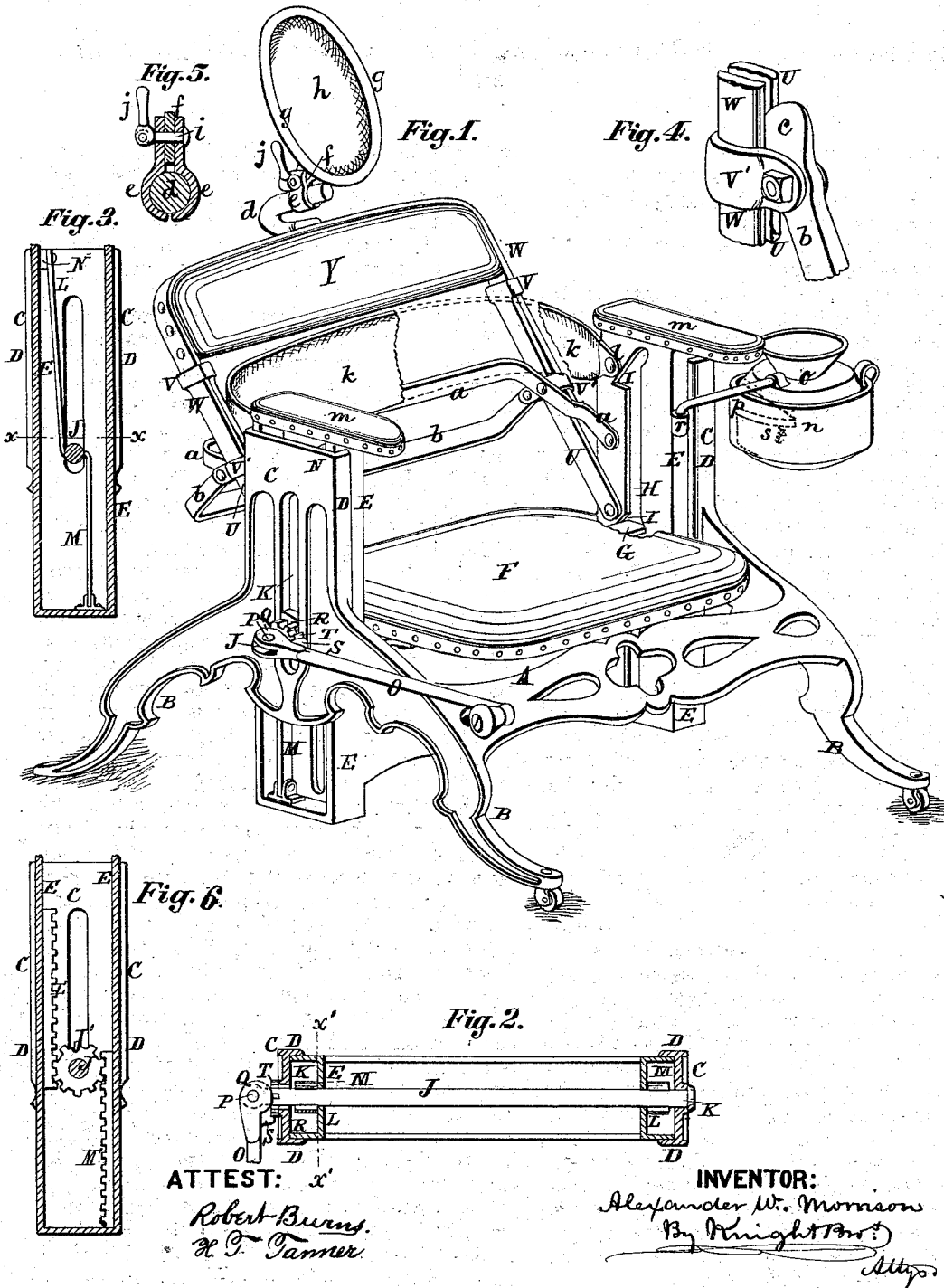


A. W. MORRISON.
Dentists' Chairs.

No. 154,069.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN DENTISTS' CHAIRS.

Specification forming part of Letters Patent No. **154,069**, dated August 11, 1874; application filed April 13, 1874.

To all whom it may concern:

Be it known that I, ALEXANDER W. MORRISON, of St. Louis, St. Louis county, Missouri, have invented a certain new and useful Improvement in Dentists' Chairs, of which the following is a specification:

The first part of my invention relates to the devices for raising the frame to which the seat and back are attached. This is done by means of two straps upon each side, one of which is attached to the top of the stationary sides of the chair, while the other is attached to the bottom of the seat-frame, and both are wound upon a central shaft turned by a hand-crank, which is pivoted to one end of the shaft, and provided with an eccentric cam at the pivot, the cam clamping the shaft fast (to prevent its rotation and support the seat-frame) when said hand-crank is forced toward the chair. The second part of my invention relates to the back, which is adjustable both in length and inclination. The sides of the back are in two pieces, which slide upon each other, and are connected by clips. To the lower clip on each side is pivoted a brace. The moving parts are simultaneously locked by wedge-formed cams at the ends of a bow, which is pivoted to the lower clips, and which is raised to force the wedges between the pieces and lock them together and to the lower clip. The third part of my improvement relates to the universally-adjustable head-rest. This is clipped to a round arm, attached to the top of the chair-back, and has side adjustment by turning thereon. The connection between the rest and clip is made by a rod which passes through the ends of the clip, and through a lug upon the rest, the rod forming the pivot on which the rest turns, for adjustment backward and forward. The eccentric cam at the end of the pivot-rod acts to simultaneously tighten the clip on the arm and lug, to fix the head-rest. The fourth part of my invention consists in the combination, with the adjustable back, carrying the shoulder-rest of a flexible back disconnected therefrom, and secured to the sides of the raising sides of the chair by pivots at the ends, so as to freely accommodate itself to the position of the person.

