

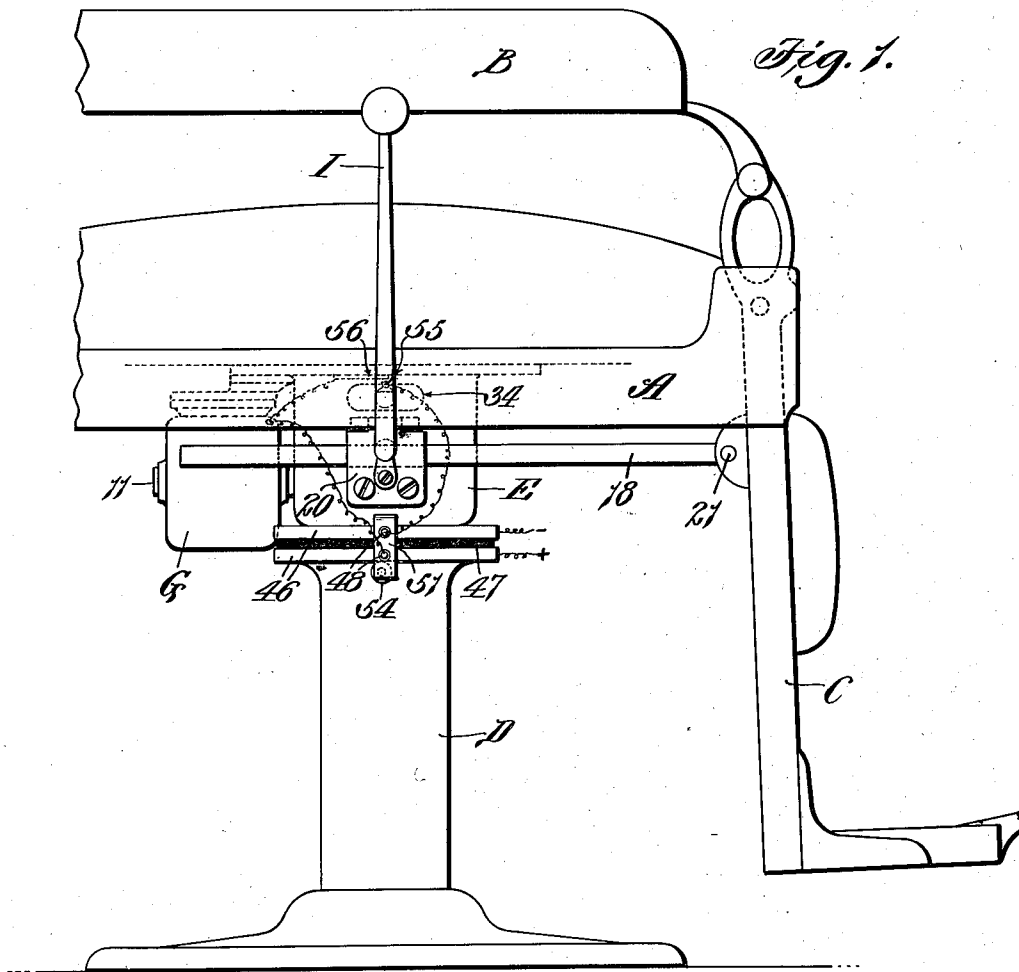
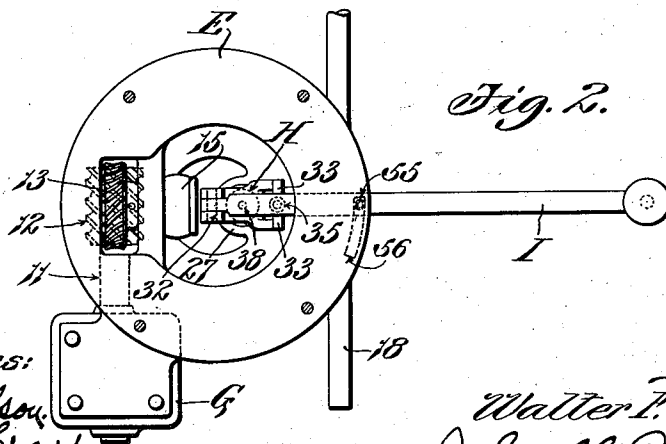
W. F. KOKEN.
BARBER CHAIR.

APPLICATION FILED DEC. 26, 1914.

1,178,733.

Patented Apr. 11, 1916.

