

(No Model.)

W. F. SLACK & G. A. SMITH.  
DENTAL ARTICULATOR.

No. 400,713.

Patented Apr. 2, 1889.

Fig. 1.

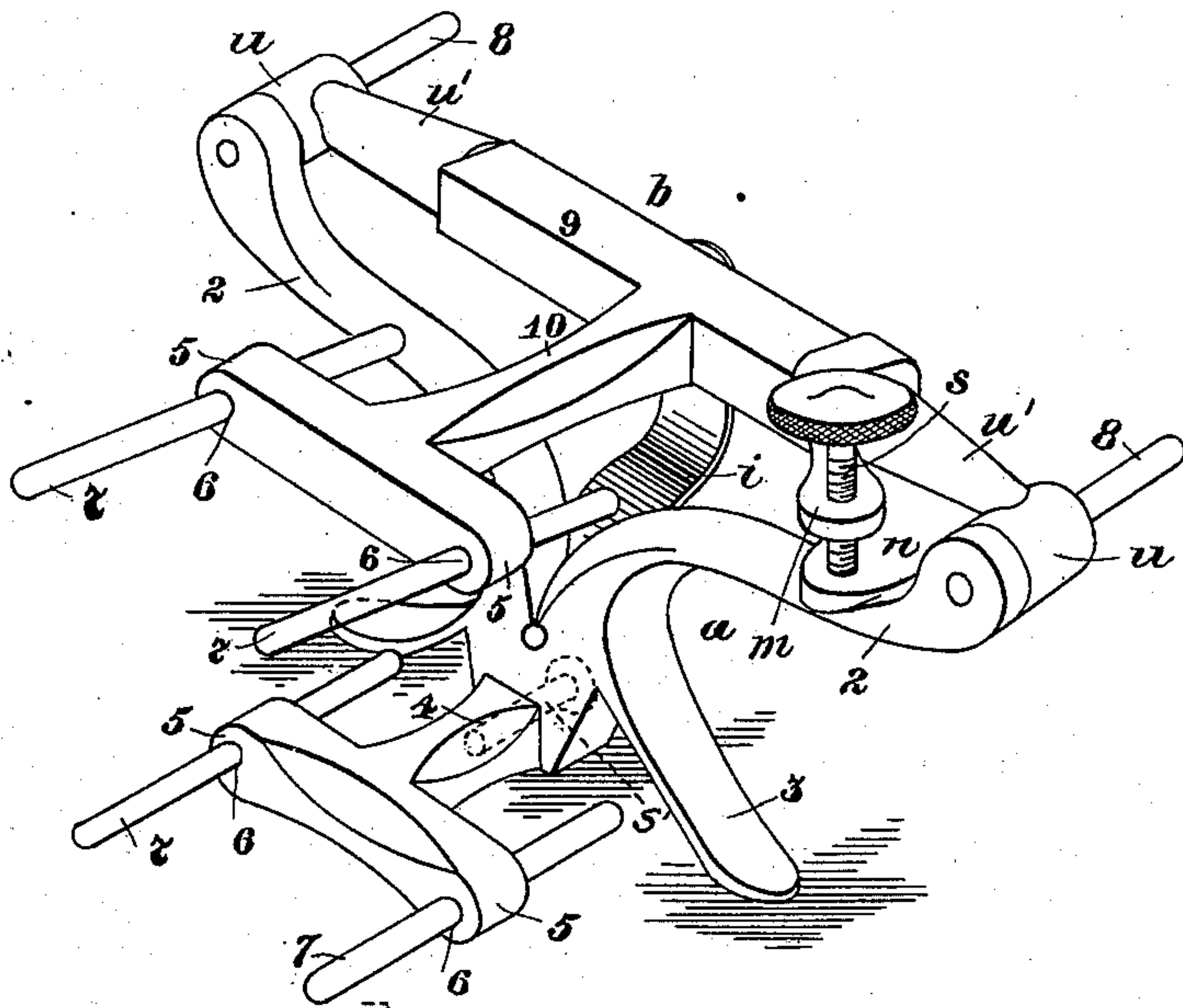


Fig. 3.

