May 12, 1959 R. H. ECKART ET AL 2,886,096

ELECTRICALLY OPERATED BEAUTICIAN'S CHAIR

Filed April 15, 1955 4 Sheets-Sheet 1

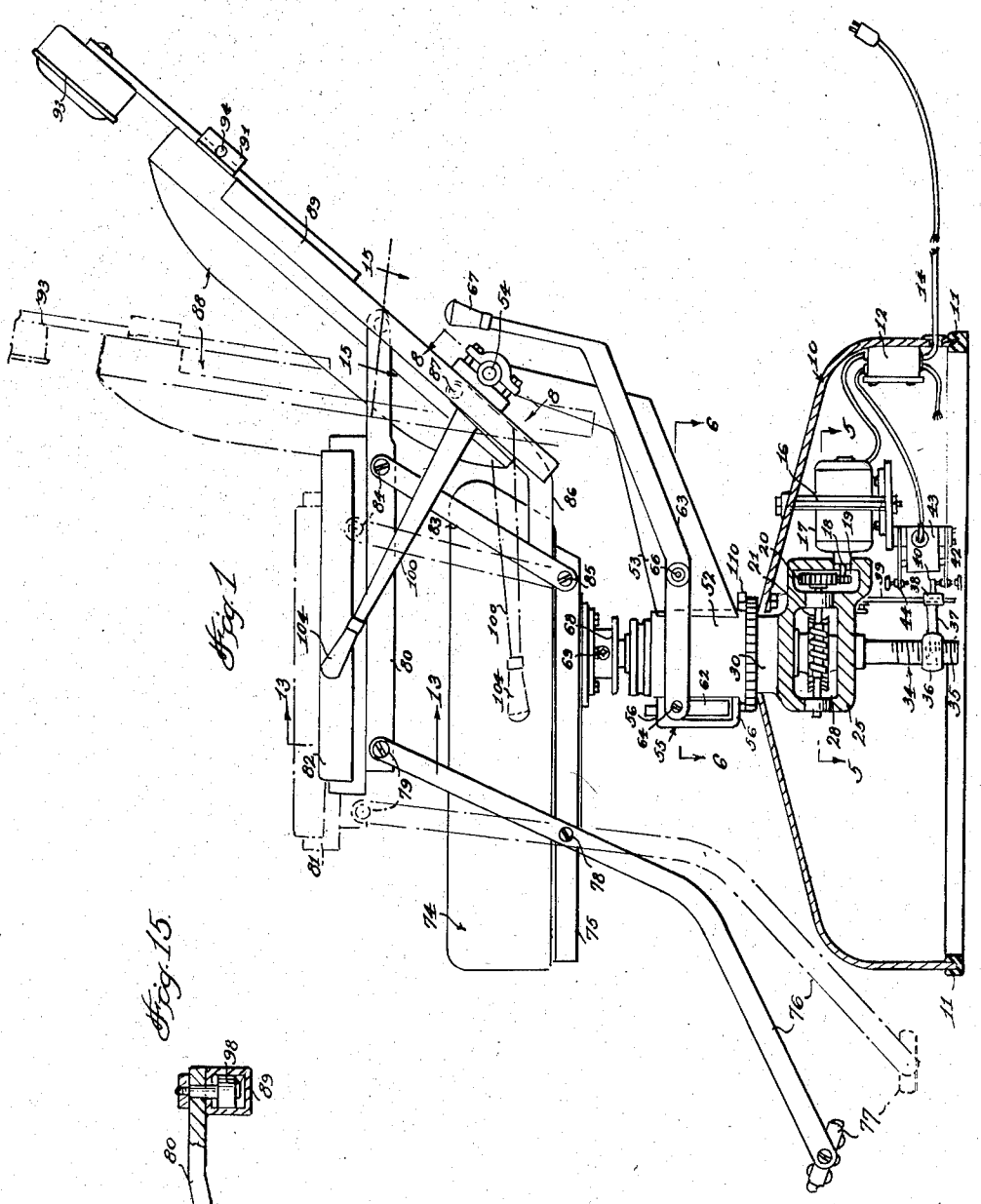


Fig. 1

Fig. 15.

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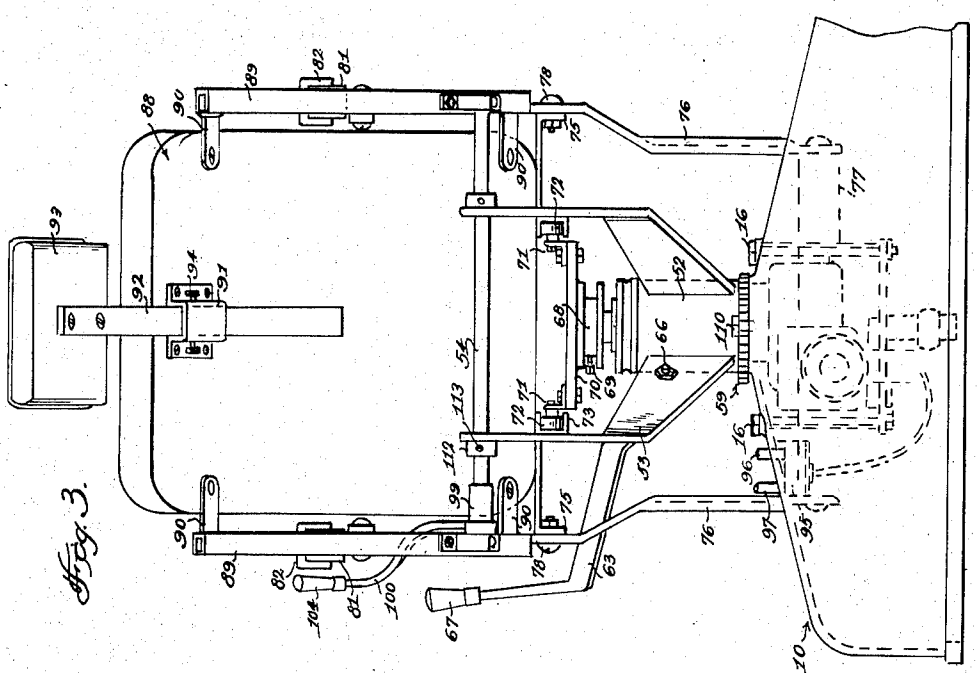


