# United States Patent Office.

HOWELL W. WRIGHT, OF TAUNTON, MASSACHUSETTS.

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## IMPROVEMENT IN ELECTROPLATING AND PLATED WARE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, HOWELL W. WRIGHT, of Taunton, in the county of Bristol, and State of Massachusetts, have invented a new and useful Improvement in Electroplating; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable one skilled in the art to make use of my invention.

In the ordinary method of electroplating metals with silver, the article to be plated is first dipped in a strong solution of potash or acids, and scoured with coarse sand or pumice, to clean the metal before immersing in the plating-bath, which destroys the surface, leaving it ragged. The article is then immersed in the plating-bath, and the deposit commences.

The silver being deposited upon this broken surface, gives the cyanides a chance to deposit in porous cells produced by dipping and scouring, which makes, on burnishing, an uneven surface. The burnishing compresses the porous cells of deposited silver and cyanides, leaving it ragged, with coarse-grained, opaque layers, which, exposed to the action of the atmosphere, the cyanides will be thrown from these porous cells, whereby the article plated will be spotted or tarnished, and often destroyed.

On Britannia or white metal, which is so extensively used, it being a softer metal, the burnisher crumples or stretches the metal, making sharp or burred edges.

My improvement consists in so preparing the surface of the metal to be plated that it is not necessary to use the burnisher in finishing the same.

I have found by experience that the surface of white metal (commonly called Britannia) may be easily polished before electroplating, and that the silver deposited on this polished surface is in an extremely fine state of divisions, so that when the ware is taken out of the plating-bath, it retains its original brilliant surface, requiring but very little further finishing, which may be done on a cotton buff.

I polish the article which is to be plated by means of a common cotton "buff," until it has the required surface necessary for the finished article. I then immerse it in the electroplating-bath until it has acquired the requisite weight of metal from the solution. It is then ready for the buff, which can be done for one-quarter of the cost of hand-burnishing.

I have found by experience that this finished article can be much improved by a second plating of pure silver.

I take the polished or brightly-plated article, which is subject to the changes before mentioned, and immerse it in the silver-bath, letting it remain there until the required transparent layers of silver are deposited; remove it, and it is ready for the last finish, which is done in a very short time on a cotton buff.

This second plating of the polished surface provides a permanent covering of silver, which prevents any oxidation or chemical action.

This plating is not like the first, inasmuch as only pure silver is deposited, and that in such an extremely fine state of division that the original polish is not disturbed.

The usual method of finishing electroplated ware is by burnishing, which leaves the surface quite imperfect, especially on Britannia or white metal. An article finished in this way often becomes dimmed, and frequently spotted after remaining in store.

Having thus described my improvement, I claim as new, and desire to secure by Letters Patent—

The art of electroplating polish-ware at once, without dipping in acids or other dips that affect the polished surface.

I claim as my invention, the process of electro-silver-plating the previously polished electroplated article, with a protective transparent layer of pure silver, all substantially as and for the purposes set forth.

HOWELL W. WRIGHT.

Witnesses:

C. P. HARRIS,

GEO. E. CHAMBERS.