J. PETRY.

DENTAL SUCTION PLATE.

APPLICATION FILED NOV. 30, 1910.

1,005,296. Patented Oct. 10, 1911.

FIG. 1

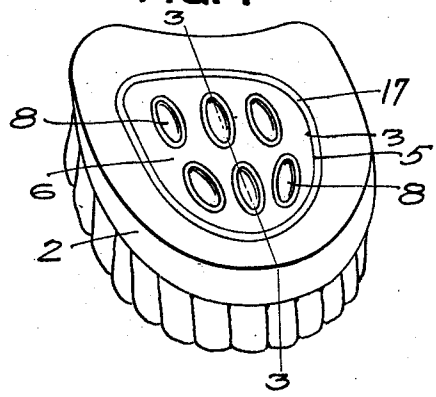


FIG. 2

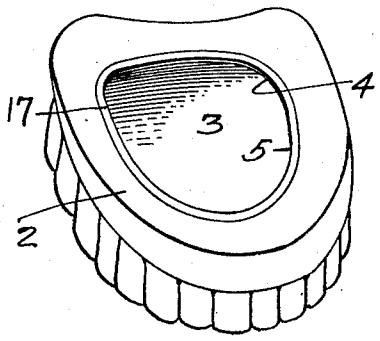


FIG. 4

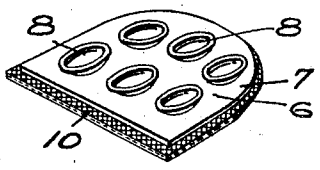


FIG. 3

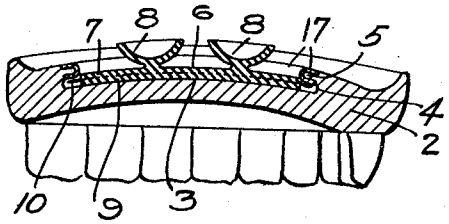


FIG. 5

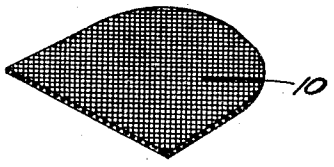


FIG. 6

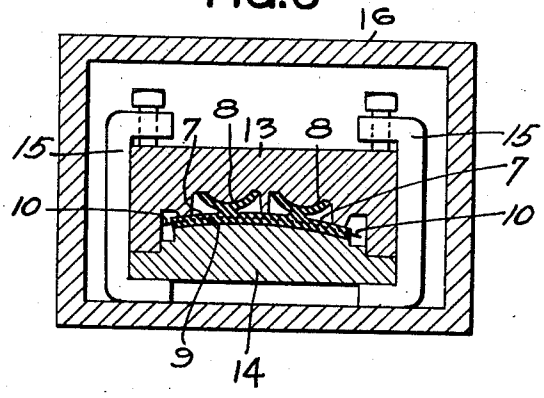
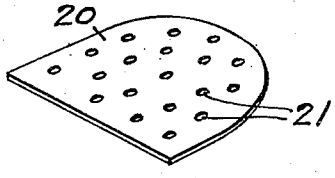


FIG. 7



WITNESSES.

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DENTAL SUCTION-PLATE.

1,005,296. Specification of Letters Patent. Patented Oct. 10, 1911.

Application filed November 30, 1910. Serial No. 594,849.

To all whom it may concern:

Be it known that I, JACOB PETRY, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Dental Suction-Plates; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to dental suction plates.

In Letters Patent of the United States No. 963,172 granted to me on the 5th day of July, 1910, I have illustrated and described a method of forming dental suction plates in which the suction-cups are formed integrally with the plate, the cups being united to the plate by a neck portion which makes them, as well as the plate itself, very flexible. I have found that where these suction-plates are mounted in the mouth plates, the flexible suction-plates do not possess sufficient rigidity, and the cups when in use stretch the rubber of the suction-plates unduly which interfere to a certain extent with the successful operation of such suction-plates.

The object of my present invention is to provide a suction-plate which will readily conform to the contour of the mouth-plate, but possessed of sufficient stiffness or rigidity to prevent the undue stretching of the cups when in use.

To these ends my invention comprises, generally stated, a dental suction-plate comprising an upper flexible rubber plate having cups thereon, a lower flexible rubber plate and an intermediate metal reticulated member, the upper and lower rubber plates being forced through the openings in such member and vulcanized to form an integral connection, whereby the cups are supported with greater firmness and cannot stretch to the same extent as where such an intermediate metal member is omitted.