Fig. 3.

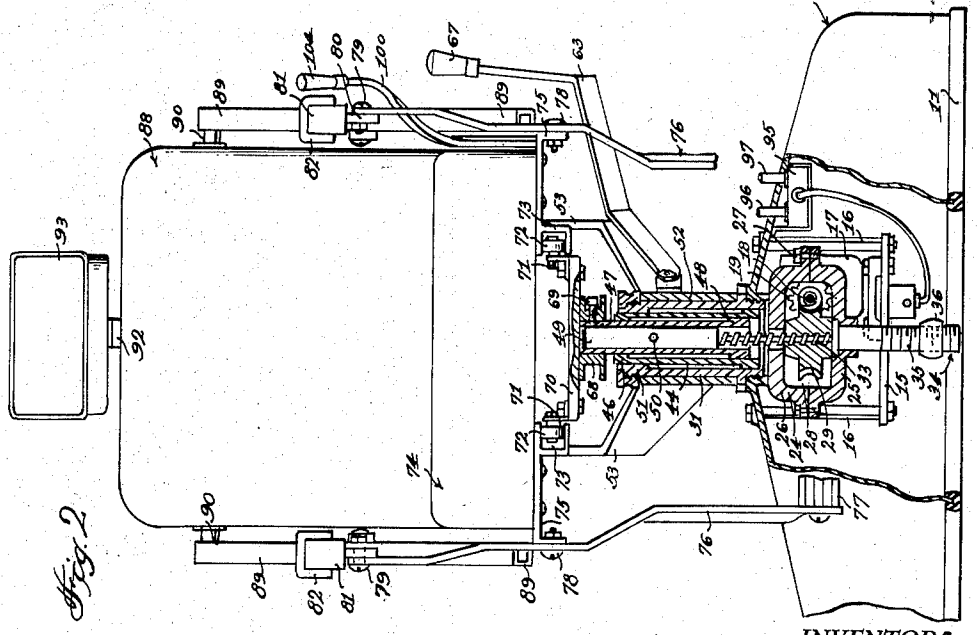


Fig. 2.

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ELECTRICALLY OPERATED BEAUTICIAN'S CHAIR

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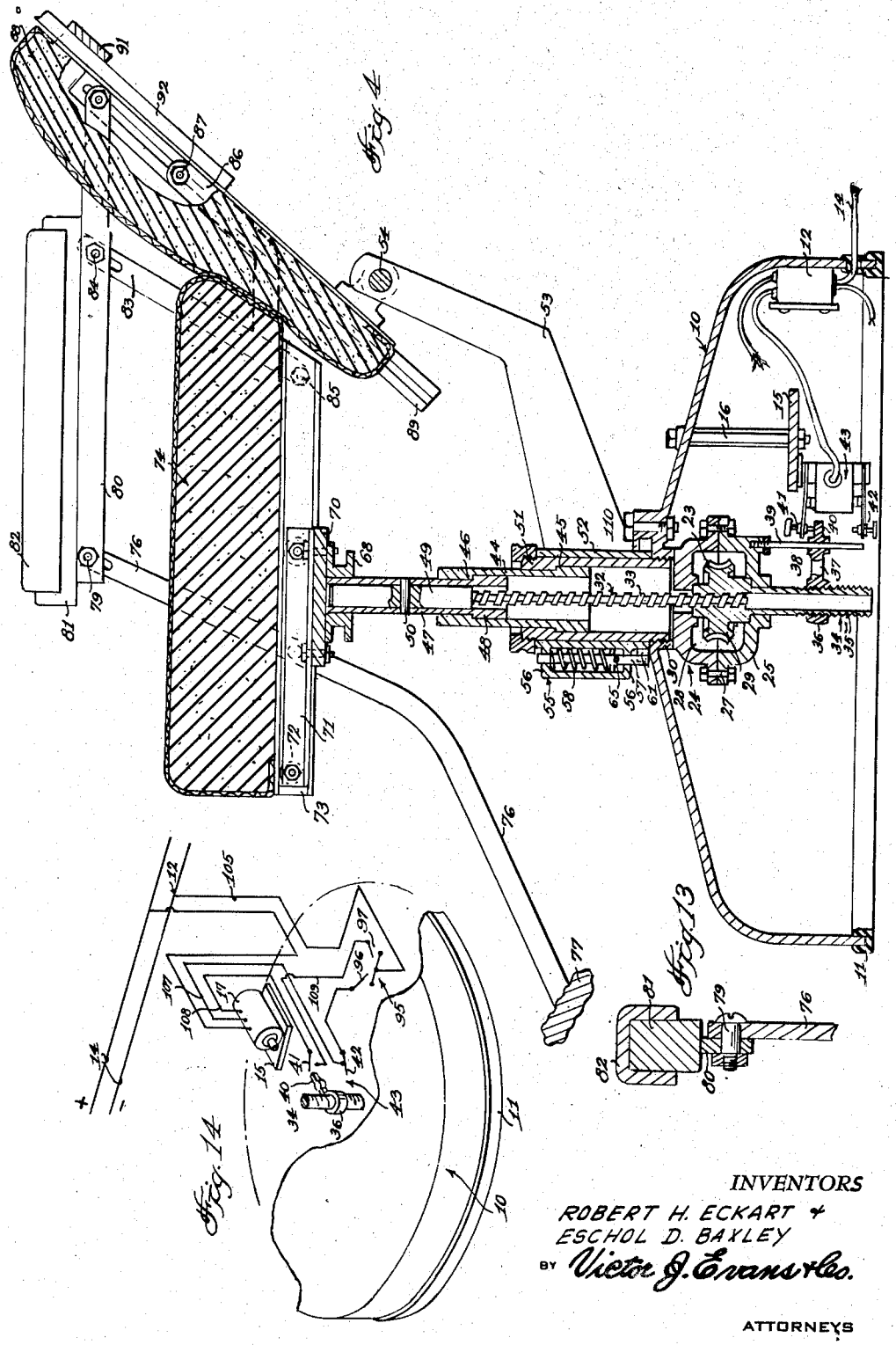


