No. 753,128. PATENTED FEB. 23, 1904.

O. E. DRISCOLL.

DENTAL PLATE MOLD.

APPLICATION FILED SEPT. 26, 1903.

NO MODEL.

Fig 1.

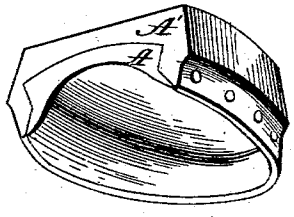


Fig 2.

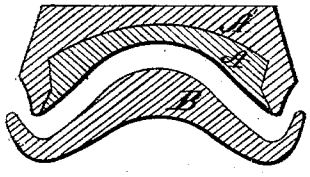


Fig 3.

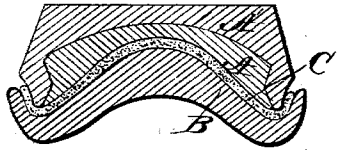


Fig 4.

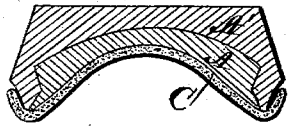


Fig 5.

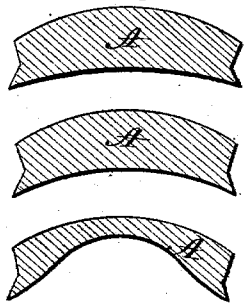
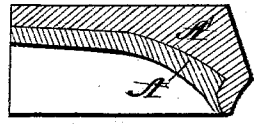


Fig 6.



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No. 753,128. Patented February 23, 1904.

UNITED STATES PATENT OFFICE.

OWEN E. DRISCOLL, OF CHARLOTTESVILLE, VIRGINIA.

DENTAL-PLATE MOLD.

SPECIFICATION forming part of Letters Patent No. 753,128, dated February 23, 1904.

Application filed September 26, 1903. Serial No. 174,814. (No model.)

To all whom it may concern:

Be it known that I, OWEN E. DRISCOLL, a citizen of the United States, residing at Charlottesville, in the county of Albemarle and State of Virginia, have invented a new and useful Improvement in Dental-Plate Molds, of which the following is a specification.

My invention is in the nature of a mold to be used in molding plates for artificial teeth after the impression has been taken.

It consists of a palate portion made in two sections of metal fitting together, the inner section of which is made one of an interchangeable series, each having an arch of different height to be selected and used according to the shape of the particular impression. Ordinarily this palate portion of the mold is made of plaster-of-paris. The use of plaster-of-paris is attended with several difficulties, all of which contribute to an imperfect fit. Plaster-of-paris always expands in setting. It also expands with heat when put in the vulcanizer. The greatest trouble is found, however, when the rubber sheet is put over the mold and the flask is closed by the action of the clamping-bolts. Then the strain causes a yielding and depression of the plaster at the arch that forms a too sharp curve on the palate-surface that produces a lump on the roof of the plate. This makes an imperfect fit and allows the plate to rock in the roof of the mouth. To avoid this difficulty, I make the body of the palate portion of metal, so that only a thin layer of plaster is required, and in order to accommodate different arches of the roof of the mouth this metal body part has a detachable inner section that can be removed and another of an approximate arch to the impression fitted in. Then the body portion of the mold, being almost entirely of metal, with only a thin layer of plaster, does not involve the expansion of a large body of plaster in setting and when heated and does not yield, spring, or bend when shut up in the flask, and consequently does not distort the true arch of the impression.

Figure 1 is a perspective view of the two-part metal body of the palate portion of the mold. Fig. 2 shows a cross-section of the same and also of the impression juxtaposed thereto. Fig. 3 is a similar cross-section showing the thin layer of plaster C interposed between the impression B and the two-part metal body of the palate portion of the mold. Fig. 4 shows in cross-section the complete palate portion of the mold as formed by the two-part metal body and the surface of plaster bearing the reverse of the impression and ready to receive the thin sheet of rubber which is to form the plate. Fig. 5 represents in cross-section a series of removable inner sections of the metal body of the palate portion of the mold, each one of the series having a different arch to approximate the varying contours of different mouths and each being interchangeable; and Fig. 6 is a longitudinal vertical section through the two-part metal body of the palate portion of the mold.

In the drawings, A A′ represent the two-part metal body of the palate portion of the mold. These are made of metal, preferably alumina for lightness. The inner portion A is made with a slip-joint, fitting closely into A′, and said inner portion is one of a series of such inner portions, as shown in Fig. 5, each of which has a different arch, the upper one being the shallowest and the lower one the deepest, but the upper surfaces of each of which sections are all alike and of the same size and fit interchangeably into the recess in the part A′.

B represents the impression taken of the patient's mouth. This having been taken in the usual way, one of the sections shown in Fig. 5 is selected, the height of whose arch corresponds most closely to the height of the arch in the impression B. This metal section is then fitted into A′, so that a space of nearly a uniform thickness will be left between the two-part mold A A′ and the impression B when juxtaposed, as seen in Fig. 2. This space is to be filled by the thin layer of plaster C, as shown in Fig. 3, for which purpose the plaster is applied by separately pouring it onto the adjacent faces of A and B, after which the parts A and A′ on one side and the impression B on the other are brought together on the soft plaster C. This completes the palate portion of the mold, as seen in Fig. 4, in which the

lower surface of the plaster C is the counterpart of the upper part of the impression B, and consequently is an exact reproduction of the roof of the mouth. Onto this lower surface of the plaster C is then laid the sheet of rubber which is to form the plate, and the parts shown in Fig. 4, with a layer of rubber below C, are then locked up in the flask, the necessary pressure applied by screw-bolts, and the rubber plate is pressed to shape and vulcanized. It will be seen that in this operation the palate portion of the mold seen in Fig. 4 instead of being made all of plaster has only a thin layer C of plaster, which reduces to a minimum the expansion from setting and from heat, while the strength and rigidity of the metal body portion A A′ prevent the yielding or springing of the mold when locked up under the pressure within the flask, and consequently avoids distorting the true curve of the arch and makes the rubber plate to exactly conform to the roof of the mouth, making a perfect fit, with no rocking of the plate.

I do not confine myself to the use of metal for the two-part mold A A′, but may use any rigid material capable of withstanding heat and pressure without distortion.

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

1. A mold for forming the palate portion of a dental plate, said mold being made of rigid material and in two sections, the inner section having an approximate arch to the roof of the mouth and being removable and interchangeable with others of a series substantially as and for the purpose set forth.

2. A mold for forming the palate portion of a dental plate, said mold being composed of a two-part rigid body part, the inner part being removable and interchangeable with others having arches approximating the roofs of different mouths, and a thin layer of plastic material applied to said inner part and receiving on its outer face the counterpart of the mouth-impression substantially as described.

3. A mold for forming the palate portion of a dental plate comprising a two-part body portion made of metal the inner part being fitted in the outer part with a slip-joint and made interchangeable substantially as described and for the purpose set forth.

OWEN E. DRISCOLL.

Witnesses:
C. B. MARCHANT,
EPPA RIXEY.