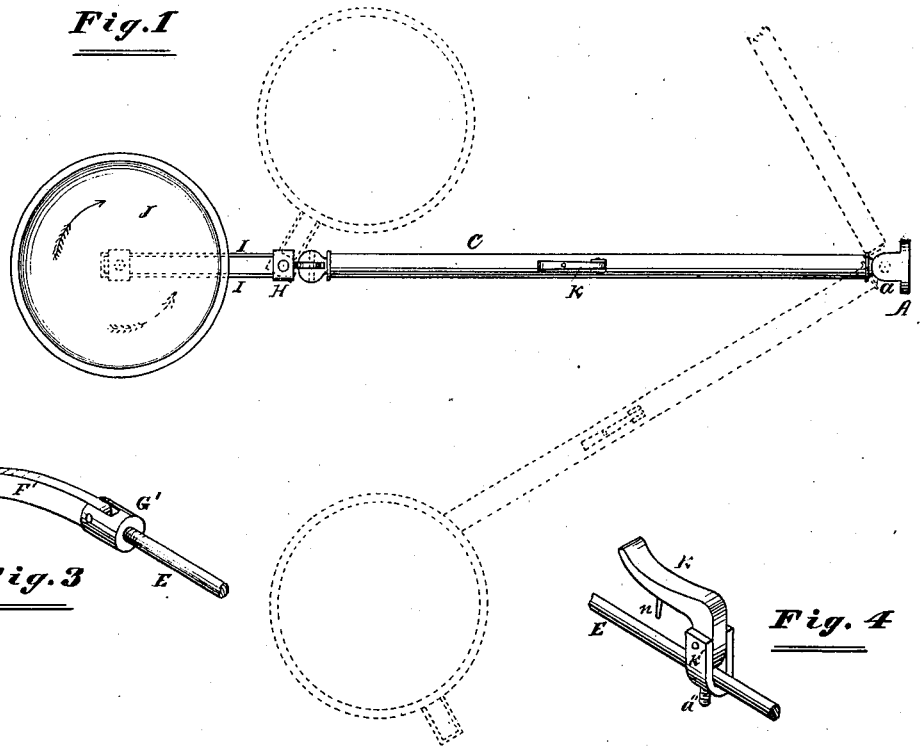
W. D. EWART.

Dental Bracket.

No. 201,876. Patented April 2, 1878.

*Fig. 1*



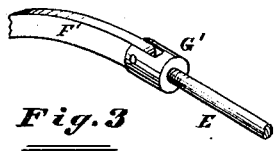




*Fig. 3*




*Fig. 4*




*Fig. 5*

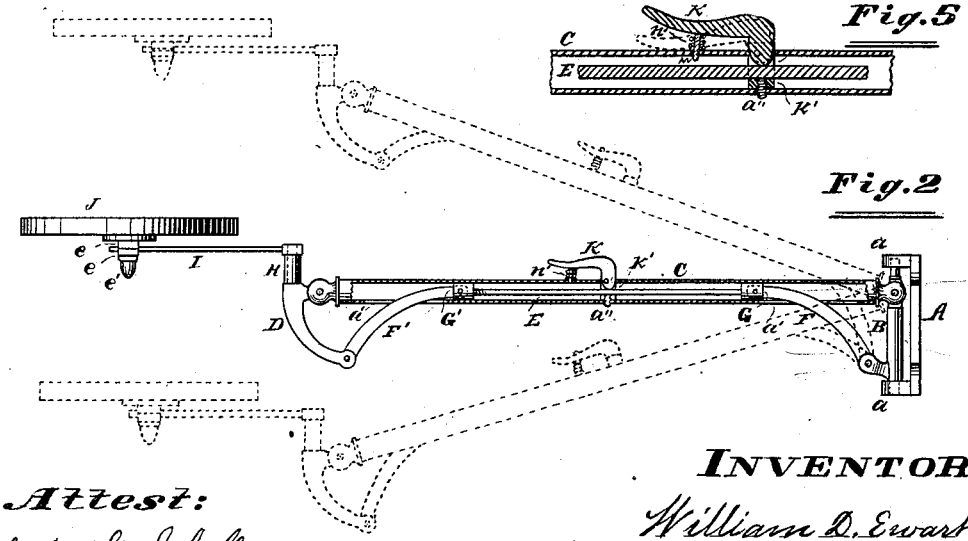



*Fig. 2*

**Attest:**

Charles H. Schoff

S. S. Schoff

**INVENTOR:**

William D. Ewart

By Coyne & Co. his

Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM D. EWART, OF CHICAGO, ILLINOIS, ASSIGNOR TO ABNER B. THOMAS AND BARTON SEWELL, OF SAME PLACE.

## IMPROVEMENT IN DENTAL BRACKETS.

Specification forming part of Letters Patent No. **201,876**, dated April 2, 1878; application filed October 22, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM D. EWART, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dental Brackets, of which the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the said improvements, reference being had to the accompanying drawing, forming a part hereof, and in which—

Figure 1 is a top or plan view of a dental bracket embodying my invention; Fig. 2, a side elevation thereof, shown partly in section; Fig. 3, a detail in perspective, showing the joint which connects the sliding rod to the links; Fig. 4, a like representation, showing the construction and arrangement of the parts employed for clamping and releasing the sliding rod; and Fig. 5, a vertical central section of the same parts, and of the part to which they are applied.

Like letters of reference indicate like parts.

My invention relates to a class of brackets used by dentists, and serving as an accessible place in which they may arrange their tools and implements while operating upon the teeth of patients. It is then necessary for the operator to change his position frequently, and these brackets have therefore been made adjustable. My invention relates to the means employed for rendering them easily adjustable; and consists of certain novel features of construction, substantially as hereinafter set forth, which I have adopted for that purpose.