Fig. 4

Fig. 13

Fig. 14

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ELECTRICALLY OPERATED BEAUTICIAN'S CHAIR

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Fig. 5.

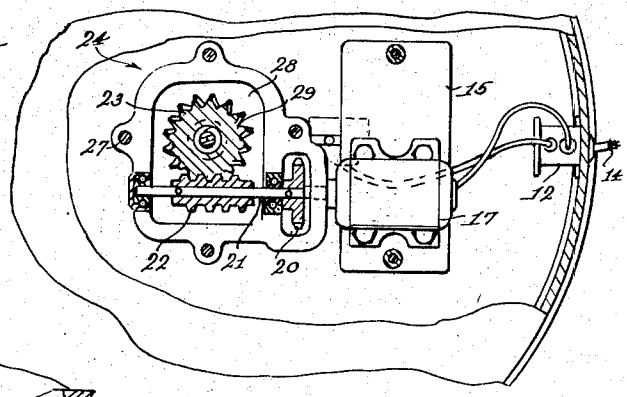
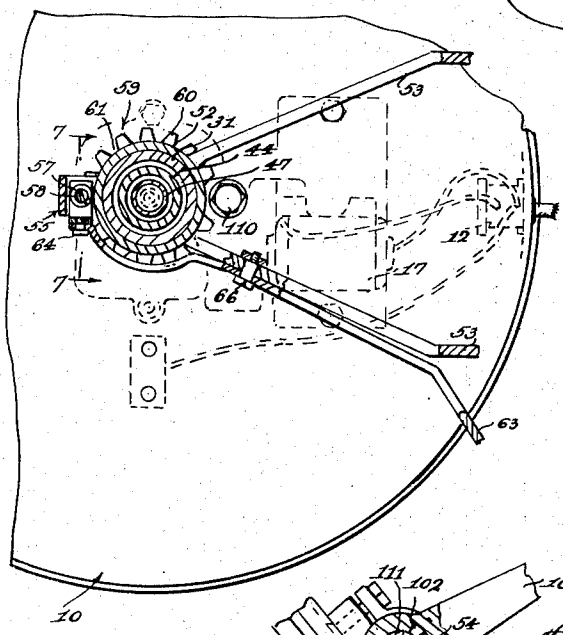


Fig. 6.



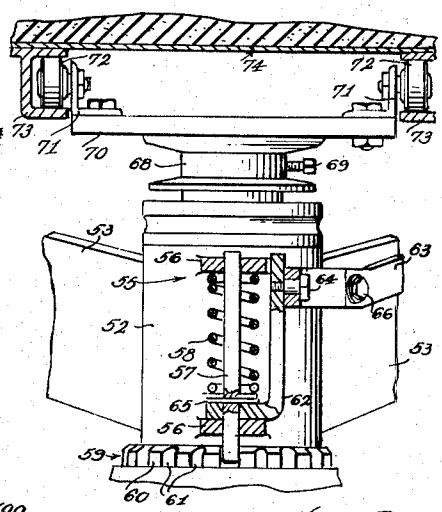


Fig. 7.

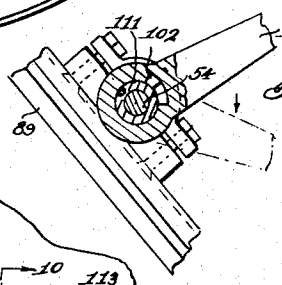


Fig. 9.

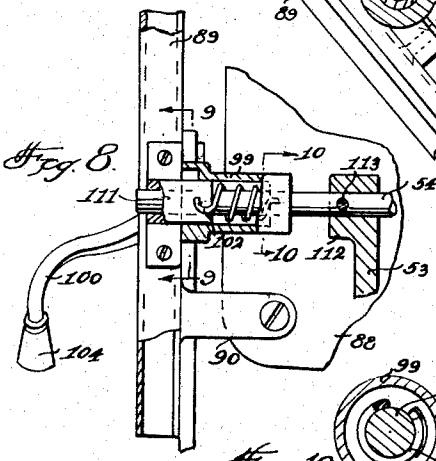


Fig. 8.

