(No Model.) 2 Sheets—Sheet 1.

G. E. SMITH.

DENTAL ARTICULATOR.

No. 321,457. Patented July 7, 1885.

Fig. 2.

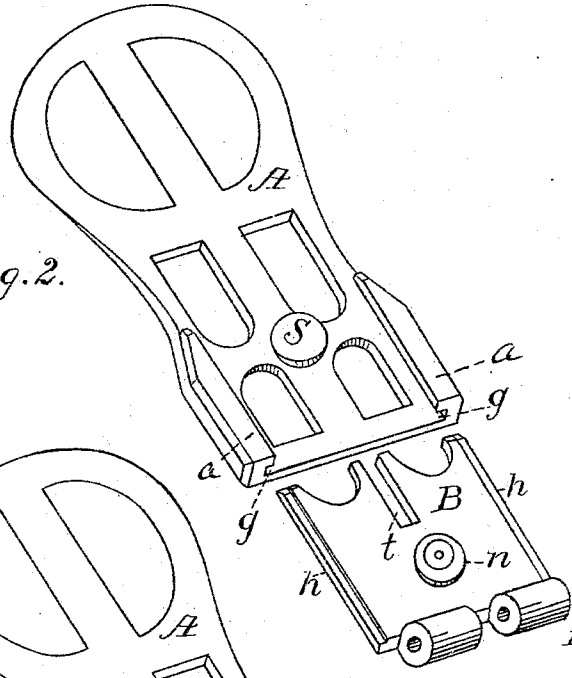


Fig. 3.

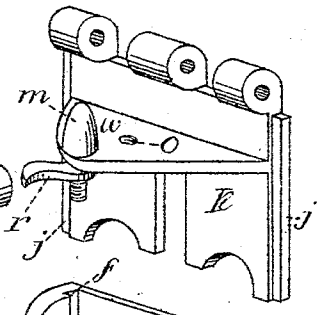


Fig. 1.

Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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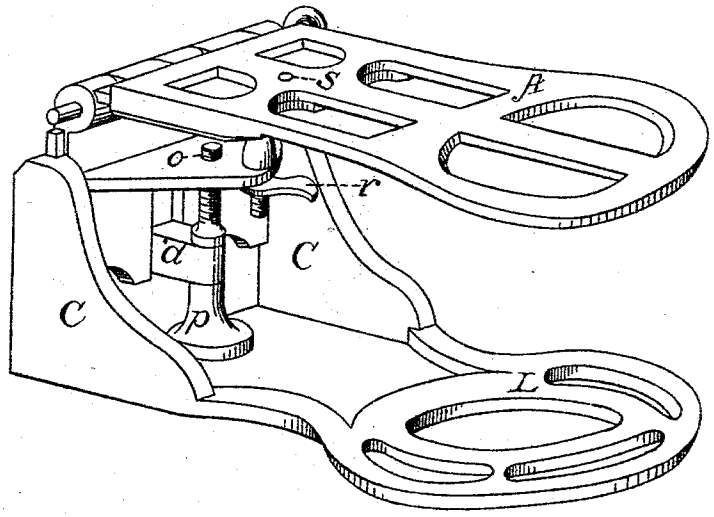


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE E. SMITH, OF WINDSOR, NEW YORK.

DENTAL ARTICULATOR.

SPECIFICATION forming part of Letters Patent No. 321,457, dated July 7, 1885.

Application filed May 21, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. SMITH, a citizen of the United States, residing at Windsor, in the county of Broome and State of New York, 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 invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts throughout the several views.

My invention relates to the common form of dental articulators; and its object is to provide for the plates such means of adjustment as will enable the operator to secure for plates while in process of manufacture the same articulation as they will have in the mouth, and enable the operator by such adjustment to correct any fault in the "bite."

In the accompanying drawings, Figure 1 is an oblique perspective of the completed articulator with the upper plate thrown back. Fig. 2 shows the top plate from its under side, the two sections of it being taken apart but lying in line with each other. Fig. 3 shows the back or vertical part of the base-plate, the plate being broken off at the dotted line in Fig. 1. Fig. 4 is an elevation of the complete articulator closed down.

The main section A of the upper plate is made with the part which carries the cast in the usual form, and near the rear of the plate it has wings *a a*, turned over, serving the double purpose of strengthening the plate and forming recesses or grooves *g g*, in which the edges of the other section, B, slide. It has also a binding-screw, S, threaded into it to hold the other section of the plate fast in position. This screw is made, preferably, with a shoulder under its head to bear on the plate B, or the head may turn down fast on the plate.

