

# UNITED STATES PATENT OFFICE.

JOSEPH G. WARD, OF NEWARK, NEW JERSEY.

## PROCESS OF ELECTROPLATING DENTAL PLATES.

SPECIFICATION forming part of Letters Patent No. 418,662, dated December 31, 1889.

Original application filed April 11, 1887, Serial No. 234,853. Divided and this application filed November 17, 1888. Serial No. 291,153. (No specimens.)

*To all whom it may concern:*

Be it known that I, JOSEPH G. WARD, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in the Process of Electroplating Dental Plates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a process by means of which complete dental plates ready for the setting of the teeth may be produced by electro-deposition, and the steps and processes are essentially as follows: making a positive cast of the mouth or jaw of the patient from plastic or other appropriate material in the ordinary manner, rendering the surface thereof conductive, and depositing thereon a plate in two or more strata of different metals superposed one upon the other by electro-deposition.

The following detailed description will more fully disclose the manner of carrying my said process into practice.

The invention is carried into effect by taking a cast or impression of the mouth or jaw in wax, plaster, or other suitable material, and from it getting a positive cast in wax or plaster in the usual manner, and after the latter has become thoroughly hardened the surface is metallized or made conductive by applying bronze-powder, plumbago, black-lead, or any of the other ordinary conducting agencies. Then the mold or positive cast is submerged in an electrolytic bath composed of any of the metallic salts—such as a double cyanide of silver and potassium, or others commonly employed in obtaining metallic electro-deposits of the metal or metals of which it is designed to make the plate. The positive cast is allowed to remain in the bath a short time, or until the deposit has attained the requisite thickness over the alveola ridge, when it is removed and stopped out over the said ridge and again returned to the bath and thickened at the center of the plate, so that a ridge or shoulder is formed against which the vulcanite may rest on the lower side of the plate to secure a well-marked line of sep-

aration. It is then placed in another bath of another metallic salt—such as that of a double cyanide of gold solution—and allowed to remain therein until a deposit of the required thickness has been superposed upon the plate first deposited, thus producing a plate of two or more metals by electro-deposition. The gold serves to prevent the sulphur of the vulcanite from affecting the silver, and thus the said vulcanite is given a perfect hold on the plate. After the plate has been taken from the bath and its edges trimmed into proper shape, (which trimming may be done before applying the gold,) it may then, if desired, be covered or partially covered on the outer or lower side with a layer of vulcanized rubber or other suitable material, and the teeth adjusted in the usual way, or the teeth may be soldered directly to the plate. After the plate has thus received the teeth a final and heavy layer of gold is deposited, so that the saliva of the mouth will not penetrate to the silver and oxidize the same, and thus form a black deposit on the gold. By this method I am enabled to secure a plate of uniform thickness, and one which will perfectly fit the mouth in every part and at a greatly reduced cost as compared with the method heretofore practiced.

The present application embraces matter which is mentioned in an application filed by me on the 11th of April, 1887, Serial No. 234,853, and is therefore a division of such application.

Having thus described my invention, what I claim as new is—

The process of making dental plates, which consists in making a positive cast of the mouth or jaw, of plaster or other appropriate material, in the usual way, and, after making the surface conductive, depositing thereon two or more strata of different metals, one upon the other, by electro-deposition, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of November, 1888.

JOSEPH G. WARD.

Witnesses:

CHARLES H. PELL,  
WALLACE DURAND.