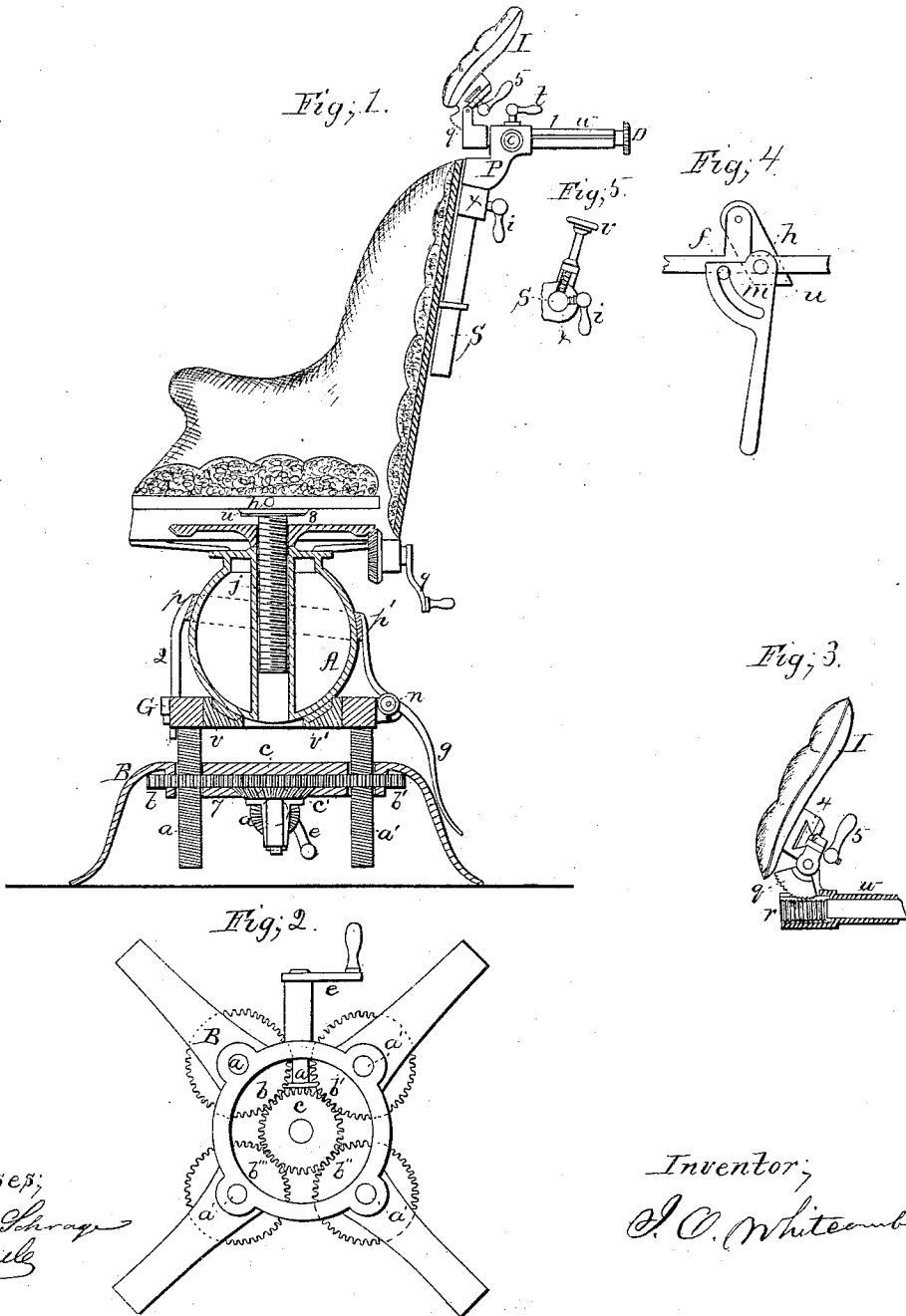


J. O. Whitcomb,

Dentists' Chair,

N^o 50,291.

Patented Oct. 3, 1865.



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IMPROVEMENT IN DENTAL OPERATING-CHAIR.

Specification forming part of Letters Patent No. 50,291, dated October 3, 1865.

To all whom it may concern:

Be it known that I, JAMES O. WHITCOMB, of the city, county, and State of New York, have invented a new and useful Improvement in Dental Operating-Chairs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a sectional elevation. Fig. 2 is a cross-section at B in Fig. 1. Fig. 3 is an enlarged view of the head-rest; and Fig. 4 is an enlarged view of the seat-tilting arrangement, to be more fully hereinafter described.

To a suitable base or stand, B, Figs. 1 and 2, provided with holes through which the screws *a a' a'' a'''* pass, and of sufficient distance below to admit the nut-wheels *b b' b'' b'''* to work freely on the screws *a a' a'' a'''*, is fixed the ring 7, having enlargements for holes coincident with the holes in the base B, and which forms bearings for the under side of the nut-wheels, upon which the whole chair rests.

In the center of the ring 7 is a bearing for the center wheel, *e*, to which motion is given by the crank E and bevel-wheels *d* and *c*, causing all the nut-wheels *b b' b'' b'''* to rotate at the same time and in the same direction.

