature.

MAX OW-ESCHINGEN.