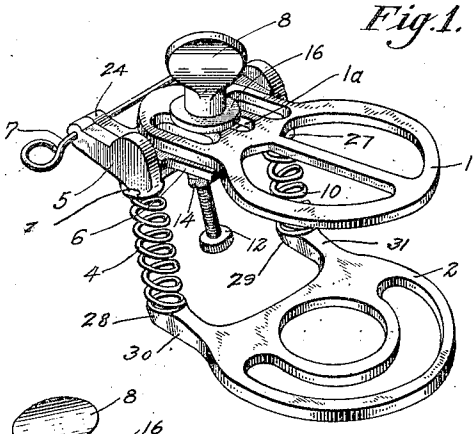
Dec. 25, 1923. 1,478,722

I. R. WHEELER

ANATOMICAL ARTICULATOR

Filed Dec. 7, 1922

Fig. 1.



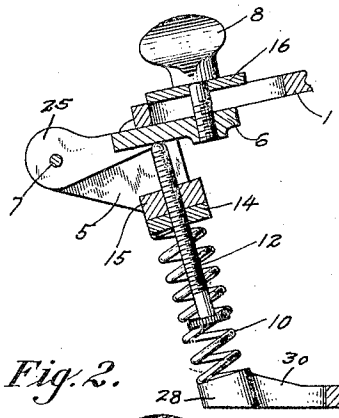


Fig. 4.

Fig. 2.

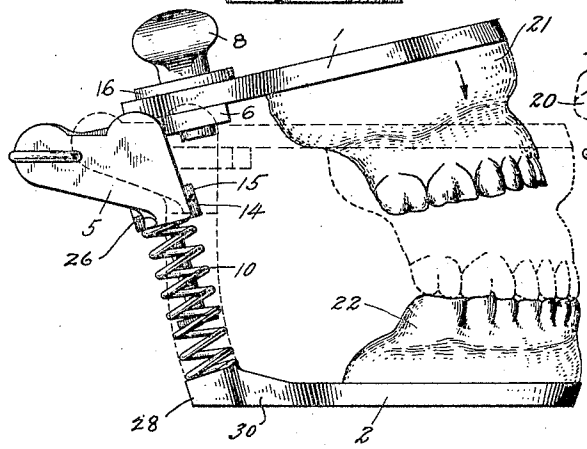
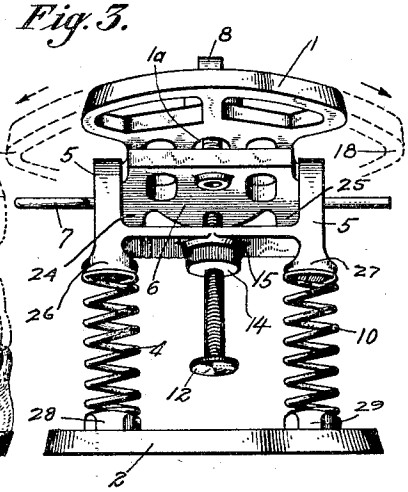


Fig. 3.



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Patented Dec. 25, 1923. 1,478,722

UNITED STATES PATENT OFFICE.

IRA ROLLINS WHEELER, OF BROCKTON, MASSACHUSETTS.

ANATOMICAL ARTICULATOR.

Application filed December 7, 1922. Serial No. 605,343.

To all whom it may concern:

Be it known that I, IRA ROLLINS WHEELER, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented a certain new and useful Improvement in an Anatomical Articulator, of which the following is a specification.

My invention relates broadly to the art of dentistry and more particularly to the construction of an anatomical dental articulator.

One of the objects of my invention is to provide a construction of anatomical dental articulator which simulates as nearly as possible the natural movement of the jaws during mastication.

Another object of the invention is to provide a construction of anatomical dental articulator which eliminates the many slots, grooves, planes, plates, guide pins, and adjustable parts heretofore employed in dental articulators for simulating the movement of dentures which would normally take place in mastication.

Another object of the invention is to simplify the construction of an anatomical dental articulator by providing resilient means between the upper and lower plates affording means for supporting the plates of the articulator by which relative movement of the plates simulate the movement of the jaws.

A still further object of the invention is to provide an articulator construction in which the upper and lower plates may be relatively adjusted with a pivotal mounting between the plates and spiral spring means spacing the plates apart whereby relative movement is permitted simulating the movement of the jaws.

Other and further objects of the invention will be understood from the specification hereinafter following by reference to the accompanying drawings, in which:

Figure 1 is a perspective view of my anatomical dental articulator; Fig. 2 is a side elevation of my articulator showing the dentures plastered in position on the upper and lower plates; Fig. 3 is a front view of the articulator with dotted lines indicating in greatly exaggerated positions the relative lateral movement of the plates which my construction permits; and Fig. 4 is a partial cross-sectional view taken through the articulator showing one of the spiral supporting springs which space the upper and lower plates apart.