The upper ends of the screws *a a' a'' a'''* are fixed to projections on the ring G, Fig. 1, at points coincident with the holes in the base B, through which the screws *a a' a'' a'''* pass. Within the ring G a spherical chamber, *v v'*, is made, into which leather or other adhesive and frictional material is placed. Said leather or other material, when fitted in the chamber *v v'*, should be of such inner spherical form that the ball A, Fig. 1, will fit closely at all points. On the upper part of the ball A, Fig. 1, is the clamp-ring *p p'*, fitting to and a little above the ball A, and in position as shown in the drawings.

To the front side of the clamp-ring *p p'* is attached the rod 2, Fig. 1, which terminates with a screw and nut after passing through a projection on the ring G. An extension on the back side of said clamp-ring is provided with eyes or loops in which the eccentric or cam *n* is worked by the foot-lever *g* connected thereto. A tube or pipe of suitable size to receive

the screw *j*, Fig. 1, passes vertically through the center and is fixed in the ball A. Said ball A is provided at the top with a flange, and is thereby attached by frame-work to the body of the chair.

To the upper end of the screw *j*, Fig. 1, after passing through the bevel nut-wheel S, is fixed the flat beam *u*. The ends of said beam *u*, Figs. 1 and 4, turn upward and a little forward, extending midway into the seat of the chair, and are thereto connected by joints to the seat. Through these ends of the flat beam *u*, near where they turn upward from the main part of the beam, the rod *h* passes. To either end of said rod *h* is fixed the cams *m*, which operate upon the pins or studs *f* fixed to the seat, as shown at Fig. 4.

The round vertically-sliding bar S, Fig. 1, is fitted into and slides freely in the two bearings in the metallic piece *x*, which is fastened to the back of the chair. In the piece *x* is fitted the clamp screw *i*, and also the guide-screw *v*, the point of which reaches through the piece *x* into the groove *s* in the sliding bar S, as shown at Fig. 5.

To the upper end of the sliding bar S is securely fixed the piece P, similar in form, as shown in the drawings. Through the upper part of the piece P the round horizontally-sliding bar 1 passes, in which is cut the groove *w*, and is provided at the inner end with suitable supports, to which the plate 6, Figs. 1 and 3, is adapted and jointed thereto, as shown in the drawings. Through said plate 6, Figs. 1 and 3, passes the dovetail-headed bolt 4, and is accurately fitted in the dovetail-slot on the back of the cushion-plate I, as shown in Figs. 1 and 3.

In the piece P, Fig. 1, is fitted the clamp-screw *t*, and also the guide-screw *o*, the point of which passes through and into the groove *w*.

On the inside of the plate 6, Figs. 1 and 3, projections are made which fit into the outer edges of the dovetailed slot on the cushion-plate I, Figs. 1 and 3, and serve also to prevent the dovetail-headed bolt 4 from turning. There is also attached to said plate 6 the toothed segment *q*. Said segment is concentric with the joint of the plate 6, and is operated by the screw on the end of the rod *r*; the threads of which fit nicely into the teeth of the segment,

as shown at Fig. 3. The rod *r*, passing entirely through the sliding bar 1, terminates with the milled head D.

Having thus described my invention, I will now explain its operation.

First, motion is given to the nut-wheels *b b'* *b'' b'''* by means of the crank *e*, bevel-wheels *d* and *e*, and the center wheel, *e'*, and the whole body of the chair is easily raised or lowered (with the patient in it) to any desired height. Second, raising the foot-lever *g* loosens the clamp-ring *p p'* from the ball A and allows the ball to work smoothly over the leather or other frictional surface in the ring G, and enables the operator to place the body of the chair in any required angle or position, and by lowering the foot-lever securely clamping it in any such position. Third, the crank *g* gives motion through the bevel-wheel attached to it to the bevel nut-wheel 8 operating upon the screw *j*, and the seat of the chair may be raised to any required height. Fourth, raising the lever of the cams *m* tilts the front of the seat up and the back of the seat down, retaining it in such angle as is needed, more effectually preventing the patient from slipping and sliding forward during painful dental operations.

Operation of the head-rest: First, it is fixed at any height by the clamp-screw *i*, and by disengaging the guide-screw *v* from the groove *s* enables the operator to arrange the cushion-plate I in a plane varying from the back of the chair and clamping it as securely (by the clamp-screw *i*) as before. Second, the cushion-plate I is placed forward or backward by the sliding bar 1, and is fixed where required by the clamp-screw *t*, and it may also be turned to either side of the chair by disengaging the

guide-screw *o* from the groove *w*, and be as securely clamped in such position by the clamp-screw *t*. Third, the cushion-plate I is readily adjusted to any angle with the back of the chair by means of the milled head D operating the screw *r* in the toothed segment *q*. Fourth, the cushion-plate I may be placed parallel and bodily to either side of the chair and firmly clamped to the plate 6 by means of the dove-tail-headed bolt 4 and clamp-nut 5.

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

1. The base or stand B, in combination with the ring 7, provided with bearings for the nut-wheels *b b' b'' b'''* and bevel-wheels *d* and *e*, as herein described and shown.

2. The chambered ring G, provided with the leather or other frictional material, in combination with the ball A, clamp-ring *p p'*, rod 2, eccentric or cam *n*, and lever *g*, as herein described and shown.

3. The cams *m*, when attached to the rod *h* and operating on the pin or stud *f*, as herein described and shown.

4. The manner of arranging and adjusting the vertically and horizontally sliding bars 8 and 1, in combination with their respective grooves, guide and clamp screws, as herein described and shown.

5. The segment *q*, when attached to the plate and operated by the screw *r* and milled head D, or its equivalent, as herein described and shown.

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