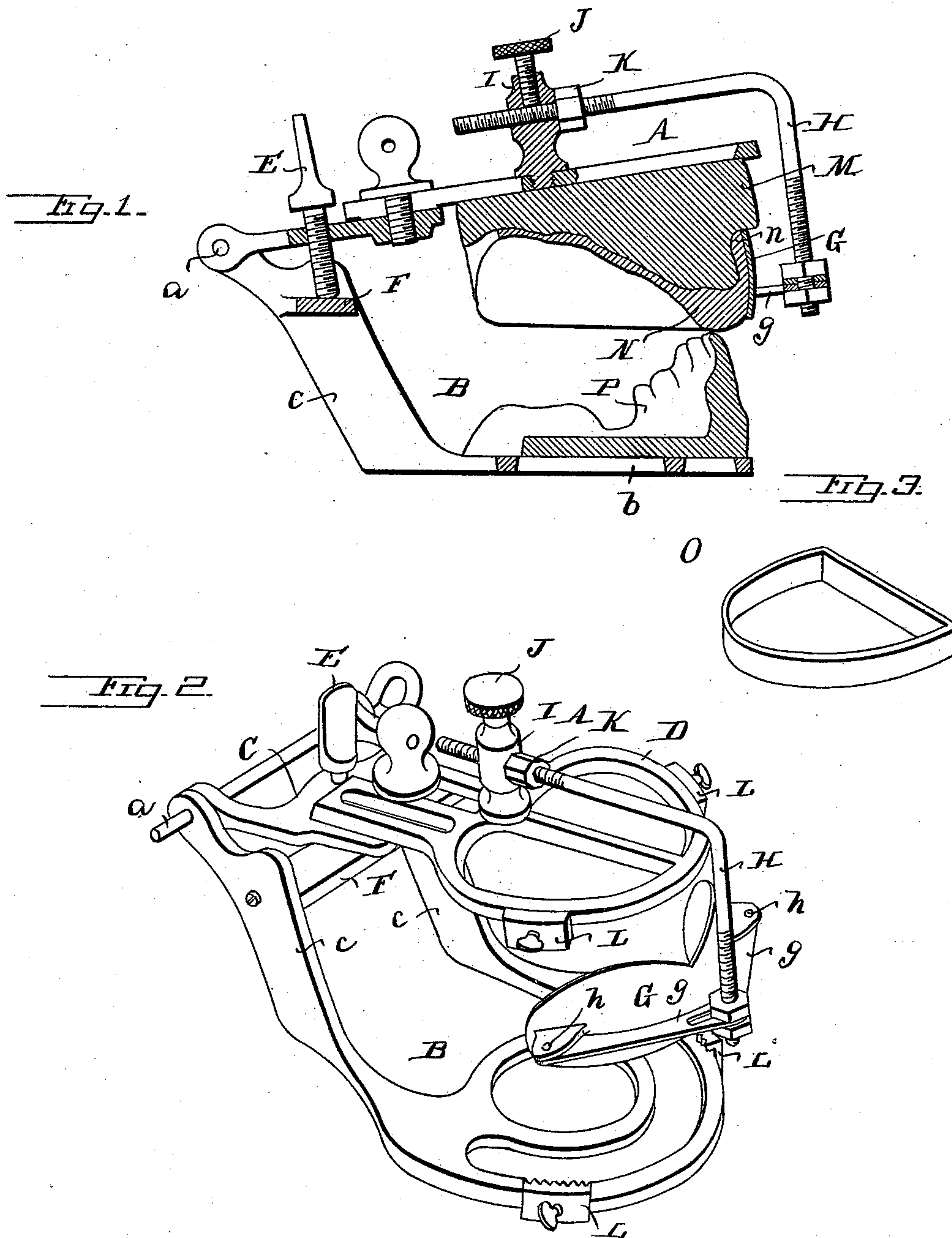


(No Model.)

J. W. ANDERSON.
DENTAL ARTICULATOR.

No. 529,010.

