

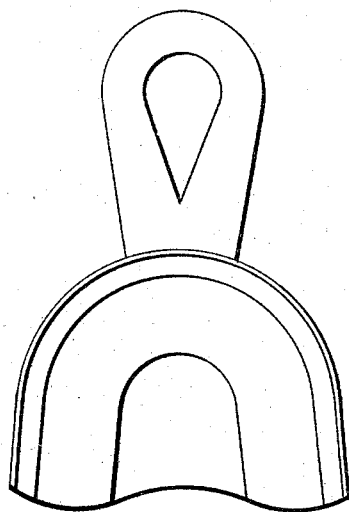
(No Model.)

J. A. A. SCHOONDERMARK.  
DENTAL PLATE.

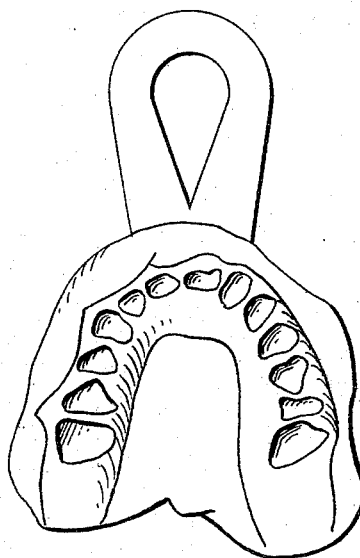
No. 493,843.

Patented Mar. 21, 1893.

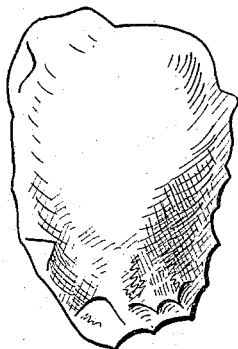
*Fig. 1.*



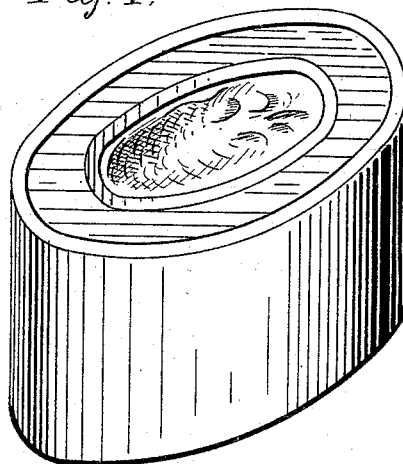
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:

*E. Kaiser.*

*Carl Popsbach.*

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*Johannes Ahasuerus*  
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# UNITED STATES PATENT OFFICE.

JOHANNES AHASUERUS ANNE SCHOONDERMARK, OF LEEUWARDEN,  
NETHERLANDS.

## DENTAL PLATE.

SPECIFICATION forming part of Letters Patent No. 493,843, dated March 21, 1893.

Application filed July 5, 1892. Serial No. 439,021. (No model.)

*To all whom it may concern:*

Be it known that I, JOHANNES AHASUERUS ANNE SCHOONDERMARK, a subject of the Queen of Holland, and a resident of Leeuwarden, in the Kingdom of Holland, have invented certain new and useful Improvements in and in the Manufacture of Artificial Palates or Dental Plates, of which the following is an exact specification.

My invention relates to an improved method of manufacturing artificial palates, especially of gold, to which false teeth are secured.

The object of my invention is to produce a dental plate which will closely adhere to the upper jaw, without the employment of air-chambers or clamps, which were usually indispensable hitherto.

My invention consists in first taking an impression of the upper jaw and the hard palate by means of a plastic mass, in producing a negative copy of the palate by means of electro-deposition, in making hereafter a positive copy by impressing the negative into molten metal, in taking thereupon a solid metallic negative copy, and in pressing finally a plate or foil of suitable material, preferably gold, between the positive and negative copy, which thus perform the function of dies.

My invention will be more readily understood by reference to the accompanying drawings, in which:

Figure 1 shows the form of holder employed for applying a plastic mass on the palate and upper jaw. Fig. 2 represents the same with the plastic mass upon it, after the impression has been taken. Fig. 3 shows the impression-mold partly filled with wax. Fig. 4 illustrates the manner of obtaining the positive copy.

Similar figures denote similar parts throughout the several views.

The artificial palate or dental plate is manufactured as follows according to my improved method: I first take the holder represented in Fig. 1, and put on the same a lump of the mass used by dentists for taking the impression of the palate and the upper jaw. The holder is then inserted into the mouth of the patient, and the plastic mass applied on the palate and upper jaw, so that an impression-mold of these parts is obtained, as shown in Fig. 2. The exterior edge of this mold, up to

the impression of the jaw, is then cut away, and the mold filled with wax on one side, so that it assumes about the shape of a cone, as will be seen in Fig. 3. This conical body is covered with graphite on its surface by means of a brush or in any other suitable manner, hereafter a metallic wire, preferably a copper wire, is inserted in or passed through said body, and the latter placed in a bath of sulphate of copper, where a galvanic deposit is formed on the same by means of an electric current, in the usual fashion. Thus I obtain an exact metallic copy of the impression-mold. When this copper-mold is strong enough, it is taken out of the bath, an opening is made at the top of the mold, and through this opening the impression-mold proper and the wax are removed. The cavity in the copper-mold is then filled with gypsum, and the outer surface of the mold strongly coated with tin. Then the copper-mold which is a negative copy of the palate is pressed rapidly into molten type-metal contained in the mold-box shown at Fig. 4. Thus a metallic positive copy is obtained. Hereafter the gypsum is taken out of the copper-mold, and by casting into the latter first type-metal and then lead I obtain two additional solid negative copies. One of these negative copies, in combination with the positive one obtained before, is employed for producing the artificial palate. The latter consists of a thin plate or foil of gold, though I may employ other metals or materials, and is produced by pressing the said gold foil between the mentioned positive and negative copies.

The article manufactured according to my improvements is of a very superior quality, as it fits quite exactly on the palate and against the upper jaw. Thus an artificial palate made according to my improved method will be held firmly in place without the employment of clamps or air-chambers which have been commonly used. I prefer to make the artificial palate of gold, as this material is best suited for this particular purpose on account of its high resistance to chemical and mechanical action.

The artificial palates made of rubber, which hitherto could be made to fit better than those made of gold, were objectionable owing to

their occasioning complaints and diseases, one of which has become known under the name of "rubber-sore mouths."

5 The artificial palates or dental plates manufactured according to my invention fit very exactly, and have no noxious influence upon the mouth.

10 Having thus fully described the nature of my invention, what I desire to secure by Letters Patent of the United States is—

15 The method of manufacturing artificial palates or dental plates, consisting in pressing the plate or foil which constitutes the material for said palate, between two molds or dies, the positive being obtained by forming

an electro-deposit of copper on an impression-mold taken by means of a plastic mass, and by impressing this copper-mold into molten metal, and the negative being obtained by casting some metal into the copper-mold, substantially and for the purpose as described. 20

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHANNES AHASUERUS  
ANNE SCHOONDERMARK.

Witnesses:

B. C. HOPMAN,  
A. S. DOCEN.