

Oct. 16, 1923.

S. H. WILSON

1,471,019

ANATOMICAL ARTICULATOR FOR DENTAL USE

Filed Aug. 31, 1922

Fig. 1.

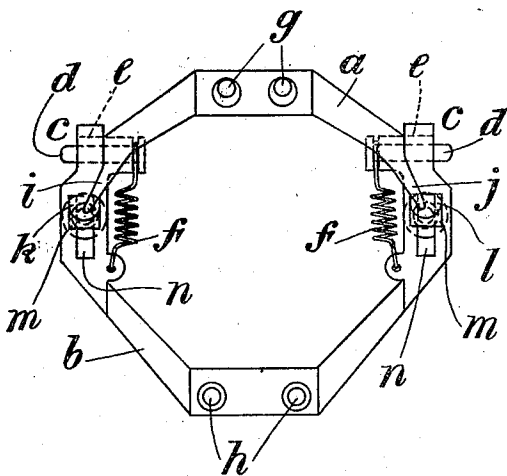


Fig. 2.

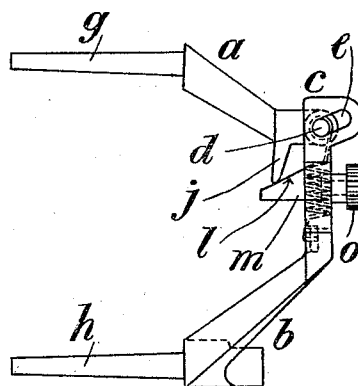


Fig. 6.

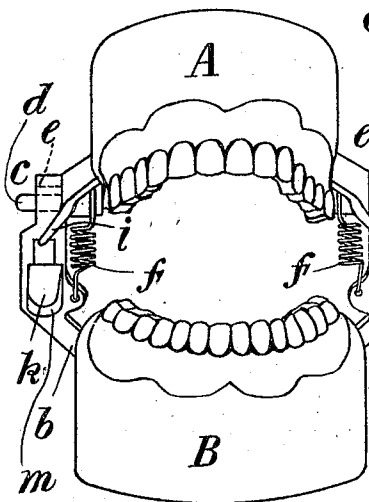


Fig. 3.

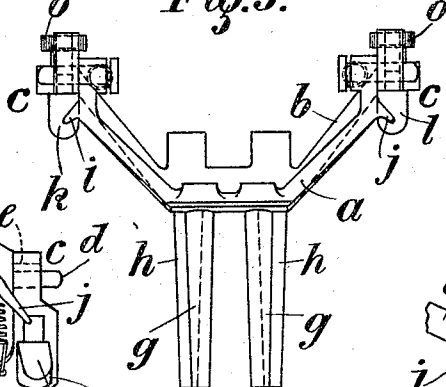


Fig. 4.

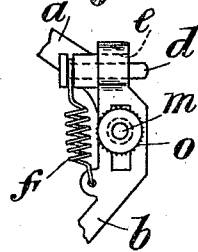
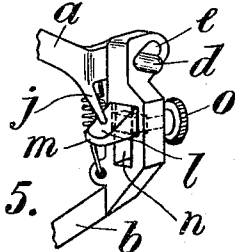


Fig. 5.



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## UNITED STATES PATENT OFFICE.

SAMUEL HOGG WILSON, OF GLASGOW, SCOTLAND.

ANATOMICAL ARTICULATOR FOR DENTAL USE.

Application filed August 31, 1922. Serial No. 585,353.

*To all whom it may concern:*

Be it known that I, SAMUEL HOGG WILSON, of 119 Clarkston Road, Cathcart, Glasgow, Scotland, a subject of the King of Great Britain, have invented certain new and useful Improvements in Anatomical Articulators for Dental Use, of which the following is a specification.

This invention relates to anatomical articulators for dental use and has for its object to improve and simplify the construction of such instruments so that an entirely unimpeded view of, and access to, all parts of the teeth during adjustment, shall be obtainable.

To the attainment of the aforesaid object, in articulators constructed in accordance with the invention, the means for guiding the jaws during overbite and crossbite movements are such that the same relative movement of the upper and lower teeth can be obtained irrespective of angular adjustment of the articulator and are located at or about the junction of the upper and lower jaws. Such means may conform to known construction in that each may be in the form of one or more inclined planes on one jaw and one or more co-acting members on the other, but differ therefrom in that such inclined planes are both, or all, on the same jaw so that the relative inclination of same remains constant irrespective of angular adjustment of the jaws.

In order that the invention may be clearly understood I have appended a sheet of drawings showing, by way of example, one form or construction of the articulator.

Fig. 1 is a front elevation.

Fig. 2 is a side elevation.

Fig. 3 is a plan.

Figs. 4 and 5 are enlarged detail views.

Fig. 6 shows the model in position with the articulator jaws open.

As will be seen the articulator comprises upper and lower jaws *a*, *b*, united, at each side, by means of joints *c* comprising pins *d* on the upper jaw somewhat loosely mounted in inclined slots *e* in the lower jaw, springs *f* being provided to maintain the pins normally at the lower ends and sides of the slots. Each jaw carries a pair of taper pins *g*, *g*, *h*, *h*, for holding the parts of the model as indicated at Fig. 6, and, at, or about, the junction of the upper and lower jaws, are two depending projections or thumb pieces *i*,

*j*, on the upper jaw engaging vertically adjustable inclined planes *k*, *l*, on the lower jaw such planes being somewhat more steeply inclined than the aforesaid slots, suitable inclinations being 27 and 23 degrees, respectively.

