

J. HOMER.
DENTAL ARTICULATOR.
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1,377,075.

Patented May 3, 1921.

Fig. 1.

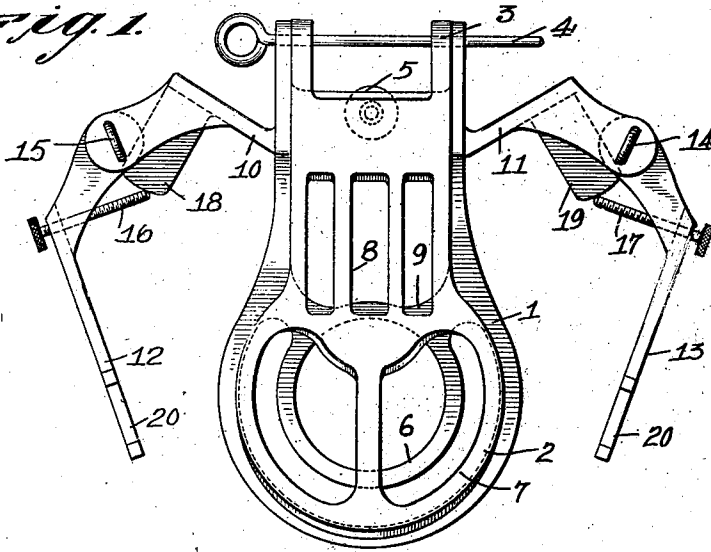


Fig. 2.

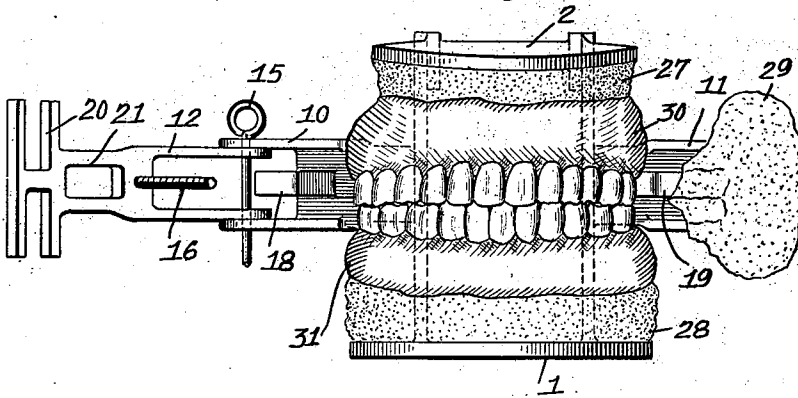
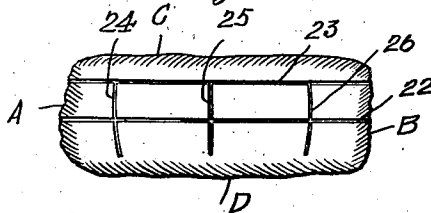


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DENTAL ARTICULATOR.

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Specification of Letters Patent.

Patented May 3, 1921.

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To all whom it may concern:

Be it known that I, JOSEPH HOMER, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Dental Articulator, of which the following is a full, clear, and exact description.

This invention relates to dental articulators which are used to assist in the formation of sets of false teeth.

An object of the invention is to provide an apparatus which materially reduces the time and labor required to manufacture sets of false teeth.

Another object is to provide an apparatus by the use of which sets of false teeth may be manufactured which are more accurately constructed with respect to the dimensions of the patient's mouth than heretofore, and are so manufactured that a minimum annoyance of the patient in the matter of trials results.

Another object is to provide an apparatus whereby a set of false teeth may be made which, when inserted in the patient's mouth, will result in the maintenance of natural facial expressions, both in repose and in the movements of the features.

Another object resides in the provision of the particular construction and arrangement of parts whereby these objects are achieved. This construction and arrangement of the parts will be apparent from consideration of the following description and claims when taken in connection with the drawings.

In the manufacture of false teeth or other dental models to be inserted in the mouth, it has been heretofore customary to make bites in which the main attempt has been to approximate the distance of the jaws apart, without paying any particular attention to the effect of the dimensions of the bite with respect to the fullness of the patient's cheeks and the natural position of his lips, either in repose or in movement. This previous method has been laborious, in that it has required repeated trials on the part of the dentist to test the trial plate and to correct the fullness of the artificial gums and the position of the teeth.

I propose to overcome this difficulty and embarrassment by providing a dental articulator in which a practically complete model can be made which is accurate with respect not only to the relative position of the jaws

but is also accurately formed with regard to the proper contours of the gums and positions of the teeth, and maintain the facial expression normal in the few fundamental positions of repose and movement. By this arrangement I avoid the expenditure of considerable time and labor in manufacture and time spent in the experimental testing of the model in the patient's mouth.

The invention is illustrated in the drawings, of which—

Figure 1 is a plan view of the articulator showing the improved attachment;

Fig. 2 is an elevation of the articulator showing a completed model; and

Fig. 3 is a view of a preliminary model or wax bite taken from the patient's mouth.