2 SHEETS—SHEET 1.



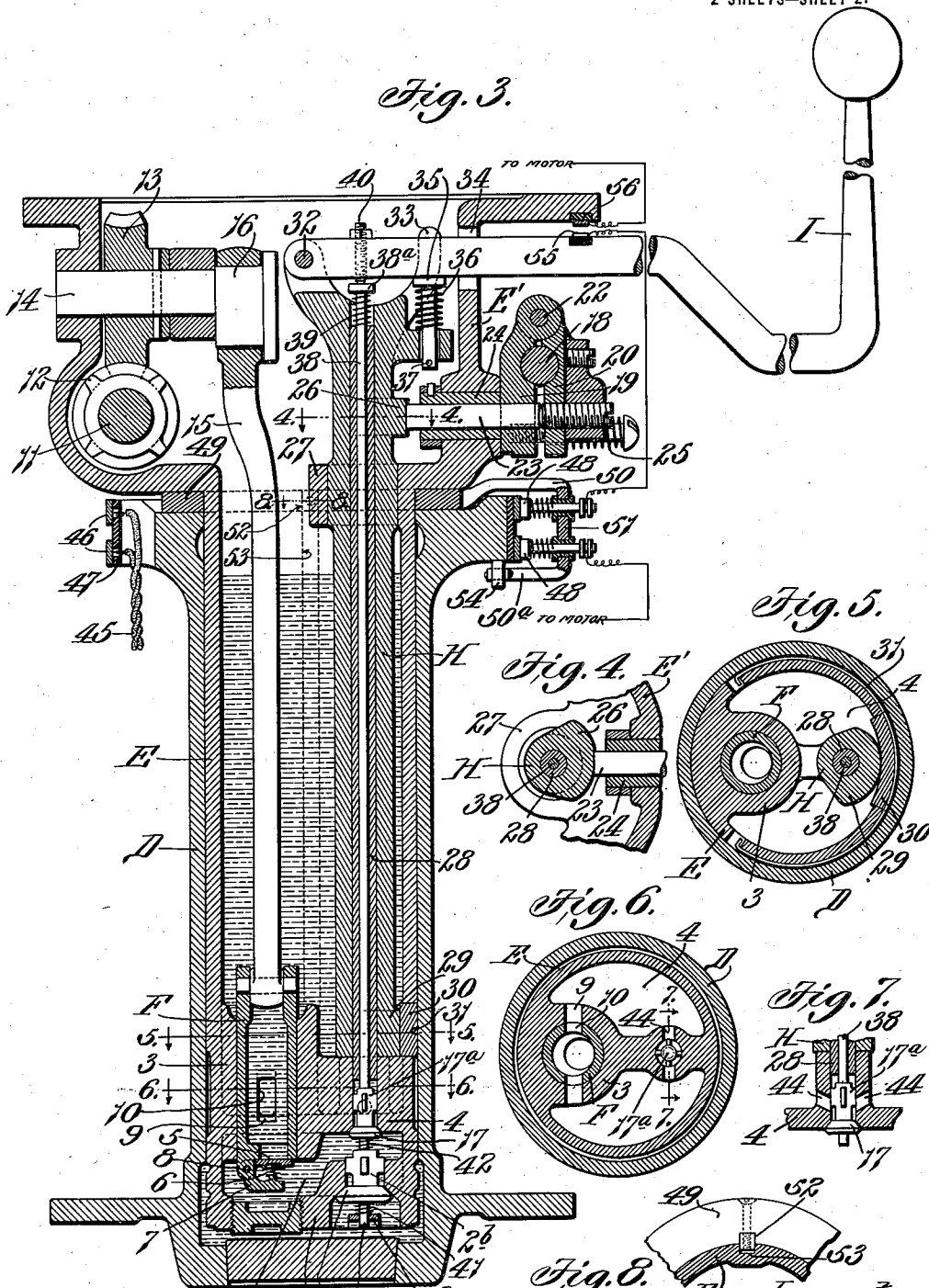
Witnesses:
Geo. P. Nelson,
Junior Clerk

Inventor,
Walter F. Koken.
By C. A. Kewell & Chas. H. Kewell.

W. F. KOKEN.
BARBER CHAIR.
APPLICATION FILED DEC. 26, 1914.

1,178,733.

Patented Apr. 11, 1916.
2 SHEETS—SHEET 2.



Witnesses: H. 1, 2, 3, 4, 5
Geo. F. Radson
Jesse Clark

Fig. 8. E. Inventor,
Walter F. Koken.
By Oakwell & Co. Attys.