Patented Nov. 13, 1894.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN W. ANDERSON, OF PHILADELPHIA, PENNSYLVANIA.

DENTAL ARTICULATOR.

SPECIFICATION forming part of Letters Patent No. 529,010, dated November 13, 1894.

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To all whom it may concern:

Be it known that I, JOHN W. ANDERSON, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Dental Articulators, of which the following is a specification.

My invention relates to dental articulators and it consists of certain improvements which are fully set forth in the following specification and are shown in the accompanying drawings.

Dental articulators are instruments adapted to assist a dentist in selecting and fitting a set of false teeth to the mouth of a patient. Much difficulty is met in properly selecting the teeth so as to preserve the natural expression of the mouth of the patient. If the teeth are too thick the lip will protrude and if they are too thin the lip will recede.

It is one of the objects of my invention to overcome this difficulty by providing a dental articulator with a guide to assist the dentist in the selection of the teeth so that teeth of proper thickness may be chosen and the natural expression may be preserved.

Heretofore the natural expression of the mouth was indicated by the trial plate fitted on the toothless jaw; but as this trial plate is bitten into by the patient to form the impression of the other jaw, the surface configuration of the trial plate was destroyed and its usefulness as a guide ceased and the dentist was compelled to rely upon his judgment in the selection of the teeth. To obviate this difficulty I provide the articulator with a lip piece which may be adjusted to the surface of the rim of the trial plate before it is bitten into by the patient so that it will correspond in position and shape with the patient's lip and therefore in connection with the usual jaw would constitute an exact guide for the selection of the teeth.

My invention also relates to certain other improvements in construction whereby the utility of the articulator is increased and its manipulation is simplified.

I shall now refer to the drawings for the purpose of particularly describing my invention.

Figure 1 is a longitudinal vertical sectional view of my improved articulator. Fig. 2 is a perspective view of the same. Fig. 3 is a perspective view of one of the modeling rings for making the said models.

A and B are respectively the upper and lower jaw frames hinged together at the rear as at *a*. The frames A and B should correspond generally in shape with the human jaws. The lower frame B may have a flat base *b* which acts as a support for the articulator and the upwardly extending rear arms *c* to which the upper jaw frame A is hinged. The upper jaw frame A may be made in two parts C, D adjustably united as by the slot *e* and screw *d* so that the upper jaw frame may be lengthened or shortened to correspond with the process of the upper jaw of any individual.

E is an adjusting screw or limit stop carried by the upper jaw frame A and bearing upon a plate F carried by the lower jaw frame, as between the arms *c*, *c*. By adjusting the screw or stop E the descent of the upper frame A toward the lower frame may be regulated. By locating the screw or stop E upon the upper frame it is easily accessible to the hand of the dentist and the adjusting may be made without overturning the articulator.

G is a lip piece curved or shaped to correspond approximately with the shape of the lip. This lip piece is carried by one of the jaw frames and acts as a guide to indicate to the dentist the position of the lip and thus to guide him in the application of the teeth as will be hereinafter explained. This lip piece is adjustable to and from the jaw frame by which it is carried. In the drawings I have shown the lip piece G provided with a bent rod H, the free end of which is inserted in a tubular stud I provided with a set screw J for locking the rod and lip piece firmly in any adjusted position.

K is a nut or adjustable stop carried by the threaded end of the rod H which may be adjusted so as to touch the stud I when the position of the rod H and lip G is ascertained and thus preserve the ascertained position when the rod and lip are removed, so that it

may be placed again in exact position. While I prefer this particular means of adjustably connecting the lip piece with the jaw frame, I do not mean to limit myself to it, and other means of attachment may be employed and my invention contemplates broadly the combination of a lip piece with the jaw frame of a dental articulator.

L are adjustable clamps carried by the edges of the jaw frames adapted to detachably clamp the plaster models upon the frame. These adjustable clamps may be of any convenient construction.

For the purpose of adjusting the shape or curvature of the lip piece G, it may be constructed of flexible material and connected with the rod H by links *g, g* pivotally connected with the ends of the lip piece G as at *h*.

