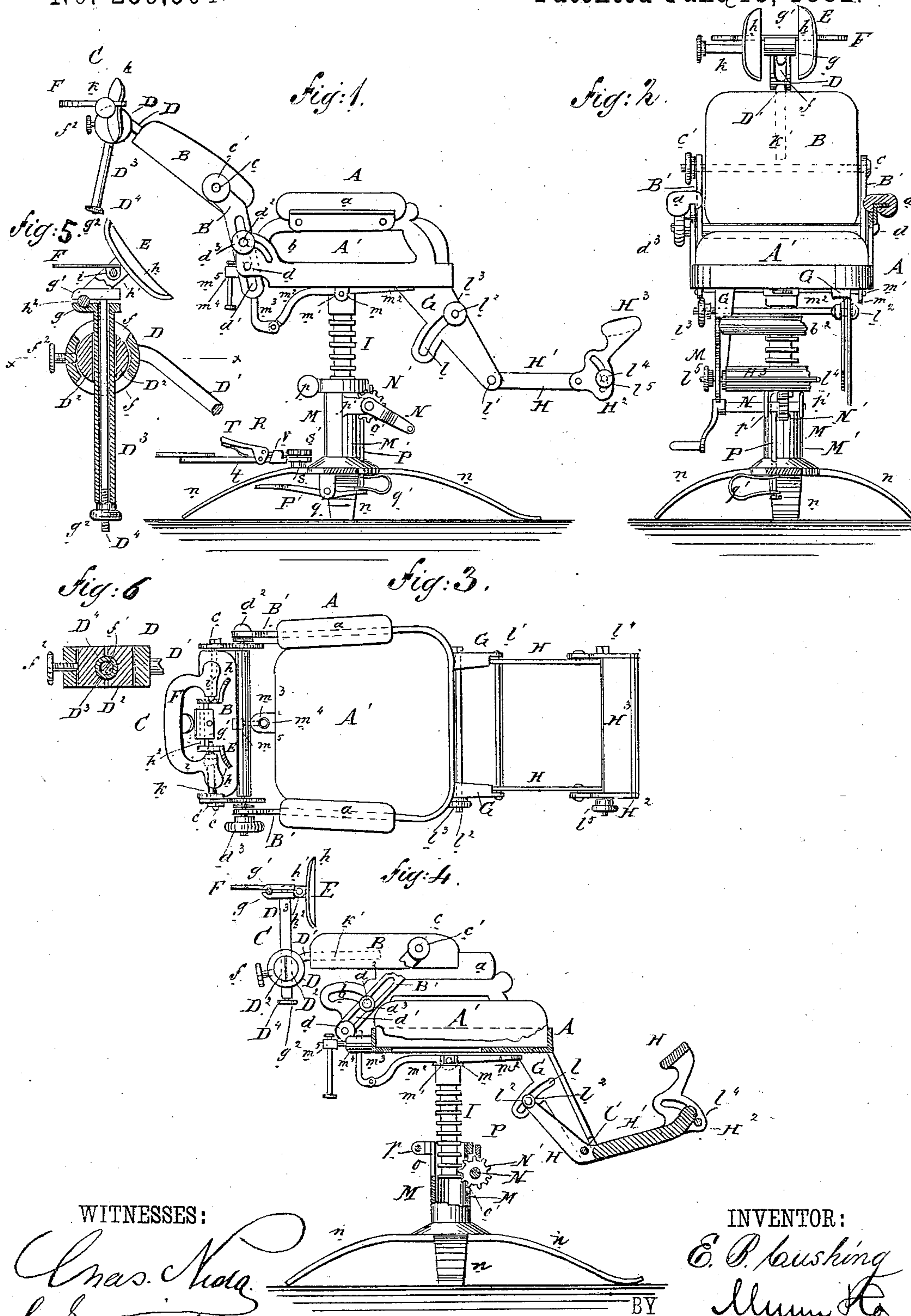


(Model.)

E. B. CUSHING.
ADJUSTABLE CHAIR.

No. 259,504.

Patented June 13, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EMERY B. CUSHING, OF LANCASTER, NEW HAMPSHIRE.

ADJUSTABLE CHAIR.

SPECIFICATION forming part of Letters Patent No. 259,504, dated June 13, 1882.

Application filed March 23, 1881. (Model.)