UNITED STATES PATENT OFFICE.

WALTER F. KOKEN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO KOKEN BARBERS' SUPPLY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

BARBER-CHAIR.

1,178,733.

Specification of Letters Patent.

Patented Apr. 11, 1916.

Application filed December 26, 1914. Serial No. 879,123.

To all whom it may concern:

Be it known that I, WALTER F. KOKEN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Barber-Chairs, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to adjustable chairs of the type that are used by barbers, dentists and other specialists for supporting a customer or patient in an upright or an inclined position. The chairs of this type that are now in general use are provided with a manually-operated means for raising the frame of the chair that carries the seat and the back, the means most generally used being a manually-operated pump or plunger that causes a non-compressible fluid to exert pressure on a piston or a vertically-adjustable stem which carries the seat frame of the chair.

The main object of my invention is to provide a chair of the general type mentioned, which comprises an electrically-operated device of novel construction for raising the seat frame of the chair, thereby enabling the chair to be adjusted quickly and without exertion on the part of the operator.

Another object is to provide a chair of the type mentioned, in which the means that releases the reclining bar clamp and the means for locking the stem in adjusted position are of novel construction and of such simple design that the chair is more efficient and easier to operate or adjust than the chairs of this type which are now in use. And still another object is to provide a practicable barber's chair of simple design, in which all of the adjustments or movements of the chair are controlled by a single operating lever or handle that the operator merely has to shift in one direction or the other to raise the seat, to lower the seat, to recline the chair and to lock the stem against accidental displacement or prevent it from turning.

Figure 1 of the drawings is a side elevational view of a portion of a barber's chair constructed in accordance with my invention. Fig. 2 is a top plan view of the vertically adjustable stem that carries the seat frame of the chair. Fig. 3 is an enlarged vertical sectional view of the standard, of

the vertically adjustable stem that is mounted in the standard and the mechanism that controls the various adjustments of the chair. Fig. 4 is a detail sectional view taken on the line 4—4 of Fig. 3, illustrating the means for releasing the reclining bar clamp. Fig. 5 is a detail sectional view taken on the line 5—5 of Fig. 3, illustrating the means for locking the stem of the chair against turning movement. Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 3. Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 6; and Fig. 8 is a detail sectional view taken on the line 8—8 of Fig. 3.

In the chair herein illustrated the means that raises the seat frame of the chair consists of an electrically operated pump or plunger that forces a non-compressible fluid into the hollow standard of the chair, in which the stem is reciprocatingly mounted, thereby causing the stem to move upwardly.

Referring to the drawings which illustrate the preferred form of my invention, A designates the seat frame of the chair, to which the arms B, the apron C and the back (not shown) are connected, the back, arms and apron being connected together in such a manner that they will move simultaneously when the position of the back is changed, and all of said parts being joined to the seat frame in such a manner that they will be raised and lowered with same. The base or standard D of the chair, commonly termed "the socket," consists of a vertically-disposed cylinder whose upper end is open so as to receive a hollow piston E, commonly termed "the stem," that carries the seat frame A. The standard D and stem E contain a non-compressible fluid, preferably oil, and means are employed for forcing the fluid in the hollow stem E downwardly into the lower portion of the base or standard D so as to exert upward pressure on the lower end of the stem, and thus raise the frame A of the chair. The means herein shown for accomplishing this consists of a plunger F arranged inside of the stem E and an electric motor G for operating said plunger, the closed end or head 1 of the stem E being provided with a check valve 2 that opens automatically when the plunger F moves in one direction, and thus permits the fluid to pass from inside of the stem into the lower