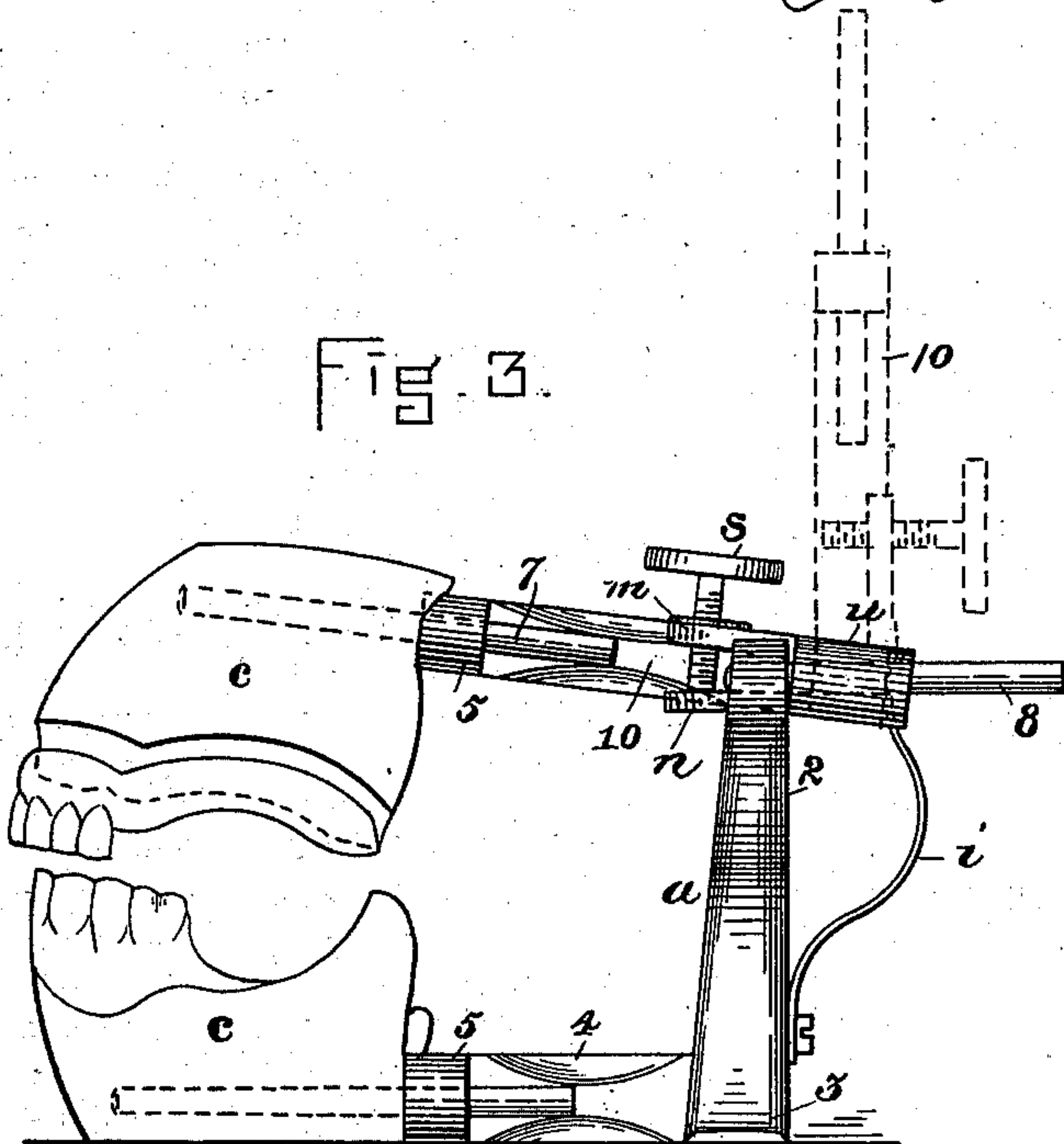