Heretofore in the art dental articulators have been constructed of many complicated parts. Movement between the upper and lower members of the articulator have only become possible at the union of the lower and upper sections by all manner of connections. These connections have involved numerous adjustment screws and in some cases extensible telescopic denture supports. Delicate scales have been provided on articulators with adjustable screws for controlling the movement of the parts of the articulator relative to the scales. By my present invention I have provided a construction of articulator which eliminates the many complications introduced in previous articulators, and yet my construction affords a movement throughout the length of supporting springs which space the upper and lower plates apart, whereby the natural movement of the jaws during mastication is reproduced.

I provide an upper and lower plate, the upper plate comprising two sections, one resting upon the other and being secured together by an adjusting nut or screw, allowing the upper plate to be regulated in position forward and backward at will, the adjusting nut or screw firmly locking the two sections together. That section to which the upper plate is adjustably connected is provided with extension members, at a plurality of points about the periphery of the plate, which are pivotally mounted in a supporting member. The supporting member carries a bridge between the sections thereof and an adjustable screw within the bridge whereby the relative position of the upper plate and the supporting member may be regulated. Short projections are provided on the supporting member. The lower plate is provided with extensions, and projections at a plurality of similar points about the periphery of the lower plate, and between these extensions and the projections on the supporting member is positioned a pair of spiral springs. These springs are positioned at a plurality of points about the peripheries of the plates or jaws and allow a free and natural movement of the plates relative to each other, which movement is not controlled in any manner by complicated adjustments heretofore required. The dentures, models or

casts are plastered upon the upper and lower plates and assume the relationship with each other that the jaws do in the natural use and working thereof. The movement permitted by these springs permits the teeth to ride over each other and be guided in their movement by the planes of the articulating surfaces as in the natural state. The teeth may be brought together for example and the pressure released upon the upper plate, whereby the two plates slide back into their normal relationship.

Referring now more particularly to the drawings, reference character 1 indicates the upper plate and numeral 2 designates the lower plate. The upper plate 1 is adjustably secured to section 6 provided with two extension members 24 and 25 which are pivotally mounted in the supporting member 5 upon axis 7. Relative adjustment between section 6 and the upper plate 1 is permitted by the adjustment of screw 8 in section 6 operating through slot 1^a in the upper plate 1 and having a shoulder bearing upon member 16. A bridge member 15 is carried by the supporting member 5 and adjustable screw 12 is threaded through this bridge for adjusting the angular position of the upper plate with the lower plate. Lock nut 14 is provided to maintain a permanent setting of the screw 12 when its position is finally selected. Between projections 26 and 27 on the supporting member 5 and the projections 28 and 29 on extensions 30 and 31 on the lower plate 2 I provide spiral springs 4 and 10 which are secured to projections 28 and 29 on the lower plate 2 and to shoulders or projections 26 and 27 formed on the supporting member 5. The dentures 21 and 22 are plastered on the upper plate 1 and lower plate 2 respectively and movement imparted by the articulator simulating the natural movement of the jaws. The spiral spring construction at points about the peripheries of the jaws permits whatever lateral movement may ever be desirable, as indicated in great exaggeration by dotted lines 18 and 20.

While I have described my invention in a certain preferred embodiment, my invention is not limited to this particular showing. An articulator employing a single spring connection between the upper and lower plates might be employed. I intend no limitations of the invention beyond those imposed by the scope of the appended claims.

What I claim and desire to secure by Letters Patent of the United States is as follows:

1. An anatomical dental articulator comprising an upper jaw and a lower jaw, resilient means positioned intermediate said jaws and interconnecting same forming the sole supporting means for said jaws whereby freedom of movement of the jaws in several directions is secured.

2. In an anatomical dental articulator, the combination of an upper jaw, a lower jaw, and resilient means connecting a plurality of points about the periphery of said jaws and forming the sole support for said upper jaw over said lower jaw and permitting freedom of movement of one jaw relative to the other jaw.

3. In an anatomical dental articulator, the combination of a lower plate and an upper plate pivotally mounted relative to the lower plate, and resilient means interposed between said pivotal mounting and said lower plate forming the sole support between the upper plate and the lower plate and permitting relative movement between said plates.

4. In an anatomical dental articulator, the combination of a lower plate and an upper plate, a plurality of short projections on said plates and spiral spring means interposed between said projections for spacing said plates and forming the sole means of support for said upper plate and permitting relative movement between said plates.

5. In an anatomical dental articulator, the combination of an upper plate and a lower plate, and a plurality of spiral springs interposed between said plates forming the sole supporting means for said upper plate and permitting relative movement of said plates.

6. In an anatomical dental articulator, the combination of an upper plate and a lower plate, means for adjusting said upper plate relative to said lower plate, means for pivotally mounting one plate relative to the other, extensions on said lower plate, and a pair of spiral springs forming the sole means of support between said extensions on said lower plate and said pivotal mounting means.

7. In an anatomical dental articulator, the combination of an upper plate and a lower plate, means for angularly and horizontally adjusting said upper plate relative to said lower plate, means for pivotally mounting one of said plates relative to the other, extensions on said pivotal mounting means, extensions on said lower plate, and a pair of spiral springs interposed between said extensions forming the sole means of support for said upper plate whereby movement of said plates is permitted simulating natural movement of the jaws.

IRA ROLLINS WHEELER.