To all whom it may concern:

Be it known that I, EMERY B. CUSHING, of Lancaster, in the county of Coos and State of New Hampshire, have invented a new and Improved Adjustable Chair, of which the following is a full, clear, and exact description.

The object of this invention is to provide an improved chair that can be adjusted in many positions, and is designed as an invalid's, dental, surgical, or barber's chair.

The invention is embodied in the construction and arrangement of parts, as hereinafter described and claimed.

Figure 1 is a side elevation of the chair partially extended. Fig. 2 is a front elevation of the same, partly in section and with parts broken away to exhibit other parts. Fig. 3 is a plan of the same. Fig. 4 is a side elevation of the chair partly in section and partly closed. Fig. 5 is an enlarged sectional elevation of the adjusting mechanism of the head-rest and arm-rest. Fig. 6 is a cross-section on line *x x*, Fig. 5.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the chair-seat frame, and A' the chair-seat. The arms of said frame A are upholstered, as shown at *a*, and the side rearward projections of said frame A have curved slots *b* formed in them for the adjustable attachment of the chair-back B, which is pivoted on a rod, *c*, between two slotted arms B', and is held in any desired position on said rod *c* by the turning of the screw-nut *c'* on the end of said rod *c*. The arms B' are adjustably connected at their lower ends with the chair-seat frame A by pins *d*, that enter through the slots *d'* of the arms B' into the rearward projections of the said frame A; and said arms B', and hence the chair-back B, are further secured to the frame A by a rod, *d''*, that passes from side to side through the slots *b d'*. A nut, *d'''*, screwed on the end of said rod *d''* serves to fix the arms B' in any desired position after they have been adjusted.

C represents the head-rest and arm-rest mechanism attached to the chair-back B. This mechanism C consists of a ring, D, circumferentially slotted, as shown at *f*, from side to side, and rigidly secured on an end of the rod D', with its axis at right angles thereto. Fitted within this ring D are two segmental blocks, D², grooved on their flat faces, as shown at *f'*.

Through the slots *f* of the ring D and the grooves *f'* of the blocks D² is passed a tube, D³, that has free longitudinal movement through the grooves *f'* and free rocking movement in a vertical plane in the slots *f*, and can be firmly held in any adjustable position by turning the set-screw *f''* down through the periphery of the ring D against a block, D², whereby said blocks D² are made to clamp the tube D³ firmly between them, and at the same time are themselves prevented from rotating. On the upper end of this tube D³ a small plate or jaw, *g*, is secured at right angles thereto, and through said tube D³ is passed a rod, D⁴, whose upper end is provided with a plate or jaw, *g'*. The lower end of said rod D⁴ is screw-threaded, and is provided with a nut, *g''*, by means of which said rod D⁴ can be adjusted, so that the plates or jaws *g g'* shall be opened or closed.

The head-rest E, which consists of two concavo-convex segmental plates, *h*, having lugs *h'*, that are connected by a horizontal bar, *h''*, so that a space is left between the opposite straight sides of said plates *h*, is held in position by the closing of the jaws *g g'* about its bar *h''*, the nut *g''* being turned to open the said jaws *g g'* for the adjustment of said head-rest E and for securing it in the desired position. One advantage of this form of head-rest is that it permits the back hair of a female patient to fall between its plates *h*, so that she shall have her head properly supported.

The arm-rest F, designed to support the arm of the operator, is a flat yoke of metal or wood, designed to be upholstered, having a depending lug, *i*, on one arm, and a spur, *i'*, on the other, and is adjustably secured or pivoted to the head-rest E, so as to move in a vertical plane by the entrance of the spur *i'* into a corresponding opening in a lug, *h'*, and by a screw, *k*, that passes through the lugs *i h'*, that are in contact with each other. By turning screw *k* the arm-rest F may be adjusted and set in any desired position.

This mechanism C is attached to the chair-back B by the insertion of the rod D' into a socket, *h'*, in the upper edge of said chair-back B.

From the front of the chair-seat frame A two parallel triangular legs, G, project downward and forward at a slight angle, said legs G having formed in them, about midway of their

length, curved slots b at about right angles to their front edges.

