

No. 725,506.

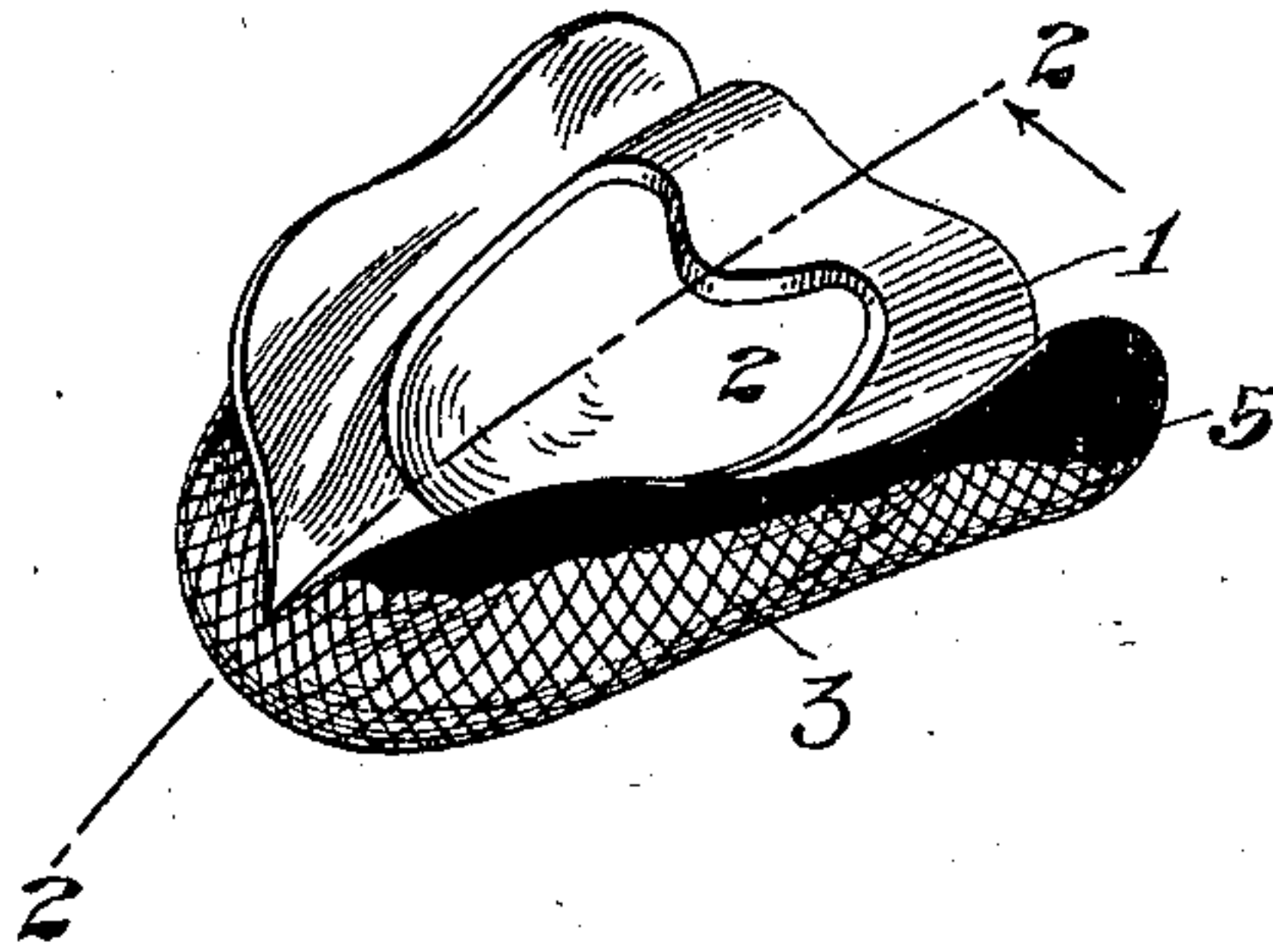
PATENTED APR. 14, 1903.