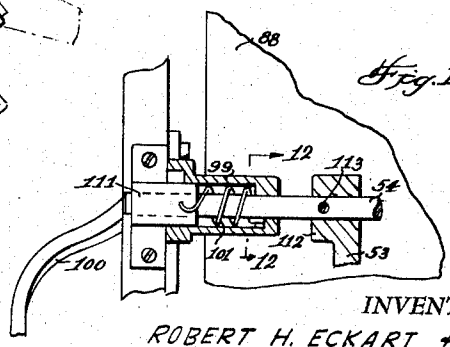


Fig. 11.

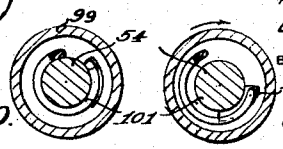


Fig. 10.

Fig. 12.

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United States Patent Office 2,886,096 Patented May 12, 1959

2,886,096

ELECTRICALLY OPERATED BEAUTICIAN'S CHAIR

Robert H. Eckart and Eschol D. Baxley, Corydon, Ind.

Application April 15, 1955, Serial No. 501,506

4 Claims. (Cl. 155—25)

This invention relates to a chair, and more particularly to a chair for use in barber shops, beauty parlors and the like.

The object of the invention is to provide a chair which can be readily adjusted to various positions so that the occupant of the chair can readily receive a hair cut, facial massage, shampoo or the like.

Another object of the invention is to provide a chair for a barber shop, beauty parlor or the like which includes an automatic adjusting means that is under the control of the occupant or the operator, and wherein the back rest and seat can be independently adjusted with respect to each other.

Another object of the invention is to provide a chair which is constructed so that the back rest cannot only be tilted to permit various operations such as hair cuts, facial massages and the like, but also the chair is constructed so that the back rest remains at a fixed height whereby the top edge of the back rest can be set even with or directly under the rim of a rinse basin or the like while the seat is being automatically adjusted to any height to permit the proper positioning or comfort of a person regardless of his size or her size.

A further object of the invention is to provide a chair which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a side elevational view of the chair of the present invention, with parts broken away and in section.

Figure 2 is a front elevational view of the chair, with parts broken away and in section.

Figure 3 is a rear elevational view of the chair, with parts broken away and in section.

Figure 4 is a vertical sectional view taken through the chair.

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a sectional view taken on the line 6—6 of Figure 1.

Figure 7 is a sectional view taken on the line 7—7 of Figure 6.

Figure 8 is a sectional view taken on the line 8—8 of Figure 1.

Figure 9 is a sectional view taken on the line 9—9 of Figure 8.

Figure 10 is a sectional view taken on the line 10—10 of Figure 8.

Figure 11 is a view similar to Figure 8 but showing the parts in adjusted position.

Figure 12 is a sectional view taken on the line 12—12 of Figure 11.

Figure 13 is a sectional view taken on the line 13—13 of Figure 1.

Figure 14 is a view illustrating the wiring diagram of the present invention.

Figure 15 is a sectional view taken on the line 15—15 of Figure 1.

Referring in detail to the drawings, the numeral 10 designates a hollow base which can be made of any suitable material, such as metal, and a yieldable or rubber pad 11 is mounted on the lower edge of the base 10, Figure 1. Positioned within the base 10 is an outlet box 12 which is adapted to be connected to a suitable source of electrical energy by means of a wire or cord 14. Also arranged within the base 10 is a platform 15 which is supported by a bolt and nut assembly 16, and the platform 15 provides a support for an electric motor 17. Driven by the motor 17 is a shaft 18 which has a gear 19 mounted thereon, and the gear 19 meshes with a gear 20 which is mounted on an end of a shaft 21. A worm 22 is also arranged on the shaft 21, and the worm 22 meshes with teeth 23, Figure 5. Arranged within the upper portion of the base 10 is a casing 24 which includes a lower section 25 and an upper section 26, and these sections may be detachably connected together by means of bolt and nut assemblies 27. The interior of the casing 24 is hollowed out to provide a chamber or compartment 28 in which is mounted a gear member 29, and the gear member 29 has the teeth 23 thereon which mesh with the worm 22. The casing 24 depends from a hub 30 which may be formed integral with the upper portion of the base, Figure 4. A first sleeve 31 of hollow cylindrical construction extends upwardly from the hub 30 and threadedly engages the hub for a purpose to be later described. A vertically disposed screw member 32 extends through the sleeve 31 and the screw member 32 includes a threaded portion 33 which threadedly engages the gear 29 so that as the gear 29 is rotated, the screw member 32 will move vertically along its axis.

Depending from the gear member 29 and secured thereto or formed integral therewith is a stem 34 which includes a lower threaded portion 35, Figure 4. A nut 36 is arranged in threaded engagement with the portion 35, and an arm 37 extends outwardly from the nut 36, there being a collar 38 mounted on the arm 37. A lug or finger extends outwardly from the collar 38, and a guide rod 39 depends from the casing 24 and projects through the collar 38. The lug 40 is mounted for movement into and out of engagement with a pair of screw members 41 and 42, and the screw members 41 and 42 lead from and serve to actuate or energize a conventional limit switch 43.