Fig. 4 shows in side view, and 5 in perspective view, (looking towards the left hand side of Fig. 4) one of the joints to an enlarged scale and, as will be seen, the pin *d* which is screwed into the upper jaw *a* can work freely in the inclined slot *e* of the lower jaw against the constraining action of the spring *f* which, at its upper end, is secured to the pin *d*, and, at its lower end, to the jaw *b* so that the two springs resiliently hold the two jaws together. The projection *j* on the jaw *a* bears on the inclined plane *l* which is constituted by the upper surface of a bracket *m* adjustable in the vertical slot *n* of the lower jaw *b* and has a pin extension (which works in the slot) and a clamping nut *o* thereon. By tightening the nut the bracket can be held in any desired position in the slot.

When working on the teeth it is very desirable that access should be attained to them from the rear as well as from the front in order that they may be positioned correctly, and I obtain this result by eliminating all cross-bars or struts between the jaws and by articulating the jaws well to the side, as will be seen from Fig. 6.

It is important to note that the inclines *e*, *e*, and *k*, *l*, are all on the lower jaw and that *k*, *l*, are both adjustable in their slots *n*. As the projections *i*, *j*, of the upper jaw bear on the inclined planes *k*, *l*, and as the angles of the slots *e* and planes *k*, *l*, determine the proper over-bite and cross-bite movements it follows that by moving the plaster models A, B, the cross-bite and over-bite of the artificial teeth can be accurately tested and also clearly observed owing to the articulator being absolutely free and open at the back.

The over-bite is regulated by the angle of the inclined planes *k*, *l*, which also form fixing mediums for the elevation of the upper jaw whilst the inclined slots *e* regulate the amount of vertical and lateral movement when moving the one model against the other for testing the cross-bite of the teeth.

No matter how the jaws are moved the ratio between the inclines of *e* and *m* are always constant.

Whilst I find it is advisable to have the angle of the planes *k*, *l*, about 27° and of the slots *e* about 23°, I do not confine myself to these angles.

5 In operation the wax bite-block is placed in the patient's mouth and the median line marked on it. The bite-block is then sealed on the appropriate model, and both upper and lower models A and B placed centrally  
10 on the articulator taper pins *g* and *h*. The bite-blocks being in contact, the height of the articulator is set by bringing up the brackets *m* until the planes *k* and *l* contact with the projections *i*, *j*. It will be observed  
15 that should there be a difference between the condyle path on the one side from that on the other side of the jaw one of the pivot pins *d* may be raised in its slot *e*; in such a case the corresponding bracket *m* will be  
20 raised more than its fellow. It will further be noticed that the models A and B may, after the teeth are mounted, be removed from off the taper pins *g* and *h* and replaced thereon without the necessity for the adjust-  
25 ment of parts. This arrangement has the further advantage that when so removed there are no parts projecting from the models as is the case when the carriers of the models are embedded therein.

30 What I claim and desire to secure by Letters Patent is:—

1. An anatomical articulator for dental use comprising an upper and a lower jaw constituting an open frame jointed together  
35 at the sides to permit of access to the teeth from the rear, pivot pins on one jaw working in inclined slots in the other jaw to form the joints, projections upon said one jaw, inclines upon said other jaw co-acting with  
40 said projections, and means to adjust said inclines independently towards and from said projections whereby differences in the condyle paths may be allowed for.

2. An anatomical articulator for dental use comprising an upper and a lower jaw constituting an open frame jointed together  
45 at the sides to permit of access to the teeth from the rear, pivot pins on one jaw working in inclined slots in the other jaw to form the joint, projections upon said one jaw, inclines upon said other jaw co-acting with  
50 said projections, brackets carrying said inclines, slots in said other jaw for the reception of said brackets, and means to retain  
55 said brackets in said slots.

3. An anatomical articulator for dental use comprising an upper and a lower jaw constituting an open frame jointed together  
60 at the sides to permit of access to the teeth from the rear, pivot pins on one jaw working in inclined slots in the other jaw to form the joints, projections upon said one jaw,

inclines upon said other jaw co-acting with said projections, said inclines being at a  
65 different angle from the angle of the inclined slots, and means to adjust said inclines independently towards and from said projections whereby differences in the condyle paths may be allowed for.

4. An anatomical articulator for dental use comprising an upper and a lower jaw constituting an open frame jointed together  
70 at the sides to permit of access to the teeth from the rear, pivot pins on one jaw working in inclined slots in the other jaw to form the joints, projections upon said one jaw, inclines upon said other jaw co-acting with  
75 said projections, said inclines being at a different angle from the angle of the inclined slots, and means to adjust said inclines independently towards and from said  
80 projections whereby differences in the condyle paths may be allowed for, brackets carrying said inclines, slots in said other jaws for the reception of said brackets, and  
85 clamping nuts to clamp said brackets to said jaws in desired position.

5. An anatomical articulator for dental use comprising an upper and a lower jaw constituting an open frame jointed together  
90 at the sides to permit of access to the teeth from the rear, pivot pins on the upper jaw, inclined slots in the lower jaw to receive said pins and form the joints, springs to  
95 keep said pins at the lower end of said inclined slots, projections depending from each side of the upper jaw, inclined planes on the lower jaw to co-act with said projections, means whereby said planes may be  
100 adjusted towards and from said projections and relatively to one another.

6. An anatomical articulator for dental use comprising an upper and a lower jaw constituting an open frame jointed together  
105 at the sides to permit of access to the teeth from the rear, pivot pins on the upper jaw, inclined slots in the lower jaw to receive said pins and form the joints, springs to keep  
110 said pins at the lower end of said inclined slots, projections depending from each side of the upper jaw, inclined planes on the lower jaw to co-act with said projections, brackets carrying said inclined planes and  
115 adjustable in slots in the lower jaw towards and from said projections, and clamping nuts for clamping said brackets in adjusted position.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL HOGG WILSON.

Witnesses:

MARGARET HONLINSON,  
LAURA WYLIE.