

UNITED STATES PATENT OFFICE.

CONSTANT LAVAL, OF NEW YORK, N. Y.

MANUFACTURE OF MIRRORS AND SIMILAR SILVERED-GLASS ARTICLES.

SPECIFICATION forming part of Letters Patent No. 242,338, dated May 31, 1881.

Application filed January 13, 1881. (No specimens.)

To all whom it may concern:

Be it known that I, CONSTANT LAVAL, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in the Manufacture of Mirrors and Similar Silvered-Glass Articles, of which the following is a specification.

My invention relates to re-enforcing and protecting the silver backs of mirrors and other articles, and promoting the brilliancy of the same.

It consists in a novel process of depositing an electroplate or coating upon the silvered backs of glass articles, as will be hereinafter particularly described.

In carrying out my invention I prepare a solution consisting of distilled water, nine hundred and sixty cubic centimeters, hydrosulphate of ammonia, ($2\text{NH}_3\text{H}_2\text{S}$), 10 grains, which I designate solution No. 1.

I also prepare another solution, composed of blue vitriol, one hundred grams; distilled water, four hundred and eighty cubic centimeters; hydrosulphate of ammonia, five grams; cyanide of potassium, five grams—these ingredients to be thoroughly mixed in solution, which I designate solution No. 2.

Having these solutions ready, I take a mirror or other glass article which has been previously coated with silver by any of the usual processes, and wash the back of the same with my solution No. 1, and then immerse the article in a bath of my solution No. 2, which bath also contains a sheet of pure copper. I then, by means of a suitable galvanic battery or other electrical generator, treat the immersed article and bath in the usual manner pursued in electroplating for the space of about twenty-five minutes, when the silver coating of the article will be found to have acquired a firm metallic copper backing. The process is then complete, and, as will be seen, is simple, cheap, and speedy, and in addition to re-enforcing and protecting the silver coating condenses the same and causes it to have a greater brilliancy than when backed by any other means of which I am cognizant.

The washing with the first solution has the

effect of forming upon the silver a coating of sulphide of silver and slightly corroding the silver surface, so that the electroplate will adhere firmly thereto, it being otherwise liable to peel off.

I do not limit myself to depositing copper upon the backs of silvered-glass articles, as other metals capable of electro-deposition may be used, and in such case the solution No. 2 would be varied to contain a salt of the metal to be deposited instead of blue vitriol, and the bath should also contain a piece of the said metal instead of copper. The solution and means for electro-deposition should, in fact, conform to the requirements of the metal to be deposited, according to the known modes of electroplating.

I am aware that in a process of preparing articles to receive a metallic coating by electro-deposition such articles have been first coated with a solution of nitrate of silver and then treated with sulphureted-hydrogen gas, for the purpose of producing a surface of sulphide of silver, upon which a copper coating is electroplated, and I lay no claim to such process. In my process a metallic surface is produced by the precipitation of silver from the solution of gun-cotton and nitrate of silver, and the treatment with hydrosulphate of ammonia is for the purpose of slightly corroding this surface, so that the subsequently deposited electroplate will adhere firmly thereto, it being liable to peel off from a smooth base.

What I claim is—

The process of depositing an electroplate upon the silvered back of a glass article, substantially as described, the same consisting in first washing the back of the article in a solution of distilled water and hydrosulphate of ammonia, and then subjecting it to a process of electroplating, substantially as described.

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

CONSTANT LAVAL.

Witnesses:

HENRY EDER,
J. A. RUTHERFORD.