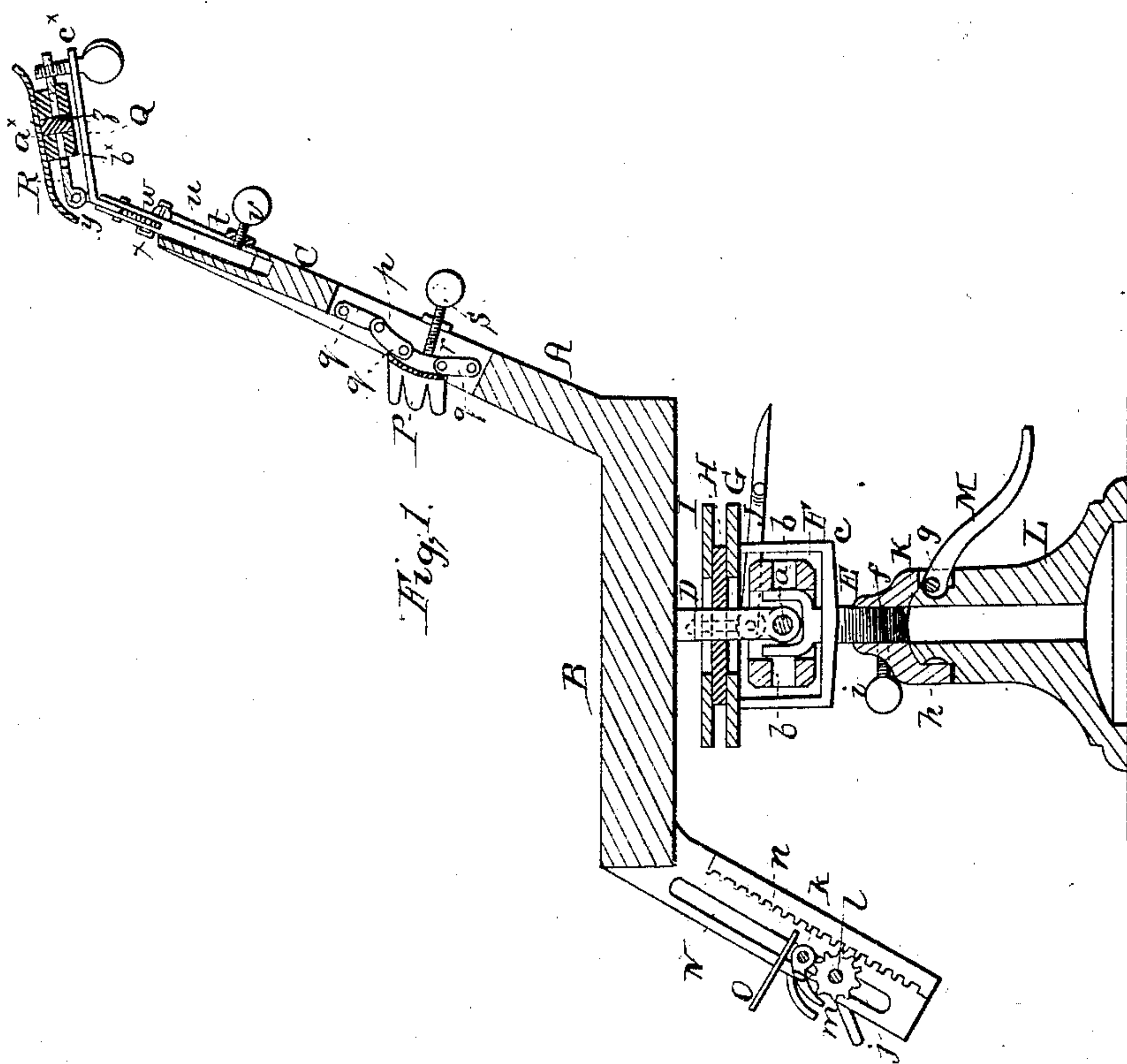
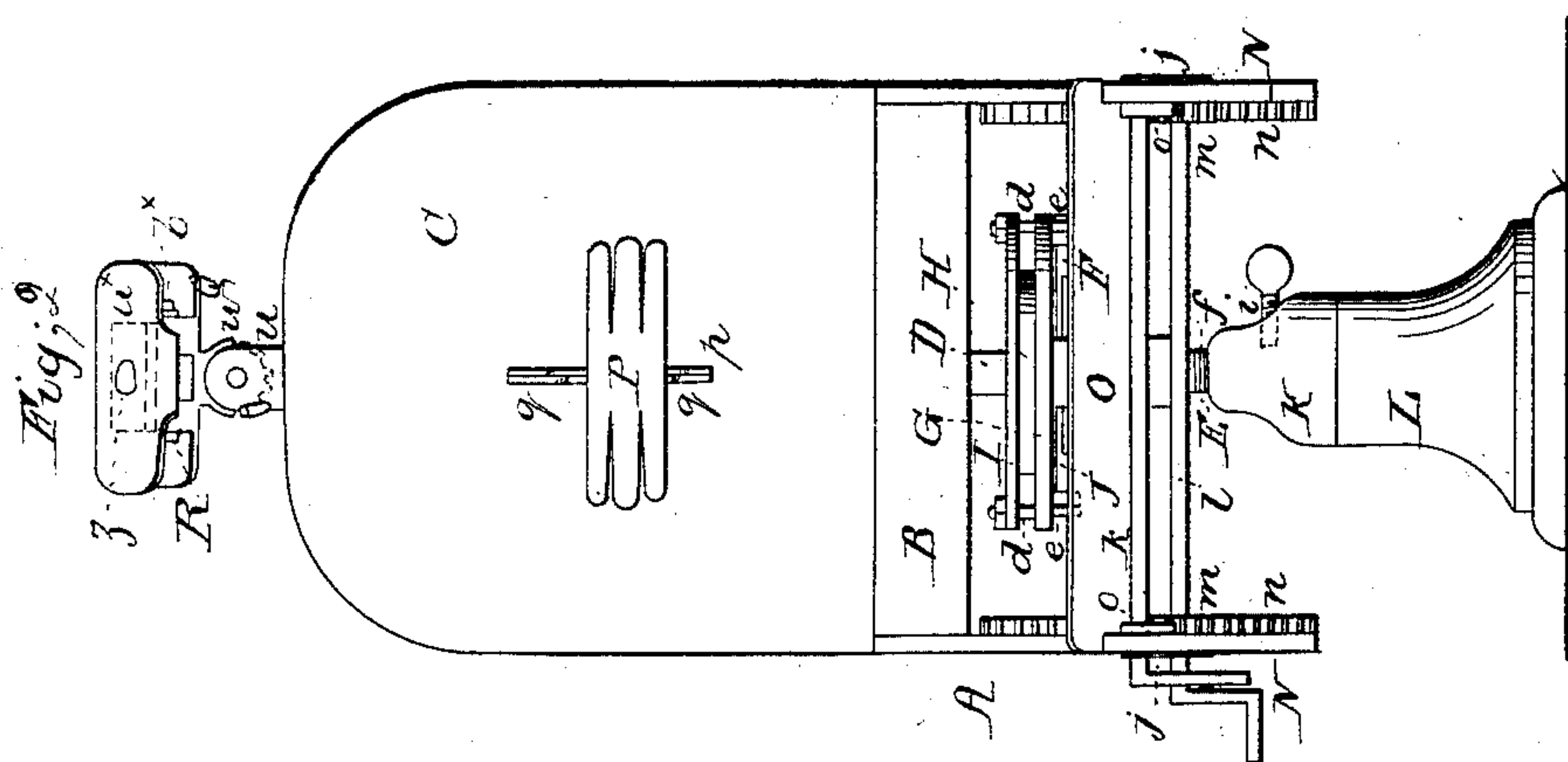