Referring to the drawings, Figure 1 is a perspective view of a dental plate showing my improved suction plate applied thereto; Fig. 2 is a view of the mouth plate with suction-plate omitted; Fig. 3 is a section of the same on the line 3—3 Fig. 1; Fig. 4 is a perspective view of the suction-plate removed; Fig. 5 is a view of the reticulated intervening member; Fig. 6 is a cross-section of vulcanizer; and Fig. 7 shows a modified form of my invention.

In the drawings the numeral 2 designates an ordinary mouth-plate having the central recessed portion 3 with the underlying groove 4 formed by the overhanging portion 5 of the plate 2.

The suction-plate 6 is composed of the upper layer of rubber 7 having the cups 8 formed integral therewith in accordance with said Letters Patent above referred to, and the lower layer 9 with the intermediate metal member 10. This intermediate metal member may be composed of wire-mesh, as illustrated in Fig. 5, and this wire mesh is formed of suitable metal such as aluminum or other metal which will withstand the heat required for vulcanization. The member 10 is inserted between the upper layer 7 and the lower layer 9 of the suction plate and the whole is then subjected to vulcanization in a suitable vulcanizer, pressure being applied to force the rubber of the upper and lower layers through the openings in the wire-mesh so as to cause the rubber of the upper and lower layers to unite and form an integral structure. The rubber employed for the plates is practically pure rubber so that when the vulcanization has taken place, the finished plate composed of the upper and lower layers with the interposed member 10 is flexible so that it can be readily adjusted to conform to the mouth plate. In Fig. 6 I have shown a manner in which this is accomplished and I employ a suitable mold composed of the upper and lower halves 13 and 14. The upper half of the metal is formed to conform to the upper plate 7 of the suction plate and the lower half 14 to force the lower plate 9. The intermediate member or wire mesh 10 is interposed between the plates 7 and 9 and the clamps 15 are adjusted so as to force the rubber of the plates 7 and 9 through the openings of the wire mesh. The mold is then placed in a suitable vulcanizer 16 and the rubber vulcanized so that the plates 7 and 9 are integrally united.

If desired, the edges of the wire-mesh 10 may extend beyond the edges of the rubber plates so as to provide a projecting flange to be tucked into the recess 4 beneath the overhanging portions 5 of the mouth plate. In order to protect the overhanging portions 5 of the mouth, said overhanging portion may be provided with the metal edging 17. Before, however, inserting the suction-plate in this manner, a suitable cement, such as

copper cement, is applied to the mouth plate 2 in the recess 3, and when the suction plate 6 is applied and inserted in the above manner, the cement will be forced in around the crevices of the groove 4 not filled up by the suction plate so that said plate will be sealed against the entrance of moisture and the lodgment of food, thus providing a sanitary construction.

In this manner I provide a dental suction plate which is stiffened to a certain extent by the introduction of the intermediate metal member which prevents the cups from stretching or elongating unduly when in use and holding the mouth plate securely up within the roof of the mouth. The intermediate metal member gives just sufficient rigidity to the suction plate to prevent this undue stretching of the cups when in use and at the same time the intermediate member is sufficiently flexible, so that the suction plate can be readily introduced into the recessed opening in the mouth-plate, and conforms readily to the shape thereof.

In Fig. 7 I have illustrated a modified form of my invention in which instead of using a wire mesh for the intermediate member, I may employ a plate 20 with a plurality of apertures 21 formed therein, said plate being sufficiently thin to be bent freely, the rubber being forced through the openings to form an integral structure in the same manner as above described.

It is apparent that my invention is equally applicable where a single large cup is employed instead of a plurality of small ones.

What I claim is:

1. A dental suction plate comprising an upper layer of flexible rubber having cups, a lower layer of flexible rubber, and an intermediate flexible reticulated metal-member, the upper and lower rubber layers being united integrally through the openings in said metal member.

2. A dental suction plate comprising an upper layer of flexible rubber having cups, a lower layer of flexible rubber and an intermediate flexible reticulated metal member, the upper and lower layers being integrally united through the openings in said intermediate member, and the edges of said metal member projecting beyond the edges of the rubber.

3. The combination of a dental plate having a recess formed therein having an overhanging lip forming a groove, a dental suction plate comprising an upper layer of flexible rubber with cups, a lower layer of flexible rubber and an intermediate flexible metal member, the edges of said metal member projecting beyond the edges of the rubber and entering said groove.

In testimony whereof, I the said JACOB PETRY have hereunto set my hand.

JACOB PETRY.

Witnesses:
ROBERT C. TOTTEN,
JOHN F. WILL.