(No Model.)

W. A. JOHNSTON & A. W. BROWNE.

DENTIST'S CHAIR.

No. 340,787. Patented Apr. 27, 1886.

FIG. 1.

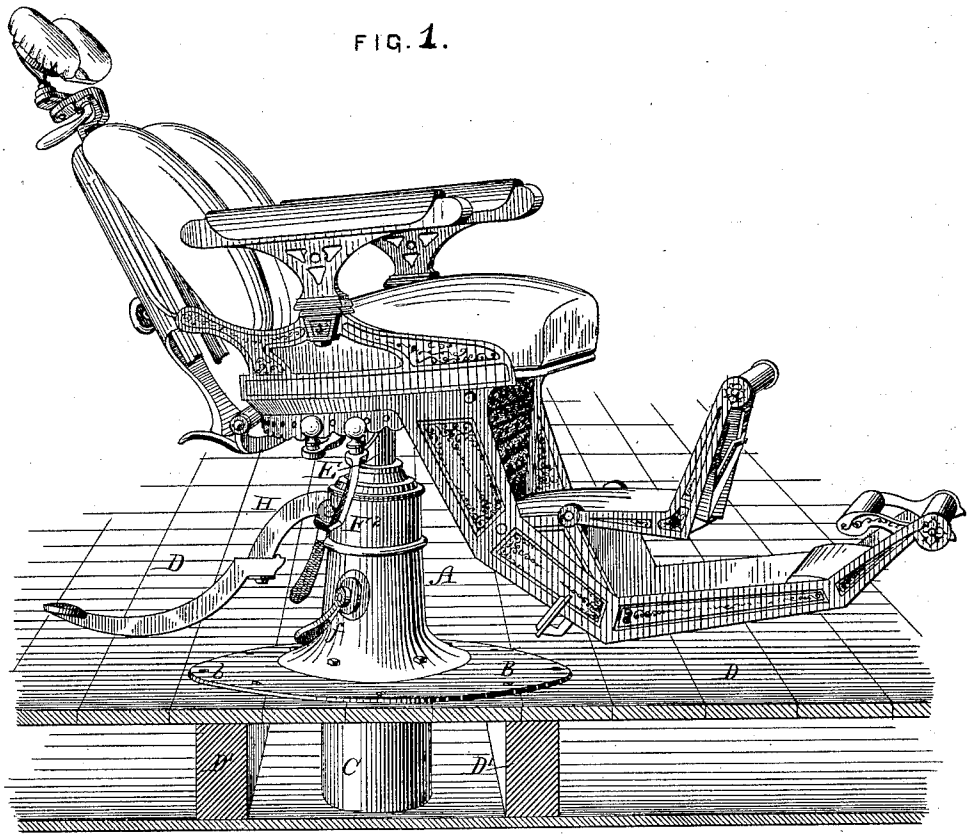


FIG. 2.

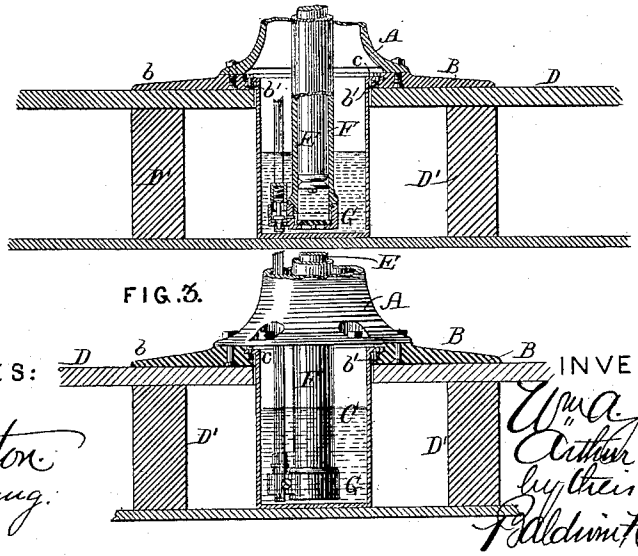


FIG. 3.

WITNESSES:

Wm. J. Peyton

James Young.

INVENTORS:

Wm. A. Johnston and Arthur W. Browne, by their Attys, Peyton & Peyton

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM A. JOHNSTON, OF CLIFTON, AND ARTHUR W. BROWNE, OF WESTFIELD, NEW YORK, ASSIGNORS TO THE S. S. WHITE DENTAL MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

DENTIST'S CHAIR.

SPECIFICATION forming part of Letters Patent No. 340,787, dated April 27, 1886.

Application filed June 10, 1885. Serial No. 168,247. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. JOHNSTON, of the village of Clifton, in the county of Richmond and State of New York, and ARTHUR W. BROWNE, of the village of Westfield, in said county and State, have jointly invented certain new and useful Improvements in Dentists' Chairs, of which the following is a specification.

Our invention relates to adjustable chairs more especially designed for the use of dentists.

The object of our invention is to give an increased range of vertical adjustment to the chair-seat, so that the patient seated in the chair may be elevated to the highest point desired, or lowered to the lowest point desired, (or held at any intermediate point,) in the practical operations of the dentist, whether the operator be a tall or a short person.

To this end our invention consists in extending the elevating and supporting apparatus of the chair below the chair-base or pedestal, which rests upon the floor or platform of the operating-room.

Heretofore in operating-chairs, the chair-base or pedestal has been supported upon the floor by suitable legs and feet, while the elevating apparatus has been mounted in or upon said base or pedestal, but not extending below it. We do not here refer to that class of operating-chairs wherein there is a supporting bar or post at the back of the chair body or seat, on which the chair body or seat is fitted to travel and be supported. By this arrangement limited vertical adjustment of the chair body or seat has been the result, because if a wide range of upward movement was desired, the base or pedestal was necessarily long in order to inclose the elevating parts of the apparatus. Consequently it was impossible to bring the chair-seat down close to the floor, because the base or pedestal would not permit such an operation. Operating stools and seats were therefore necessarily employed by the operators, so as to place themselves in the proper altitude to conduct the dental operations. On the contrary, were the base a low one, the patient seated in the chair might be brought down close to the floor, but a high range of adjustment or altitude could not be effected.