portion of the standard D. The plunger F of the chair herein illustrated is of relatively small area, so that it will displace a small quantity of fluid at each stroke, and it is reciprocatingly mounted in an open-ended, cylindrical-shaped bearing 3 carried by a horizontally-disposed partition 4 that extends transversely of the stem adjacent the lower end of same, said partition cooperating with the head or end wall 1 of the stem to form a chamber K which is normally cut off from the hollow space in the stem above the partition 4. It is preferable to employ a small plunger that displaces only a small quantity of the fluid at each stroke, on account of the high speed at which the plunger operates, but it will, of course, be obvious that a large plunger could be employed without departing from the spirit of my invention. The plunger F is hollow and at the lower end of same is a check valve 5 that is held seated by means of a spring 6 which is interposed between said valve and a depending arm 7 on the plunger F, to which the check valve 5 is pivotally connected at 8. Ports 9 and 10 that are formed in the bearing 3 and in the plunger F, respectively, establish communication between the chamber K and the upper portion of the stem E when the check valve 5 is open and thus cause the fluid to pass into the chamber K below the partition 4 when the plunger F moves upwardly. On the reverse stroke of said plunger the check valve 5 remains tightly seated, and thus causes the charge of fluid that entered the chamber K on the previous upward stroke of the plunger to be forced out of said chamber into the lower portion of the standard D through the port which the check valve 2 controls, the charges of fluid that are forced into the lower portion of the standard D intermittently when the plunger is in operation gradually forcing the stem E upwardly. The electric motor G which operates the plunger F is preferably mounted adjacent the upper end of the stem E and the shaft 11 of said motor is provided with a worm 12 that meshes with a worm gear 13 on a shaft 14 with which a link 15 is eccentrically connected so as to cause the plunger F to reciprocate when the motor is in operation, the link 15 being pivotally connected at its lower end to said plunger and provided at its upper end with a yoke that surrounds an eccentric 16 on the shaft 14. Downward movement of the stem E is effected by opening the check valve 2 in the lower end or head 1 of the stem and also opening a check valve 17 in the partition 4 in the stem so as to permit the fluid to pass from the hollow standard D into the hollow space in the stem E above the partition 4, the means that is employed for opening said valves being hereinafter described.

As previously stated, the back, arms and apron of the chair are connected together in such a manner that they will move simultaneously when the position of the back is changed. In the chair herein shown the means for holding said parts in adjusted position consists of a lock bar 18, commonly termed "a reclining bar", that is normally clamped securely by a pair of cooperating clamping plates 19 and 20 which are carried by a housing E', at the upper end of the stem E, one end of said reclining bar 18 being pivotally connected at 21 to the apron C of the chair, as shown in Fig. 1. The clamping plates 19 and 20 are hinged together at 22, as shown in Fig. 3, and the stationary clamping plate 19 bears against a vertically-disposed face on the housing E' and is pivotally mounted on a releasing plunger 23 that is arranged horizontally in a bearing 24 in the housing E'. The stationary clamping plate 19 is provided with laterally-projecting screws that pass freely through openings in the movable plate 20 and springs 25 are mounted on said screws between the heads thereon and the outer side of the plate 20 so as to exert sufficient pressure on said plate to cause the plates 19 and 20 to securely hold the reclining bar in adjusted position. Means are employed for forcing the releasing plunger 23 to the right, looking at Fig. 3, so as to shift the clamping plate 20 sufficiently to release the bar 18, and thus permit the back, the arms and the apron to be adjusted. The means herein shown for actuating the releasing plunger 23 is of novel construction and consists of a vertically-disposed rock shaft H that is arranged inside of the stem E and which is provided with a cam 26 that engages the releasing plunger 23 and moves it to the right when the shaft H is rocked in one direction. The upper portion of the rock shaft H is guided by a bearing 27 on the stem E, and at the lower end of said rock shaft is a reduced extension that projects into a hole in the partition 4, said extension being preferably formed by a piece of tubing 28 that is embedded in the shaft H and which projects downwardly below the lower end of said shaft, which is supported by a raised bearing on the partition 4. In addition to acting as an actuating device for the releasing plunger 23, the rock shaft H also forms part of a locking means for the stem E so as to hold said stem against rotary movement, or, in other words, prevent the stem from turning. As shown in Figs. 3 and 5, the rock shaft H is provided adjacent its lower end with a cam 29 that acts on a segmental shoe 30 which is loosely mounted in the stem E. When the shaft H is rocked in one direction the cam 29 forces the clamping shoe 30 outwardly tightly against the inner surface of the hollow standard D, and thus securely clamps

the stem E in adjusted position. When the shaft H is turned in the opposite direction back to neutral position the clamping shoe 30 is released. If desired, the standard E can be provided with a retaining device 31, conveniently formed from a piece of spring wire that extends across the clamping shoe 30, as shown in Fig. 5, and thus prevents accidental displacement of same when the stem E is raised high enough with relation to the standard D to expose said shoe above the upper edge of said standard.