In the drawings, Figure 1 is a perspective view of the chair. Fig. 2 is a section at x x ,

Fig. 3. Fig. 3 is a section at x' x' , Fig. 2. Fig. 4 is a perspective view on an enlarged scale, showing the locking device of the adjustable back. Fig. 5 is a transverse section of the adjustable head-rest attachment, enlarged. Fig. 6 is a section, showing a modification of Fig. 2.

A is the base of the chair, supported on legs B B. C C are the sides or standards, having flanges D, forming guides for the sides E of the vertically-adjustable frame, to which the back and seat are secured. The seat F is made adjustable by the following means: Upon each side is a lug, G, which extends into a vertical slot, H, of the side pieces E. This slot has notches I, in which the lugs G engage. When the seat is turned edge up, to bring the width of the lugs in line with the length of the slot, the seat may be raised or lowered from one notch to another, so as to suit it to persons of various sizes. J is a shaft passing through the slots K in the standards, and through slots H of the side pieces E, and having secured to it, near each end, two flexible straps or tongues, L M, of leather or other suitable substance, for winding upon the shaft as it is turned. The strap L extends upward from the shaft, and is attached to a lug, N, at the top of the standard C on each side. The strap M extends downward from the shaft, and is attached to the lower end of the side piece E, so that when the shaft J is turned it is itself raised by the strap L at each end, and the bottom of the side piece E is drawn up toward the shaft by the strap M, the side pieces E moving upward at twice the speed of the shaft, as the straps are wound in a double coil upon the latter. The shaft is turned by a hand-crank, O, which is jointed to the end of the shaft at P, so as to permit of an oscillatory movement, to throw into operation the cam Q, to fix the shaft in position and prevent its retrograde rotation, which latter would allow the descent of the seat-frame. When the hand-crank is pressed inward, the cam Q is forced against the journal-block R, in which the shaft has journal-bearing, so as to prevent the rotation of the shaft. There is also a positive device to hold the shaft. In this, a lug, S, on the hand-crank interlocks with cogs T on the block R when the hand-

crank is forced sufficiently close to the chair, (the cam coming into operation before the lug and cogs engage,) and, by its frictional hold upon the block, tending to hold the parts in lock. The sliding block R is prevented by the slot K from turning with the shaft. When the hand-crank O is drawn outward from the chair sufficiently to disengage the cam Q, it may be turned freely. The back has lower side bars U pivoted at the lower end to the pieces E, and connected by clips V V' to the sides of the bow W, to which the shoulder-pad Y is attached. To the lower clips V is pivoted a bow, *a*, whose ends are pivoted to the pieces E, at points above the connection of the side bars U. The side bars U and the ends of the bow W all slide in the clip V, and between the ends of the clip are pivoted the ends of a bow, *b*. The ends *c* of this bow are wedge-shaped, and the raising of the bow forces them between the bars U and W, within the clip, and holds the bars and clip in the position they may then be in. When it is desired to alter the position of the back, the bow *b* is depressed, drawing the wedges *c* out. The back may then be lengthened and inclined as desired—the ends of the bow W sliding in the clip to regulate the length, and the clip V sliding on the sides of the back in adjusting the inclination. Attached to the top portion W of the back is a U-shaped bar, *d*, around which is a strap-clip, *e*, whose ends embrace a lug, *f*, attached to the circular frame *g* of the head-rest. The head-rest is formed of the marginal oblong frame *g* and a central web, *h*, of cloth, so as to accommodate itself to the shape of the head. The ends of the clip *e* are held together by a bolt, *i*, having at one end a head and at the other an eccentric lever-cam *j*, by turning which the clip is tightened simultaneously upon the bar *d* and upon the lug *f*, so as to secure the head-rest in any position in which it may be placed, the bolt *i*, when the cam is relaxed, forming a pivot for a backward and forward inclination of the head-rest, and the bar *d* for a side inclination. In addition to the shoulder and head rests, and dis-

connected therewith, is a flexible rest, *k*, for the hollow of the back. This consists of a broad strap of cloth, velvet, or any other suitable material, and is attached to the side pieces E by a stud or pivot, *l*, at each end. This has the required freedom of movement to accommodate itself to any position taken by the occupant of the chair. *m m* are the elbow-rests on top of the pieces E. *n* is the spittoon, consisting of a neck, *o*, supported in a bracket, *p*, the bracket *p* being hinged to the chair at *r*. The base *s* is connected to the neck by a turn-catch, and has a lip, *t*, for the retention of the gold or any solid matter when the liquid contents are poured out.

In Fig. 7 is shown a modification of my seat-frame raising apparatus. In this, the shaft J carries a pinion, J', which engages with cog-racks L' and M' on the inner sides of the standards C and side pieces E, respectively. As the shaft is turned the pinion climbs the racks L' at each end, and draws up the side pieces E by means of the rack M'.

I claim herein as my invention—

1. The combination of the frame E E, straps L L and M M, shaft J, block R, slotted standards C C, and hand-crank O P, provided with a friction-cam, Q, all constructed and arranged to operate substantially as set forth.
2. The combination of the back-bars U, U, and W, clips V V', wedge-cams *c c*, and pivoted brace *a*, as and for the purpose specified.
3. The combination of the bar *d*, clip *e*, pivot cam-bolt *i j*, lug *f*, and head-rest *g h*, all constructed to operate substantially as set forth.
4. The combination of the flexible back *k* with the adjustable side pieces E E, as and for the purpose set forth.
5. In a dentist's chair provided with adjustable side pieces E E and flexible back *k*, the extensible and adjustable back U U W V V', as and for the purpose set forth.

ALEXANDER W. MORRISON.

Witnesses:

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