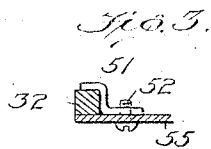
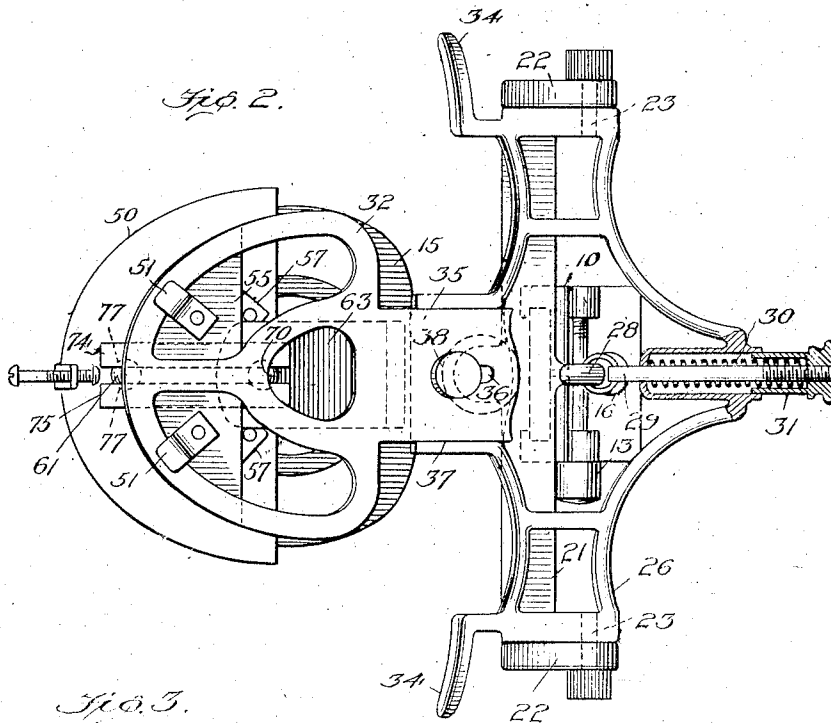
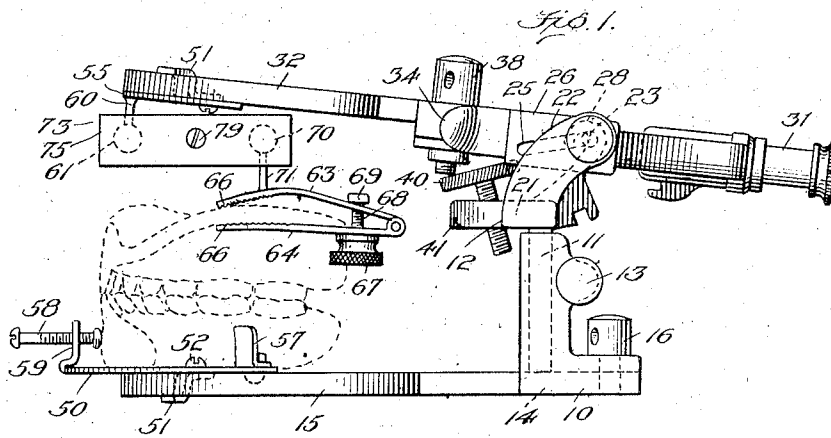


L. G. COBLE.
DENTAL ARTICULATOR.
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1,362,602.

Patented Dec. 21, 1920.



Inventor

Lucian G. Coble

Church & Church

By

His Attorneys

UNITED STATES PATENT OFFICE.

LUCIAN G. COBLE, OF GREENSBORO, NORTH CAROLINA.

DENTAL ARTICULATOR.

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Specification of Letters Patent.

Patented Dec. 21, 1920.

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To all whom it may concern:

Be it known that I, LUCIAN G. COBLE, a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Dental Articulators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to dental articulators and has for its object the provision of an articulator with a greater field of usefulness than possessed by any of the present type.

The object of the present invention is to provide an articulator which will give a wider range of adjustment between the denture holder and the upper jaw than is possible in present day articulators, without materially increasing the cost or altering the simplicity of the device.

A further object of the invention lies in the provision of an attachment for articulators capable of being secured to any of the well known types on the market and upon which attachment it will be possible to mount a finished denture, so that the occlusion may be perfected by grinding the cusps of the teeth by the use of a small stone in the hand piece of a dental engine.

In the present device means are provided for securely holding in place a lower set of teeth and for mounting the corresponding upper set in a clamp which is held in a universal connection secured to the upper jaw of an articulator. The object of this construction is to permit ready withdrawal of the dentures for trial in the patient's mouth, without the necessity of altering the position of the parts of the apparatus.

There are on the market at the present time articulators in which the upper jaw of the articulator has universal movement with respect to the lower jaw of the instrument, but there is no device available, as far as I am aware, which will permit universal adjustment of the upper denture with respect to the upper jaw. The saving of time accomplished by using the device of this application is very material, since each of the dentures are held in place, and may be removed by the action of a single screw.

Referring now to the drawings:

Figure 1 is a side elevation of a preferred form of my device.

Fig. 2 is a plan view thereof, and

Fig. 3 is a vertical sectional view, showing a means of securing the plates to the jaws of the device.