The rock shaft H is actuated by means of a manually-operated lever I whose inner end is pivotally connected at 32 to a bifurcated jaw on the upper end of the shaft H, said shaft also being provided with a bifurcated guide 33, through which the lever I passes, so as to reduce the strain on the pivotal connection between said shaft and lever when the lever is turned to rock the shaft H, as previously described. The lever I passes through an opening 34 in the housing E' which is of sufficient size to permit the lever I to be moved upwardly and downwardly and also moved from side to side, and means are employed for normally holding said lever in an approximately horizontal position, as shown in Fig. 3, the means herein shown for this purpose consisting of a yielding support 35 carried by the rock shaft H and on which the lever or handle I normally rests. The spring 36 that sustains the support 35 is of sufficient tension to normally hold the lever I in the position shown in Fig. 1, and the shank of said support 35 is provided with a cross pin or stop 37 that strikes against the underside of the bearing through which said shank passes, and thus limits the upward movement of the support 35.

In order that all of the movements of the chair may be controlled by means of the lever or operating handle I, I have provided said lever with a switch for governing the electric circuit that energizes the motor G and have arranged a valve-operating rod 38 in such a manner that it can be actuated by said lever I when it is desired to open the check valves 2 and 17 that permit the stem E of the chair to descend. The valve rod 38 passes through the tubing 28 in the rock shaft H and is arranged in direct alignment with the check valve 17 in the partition 4 at the lower end of the stem E, said valve rod being normally held out of engagement with the stem 17^a or in such a position that it does not exert pressure on same, by means of a coiled expansion spring 39 that is arranged underneath a head 38^a at the upper end of the valve rod 38. When the lever I is moved downwardly an adjustable contact device 40 in said lever strikes the head 38^a of said valve rod and depresses said rod, thereby causing the valves 17 and

2 to open. When the downward pressure on the lever I is removed the yielding support 35 restores said lever to the position shown in Fig. 3, and the spring 39 whose tension is just sufficient to sustain the valve rod 38, moves said valve rod upwardly. The check valves 2 and 17 are restored to their normal closed position by means of expansion springs 41 and 42, respectively, the spring 41 being interposed between the underside of the valve 2 and a stationary stop 43 through which a depending guide pin 2^a on said valve passes, and the spring 42 being mounted on a depending guide pin on the underside of the valve 17, as shown in Fig. 3 and arranged between said valve and the upper end of the stem 2^b of the valve 2. The stems of the valves 2 and 17 are of substantially skeleton construction so as to permit the free passage of the fluid through the ports which said valves control when said valves are opened, and the bearing on the partition 4 which acts as a guide for the stem 17^a of the valve 17 is provided with a plurality of ports 44, as shown in Fig. 7, through which the fluid escapes into the hollow stem E of the chair above the partition 4 when the valve 17 is open.

The chair is equipped with an extension cord 45 that is adapted to be connected to an electric lamp socket or other source of electrical energy in the room where the chair is located, the two wires of said cord being connected to contact rings 46 that are carried by a ring of insulating material 47 which is connected to the pedestal or base D of the chair adjacent the upper end of same. Two spring-pressed brushes 48 that bear upon the contact rings 46 are combined with the stem E of the chair in such a manner that they will travel over said contact rings when the stem E is turned or rotated, and thus prevent the conductors that lead from the brushes 48 to the motor from becoming twisted or broken. One convenient way of mounting the brushes 48 is shown in Fig. 3, wherein the reference character 49 designates a ring-shaped plate mounted on the upper end of the pedestal D and provided with a laterally-projecting arm 50 that has a depending portion 51 in which the brushes 48 are mounted. The plate 49 is splined to the stem E of the chair so that it will revolve with same, as, for example, by means of a key 52 on said plate that slides in a vertically-disposed groove 53 in the outer surface of the stem E, as shown in Fig. 8, and means are preferably employed for preventing said plate 49 from rising or moving upwardly with the stem E, one means that may be used for this purpose being shown in Fig. 3 and consisting of an inwardly-projecting arm 50^a on the depending portion 51 of the arm 50 that is provided with a roller 54 which travels over the

underside of an annular flange at the upper end of the base or pedestal D of the chair. The switch previously mentioned that governs the circuit which energizes the motor G is formed by a contact 55 on the controlling lever I and a contact 56 on an annular flange at the upper end of the housing E' on the stem E.