A. M. Holmes,

Dentists' Chair,

No 21,562

Patented Sept. 21, 1858



UNITED STATES PATENT OFFICE.

ALEXANDER M. HOLMES, OF MORRISVILLE, NEW YORK.

IMPROVEMENT IN DENTISTS' CHAIRS.

Specification forming part of Letters Patent No. **21,562**, dated September 21, 1858.

To all whom it may concern:

Be it known that I, ALEXANDER M. HOLMES, of Morrisville, in the county of Madison, and State of New York, have invented a new and Improved Chair for Dental and other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical central section of my invention. Fig. 2 is a front view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in having the chair provided with an adjustable foot-rest, an adjustable head-rest, and supplemental back, the whole being arranged as hereinafter shown, whereby the body of the chair may be rotated and also inclined in any direction and secured in varying positions, so that the operator may with facility place the occupant of the chair in positions most favorable for his comfort and for the successful and ready performance of the operation.

The invention is more especially designed for dentists' use, but it may be advantageously used by barbers and hair-dressers.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents the body of the chair, which is formed of a seat B and back C, properly upholstered and rigidly or permanently attached to each other at a suitable angle, so that the back will have a proper inclination. (See Fig. 1.)

To the under side of the seat B and at its center a pendent rod D is attached, the lower end of which is bifurcated or forked, a pin *a* being attached at right angles with each prong of the fork.

E is a rod, the upper end of which is also forked and each prong provided with a pin *b*. The pins of the two rods are fitted in a hub F, the pins of one rod being at right angles with those of the other, the pins being allowed to turn freely in the hub. This hub may be formed of two circular metal plates connected together by pins or bolts. The two rods D E form the standard of the chair and the forked end of the rods with the pins and hub form the universal-joint connection.