As illustrated in the drawings, the invention comprises an articulator having jaw portions 1 and 2 which are hinged together, as at 3, by a suitable pin 4 and which can be adjusted in any definite relative position by means of an adjusting thumb nut 5 of any suitable type. These jaw portions 1 and 2 are provided with suitable apertures, such as 6, 7, 8 and 9, whereby the weight of the instrument can be reduced and whereby models may be anchored in place during the manipulation of the instrument. Either jaw portion 1 or 2 is provided with extending arms 10 and 11 on both sides thereof, to which arms are pivoted adjustable supports 12 and 13. These are pivoted by means of pins 14 and 15 and are provided with adjusting screws 16 and 17 adapted to bear against lugs 18 and 19 on the arms 10 and 11. These supports 12 and 13 are provided with suitable slots 20 and 21 similar to the slots of the jaw portions 1 and 2 and for similar purposes. These jaws 1 and 2 cooperate with the rear portion 3, the pin 4 and the adjusting thumb nut 5 in a manner well understood in connection with articulators hitherto used. This particular construction is not a part of the invention and it is not thought necessary to go into further detail as to this construction. A construction which may be used is shown in the United States patent to Knapp, No. 856884, issued June 11, 1907.

In the operation of the method in connection with which this apparatus is used, the dentist places within the mouth of the patient a large portion or bite of soft wax upon which the patient is supposed to clamp his jaws to a degree determined by the

dentist. This action results in the formation in the soft wax of an accurate outline of the gums of the patient and the roof and base of the mouth, as well as an impression of the curvature of the outer edges of the gums. The dentist, by manipulating the soft wax while in the patient's mouth, can so form the outer portions of this wax with respect to the lips and the cheeks as to retain them in their natural relative positions as to fullness in the few fundamental positions of the lips and jaws in repose and in movement. The line of repose of the lips can also be marked on the bite while in the patient's mouth, as well as the fundamental positions of certain major teeth, and also the lip line for other positions than repose, such as smiling, or talking. This portion or bite is large enough so that it practically fills the mouth of the patient and gives other impressions than the mere outline of the gums.

A view of this portion or wax bite is shown in Fig. 3, in which the line 22 represents the normal lip line in repose; the line 23 represents the lip line when the patient is laughing or talking; and the lines 24, 25 and 26 represent the proper positions of certain major teeth. The side outlines of the portion or bite, such as A and B, represent the required fullness of the gums and the required lateral positions of the teeth to give the proper appearance of fullness to the lips and to the cheeks of the patient. This bite is then pressed over previously prepared models of the jaws which are then anchored to 1 and 2 by soft plaster 27 and 28. A mass of soft plaster, such as 28 and 29, is placed on the supporting side hinges 12 and 13, and this mass of plaster is pressed against the sides of the portion or bite and retains therein an impression of the profile or outline of the bite, which gives an indication of the profile or vertical curvature of the gums and teeth which should be attained in the completed model in order to produce the desired outlines of the features.

The bite is then removed from the plaster base portions 27 and 28 and wax plates, simulating the gums, such as 30 and 31, are then built up on the plaster models 27 and 28; and in these wax plates the teeth are set. By moving the arms 12 and 13 up to the wax plate or plates, facings or teeth, during this operation, it can be readily and accurately determined whether the wax plate and the teeth are being formed in position to produce the proper vertical outline, and whether the various fundamental lines of the teeth and the gums are being preserved, which lines are noted on the profile model. After this wax model is completed, the process of preparing sets of false teeth is proceeded with in the usual manner.

By this apparatus, I, therefore, have pro-

vided means whereby an accurate and complete model for manufacturing sets of false teeth can be readily and simply made without the annoyances and inconveniences which have been above mentioned. It will be apparent that various modifications can be made in the construction and arrangement of this device without departing from the spirit of the invention.

What I claim is:—

1. A dental articulator comprising a plurality of jaws pivotally connected and adjustable relative to each other and adapted to support the dental articles being constructed, and a lateral support pivotally connected to one of the jaw portions and adapted to support any desired impression.

2. A dental articulator, which comprises a pair of main jaw portions or supports adapted to support a dental article being constructed, and a laterally movable jaw or support adjustably connected to one of the main jaw portions and adapted to support any desired impression.

3. A dental articulator, which comprises main jaw portions adapted to support the dental article being constructed, movable auxiliary supporting means connected at the side of the main jaw portions, and means for adjusting the movement of the auxiliary supporting means with respect to the main jaw portions.

4. A dental articulator comprising main jaw portions adapted to support a dental mold of any desired form, and auxiliary supporting means adjustably connected with one of said main jaw portions and adapted to support an auxiliary mold or impression.

5. A dental articulator comprising jaw portions for supporting molds of the gums and teeth, a plurality of hinged adjustable arms connected thereto and adapted to support impressions of the gums and teeth, and means for adjusting the position of these arms with respect to the jaw portions.

6. A dental articulator having main jaw portions which are relatively adjustable and adapted to support molds of the gums and teeth, comprising a plurality of hinged supporting arms connected thereto and laterally disposed with respect thereto, and means for adjusting said arms with respect to the jaw portions.

7. A dental articulator having a plurality of jaw portions adapted to support molds of the gums and teeth and to be adjusted in a vertical plane with respect to each other, which comprises a plurality of hinged supporting arms connected to one of the jaw portions, and means for adjusting said arms in a horizontal plane with respect to the jaw portions.

8. A dental articulator having a plurality of jaw portions adapted to support molds on the gums and teeth and to be adjusted in

vertical planes with respect to each other, which comprises a laterally extending wing portion disposed on each side of the jaw portions, a hinged supporting arm connected to the end of each wing portion, and means on said arms for adjusting the position thereof with respect to the wing portions and the jaw portions.

9. A dental articulator having a plurality of jaw portions adapted to support molds on the gums and teeth and to be adjusted in a

vertical plane with respect to each other, which comprises a laterally extending wing portion disposed on each side of the jaw portions, a supporting arm pivotally connected to the end of each wing portion, and an adjusting screw on each supporting arm adapted to contact with the wing portion to adjustably position the supporting arm with respect to the wing portion and the jaw portion.

JOSEPH HOMER, D. D. S.