When the lever I is moved upwardly so as to bring the contacts 55 and 56 into engagement with each other, the circuit that energizes the motor G will be closed, and consequently, said motor will start to operate, thereby causing the stem E to move upwardly gradually. After the seat of the chair has been raised the desired distance the controlling lever I is released or depressed sufficiently to open the circuit that energizes the motor G, the plunger F coming to rest as soon as the motor G ceases operating. Thereafter, the operator moves the controlling lever I forwardly, or to the right, looking at Fig. 1, so as to turn the rock shaft H and cause the cam 29 on said shaft to force the clamping shoe 30 outwardly into engagement with the inner surface of the pedestal D of the chair, thereby securely locking the stem E of the chair in adjusted position. If it is desired to change the position of the back of the chair the operator moves the controlling lever I in the opposite direction, or to the left of the neutral position shown in Fig. 1, so as to cause the cam 26 on the rock shaft H to actuate the releasing plunger 23 that separates the clamping plates that cooperate with the reclining bar 18. After the back has been adjusted properly the controlling lever is moved back to its neutral position, and if it is desired to again lock the stem E against rotary movement, said controlling lever I is again moved to the right. To lower the chair the operator simply restores the controlling lever I to neutral position and presses downwardly on same so as to open the check valves 2 and 17 which govern the passage of the liquid from the hollow standard D into the hollow portion of the stem E above the partition 4.

In view of the fact that the switch that governs the circuit that energizes the motor G is formed by a contact on the controlling lever I and a contact on the housing at the upper portion of the stem E, said contacts can be easily arranged in such a manner that it will be impossible to start the motor G when the controlling lever I is in its forward position. In the chair herein shown the contact 56 extends rearwardly or to the left of the neutral position of the lever I, as shown in broken lines in Fig. 2. Consequently, if the lever I is raised when said lever is in its forward position, with the stem locked against rotary movement, the motor will not start, thereby eliminating the

possibility of damaging the chair, due to attempting to adjust the stem vertically when the stem is locked.

In a chair of the construction above described the seat frame can be raised quickly and without exertion on the part of the operator, owing to the fact that the means that effects the vertical movement of the stem E consists of an electrically-operated device. Furthermore, all of the adjustments of the chair are controlled from a single lever or handle which is so arranged that it can be actuated easily by the operator and moved in the direction in which it is desired to adjust the seat of the chair, namely, upwardly when it is desired to elevate the seat, downwardly when it is desired to depress the seat, rearwardly when it is desired to recline the chair or change the position of the back and forwardly when it is desired to lock the stem in adjusted position. In addition to the desirable features above mentioned, a chair of this construction overcomes the necessity of the operator using great care when adjusting the chair, owing to the fact that the controlling lever is given a full stroke in its four different directions of movement when the adjustment of the chair is changed. In the chairs of this type that are now in general use the vertical adjustment of the seat frame is effected by rocking a manually-operated lever back and forth a certain distance, the locking of the stem against rotary movement being effected by continuing the movement of the lever in one direction and the release of the reclining bar being effected by continuing the movement of the lever in the opposite direction. If, during the operation of raising the seat, the lever should be rocked too far in one direction or the other, the stem will be locked or the reclining bar released. Consequently, a certain amount of skill and care has to be exercised by the operator in adjusting the seat vertically. In the chair herein shown no skill or practice on the part of the operator is required to adjust the chair, because the vertical adjustment is effected merely by raising the controlling lever and the other adjustments are effected by moving the controlling lever in entirely different directions.

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

1. A chair provided with a vertically-adjustable stem, a cylinder in which said stem operates, and an electrically-operated device carried by said stem for forcing a fluid into said cylinder between the end of the stem and the end wall of the cylinder so as to cause the stem to move upwardly.

2. A chair provided with a hollow base and a hollow stem reciprocatingly mounted in said base, said stem having two compart-

ments, and an electrically-operated pump provided with a hollow piston that controls the flow of a non-compressible fluid from one of said compartments into the other and also forces said fluid into said base so as to cause the stem to move upwardly.

3. A chair provided with a hollow base and a hollow stem reciprocatingly mounted inside of same and both of which are adapted to contain a non-compressible fluid, said stem having two compartments, a plunger that permits said fluid to pass from one compartment into the other and also forces said fluid into the base so as to raise the stem, and an electric motor on said stem for actuating said plunger.

4. In a chair of the general class mentioned, the combination of a vertically-disposed cylinder, a hollow stem reciprocatingly mounted in said cylinder and provided with a partition that separates the interior of said stem into two compartments or chambers, a check valve that controls a port in the end of said stem which establishes communication between the lower chamber and said cylinder, and an electrically-operated device in said partition that forces a non-compressible fluid out of said lower chamber into said cylinder so as to cause the stem to move upwardly.

5. A chair of the general class described, provided with a vertically-adjustable frame that is adapted to be turned or rotated into different positions, an electrically-operated means carried by said frame for effecting the vertical adjustment of said frame, and a manually-operated means for locking said frame against rotary movement.