In the drawing, A represents a small wall-plate, which may be fastened to the wall or other convenient place in any suitable manner. B is a vertical post or stud set to turn freely in the bearings *a a*, projecting horizontally from the plate A. C is a tubular arm, knuckle-jointed, or otherwise so connected to the upper part of the post B that the arm may be swung vertically on its joint. D is an arm or lever, terminating vertically at its upper end, and there so jointed to the outer end of the arm C as to be capable of being swung in the direction in which the latter arm extends. E is a slide-bar or connecting-rod arranged within the arm C. F and F′ are links, preferably knuckle-jointed to the plugs G and G′, respectively, which are run upon the ends of the rod E, and fitted to play nicely within the arm C during the sliding movement of the rod to which they are applied. The outer or lower ends of the links F and F′ are jointed to the post B and to the lever D, respectively, at points below the plugs G and G′, as represented in Fig. 2. The rod C is slotted at *a′ a′*, to admit of the movement of the links F and F′. H is a hollow post or stud turning freely on a pin projecting vertically from the upper end of the lever D. I I are parallel arms projecting horizontally from the post H. J is a rotary table, mounted on a center-pin passing freely between the arms I I, and screw-threaded on its lower end. *e e* are washers or clamping-blocks on the center-pin. These blocks are arranged one above and the other below the rods I I, and should be grooved or fitted to ride nicely thereon when the table is moved back and forth, it being understood that a nut, *e′*, on the lower end of the center-pin may be loosened to admit of this movement, and tightened to retain the table in any desired position on the arms I I. The upper clamp *e* should be rigidly attached to the center-pin, so that the rotation of the table will not be prevented when the nut *e′* is tightened. The table may be mounted upon only one arm or rod; but I deem it preferable to employ two to prevent the table from being tilted or rocked on its support. K is a small cam-lever, the cam end of which enters the arm C. K′ is a loop or lug pivoted to the lever K. The rod E passes through the loop K′, and is in contact with the cam. A small pin, *n*, depends from the long arm of the lever K and enters the arm C. *n′* is an open spiral spring exerting an upward pressure against the lever K, and holding the cam against the rod C. The loop K′ may be tied to the rod C by means of a screw or pin, *a″*.

It will be perceived from the foregoing description that the table J is not only rotary on its center-pin, but that it is also adjustable horizontally on the arms I I, and may be revolved horizontally about the post H. The revolving and sliding movement may be accomplished by grasping the nut *e′*, or either of these movements may be made separately in

the same manner, it being understood that the nut must be loosened in order to adjust the table on its supporting-arms, and that the nut should be tightened after the table is adjusted. It may be sufficient, ordinarily, if the nut is made only tight enough to prevent a too free movement of the table on its supports, and to admit of an adjustment without requiring a further loosening of the nut. In other words, a friction-clamp will serve the purpose of the nut and washers.

The table may also be elevated and revolved about the post B as a center while the hand is on the nut for any of the purposes above set forth; or the nut may be grasped for that or any other special purpose. It will be perceived that any or all of these movements may be made by using only one hand.

The table will be held at any elevation at which it may be placed, for the reason that its tendency to descend, as well as the action of the spring $n'$, causes the cam to bite the rod E, and the latter is thus crowded against the tied loop K′ with sufficient force to prevent the rod from sliding forward in the arm C, it being evident that this rod must so move in order to allow the arm to descend, and that the rod must move either forward or backward in the arm whenever the inclination of the latter with respect to the post B is changed, the rod and arm both occupying the same, or nearly the same, horizontal plane, and both being tied to the post B at different elevations. When, however, the forward end of the arm C is elevated, the rod E will move freely between the cam and the loop K′, the friction of the rod against the cam tending to raise and loosen the latter. In order, therefore, to lower the table, the outer end of the lever K should be depressed, so as to free the rod E with certainty. The spring $n'$ will throw the cam against the rod as soon as the long arm of the lever is released. Other similar means for clamping the rod may be employed.

It will also be evident that the table will always be retained in a horizontal position during all of these movements, owing to the connection of the link F′ to the pivoted lever D, in the manner described.

It is also evident that the arm C need not be hollow, although I deem the tubular form to be the best, as it shields the rod E, and renders the bracket attractive in appearance.

The arm C may consist of a solid bar or rod, in which case it may be encircled by loops or lugs employed to hold the rod E in the same relative position it now occupies. The arm C may also be skeleton in form, and a drawer may be applied to the table.

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

1. A dental bracket wherein the tool-table is automatically retained in a horizontal position during its adjustment vertically, by means of the combination of a vertically-vibrating arm, C, a sliding connecting-rod, E, carried by the said arm, and arranged in or nearly in the same horizontal plane therewith, and a vibrating lever, also carried by the said arm, and carrying the table, the said rod being linked at one end to the lower end of the said lever, and at the other to a point below the plane of the rod, substantially as specified.

2. In a dental bracket, the tool-table J, clamped to a horizontal arm by means of the finger-nut $e'$, the said arm mounted freely on a vertical pin, for the purpose of thereby admitting of the adjustment of the table on its arm, and of the adjustment of the arm on its pin or supporting-post, by one act or operation, substantially as specified.

3. The combination of the wall-plate A, the pivoted vertical post B, arm C, jointed to the said post, lever D, jointed to the arm A, and carrying the table-supporting arm, the sliding rod E, links F and F′, and the lever K, substantially as and for the purposes specified.

WILLIAM D. EWART.

Witnesses:
RUFUS C. HALL,
JOHN R. DALEY.