By this means the ends of the piece G may be moved together or farther apart to vary the curvature of the lip piece.

O, Fig. 3 is one of the modeling rings which may be employed for making the jaw models.

I shall now describe the manner of using my improved dental articulator, showing at the same time the advantages which it possesses.

The dentist who is to prepare the set of teeth first places in a suitably shaped plate or impression tray a quantity of wax, paraffine or other plastic material and this is pressed up upon the tooth denuded jaw. This imparts to the plastic material the impression of the jaw process of the patient, to which the set of teeth is to be applied. Into the impression or mold thus formed, plaster is poured and this when it hardens supplies the dentist with an exact model of one of the jaws of the patient. In Fig. 1 M is the plaster model thus formed. This model M is formed in a ring O corresponding in size and shape with the articulator jaw to which it is to be applied, so that the model will exactly fit the jaw, when it is applied to it. The model is then applied to the proper jaw frame of the articulator and is secured thereto by the clasps L. Over the model thus formed the dentist then shapes a trial plate of wax, paraffine, or other plastic material. Shown as N in Fig. 1. The inner side of this trial plate being formed over the model M is exactly complementary to the patient's jaw. The trial plate is then placed on the patient's jaw and the outer rim *n* over which the lip fits is properly shaped and proportioned to preserve the natural expression of the patient's mouth. The trial plate is then taken out of the mouth and is again applied to the model M and the lip piece G is adjusted, so as to make even contact throughout with the surface *n* of the trial plate. Thus there is preserved for future use an exact reproduction upon the articulator of the natural position of the patient's lip. When the adjustment of the lip piece is made the stop or

nut K may be set so as to fix the adjustment and the lip piece may then be removed. The trial plate N is now put back into the patient's mouth over the tooth denuded jaw and he bites into it with the teeth of the other jaw thus imparting to the plastic trial plate the impression of the other jaw. From the impression thus made a second model is formed with the ring such as O by pouring plaster in the impression or forcing the impression into the plaster. This model which is marked P in Fig. 1 is applied to the appropriate frame of the articulator and is secured thereto by the clamp L. The lip piece G if it has been previously removed is now restored to place and the dentist has before him an exact reproduction of the patient's mouth including the upper and lower jaws and the lip. With these parts before him he fits to the model of the tooth denuded jaw the proper teeth, having to assist him the lip piece G which guides him in the selection of the teeth so that every tooth shall be of proper thickness and shape to preserve the natural expression of the patient's mouth.

In the articulators heretofore used the lip piece was not employed. It resulted from this that the shape of the rim *n* was totally destroyed when the trial plate was bitten into so that the dentist had no means to guide him in the selection of teeth to preserve the natural expression of the mouth.

In the methods heretofore employed it has been customary also to form the models M and P directly upon the frames A and B and not on separate rings O. In consequence of this it has been necessary to more or less shape or cut the model and to break them in separating them from the frames.

By my improvements the models may be formed separate from the articulator and are detachable therefrom so that they may be removed without injury.

The minor details of construction shown may be varied without departing from the invention.

What I claim as new and desire to secure by Letters Patent, is—

1. In a dental articulator, the combination with the jaw frames, of a lip piece carried by one of the jaw frames.

2. In a dental articulator, the combination with the jaw frames, of a lip piece carried by one of the jaw frames and adjustable with reference thereto.

3. In a dental articulator, the combination with the jaw frames, of a flexible lip piece carried by one of the jaw frames.

4. In a dental articulator, the combination with the jaw frames, of a lip piece detachably and adjustably carried by one of the jaw frames, and an adjustable limit stop to preserve the ascertained position of adjustment when the lip piece is detached.

5. The combination with the frames A and B, of the lip piece G provided with a rod H

adapted for adjustable connection with one of the frames A, B.

5 6. The combination with the frames A and B, of the lip piece G provided with a rod H adapted for adjustable connection with one of the frames A, B and the adjustable limit stop K carried by the rod H.

In testimony of which invention, I have hereunto set my hand.

J. W. ANDERSON.

Witnesses:

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