6. A chair of the general class described, provided with a vertically-adjustable frame that is adapted to be turned or rotated into different positions, an electrically-operated means for effecting the vertical adjustment of said frame, a locking means separate and distinct from said electrically-operated means that prevents the frame from turning or rotating, and a device under control of the operator for governing both of said means.

7. A chair provided with a vertically-adjustable seat frame that can be turned or rotated into different positions, a locking mechanism for the back of the chair, a locking mechanism for preventing said seat frame from turning, a manually-operated means for controlling both of said locking mechanisms, and a motor driven device for effecting the vertical adjustment of the seat frame.

8. An adjustable reclining chair of the general class described, provided with a single controlling lever that is adapted to be moved horizontally and also raised and lowered into four different positions, and devices that are rendered operative when said lever

is in its different positions for causing the seat to move upwardly, for causing the seat to move downwardly, for locking the seat against rotary movement, and for releasing the back of the chair.

9. An adjustable reclining chair provided with a suitable apparatus for causing the seat to move upwardly and downwardly and for locking the back and the seat in adjusted position, and a single controlling lever combined with said apparatus in such a manner that any of said adjustments can be effected by merely shifting the lever horizontally or raising or lowering it into one of a number of different positions.

10. An adjustable reclining chair provided with a vertically-adjustable seat that can be rotated or turned into different positions, means comprising an electric motor for effecting the vertical adjustment of the seat, a controlling lever, means for causing the circuit that energizes said motor to be closed when said lever is moved in one direction, and means for causing the seat to descend when said lever is moved in a different direction.

11. An adjustable reclining chair provided with a vertically-adjustable seat that can be rotated or turned into different positions, a locking means for the back of the chair, means comprising an electric motor for effecting the vertical adjustment of the seat, a controlling lever, means for causing the circuit that energizes said motor to be closed when said lever is moved in one direction, means for causing the seat to descend when said lever is moved in a different direction, means for causing the seat to be locked against rotary movement when said controlling lever is moved into a certain position, and means for causing the back locking mechanism to be released when said lever is moved into still a different position.

12. In a chair of the type described, a hollow standard or base, a vertically-adjustable stem in said base whose lower end acts as a piston, an electrically-operated device carried by said stem for forcing a fluid into said standard so as to exert upward pressure on the lower end of the stem and thus cause the stem to move upwardly, and a manually-operated means for relieving the upward pressure that said fluid exerts on said stem so as to cause the stem to descend.

13. A chair provided with a cylinder, a stem or piston reciprocatingly mounted in said cylinder, a pump carried by said stem for forcing a fluid into said cylinder so as to cause the piston to move upwardly, a motor carried by said stem for driving said pump, a relief valve, and means under control of the operator for actuating said relief valve when it is desired to have said piston descend.

14. In a chair of the class described, a ver-

tically-disposed cylinder, a vertically-adjusted stem or piston in said cylinder provided with two compartments, a plunger for permitting a fluid to pass from one compartment into the other and for forcing the fluid out of said compartment into said cylinder so as to cause the stem to move upwardly, an electrically-operated means for actuating said plunger, a valve for establishing communication between said cylinder and the interior of said stem, and a manually-operated means separate and distinct from said plunger-operating means for actuating said valve when it is desired to have the piston descend.

15 15. In a chair of the class described, the combination of a vertically-disposed cylinder, a hollow piston or stem reciprocatingly mounted therein provided with a partition that divides the interior of same into two compartments, a hollow plunger reciprocatingly mounted in a guide on said partition and provided with a check valve, said plunger and guide being provided with cooperating ports, a check valve in the lower end of said stem that opens automatically when said plunger moves in one direction, and a separate and distinct valve in said partition that controls the communication between the two separate compartments of said stem.

20 16. In a chair of the class described, the combination of a vertically-disposed cylinder, a hollow piston or stem reciprocatingly mounted therein provided with a partition that divides the interior of same into two compartments, a hollow plunger reciprocatingly mounted in a guide on said partition and provided with a check valve, said plunger and guide being provided with cooperating ports, a check valve in the lower end of said stem that opens automatically when said plunger moves in one direction, a separate and distinct valve in said partition that controls the communication between the two separate compartments of said stem, a controlling lever, and means operated by said lever for unseating the valves in said partition and in the lower end of the stem.