Telescopically or slidably mounted in the first sleeve 31 is a second sleeve 44 which has a shoulder 45 on its lower end for coaction with a shoulder 51 on the sleeve 31 to limit upward movement of the sleeve 44. A shoulder 46 projects inwardly from the upper end of the sleeve 44, and the shoulder 46 is adapted to be abutted by a shoulder 48 on the lower end of a sleeve 47 so as to limit upward movement of the sleeve 47. A rod or pin 49 is positioned within the sleeve 47 and is secured thereto by means of a key or pin 50, and the rod 49 is mounted on or formed integral with the upper end of the screw member 32.

Rotatably mounted on the sleeve 31 is a sleeve 52, and extending outwardly and upwardly from the sleeve 52 is a pair of angularly arranged arms 53, there being a cylindrical bar or rod 54 supported by the upper ends of the arms 53.

A means is provided for limiting rotation or controlling rotation of the sleeve 52 on the sleeve 31, and this means comprises a bracket 55 which is secured to the sleeve 52. The bracket 55 may have a substantially U-shape and may include a pair of apertured ears 56 which provide a support for a slidable or reciprocatory pin

57. A coil spring 58 is circumposed on the pin 57, and the coil spring 58 is interposed between the pair of ears 56, Figure 7. The lower end of the pin 57 is mounted for movement into and out of registry with cutouts or spaces 61 which are formed between teeth 60 of a ring member 59, and the ring member 59 may be formed integral with or secured to a suitable part of the chair. An L-shaped bar 62 has a portion thereof positioned below a key 65 which extends through the pin 57, and a pin 64 pivotally connects the upper end of the bar 62 to a manually operable lever 63. A pin 66 pivotally connects the lever 63 to one of the arms 53, and the lever 63 may have a hand grip 67 on its upper end for facilitating the gripping thereof.

Mounted on the upper end of the sleeve 47 is a collar 68 which can be retained in place by means of a set screw 69, and a plate 70 is secured to the top of the collar 68, Figure 7. A pair of angle irons 71 are secured to the plate 70, and rollers or wheels 72 are journaled on the angle irons 71, the rollers 72 engaging a pair of rails or channels 73 which are secured to the under surface of a seat 74. Lugs or brackets 75 are also secured to the bottom of the seat 74 for a purpose to be later described, Figure 2. A pair of spaced parallel levers 76 are pivotally connected to the lugs 75 by pins or bolts 78, Figure 4, and a foot rest 77 extends between the lower ends of the levers 76 and is secured thereto for conveniently and comfortably supporting the feet of the occupant of the chair. A bolt or pin 79 pivotally connects the upper end of each of the levers 76 to a link 80, Figure 13, and an arm rest 81 extends across the top of each of the links 80 and is secured thereto. A cover 82 extends across the top of the arm rest 81 for the convenience of the user. Links or arms 83 are pivotally connected to the links 80 by bolts 84, and the lower ends of the members 83 are pivotally connected to the lugs 75 by bolts 85. Bracket members 86 have their lower ends fixed to the lugs 75, and bolts 87 extend through the upper ends of the bracket members 86.

The numeral 88 designates an adjustable back rest which has a pair of channels 89 arranged adjacent its sides, and the channels 89 may be secured to the back rest 88 through the medium of ears 90, Figure 3. A bracket 91 is secured to the rear upper portion of the back rest 88, and a bar 92 is slidably mounted in the bracket 91, there being a head rest 93 secured to the upper end of the bar 92. Set screws or bolts 94 are provided for maintaining the bar 92 and head rest 93 immobile in their adjusted positions.

The numeral 95 designates a conventional push button switch which is electrically connected to the motor 17, Figure 2, and the switch 95 includes a pair of manually operable buttons 96 and 97 which are adapted to be manually depressed for controlling the motor. The switch 95 may be arranged within the base 10.

Wheels or rollers 98 are journalled on the rear ends of the links 80 and bracket members 86, and these wheels 98 are mounted for movement through the channels 89, Figure 15.

Mounted on an end of the shaft or bar 54 is a bushing 99, Figures 8–12. A manually operable lever 100 extends from the bushing 99, and a hand grip 104 is mounted on an end of the lever 100 for facilitating the movement of the lever. A coil spring 101 is positioned within the bushing 99, and one end of the coil spring 101 engages a slot 102, Figure 9, while the other end of the coil spring 101 engages a slot or cutout 103 in the end of the bushing 99.

Referring to Figure 14 of the drawing there is shown a schematic wiring hookup for the present invention wherein the power line is indicated by the numeral 14, and leading from the outlet box 12 are wires 105 and 106. A wire 107 leads from the motor 17 to the limit switch 43, and a wire 108 leads from the motor 17 to the switch 43 also. A wire 109 leads from the switch 43 to the push button switch 95.

From the foregoing it is apparent that there has been provided a chair which is especially suitable for use in beauty parlors, barber shops and the like. The chair is fully adjustable and the back rest 88 can not only be tilted to accommodate the various operations such as hair cuts, facial massages and the like, but also the back rest 88 remains at a fixed height so that the top edge of the back rest can be set even with or directly under the rim of a lavatory or rinse basin and remain there while the seat 74 is being automatically adjusted to any height to accommodate the proper positioning or comfort of persons of different sizes, as for example children. With the present invention it will not be necessary to fill the seat with towels, books and the like, in order to raise children or small persons to the desired height at the rinse basin during shampoos for example. The chair not only adjusts for height by means of electrical power, and for position by tilting the back 88, but it also rotates for approximately 360 degrees and locks in any rotated position for the convenience of the operator and customer.

