DENTAL IMPRESSION EQUALIZER

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Inventor

Hyman F. Chaiken

By Wilfred Edgerton

Attorney
This invention relates generally to the class of dentistry and pertains particularly to improvements in methods and means of taking impressions, more particularly to the impressions of the dental lower ridge.

In following the method at present in use for the taking of impressions of the gum ridge of the lower jaw for the purpose of making dentures, use is made of a tray for carrying the impression material and pressure is applied with the fingers, by the operator, to force the ridge into the impression material. In doing this, compression of the tissue invariable occurs either merely as a result of the holding of the impression tray in place by the operator or deliberately for the purpose of getting the proper suction. This compression or displacement of the tissue frequently results in the development of some type of trouble for the denture wearer.

The principal object of the present invention is to provide a device for use in making lower impressions, by means of which the pressure upon the impression material and the ridge is equalized and it is not necessary for the operator to hold the impression material or the material tray in place, such pressure equalizing device, producing, because of its design, a steady and evenly balanced pressure which produces the desired impression of the ridge in the impression material without displacing or compressing the tissue.

Another object of the invention is to provide an impression equalizer for use in taking impressions of the lower dental ridge which comprises weighted bodies joined together to substantially conform to the geometric pattern of an isosceles trapezoid, which corresponds with the pattern of the bicuspid and molar area whereby proper balance of the pressure imposed by the device upon the impression material, is obtained.

A further object of the invention is to provide an impression equalizer of the character stated, in which weight numbers are coupled together by a flexible metal strip to facilitate changing the angular relation of the sides of the pattern to adapt the equalizer to different lower ridge shapes.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this application, with the understanding, however, that the invention is not confined to a strict conformity with the showing of the drawing but that slight changes and modifications may be made therein so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a view in perspective of one embodiment of the invention.

Figure 2 is a diagrammatic view illustrating the principle upon which the device is designed.

Figure 3 is a plan view of the device applied to a base plate.

Figure 4 is a section taken on the line 4—4 of Figure 3.

In carrying out the present invention, reference being had to the accompanying drawing, a preferred embodiment of the invention is shown in Figure 1 wherein there are provided two weight numbers 10 formed of metal of suitable weight and each having a length sufficient to overlap the portion of the gum ridge occupied by the bicuspid and molar teeth. These weights 10 are preferably tapered off at their rear ends as indicated at 11 while at their front ends they have secured thereto the ends of a metallic arch 12 which is formed of a suitable flexible metal to permit the changing of the distance between the weights 10 as may be necessary to conform to a particular ridge shape or design.

The equalizer as a whole is generally in form of a horseshoe, the rear ends of the weights being divergently related and it is designed to conform generally to the geometric pattern of an isosceles trapezoid such as is designated 13 in Figure 2. This is the pattern arrangement or form for the bicuspid and molar area in a perfectly formed jaw.

In practice a number of these equalizers would be provided preferably to cover three sizes such as small, medium and large and with these three sizes slight intermediate adjustments might be made by suitably bending the metal bow 12, to adapt the equalizer to the shape of the gum ridge of a patient. The larger size would have a weight of about 3/4 of an ounce and the smaller sizes would be correspondingly lighter as for example the middle or medium size might weigh approximately a half ounce and the small size would be approximately ¼ of an ounce.

The equalizer may also be constructed of a solid piece of metal of desired weight, embracing the entire lower ridge, thus eliminating the flexible bow or strip 12 of metal. However, this would not be as satisfactory as the form having the flexible metal bow as it would then be required to carry on hand many more shapes and sizes to
correspond to the various shapes of the lower jaw, than would be required with the form of the equalizer shown in Figure 1. The equalizer may be used alone with the impression material or a base plate may be constructed to hold the impression material in which case the equalizer would then be attached to the base plate, upon the top of the same, by wax, or in any other suitable manner, to hold the impression material down on the lower ridge until the material has set.

Also the equalizer or counterweight could be permanently fixed on any rigid or semi-rigid or flexible base on which the impression material is carried into the mouth.

Figure 3 illustrates the application of the equalizer to a base plate 14. In this arrangement the equalizer is shown upon the top of the base plate, the weights 15 thereof being secured by wax pieces 16 or in any other suitable manner, to the top of the plate.

The entire principle of this method of taking impressions revolves around the fact that the patient automatically relieves the muscle tension or "muscle trimming" as it is called, when the mouth is closed, thereby eliminating pressure on the ridge, since the operator does not touch the impression with his hand and cause pressure on the ridge, no matter how lightly the touch might be.

In the use of the equalizer the operator places the impression material and equalizer or the impression material on the plate carrying the equalizer, in the patient's mouth, and tells the patient to close his lips. In this way the impression material is maintained in place and proper equalized pressure is imposed thereon so that the gum form will be properly reproduced in the impression material without compressing or displacing the tissues.

In accordance with the present invention the impression is taken in a few minutes whereas with the method at present in use, a considerably longer time is employed and the impression is taken under pressure and the mouth distended because of the necessity of using dental trays that are clumsy and take up too much room in the mouth.

Where the equalizer is used alone or without a base plate, the impression material is made in the form of a heavy or thick cream which is applied over the gum ridge and the weight or equalizer is then placed in position on top of the material to hold it into place. While the equalizer has been described and shown as having the weights permanently joined together by a metallic bar it is contemplated to form the device with the weights and bar detachably joined together.

It is also contemplated to use the weights independently of the coupling bar. These weights can be made separate and the operator can attach them to any base plate or tray.

I claim:

1. A pressure equalizer for use in making lower dental ridge impressions, comprising two weight bodies having a greater length than width and of a size to position in the mouth, and an intermediate relatively light-weight coupling between ends of the bodies, said bodies being maintained with the unconnected ends in divergent relation and conforming to the isosceles trapezoid pattern of the bicuspid and molar area of the lower dental ridge.  

2. An equalizer as set forth in claim 1, in which the coupling is bendable to facilitate changing the angular relation between the bodies.  

3. The combination with an impression base plate, of an impression equalizing means comprising two weight bodies each having a length to substantially equal the length of the bicuspid and molar area of the lower gum ridge, the weights being secured to the top of the base plate over the portions of the base plate designed to overlie said areas.

HYMAN F. CHAIKEN.

REFERENCES CITED

The following references are of record in the file of this patent:

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