S. G. SUPPLEE.  
DENTAL PLATE.

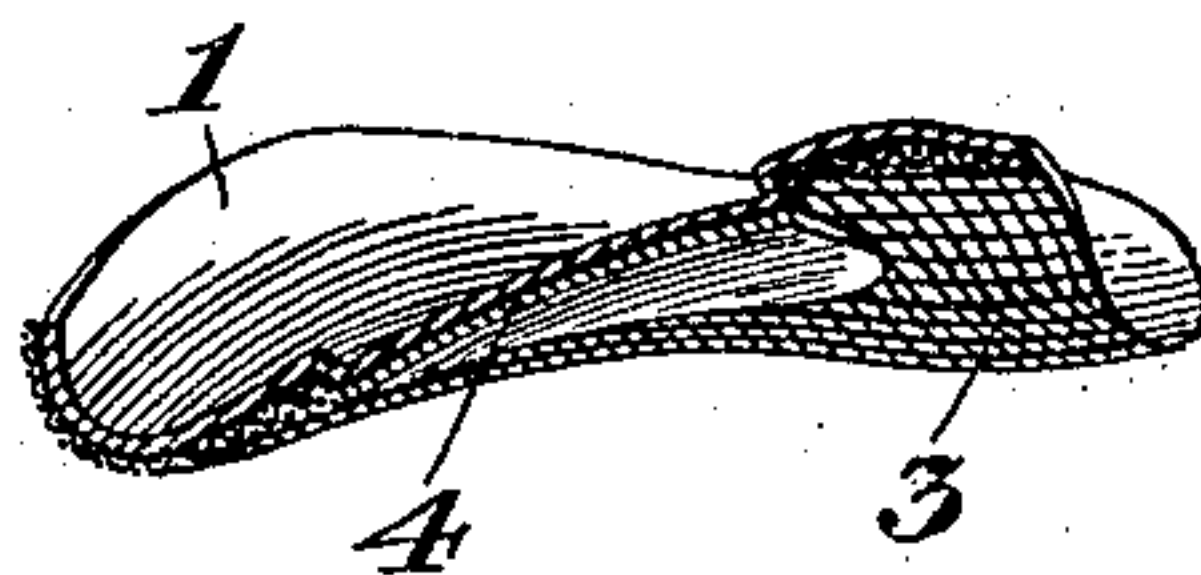
APPLICATION FILED JULY 8, 1902.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## DENTAL PLATE.

SPECIFICATION forming part of Letters Patent No. 725,506, dated April 14, 1903.

Application filed July 8, 1902. Serial No. 114,719. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL G. SUPPLEE, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Dental Plates, of which the following is a specification.

My invention relates to dental plates; and it is my purpose to provide a plate which shall possess the advantages of a gold plate in addition to the advantages of a rubber plate, at the same time producing a construction substantially cheaper than all-gold plate, yet strong, efficient, and durable in every particular. The base-plate is formed of gold, silver, platinum, or some other suitable and proper metal to serve as the contact or bearing member which engages with the roof of the mouth or "palatal surface," as it is termed. To this a coating of rubber, celluloid, or other suitable material of a proper thickness is applied on the labial surface. The palatal surface of the plate being metallic can be fitted more accurately to the roof of the mouth than can rubber. This is a recognized fact in mechanical dentistry, and in this respect metal plates are acknowledged to be superior to rubber plates. Inasmuch as it is not within the means of many to purchase gold plates, I have by my invention produced a device which is substantially less costly than an ordinary all-gold plate. The device is also superior in strength and in fit to an all-gold plate, while at the same time being thinner and lighter. The bearing-surface of the base-plate is smooth and imperforate, by which I mean that in these respects the bearing-surface corresponds to the usual gold plate. The opposite surface of the base-plate, however, is different in that it is cellular or reticulated for the purpose of giving to a rubber coating a secure anchorage to prevent peeling. I have a preferable method of forming the reticulations or cells in this surface of the base-plate which I will hereinafter explain and claim.

In the drawings, Figure 1 is a perspective view. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is the transverse section illustrating a modification.

The drawings illustrate my invention as it is applied to an upper plate; but any one

skilled in the art would understand from a reading of the following description how to construct a lower plate in keeping with my invention. Hence it is needless to separately illustrate a lower plate in detail.

1 is the base-plate, which is shaped to fit accurately to the roof of the mouth of any particular wearer.

2 is an air-chamber usually provided in upper plates.

3 is the cellular or reticulated surface of the plate. 5 illustrates a portion of the rubber coating, such as is applied to said reticulated surface. The reticulations or cells are provided in that portion of the base-plate 1 to which the rubber coating is to be applied, and when the article is finished they provide a secure anchorage for said coating.