By our improvement we employ a low base, which enables the chair body or seat to be brought as low down as is necessary to meet any practical requirements, and by extending the elevating part of the apparatus below said base—as, for instance, through the floor—we employ lengthened elevating apparatus, by which the chair body or seat may be raised to any desired height, and this because the elevating part of the apparatus is not confined in length to correspond with the base or pedestal.

Our invention further consists in certain new organizations and combinations of devices, which are particularly recited at the close of the specification.

In the accompanying drawings, Figure 1 is a perspective view of our improved chair organized in the best way now known to us. Fig. 2 is a sectional view of the lower portion of the base or pedestal and elevating devices. Fig. 3 is a similar view to Fig. 2, with the exception that the base, except its plate B, is in elevation.

The base or pedestal of the chair is preferably made up of a tubular casting, A, having a lower, enlarged, or flaring end secured or bolted to a plate, B, which is in turn fastened to the floor by suitable fastenings. This plate B is preferably a circular plate, and is provided preferably with flaring or tapered edges *b*, so that the carpet may be fitted upon and over said plate B without affording sharp edges, by which the carpet will be liable to be cut by the pressure of the feet of the operator. Said plate B is provided with a central opening communicating with the bore of the tubular pedestal or base A, and securely bolted to a flange, *b'*, of said plate B is a well or reservoir, C, the flange *c* of the well C being firmly united to the flange *b'* of the plate B, so as to be fluid-tight.

The flooring of the operating-room is represented by D, and it will thus be seen that the well C is passed through the flooring and between two of the joists D' D', supporting

said flooring, whereby a part of the chair is extended below the base and through an opening in the floor.

The elevating apparatus consists in this example of a plunger, E, and its supporting and operating connections, upon the upper end of which plunger the chair-body or seat-frame is mounted. Said plunger is fitted to work up and down in a cylinder, F, which is fitted at its lower end with a valve-frame, G. Said valve-frame G is fitted with one or more valves, which constitute the means of communication between the cylinder F, in which the plunger T moves, and the well C. The upper end of the cylinder F is enlarged or provided with a cap, F^2, which rests upon the upper end of the tubular base A, and is fitted to turn or swivel thereon, whereby the chair-body may be turned around horizontally to afford horizontal adjustment, while it may be locked in the desired position by means of a clamp-screw, *f*, passing through the base A, and bearing against the side of the cylinder F. The cap F^2 of the cylinder F is slotted and fitted with lugs, between which an elevating-lever, H, is pivoted, the inner end of said lever carrying connections which act upon the plunger E to elevate it in the cylinder F when the pedal end of the elevating-lever is depressed. The operating connection between the elevating-lever H and the plunger E may be a lifting-pawl on the end of said lever, engaging teeth on the plunger. By depressing the elevating-lever, which is a pedal-lever preferably, the plunger is elevated in the cylinder, while the fluid which is contained in the well C follows the plunger in its ascent and supports it in its elevated position by the closing of the valves. By opening one of the valves the fluid is displaced and the plunger permitted to descend to lower the chair-body. This elevating, lowering, and supporting apparatus is substantially the same as that shown in Wilkerson's patent of November 20, 1877, and E. T. Starr's patents of November 25, 1879, and April 12, 1881, and need not be described in detail, as our invention is not limited to the particular form of elevating and supporting apparatus shown.

By the organization shown, a long plunger or support for the chair-seat may be employed, as it is free to move not only through the base, but below the base and through the floor or a platform, on which the base may rest, for the required distance, whereby the chair may be brought down as low as desired to the floor, while it may be elevated to any desired height required in practical operation.

We do not claim herein anything shown in Newbrough's patent of November 16, 1875, which shows a rack-bar or post mounted upon and extending above the floor of the operating-room, and fitted with a traveling chair-body, adjustable up and down thereon and in front thereof; nor do we claim herein anything shown in the German Patent No. 23,446, of 1883, which shows a series of theater-chairs fitted to move up and down through holes in the floor of the theater, and elevated and lowered relatively to said floor, by a plunger or series of plungers beneath the floor and working in a cylinder or cylinders located in a pit or pits beneath said floor.

We claim as our invention—

1. The combination, in an operating-chair, of a base or pedestal resting upon the floor or platform of the operating-room, a chair body or seat elevating and supporting mechanism mounted in said base and extending below said base or pedestal through the floor or platform on which it rests, and a turning or swiveling connection between said elevating and supporting mechanism and said base or pedestal, substantially as described, whereby increased range of vertical adjustment is imparted to the seat or body of the chair without interfering with its turning or horizontal movements relatively to the base thereof.

2. The combination of a hollow base or pedestal, a base-plate or support bolted or secured thereto, and a fluid cell or reservoir fastened to said base-plate and extending below it, substantially as described.

3. In combination with the floor or platform of an operating-room, an operating-chair consisting of a base or pedestal resting on said floor or platform, elevating and supporting mechanism mounted upon said base and extending below it through the floor or platform, operating mechanism by which said elevating mechanism is controlled mounted above said floor or platform, and the chair-seat or chair-body mounted upon said elevating and supporting mechanism, substantially as described.

In testimony whereof we have hereunto subscribed our names.

WILLIAM A. JOHNSTON.
ARTHUR W. BROWNE.

Witnesses:
HUBBARD R. YETMAN,
LLOYD B. WIGHT.