The chair includes the base 10 which can be made of any suitable material such as steel. Mounted on the base 10 is a linear actuator mechanism which is constructed so that when pressure is applied to one of the push buttons 96 of the switch 95, the reversible motor 17 will rotate in one direction to cause the gear 29 to rotate due to the previously described gear connections. This rotation of gear 29 causes the screw member 32 to move upwardly to thereby cause vertical adjustment of the seat. Conversely, by applying pressure to the opposite button 97 of the switch 95, the procedure will be reversed and the screw 32 will be lowered. As long as pressure is applied on the down button 96 of the switch 95, the motor 17 will continue to rotate and pull the screw 32 in a down position until the nut 36 has been lowered by means of the threads 35. The nut 36 is prevented from rotating by means of the rod 39 which extends through the collar 38. When the finger 40 moves too far up it will engage the screw 41, and when it moves too far down it will engage the screw 42.

The plurality of sleeves shown in Figures 2 and 4 for example will stabilize and maintain the parts in their proper aligned position, and the shoulders on the sleeves limit outward telescoping movement. The limit switch 43 prevents jamming of the parts or over-travel of the seat raising and lowering screw 32. The sleeve 47 carries the collar 68 which has the plate 70 secured thereto, and the plate 70 has the angle members 71 secured thereto. Attached to these angle members are ball bearing rollers 72 and opposed channels or rails 73 engage the rollers 72. Permanently secured to the lugs 75 on the rear ends of the rails 73 are bracket members 86, and on the upper ends of these bracket members are rollers 98. These rollers operate and roll in slotted back rest supports or channels 89. Thus, it will be seen that as the seat cushion 74 is raised and lowered, it will follow a line of direction parallel to the axis of the channels 89. Thus, regardless of the position of the seat 74, the space between the back edge of the seat and the back rest 88 will remain the same regardless of the height of the seat or the position or the degree of tilt of the back rest 88.

The sleeve 52 and arm 53 are rotatably mounted on the sleeve 31 and these parts can be rotated by means of the hands. Thus, by placing one hand on the control lever 63 and moving this lever 63, the bar 62 can be used to raise the pin 57 against the tension of the coil spring 58 so that the bottom of the pin 57 will clear the teeth 60 to permit rotation of the sleeve 52 to the desired position. With this pin 57 raised out of the spaces 61 between the teeth of the sprocket 59, the entire chair can be rotated to the desired position to permit the necessary operation to be performed by the beautician or other

person. This rotation may continue until the bottom of the frame **55** comes in contact with the locking bolt **110** which acts as a rotation limit stop.

It is to be noted that movement of the back rest **88** causes movement of the seat **74** since the bracket members **86** which control the lateral position of the seat **74** also control rotation of the seat. This causes vertical movement of the lifting screw **32** in the pinion **29** while this pinion **29** is stationary but this is of no consequence since the screw **32** has more threads than actually required for the amount of adjustment necessary for the seat and this screw also has more threads which extend beyond the point at which the limit switch **43** cuts off the power to the driving motor **17** so that one rotation of the entire chair will not place the mechanism out of time.

Considering next the tilting of the back rest **88**. Assuming the back rest to be tilted fully back as indicated in Figure 4, one hand may be placed near the top quarter of the back rest **88** and pressure applied forward while the other hand is placed on the handle of the back rest tilting lever **100** and force applied downward. This automatically unlocks the back rest tilt control and permits the customer to be raised to an upright sitting position. Conversely, pressure applied upward on the handle **100** of the tilting control lever will permit the customer to lean back. This action is dampened and perfect control of the speed of tilt can be regulated by the back rest tilt locking device shown in Figures 8–12.

When the customer leans back against the back rest **88**, pressure is applied backward or counterclockwise on the supports or channels **89** by means of the brackets **90** and therefore applies a counterclockwise torque on the ferrule **111**, and the ferrule **111** is solidly connected to the adjacent channel **89**. This counterclockwise torque causes the spring **101** to wind and since the spring **101** has been constructed to fit snugly to the shaft **54**, it will lock on the shaft, and since the spring **101** has an end seated snugly in the slot **102** in the ferrule **111**, the following will occur. It is to be further noted that the shaft **54** is pinned to a collar shaped projection **112** by means of a pin **113**, Figure 3, so that the back rest **88** cannot be forced back by the customer. Now, if pressure is applied upward by the hand on the tilting control lever **100**, counterclockwise torque will be applied to the bushing **99** and consequently the pressure of the bushing **99** will apply an unwinding pressure to the end of the spring **101**.

Conversely, pressure from the hand applied downwardly on the operating lever **100** will cause pressure to be applied to the ferrule **111** which is connected solidly to the adjacent channel **89** and this causes the spring **101** to unwind or release its hold on the shaft **54** to cause the back rest **88** to tilt forwardly. This procedure permits perfect control so that the operator can control the movements of the customer and the customer will not be moved too fast so that he will not be injured or made uncomfortable.

Tilting of the back rest **88** will produce a longitudinal motion to the connecting bars **80** which have the arm rests **81** secured thereto so that the arm rests will move back and forth as shown by broken lines and solid lines in Figure 1. The bars **76** and **83** are pivotally connected to the bar **80** by the bolts **79** and **84** and these bars are also pivotally connected to the lugs **75** at the bottom of the seat **74** by means of bolts **78** and **85**. Thus, the members **80** will move in a line parallel to the axis of the seat base.