In the preferred method of constructing a plate to embody my invention a form is first taken of that portion of the mouth to which the plate is to fit. A die or model is made to correspond thereto. A sheet of gold or other suitable metal of the proper thickness is placed over said die and forced upon it, so that it will correspond identically to all the impressions of said die. I then place upon that surface of the base-plate to which the rubber coating is to be applied a thin wire gauze or cloth, which may be of the same metal as the base-plate. This wire-cloth is then pressed into the shape of the base-plate, and upon it I sprinkle fine particles of solder, which when heated firmly and permanently unite the gauze with said plate, so that it is practically a part thereof. By this means this surface of the base-plate is made cellular or reticulated, and the cells or reticulations will be seen to be enlarged at the base, forming, in effect, undercut cavities into which the rubber is projected and firmly clenched or anchored when finally vulcanized. A base-plate formed as above described may be trimmed at any time at its edges or reswaged to fit exactly in the event of shrinkage of the tissues and to be of exactly the desired height and conformation. The artificial teeth and the rubber coating may be applied to the base-plate in the usual way. When the rubber is in the plastic state, it flows readily over the cellular surface of the plate and into the interstices and reticulations therein.



In Fig. 2 it will be seen that the reticulated portion of that surface of the base-plate to which the rubber coating is to be applied extends to the edge of the air-chamber 2. A separate plate 4 of metal, preferably corresponding to the metal constituting the base-plate 1, is united directly with the lower wall of the air-chamber. As shown in Fig. 2, this plate 4 is slightly larger than the dimensions of the air-chamber, so as to overstand the same at the edge and form a recess into which the rubber coating will project when applied, thus still further anchoring the same to said base-plate. When the plate is finished and ready for use, the coating of rubber on the lingual side is smooth and substantially flush with the surface of the plate 4, but does not cover it. It will thus be seen that the plate 4 is exposed on its lower side, and hence the finished article will possess the desirable thermal qualities peculiar to an all-gold plate.

By the term "rubber" I of course include all such materials as can be employed to form a suitable lingual surface. By "lingual surface" I intend to include that surface of the base-plate adjacent to the cheek (termed the "buccal surface") as well as to the tongue.

The device of Fig. 3 differs from the device of Fig. 1 merely in that the air-chamber is lacking in the former and in that the wire-gauze covers the space occupied by said air-chamber. This figure shows to better advantage the enlargements corresponding to undercuts in the cellular surface of the base-plate.

What I claim is—

1. A base for a dental plate comprising, a metallic plate, the bearing-surface of said base-plate being smooth and imperforate, the opposite surface being reticulated or cellular, substantially as described.

2. A base for a dental plate comprising, a metallic plate, the bearing-surface of said base-plate being smooth and imperforate, the opposite surface being reticulated or cellular, said reticulations or cells being enlarged at the base.

3. In a dental plate, a metallic base-plate having a smooth and imperforate bearing-surface, a coating of rubber secured to the lingual side of said base-plate, those portions of the base-plate to which said coating is applied

being provided with reticulations or cells to afford an anchorage therefor.

4. In a dental plate, a metallic base-plate having a smooth and imperforate bearing-surface, the opposite surface being reticulated or cellular, said reticulations or cells being enlarged at the base, and a coating of rubber on said reticulated surface, said rubber extending into said cells or cavities.

5. In a dental plate, a metallic base-plate comprising a thin sheet of metal shaped to correspond with that portion of the mouth against which it is to bear, a woven-wire gauze permanently united with said plate on its exposed surface, a coating of rubber affixed to said plate at those portions bearing said gauze.

6. In a dental plate, a base-plate formed of thin sheet metal shaped to correspond with that portion of the mouth against which it is intended to bear, a wire-gauze soldered to that surface of the base-plate to which rubber is to be applied, the said base-plate and wire-gauze being permanently united, and a coating of rubber borne by that portion of the plate to which the wire-gauze is attached.

7. In a dental plate, a thin sheet-metal base-plate one surface of which is smooth and imperforate to constitute the bearing-surface, cells or reticulations provided on the opposite surface of said plate, an air-chamber in said base-plate, a coating of rubber on the cellular surface of said plate, the metallic wall of the air-chamber being uncovered on both the palatal and lingual surfaces.

8. In a dental plate, a thin sheet-metal base-plate having a smooth and imperforate bearing-surface, cells or reticulations on the opposite surface, an air-chamber therein, a metallic plate covering the lingual side of said air-chamber and projecting slightly beyond the same to form a recess at the edge of said air-chamber on the lingual side, a coating of rubber on the cellular portion of said plate and projecting into said recess.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

SAML. G. SUPPLEE.

Witnesses:

F. O. MCCLEARY,  
J. C. PYBAS.