To the lower rod E of the standard a curved or bent plate or bar *c* is attached, said bar extending upward at opposite sides of the hub F and attached to an annular plate G, through which the rod D passes. On the plate G a circular plate H is placed, through the center of which the rod D also passes, but the plate H is fitted rather snugly to the rod as the plate moves with it. (See Fig. 1.)

On the plate H an annular plate I, precisely similar to G, is placed. This plate I has two bolts *d* attached to it, said bolts passing down through the lower annular plate G and having the ends of a semicircular rod J attached by pivots *e*, the ends of said rod being made of eccentric form and bearing against the under side of plate G. The lower end of the rod E has a screw-thread *f* formed on it, and is screwed into a nut K, which is placed on a bell-shaped base L, the nut being secured on the upper end of the base in consequence of the inner end of a lever M, which has its fulcrum-pin *g* in the nut *k*, fitting in a groove *h* in the base. The inner end of the lever M is of eccentric form, and serves by having its outer end depressed as a stop to the nut, preventing the rotation of the same. The base L may be of metal. Cast-iron will probably be the material generally used. The nut K has a thumb-screw *i* passing into it and bearing against the screw *f* to prevent the casual turning of the same.

To the front end of the seat B two inclined metal bars N N are attached. These bars are slotted longitudinally nearly their whole length, and a slide *j* is fitted in each bar. In the slides *j j* two shafts *k l* have their bearings, and on the lower shaft *l* two pinions *m m* are placed, one at each end, said pinions gearing into racks *n n*, which are attached one to the inner side of each bar N. To the shaft *k* two pawls *o o* are attached, which, when the shaft *k* is properly turned, catch into the pinions *m m*. To the upper ends of the slides J J a foot-rest O is attached, said rest being a flat plate of metal or wood.

In the back C a vertical slot *p* is made, and in this slot a series of metal plates or links *q* are secured, said plates being connected together by rivets similar to a chain. To one of these links *q* a screw *r* is attached, said screw passing through a nut *s*, attached to the

back of the chain. To the front sides or edges of the plates *q* a plate *P* is attached. This plate may be formed of metal, covered or upholstered.

In the upper end of the back *C* a metal socket *t* is placed, in which a slide *u* is fitted. This slide may be adjusted in and out—that is to say, raised or lowered—and it may be secured at any desired point by a set-screw *v*. In the upper part of the slide *u* a small toothed wheel *w* is placed, and a pawl or stop *x* in the slide *u* retains the wheel or prevents it from casually turning. A plate *Q* is attached to wheel *w*, and a plate *R* is connected by a hinge *y* to the lower end of plate *Q*. The plate *R* is slotted, and a pin *z* passes through the slot in said plate, the upper end of the pin having a plate *a*^x attached and the lower end having a plate *b*^x attached. A thumb-screw *c*^x passes through the outer ends of the two plates.

From the above description of parts it will be seen that by raising the outer end of the rod *J* the chair may be inclined or moved in any direction in consequence of the universal-joint connection between the two rods *D* *E*, and by depressing the outer end of rod *J* the chair may be secured in any desired position, as the upper annular plate *I* will be drawn down by the eccentric ends of the rod *J* and the plate *H* firmly clamped between the plates *I* *G*, thereby securing the chair. The chair may be elevated when required by unscrewing the screw *i* and turning the chair or the nut *K*, the lever *M* being raised, and the chair may be simply rotated without being raised by not removing the screw *i*, but

merely raising lever *M* and allowing the nut *K* to turn on the base *L*.

The foot-rest *O* is raised or lowered by turning the shaft *l*, the pawls *o* being thrown out of gear, the pawls *o* retaining the pinions and consequently the foot-rest when thrown in connection with the pinions.

The plate or supplemental back *P* is adjusted in or out, as may be desired, by adjusting the thumb-screw *s*, so that persons may have the form of the back varied or modified, as occasion may require.

The head-rest at the top of the back *C* may be adjusted in any position as occasion may require. It may be lowered or inclined either to the right or left by turning wheel *w*, adjusted laterally by relaxing the set-screw *c*^x and moving plate *a*^x, and inclined more or less by adjusting plate *R*.

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

1. The foot-rest *O*, arranged with the slides *j j*, racks *n*, pinions *m*, and pawls *o*, substantially as described.
2. The supplemental back *P*, attached to links *q*, which are fitted in the slot *p* of the back *C*, and actuated by the set-screw *s*, substantially as set forth.
3. The adjustable head-rest formed of the slide *u*, pinion *w*, plates *Q* *R* and *a*^x *b*^x, arranged relatively to each other and applied to the back *C*, substantially as set forth.

A. M. HOLMES.

Witnesses:

A. G. PURDY,
I. STERLING SMITH.