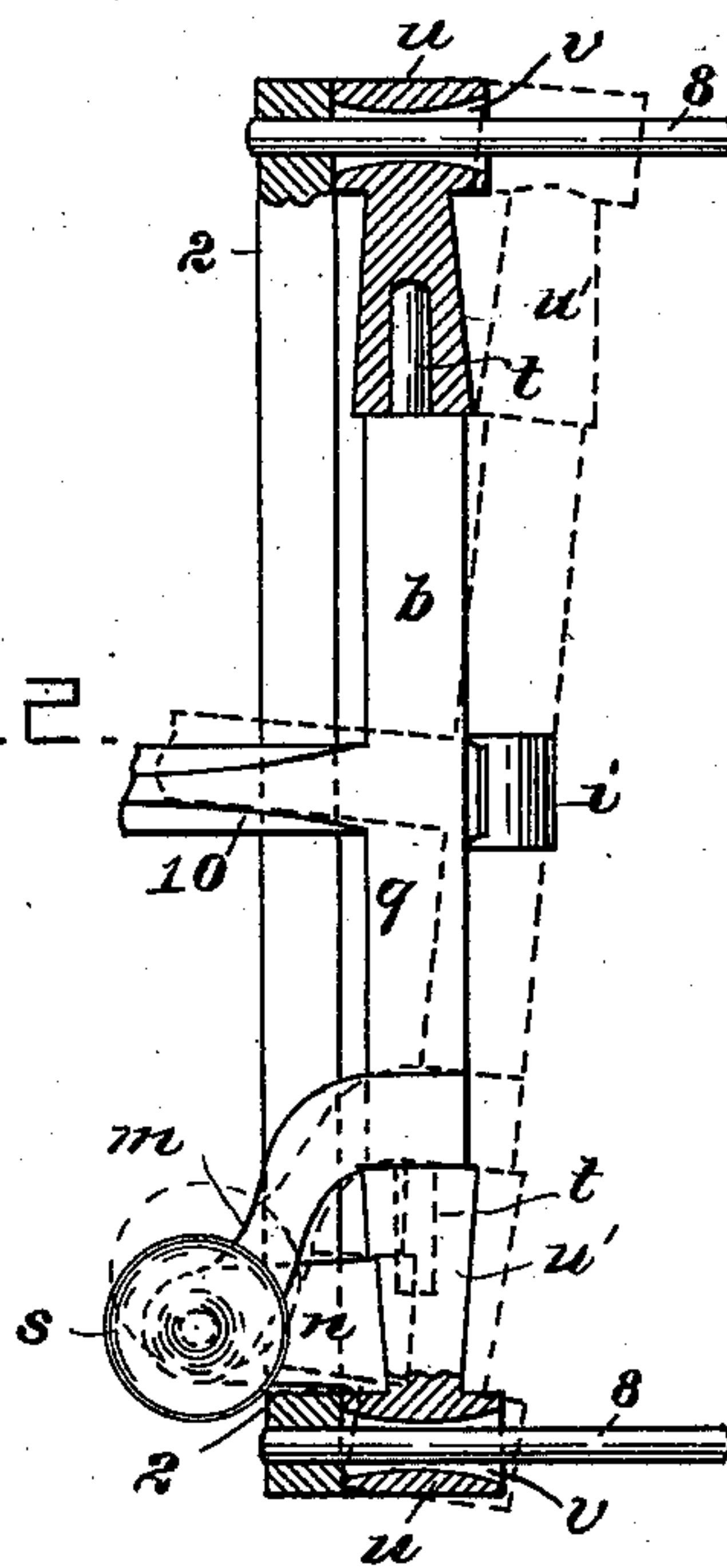