The base 10 of my device is grooved vertically to receive the tongue 11 of the yoke 12 held in desired raised position by means of the clamp screw 13 and is also grooved horizontally to receive the tongue 14 of the lower jaw 15, the latter not necessarily being adjustable within the groove in base 10, but preferably is secured thereto by means of the screw 16 which permits the ready detachment of the lower jaw for the purpose of cleaning.

The yoke 12 in addition to the vertical tongue 11 includes a pair of laterally extending arms 21 upturned as at 22 to receive the pivots 23 which extend into the diagonal slots 25 of the pivoted frame 26. A hook 28 rises from the center of the yoke 12 and carries the usual tension member 29 for supporting the spring 30 adjustably secured by means of a cup 31 having threaded engagement with the member 29. The object of this connection is to permit a complex motion of the upper jaw 32 with respect to the lower jaw 15, such action being secured through manual manipulation of the finger pieces 34, causing the frame to ride on the pivots, thus giving a side-to-side masticating movement.

The upper jaw 32 is generally similar to the lower jaw 15, and is provided with a tongue 35, slotted as at 36 and slidably received in a horizontal groove 37 in the frame. A set screw 38 binds the tongue of the upper jaw to the pivoted frame in desired longitudinal relation, and in addition bears against the rest or stop 40 adjustably mounted in a forwardly extending lug 41 of the yoke.

My attachment consists in means to hold the lower denture upon the lower jaw in such a manner as to permit its quick removal and replacement and also includes the mounting of the upper denture so that it also may be readily and quickly removed and replaced, and yet have universal movement with respect to the upper jaw 32. The plate 50 is preferably in the form of a seg-

ment of a circle and is secured to the jaw 15 by means of hooks 51 passing through the plate 50 and bearing against the outer marginal portion of the jaw 15 by virtue of the threaded engagement of the hook 51 with a small screw 52 passing loosely through the plate 50. The upper plate 55 is secured to its jaw by exactly similar means, but it should be understood that these holding means are purely illustrative, and may be replaced by spring fingers, thumb nuts or any other fastening means desired.

The lower plate 50 is provided with a plurality of adjustable positioning lugs 57 co-operating with a screw 58 mounted in an up-turned end 59 of the plate 50 and adapted to bear against the central portion of the lower denture to hold it in place against the positioning lugs 57.

The upper plate 55 is provided at its forward end with a downwardly directed shank 60 having at its lower end a ball 61. The means for holding the upper denture is preferably a clamp consisting of a pair of jaws 63 and 64 hinged together and preferably serrated as shown at 66 in order to more firmly secure the denture. The jaw members 63 and 64 of the clamp may be secured together by means of a large knurled thumb nut 67 mounted upon a screw 68, the head 69 of which is preferably loosely mounted in the upper jaw member 63. A ball member 70 mounted on a shank 71 rising from the jaw member 63 is similar in size to the ball 61 on the upper plate 55 and co-operates with the same to secure movement in every direction by means of a universal connection 73 consisting in a pair of similar parallel plates 74 and 75 each having sockets 77 to receive the balls. The two members 74 and 75 of the universal connection are secured together by one or more screws 79 preferably two arranged in proximity to the concave portions 77 so that the friction existing between either ball and its socket may be varied without altering the friction existing in the other ball and socket.

The operation of the device is as follows: The lower denture is held in position against the positioning lugs 57 and the screw 58 is moved so as to securely fasten the denture in place. The upper denture is now placed between the jaws of the clamp as far back as it will conveniently go and the clamp and

the universal connection are made horizontal, that is, parallel with the surface of the upper jaw. The upper jaw is then secured in desired position with respect to the frame and is clamped in place by movement of the screw 38. The bite is now inserted over the lower denture and the upper denture is moved about the ball and socket joints so as to bring it into registry with the upper impression of the bite. It will be noted that the upper denture can rotate about a vertical line through either of the ball and socket joints so that it may be made parallel and to one side of the lower denture. The clamp is also free to rotate in about a horizontal line through either of the balls, which permits a tilting of the denture in any desired manner so that no difficulty whatsoever is encountered in making a correct registry between the dentures and the bite. After proper registry has been secured the adjustable stop 40 is manually turned to proper position to permit smooth contact between the bite and the two dentures, and when this screw is in proper position the bite may be removed and the occlusion perfected in the usual manner by means of a stone in the small dental engine.

What is claimed is:

1. As an attachment to a dental articulator, a pair of pivoted clamping members adapted to hold a denture, and means for adjustably securing one of said members to one of the jaws of the articulator.
2. In an attachment for a dental articulator, a two-piece pivoted clamp for holding a denture, a support adapted to be secured to a jaw of said articulator, and ball and socket means for securing said clamp to said support.
3. In an attachment for a dental articulator, a clamp for holding a denture, a support adapted to be secured to a jaw of said articulator, a ball member on said clamp, a ball member on said support, and means for adjustably holding said balls at a fixed distance apart.
4. In combination, a pair of convex hinged clamping members, means for detachably securing a denture between said jaws, and means consisting of a plurality of ball and socket joints for securing said clamping members to the jaw of a dental articulator.

LUCIAN G. COBLE.