Construction of a Thin Vulcanite Palate Retainer

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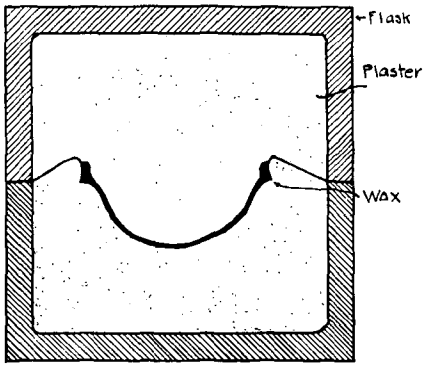
The vulcanite palate retainer for the maintenance of arch width has long been a favorite with the orthodontist. It is easy to make and lends itself readily to the addition of various accessories, such as the labial wire, incisal hooks, bite plane, etc., that are so frequently necessary.

Its main drawback has been the difficulty of making the patient wear it conscientiously and this has undoubtedly been due, in many cases, to the fact that its bulk and design have made normal function uncomfortable if not impossible.



Retainer Waxed and Flasked

Figure 1

The following technique has been developed in an effort to eliminate some of these difficulties and the results gained over six years use have proved that interference is cut to the minimum without any loss of the desirable features of this type of retention.

The first step in constructing the retainer is the careful taking of the plaster impression. The impression must have in detail the entire palate showing rugae, the lingual surfaces of the teeth, the gingival line and embrasures. The impression after being taken, is washed and allowed to dry. It is then assembled and painted lightly and carefully with two coats of shellac and one coat of sandarac varnish. After the varnish has hardened, the impression is poured with a good quality plaster. When this has tho-

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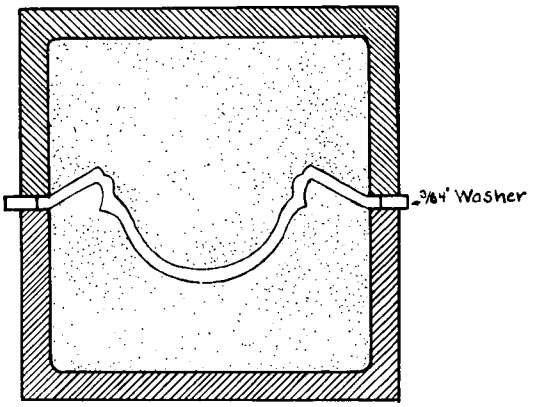
roughly hardened, the impression is cut away, leaving a model showing all the details desired.



Halves of Flask Separated by Washer After Packing

Figure 2

The model is now heated in warm water and a No. 30 gauge casting wax, also warmed in water, is gently adapted to the palate and lingual surfaces of the teeth. The adaptation of the wax to the model must be done carefully in order that the retainer's lingual surface shall closely resemble the palate. A swab of cotton soaked in hot water and the use of an art gum eraser, help materially in this adaptation. Care must be exercised in this step to avoid undue pressure in high spots which will cause a thinning of the wax over these areas.

The wax is then trimmed to the desired outline of the case. Generally it is trimmed to the middle of the second molars distally and on the lingual surfaces of the teeth to ½ to 2/3 the height of their crowns. In order to insure the same thickness of material against the teeth as will be obtained over the palate, it is necessary to add an extra thickness of wax, in the form of a strip, to the lingual surfaces of the buccal teeth. This is carefully adapted and then the gingival line is accentuated with an instrument.

The model is then invested in the lower half of the flask. It is trimmed to draw, and painted with a separating medium. The upper half of the flask is then poured. Fig. 1. When the plaster has hardened, the flask is warmed and separated, and the wax is thoroughly removed. The retainer surfaces

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of both upper and lower halves of the flask are painted with a light coat of silex, and allowed to dry. If any attachments are used be sure *not* to cover them with any of the denture coating. A good grade of base plate rubber, one thickness, is cut to cover the entire area of the retainer. If any attachments are used, care must be exercised in packing around the ends.

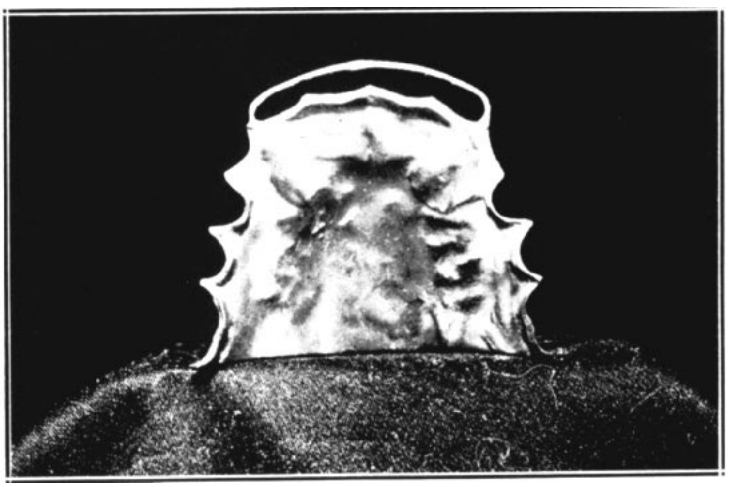

Figure 3
The finished plate. (Courtesy of Dr. Strang)

Thus far our technique has accomplished the following things for us: it has permitted a close and even adaptation of light wax, so that the details of the palate have been reproduced on the tongue side of the plate. The silex has given us surfaces of such a finish that no polishing need be done after vulcanization. On the other hand it has cut the thickness to such an extent as to be too weak for practical use. This defect is taken care of after the rubber has been placed in position and before the flask is bolted together. Washers 3/64 of an inch are slipped over the guide tongues of the flask so that the two halves are separated by this amount of space. Fig. 2. No vents need be cut with this escape provided for. The flask is then bolted in the usual manner and the case is vulcanized.

After vulcanization and cooling the retainer is removed from the embedding plaster. The coating of silex gives a surface which though not as smooth as a finished denture, is of good appearance and smoothness, needing no finishing other than a thorough scouring. The occlusal area and the posterior edge of the plate should be finished with a vulcanite file. The

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occlusal area should be filed at right angles to the teeth, so that this portion will engage the teeth to the correct height and not interfere with mastication. The lingual tooth surfaces should not be touched by the file. All blow bubbles can be cut off. Fig. 3 shows the finished plate.

The plate when thoroughly finished should be placed in the patient's mouth where it will be found to fit very accurately providing it is made and finished within two days. It is best not to attempt final adjustment however, for forty-eight hours after the plate has been worn. A retaining plate made in this manner requires no more time and the patient easily adapts himself to it because of its accuracy, its tightness, and the natural feeling it imparts to the tongue.

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