The levers or support members **76** extend downwardly and are curved so that their lower ends terminate at a point to receive or have connected thereto the foot rest **77**, and the foot rest **77** may be covered with a suitable covering to prevent slippage of the feet of the occupant of the chair.

The head rest **93** is connected to the upper end of a bar **92** which is adjustably mounted in a bracket **94** and this head rest can be removed when the person is to receive a shampoo, rinse or the like.

The switch **95** can be operated by the foot if desired. In the present invention the seat adjusts independently of the back. While the drawings illustrate the use of gears being driven by the motor **17**, it is to be understood that other types of drive can be utilized, as for example a V-belt, friction drive or chain and sprocket drive can be used. The motor is preferably a series wound with reverse polarity winding in the field coils, but any type of motor that will work can be used. The seat can be raised and lowered without changing the adjusted position of the back rest. The lever **63** controls rotation of the chair, and the lever **100** controls tilting of the back **88**. Thus, the back **88** will remain immobile in its adjusted positions while the seat raises and lowers regardless of the angle of the back. The arm rests **81** always remain level and the rollers **72** travel in the rails **73**.

It is to be understood that with the present invention the seat can be elevated and lowered at an angle parallel to the back rest and at any angle that the back rest may be positioned at the time of adjusting the seat.

After the customer is seated on the cushion **74**, and work is to be done which requires the customer to remain in an upright position, the operator places a hand on the handle **104** and forces the same downward to cause the shoulder of the crescent shaped opening in the bearing of the lever **100** to engage with the lug which projects and depends from the ferrule **111** to cause the ferrule **111** to rotate. This ferrule **111** depends from and is secured to the pillow block shaped plate which is bolted or welded to the tubular back rest support **89**. Thus, downward pressure on the lever **100** causes the customer to be placed erect in the chair to the degree of comfort and also to the convenience of the operator that is desired.

After the customer has been so positioned, the head rest **93** can be manually raised or lowered to the desired height by loosening the locking bolt **94** from engagement with the bar **92**.

Now, if a customer wishes a facial or similar work performed, the operator merely places a hand on the control knob **67** and applies downward pressure on the knob while placing the other hand in a different position on the chair so as to rotate the chair to a position away from the rinse basin and to a position convenient to the operator and adjoining work tables. The pressure applied to the knob **67** causes the lever **63** to rock on the bolt **66** to apply an upward movement to the bolt **64** to lift the L-shaped member **62** which lifts the lock pin **57** and overcomes the spring **58** to cause the pin **57** to disengage from the openings in the locking ring **59**. This permits the seat **74**, as well as the back rest **88**, foot rest **77**, arm rests **81** and head rest **93** to rotate as a unit.

Now, reversing the procedure, pressure is applied upward on the handle **104** and this causes the lever **100** to raise. This rotates the ferrule **99** which depends from the lever **100** and this unwinds the spring **101** which is wound tight on the fixed shaft **54**. This permits the ferrule **111** to rotate so that the back rest can tilt back to a position suitable for the work to be performed. This control is necessary to place the reclining of the back rest under the control of the operator, rather than the customer, to thereby prevent accidents caused by too rapid reclining or falling back and striking the head on rinse basins and the like.

To reposition the customer from this position to the rinse basin for shampoo and the like, the above procedure is reversed, whereby the customer is re-erected which also causes the arm rest **81** to move forward and upward but parallel to the seat **74**, the arm rest **81** being pivotally mounted as at **83**. The foot rest support **76** causes the foot rest **77** to retract and lower to a comfortable position while sitting erect. Conversely, when the back rest **88** is reclined, the foot rest **77** is extended forward and

upward to the position of comfort for the customer when reclining.

After re-rotating the chair as above explained until the customer has her back to the rinse basin, the head rest **93** is removed by merely lifting the head rest along with the support bar **92** out of the slide socket **91** and this can be laid aside. Then, the back rest **88** is reclined as previously stated until the top edge of the back rest **88** is just under the rim of the rinse basin. Now, the operator places a foot on the "Up" button of the elevation control switch and this permits the motor **17** to elevate the seat independently of the back rest until the customer's head and neck fit properly over the top of the back rest and is properly positioned for the convenience of the customer and operator.

During the operation of raising the seat **88**, the rollers **98** travel upward in the tubular back rest supports **89** and since the bracket members **86** are connected to the seat **74**, the seat is guided upward at an angle parallel to any angle that the back rest may be tilted to. This therefore causes the seat **74** to be retracted rearwardly, and this is permitted by means of the rollers **72** which are disposed on the base plate **70** which is welded or bolted to the collar **68**, and the collar **68** is connected to the inner telescoping sleeve **47**. The rollers **72** permit laterally disposed channels **73** to accommodate the forward and rearward movement of the seat **74**.

Conversely, the seat **74** may be lowered by the operator placing his or her foot on the "Down" button of the elevation control switch which reverses the field current in the motor **17** and causes a reverse rotation and consequent lowering of the seat **74** by means of the rotating worm **22** and pinion **23**. This permits the threaded shaft **33** to unscrew and lower the seat **74**.