25 17. A chair provided with a hollow standard or base, a rotatable stem reciprocatingly mounted in said base, a plunger for forcing fluid out of said stem into said base so as to cause the stem to move upwardly, a motor for actuating said plunger, a check valve in the stem that opens automatically and thus permits the fluid to pass from the stem into the base when the plunger moves in one direction, and a manually-operated controlling device for causing said motor to become operative and for holding said check valve unseated.

30 18. A chair provided with a hollow standard or base, a rotatable stem reciprocatingly mounted in said base, a plunger for forcing fluid out of said stem into said base so as to

cause the stem to move upwardly, a motor for actuating said plunger, a check valve in the stem that opens automatically and thus permits the fluid to pass from the stem into the base when the plunger moves in one direction, a manually-operated controlling device for causing said motor to become operative and for holding said check valve unseated, means for locking the stem against rotary movement, and means governed by said controlling device for causing said stem-locking means to become operative.

70 19. In a chair of the class described, a vertically-disposed cylinder that constitutes the base of the chair, a hollow stem in said cylinder provided at its lower end with a check valve, a plunger for forcing a fluid out of said stem into said base so as to cause the stem to move upwardly, a vertically-disposed rock shaft arranged inside of said stem, a device actuated by said rock shaft for locking the stem against rotary movement, and a valve rod in said rock shaft for holding the check valve in the stem unseated.

85 20. In a chair of the class described, a vertically-disposed cylinder that constitutes the base of the chair, a hollow stem in said cylinder provided at its lower end with a check valve, a plunger for forcing a fluid out of said stem into said base so as to cause the stem to move upwardly, a vertically-disposed rock shaft arranged inside of said stem, a device actuated by said rock shaft for locking the stem against rotary movement, a valve rod in said rock shaft for holding the check valve in the stem unseated, and a handle or lever for actuating said rock shaft and for actuating said valve rod.

90 21. In an adjustable reclining chair, the combination of a hollow standard or base, a hollow stem mounted therein, a plunger for forcing a fluid out of said stem into said base so as to cause the stem to move upwardly, a reclining bar, locking mechanism for said reclining bar, a locking device for the stem, a releasing plunger for rendering the reclining bar locking mechanism inoperative, a vertically-disposed rock shaft in the stem provided with cams that cooperate with said releasing plunger and with said stem locking device, and a lever or handle under control of the operator for actuating said rock shaft.

95 22. In an adjustable reclining chair, the combination of a hollow standard or base, a hollow stem mounted therein, a plunger for forcing a fluid out of said stem into said base so as to cause the stem to move upwardly, a reclining bar, locking mechanism for said reclining bar, a locking device for the stem, a releasing plunger for rendering the reclining bar locking mechanism inoperative, a vertically-disposed rock shaft in the stem provided with cams that cooperate with said releasing plunger and with said

stem locking device, a lever or handle under control of the operator for actuating said rock shaft, an electric motor for operating said plunger, a valve which causes the stem to descend when it is held unseated, and means governed by said controlling lever for holding said valve unseated and for rendering said motor operative.

23. In a chair of the type described, a controlling lever that is adapted to be raised when it is desired to move the seat of the chair upwardly and depressed when it is desired to move the seat of the chair downwardly, and a yielding support for said lever that normally holds the lever in a neutral position.

24. A chair of the type described, provided with a hollow standard or base, a vertically-adjustable stem in said base, a pump for forcing a fluid out of said stem into said base so as to cause the stem to move upwardly, an electric motor mounted on said stem for actuating said plunger, said stem being mounted in said base in such a manner that it can be turned or rotated with relation to the base, conductors on the base that are connected with a supply of electrical energy, brushes cooperating with said conductors and operatively connected with said motor, and means for causing said brushes to turn or rotate with the stem.

25. In a chair of the class described, a hollow standard or base, a vertically-adjustable stem rotatably mounted in said base, an electric motor carried by said stem, conductor rings on said base that are connected with a supply of electrical energy, brushes cooperating with said conductor rings and operatively connected with said motor, and a member on said base that carries said brushes and which is splined to said stem so that it will turn or rotate with same.

26. In a chair of the class described, a standard, a vertically-adjustable stem in said standard, an electrically-operated device for raising and lowering said stem, a reclining bar, mechanism for locking said reclining bar, a releasing device for rendering said mechanism inoperative, a locking device for the stem, a vertically-disposed rock shaft in the stem for actuating said releasing device and said locking device, and means associated with said rock shaft for controlling said electrically-operated device.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 19th day of December, 1914.

WALTER F. KOKEN.

Witnesses:

EDGAR W. MEYER,
LEWIS E. MOORE.