The edges *h h* of the plate B are fitted to slide snugly in the grooves *g g* of the plate A, and a slot, *t*, is cut in it to receive and slide upon the stem of the binding-screw S. This sliding plate has also a half-hinge at the rear to engage with a corresponding half-hinge on the sliding plate K, Fig. 3, and when in use the two are connected by the rod *e*, Fig. 1.

On the sliding plate B, near the hinge, integral with the plate or made fast in it, is a stop-button, *n*, having a flat surface, to strike on the conical screw-head *m*. (Shown in Figs. 1 and 3.)

The two sections A and B are slid together the desired distance and securely fastened by turning down the binding-screw S until it bears on the plate B.

The base-plate L has a vertical plate at right angles to the plate which carries the cast, and is strengthened in the turn by the webs C C. In the corners formed by these webs and the vertical plate are the grooves *f f*, to receive the edges *j j* of the sliding plate K.

Integral with the vertical plate, and projecting horizontally from it, is an arm, *d*, with an adjusting-screw, *p*, journaled in it so as to turn freely, and collared each side the arm, so that it retains the same position in the arm when rotated. Above the upper collar this screw is threaded to engage with the threaded orifice *o* in the wing of the sliding plate K.

The vertical sliding plate K is fitted so that its edges *j j* will slide freely in the grooves *f f* in the vertical base-plate, and is provided at the top with a half-hinge to correspond with the half-hinge on the sliding plate B. Below the hinge this sliding plate K has a triangular wing, *w*, integral with it and at right angles to its vertical part. Near the outer corner of this wing there is a screw-threaded orifice to receive the screw-stem of the conical-head stop *m*, which is designed to meet the stop *n* on the upper plate to regulate the distance of the plates from each other at the front when the articulator is closed down. It is obvious that this stop will require to be made fast at the desired point, and this is accomplished by the use on the screw of the locking-nut *r*. This locking-nut *r* is shown in the drawings with the handle projecting beyond the wing, as it is when it is necessary to move the screw *m*, and should be so adjusted that when locked the handle turns around beneath the wing *w*, and is then entirely out of the way, and is not liable to be displaced by accident. Back of this stop is the screw-threaded hole *o*, to receive the adjusting-screw *p*.

The vertical sliding plate is slotted from the

wing down to its end to admit of its passing the extension-arm *d*.

The edges *j j* of the sliding plate K are slid down in the grooves *f f* until the adjusting-screw *p* engages with the thread in the hole *o*. Then the sliding plate is moved up or down, as required, by rotating this screw. In this way a change can be made at any time without fear of displacing the cast, and there is no possibility of the sliding plate moving except as the screw is turned.

It will be observed that by the use of the wide hinge-joint and the adjustable parts sliding in grooves the plates are kept in line with each other, and any adjustment the operator may make will not displace them laterally.

The plaster casts are secured to the opposing faces of the plates in the ordinary way. Before securing the casts to the plates, by moving the vertical sliding plate up or down the articulator may be adjusted to any thickness of cast, or to one or both casts, as may be needed. Then, by moving the vertical sliding plate K up or down by means of the adjusting-screw *p*, a false bite may often be corrected and a natural bite obtained without changing the relative position of the plates or removing the casts therefrom. Lengthening the upper plate by means of the sliding plate B will often aid also in correcting a false bite without removing the casts, as one of the most common faults in a bite is caused by the under jaw being thrust forward from its normal position when making a bite. Thus it is obvious that by moving the vertical sliding plate K up or down by means of the adjusting-screw *p*, regulating the fall of the upper plate by the conical-head screw *m*, locked in position by the locking-nut *r*, and the length of the upper plate by the sliding plate B and binding-screw S, any ordinary articulation can be readily secured and certainly retained.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a dental articulator of the class described, the plate A, with grooves and binding-screw, in combination with the sliding plate B, made with stop-button and hinge to form the upper plate of an articulator, all constructed substantially as shown and described.

2. In a dental articulator, the combination, with the vertical portion of the base-plate L, made with arm *d* and adjusting-screw *p*, of a sliding plate, K, carrying the hinge, and provided with wing *w*, having conical-head screw *m*, locking-nut *r*, made to lock under the wing, and hole *o*, to receive the adjusting-screw *p*, all constructed substantially as shown and described.

3. In a dental articulator, a base-plate having a vertical sliding plate which carries the hinge, and having its height regulated by means of an adjusting-screw journaled in an arm on the stationary part of the base-plate, in combination with an upper plate formed of two sections sliding one upon the other and fastened in position by a binding-screw, all substantially as shown and described.

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

GEORGE E. SMITH.

Witnesses:

GEORGE WHITNEY,

A. L. PINE.