The adjustment screws **41** and **42** serve to time the contacts which are standard micro-switches mounted in opposed relation inside the box **43**, and pins from these switches extend through the box and are connected to the spring leaf as shown in Figure 4. These spring leaves each have one end fixed while the other end is movable and the movable ends hold the limit adjusting screws **41** and **42**. The foot rest **77**, arms **82** and seat **74** raise and lower together, but independently of the back rest **88**.

We claim:

1. In a chair, a hollow base, a hub depending from the top of said base, a first hollow cylindrical sleeve extending upwardly from said base and connected to said hub, a casing positioned in said base and including a pair of upper and lower opposed sections connected together and with the upper section connected to said hub, there being a chamber in the interior of said casing, a horizontally disposed platform arranged within and secured to said base, a motor mounted on said base and adapted to be connected to a source of electrical energy, a first shaft driven by said motor, a second shaft extending into said casing, gear means connecting said first and second shafts together, a gear member arranged in the chamber of said casing and driven by said second shaft, a vertically disposed screw member including a threaded portion on which said gear member is mounted, there being a shoulder extending inwardly from the upper portion of said first sleeve, a second sleeve telescopically mounted in said first sleeve and having a shoulder on its lower end for engagement with the shoulder on said first sleeve, a third sleeve slidably mounted in said second sleeve, coacting shoulders on said second and third sleeves, a rod mounted on the other end of said screw member and secured to said third sleeve, a fourth sleeve rotatably mounted on said first sleeve, a pair of arms extending outwardly and upwardly from said fourth sleeve, a horizontally disposed cylindrical bar supported by the upper ends of said arms, a pair of spaced parallel channel members mounted on the ends of said bar, a back rest positioned between said channel members and secured thereto, a seat arranged forwardly of said back rest, a pair of spaced parallel rails secured to the bottom of said seat, rollers journaled in said rails, angle irons secured to said rollers, a plate extending between said angle irons and secured thereto, a collar mounted on the upper end of said third sleeve and secured to said plate, lugs secured to the lower portion of said seat, a pair of spaced parallel levers arranged on opposite sides of said seat and pivotally connected to said lugs, a foot rest extending between the lower ends of said levers and secured thereto, a pair of links pivotally connected to the upper ends of said levers and the rear ends of said links being pivotally connected to said channel members, straps extending between said links and lugs and pivotally connected thereto, arm rests mounted above said links, covers extending over said arm rests, and manually operable means for controlling rotation of said fourth sleeve on said first sleeve.

2. The structure as defined in claim 1, and further including a stem depending from said gear member and including a lower threaded portion, a nut arranged in threaded engagement with the threaded portion of said stem, an arm extending outwardly from said nut and having a collar thereon, a finger extending from said collar, a rod depending from said casing and projecting through said collar, a switch positioned in said base and electrically connected to said motor, and upper and lower contacts extending from said switch for engagement by the finger projecting from said collar.

3. In an electrically operated beautician's chair, a base, a seat, a back rest, bracket means slidably connecting said back rest to said seat, and a screw member extending upwardly from said base, a first sleeve connected to said screw member, means for slidably connecting said sleeve to said seat, a gear member mounted in said base and adapted to be engaged with said screw member, a worm positioned adjacent said gear member and adapted to be engaged by said gear member, a shaft journalled in said base for mounting said worm, a second gear member on said shaft, a third gear member, a second shaft journalled in said base and mounting said third gear member thereon so that said third gear member engages said second gear member, a second sleeve mounted in telescopic relation to said first sleeve, a third sleeve mounted on said base in telescopic relation to said second sleeve, a fourth sleeve rotatably mounted on said third sleeve, angularly arranged arms mounted on said fourth sleeve and connected to said back rest, connecting means mounted in said back rest, linkage means connecting the means in said back rest to said seat, an electric motor mounted in said base and connected to said second shaft for the rotation of said second shaft for raising and lowering said seat along a path parallel to the back rest and parallel to any plane in which the back rest may be positioned in at the time of adjusting the seat.

4. In an electrically operated beautician's chair, a base, a seat, a back rest, bracket means slidably connecting said back rest to said seat, and a screw member extending upwardly from said base, a first sleeve connected to said screw member, means for slidably connecting said sleeve to said seat, a gear member mounted in said base and adapted to be engaged with said screw member, a worm positioned adjacent said gear member and adapted to be engaged by said gear member, a shaft journalled in said base for mounting said worm, a second gear member on said shaft, a third gear member, a second shaft journalled in said base and mounting said third gear member thereon so that said third gear member engages said second gear member, a second sleeve mounted in telescopic relation to said first sleeve, a third sleeve mounted on said base in telescopic relation to said second sleeve, a fourth sleeve rotatably mounted on said third sleeve, angularly arranged arms mounted on said fourth sleeve and connected

to said back rest, connecting means mounted in said back rest, linkage means connecting the means in said back rest to said seat, an electric motor mounted in said base and connected to said second shaft for the rotation of said second shaft for raising and lowering said seat along a path parallel to the back rest and parallel to any plane in which the back rest may be positioned in at the time of adjusting the seat, and manually operable means for rotating said seat and back rest.

References Cited in the file of this patent

UNITED STATES PATENTS

340,787	Browne	Apr. 27, 1886
490,637	Butler	Jan. 31, 1893
557,406	Gohlke	Mar. 31, 1896
2,053,852	Tracy	Sept. 8, 1936
2,619,157	Guyton et al.	Nov. 25, 1952
2,698,047	Ralston	Dec. 28, 1954