Angle or L-shaped arms H are pivoted at their elbows on a transverse rod, l' , that is passed through the lower extremities of the legs G , and are further secured and may be adjusted and held in position by a rod, l^2 , or other convenient device, that passes through their upper extremities and through the slots l . On the end of said rod l^2 is a nut, l^3 , that may be turned to clamp said arms H and foot-board H' , that is held between their horizontal extensions in any desired position. Pivoted on the arms H near the extremities of their horizontal extensions are two slotted lugs, H^2 , that carry between their upper ends the foot-rest H^3 . Said foot-rest H^3 is adjusted in a vertical plane, and is locked in position by a rod, l^4 , that passes through the slotted lugs H^2 and the extremities of the arms H , and has a screw-nut, l^5 , on its end, the turning of said nut l^5 clamping the said lugs H^2 , and consequently the foot-rest H^3 , in any desired position.

On the under side of the chair-seat frame A , at opposite sides thereof, are two depending perforated lugs, m , by means of which the said chair is pivoted on the cross-head m' of the annular grooved rod I , which enters the chair-standard M in such a manner that said chair can be tilted forward or back, its movements in this direction being restricted only by bars m^2 , that extend at right angles to the cross-head m' from the top of the rod I . The rear one of these bars m^2 has its extremity bent downward slightly, and has hinged upon it a vertical pin, m^3 , which passes up through a stud, m^4 , that extends rearward from the said chair-seat frame A . A screw, m^5 , which enters through the end of said stud m^4 , can be turned against the pin m^3 , and thereby lock the chair in any desired tilted position.

The chair-standard M consists of a tubular upright, M' , supported on four feet, n , said upright M' being longitudinally slotted on opposite sides, as shown at o o' , respectively, the slot o extending from about midway of its length to the top, so that the upper portion of the said upright M' may be compressed by the clamp and screw p about the rod I , and thereby secure the chair in any position in the circle of its base.

On either side of the slot o' a lug, p' , projects from the upright M' , and afford a bearing for a horizontal crank-shaft, N , on which is a spur-wheel, N' , that enters the slot o' and engages against the rod I , so that by turning the crank-shaft N the rod I , and thereby the chair, can be bodily raised or lowered. This spur-wheel N' and crank-shaft N are locked in position by a dog, P , whose bent finger engages

in the teeth of said wheel N' , that is extended down through the base of the standard M , and is hinged to a treadle, P' , which is pivoted within easy reach of the operator's foot on a lug, q , that depends from the base of said standard M . A spring, q' , set about the lower portion of the dog P , serves to hold said dog P engaged in the wheel N' , while downward pressure on the treadle P' releases said dog P .

The operator's foot-rest R is pivoted on a stud, s , that is fixed in one of the feet n of the standard M , on the top of which stud s is a horizontal ratchet-wheel, s' . On said foot-rest R is pivoted a pawl, T , which is held engaged in the ratchet-wheel s' by a spring, t , and is guided by a loop, v , that is also secured on the said foot-rest R . By pressing his foot on the outer end of the pawl T the operator can disengage it from the ratchet-wheel s' , and can then turn said foot-rest R to the right or left to serve as a rest for either foot.

The operator's foot-rest, the treadle mechanism, and the means for raising, lowering, and locking the chair form no part of the invention herein claimed.

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

1. The combination of the base, the seat-supporting spindle provided with the circular ribs or teeth, movable endwise and capable of turning or swiveling in said base, the pinion-wheel acting upon the spindle to elevate it, and the crank-shaft N' , journaled in lugs p' on the upright M' , as shown and described.

2. The combination, with chair-seat frame A , having slotted rearward projections, and the back B , pivoted on rod c , of the slotted arms B' , pins d , rod d^2 , and nut d^3 , as and for the purpose specified.

3. The combination, with the chair-back and head-rest, substantially as described, of the slotted ring D , rod D' , grooved blocks D^2 , the sliding tube D^3 , provided with jaw g , the adjustable rod D^4 , provided with jaw g' , and the nuts f^2 g^2 , as and for the purpose specified.

4. In an adjustable chair, the combination, with the slotted side bars, G , of the foot-board-supporting angle-arms H , rods l' l^2 , and nut l^3 , substantially as herein shown and described, whereby the foot-board may be adjusted and held in position, as set forth.

5. In an adjustable chair, the combination, with the foot-board-supporting arms H , of the slotted pivoted lugs H^2 , rod l^4 , and nut l^5 , and foot-rest H^3 , substantially as and for the purpose described.

EMERY BLANCHARD CUSHING.

Witnesses:

HARRY G. CORNING,
GEO. F. WOLCOTT.