Fig. 2.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

WILLIE F. SLACK AND GEORGE A. SMITH, OF LAWRENCE, MASSACHUSETTS.

## DENTAL ARTICULATOR.

SPECIFICATION forming part of Letters Patent No. 400,713, dated April 2, 1889.

Application filed January 11, 1889. Serial No. 296,066. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIE F. SLACK and GEORGE A. SMITH, both of Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Dental Articulators, of which the following is a specification.

This invention has for its object to provide for the use of dentists an articulator, whereby the movements of the human jaws may be accurately imitated, so that artificial teeth can be properly fitted and adjusted.

The invention consists in the several implements in the construction of dental articulators, which we will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of our improved articulator. Fig. 2 represents a top view of the same. Fig. 3 represents a side view.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the supporting-frame of our improved articulator, the same having the arms 2 2 formed in one piece with each other and with the feet 3 3. To the lower portion of the frame *a* is affixed an arm, 4, having ears or lugs 5 5, in which are holes 6 6, to receive removable pins or dowels 7 7, said pins being intended to hold the plaster mold or cast *c*, relating to the lower jaw. To the upper ends of the arms 2 2 are affixed rods 8 8.

*b* represents the upper frame, composed of a bar, *g*, on which is formed an arm, 10, having ears provided with holes 5 5, to receive pins or dowels 7 7, said pins being intended to support the plaster mold *c*, relating to the upper jaw. The bar *g* has trunnions *t t* on its ends, which are fitted in sockets or bearings *u' u'*, formed on collars *u u*, having longitudinal apertures *v v*, through which the rods 8 8 extend, the collars *u* being adapted to slide upon the said rods. The orifices *v* are enough wider than the diameter of the rods 8 to enable either end of the bar *g* to swing back independently, and thus permit the arms 10 and the mold supporting them to swing horizontally, while the connection of the bar *g* with the collars *u u* by means of the trunnions *t* and sockets *u'* enables said arm and mold to swing vertically. It will be seen, therefore,

that the two molds may be relatively moved in the same manner as the human jaws, so that all the movements required to demonstrate whether artificial teeth bite properly or not may be properly produced. The molds *c c* are built upon the pins or dowels 7, and said pins are readily removable from the ears 5, in which they are inserted, so that the molds, with the pins affixed thereto, may be detached from the articulator as often as may be required and readily reapplied thereto; hence the same articulator can be used for several sets of teeth in process of construction at the same time, a corresponding number of pins being employed.

Heretofore, as far as we are aware, no means have been provided for the ready removal and reapplication of molds, each articulator requiring to be kept in connection with one set of molds until the teeth are finished, so that if a dentist has several sets in construction at the same time he must provide himself with as many articulators. The advantage of our improvement, which enables the molds to be readily removed and reapplied, and therefore enables one articulator to be used for all the work in hand, will be readily seen.

*i* represents a spring attached at one end to the lower portion of the frame *a*, its upper end bearing against the bar *g* and holding the same in place with a yielding pressure by keeping the collars *u u* in contact with the frame-arms 2 2. The extent of the downward movement of the upper mold may be regulated by a screw, *s*, which works in a tapped socket in an ear, *m*, formed on the bar *g*, and bears on an ear, *n*, formed on one of the arms 2 of the frame *a*.

It will be seen by reference to the dotted lines in Fig. 3 that the upper frame may be held by the spring *i* in a vertical position, so that it will be out of the way when the lower mold or cast is being operated on, the spring holding the upper frame in said position with sufficient firmness to prevent accidental dropping of the upper cast upon the lower.

The arm 4 is secured to the frame *a* by a screw, *s*, which, when loosened, permits said arm and the lower cast to be tilted laterally or vertically.

We claim—

1. In a dental articulator, the supporting-



frame having the holes or sockets 6 6 for the reception of pins or dowels affixed to the lower mold, combined with the pivoted or hinged frame having the holes or sockets 6 6 for the reception of pins or dowels affixed to the upper mold, as set forth.

2. The combination of the lower frame having rods 8 8, the upper frame having sleeves jointed or swiveled to its ends, whereby the upper mold is enabled to rise and fall, said sleeves having orifices fitting loosely on the rods 8 8, whereby the upper mold is enabled to swing laterally, as set forth.

3. The combination of the lower frame having the rods 8 8, the upper frame having sleeves jointed to its ends, (said sleeves embracing the rods 8 8,) and a spring whereby said sleeves are normally held with a yielding pressure against the lower frame, as set forth.

4. The combination of the lower frame having the rods 8 8, the upper frame having a pivotal connection with the lower frame and provided with an ear, *m*, having a tapped socket, and an adjusting-screw engaged with said socket and bearing on a portion of the lower frame, whereby the downward move-

ment of the upper mold may be adjusted, as set forth.

5. The improved dental articulator composed of the supporting-frame *a*, having the rods 8 8 and the detachable pins or dowels 7, the upper frame, *b*, having the sleeves *u u*, jointed or pivoted to its ends, said sleeves being adapted to slide and move laterally on the rods 8 8, the detachable pins or dowels on the upper frame, the controlling-spring *i*, and the adjusting screw or stop *s*, all arranged and operating substantially as set forth.

6. The combination of the lower frame, *a*, the lower cast supporting-arm, 4, made in a separate piece from said arm, and a screw, *s*, connecting said arm and frame, as set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 7th day of January, A. D. 1889.

WILLIE F. SLACK.  
GEORGE A. SMITH.

Witnesses:

GEORGE B. KING,  
FRANK P. REMICK.