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BARBER CHAIR

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FIG 1

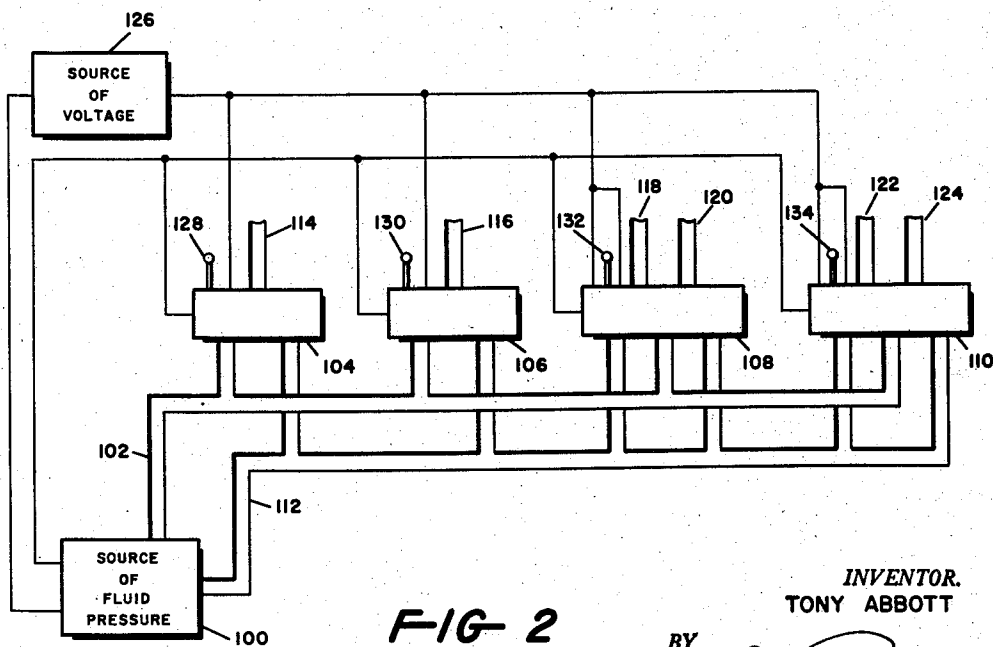
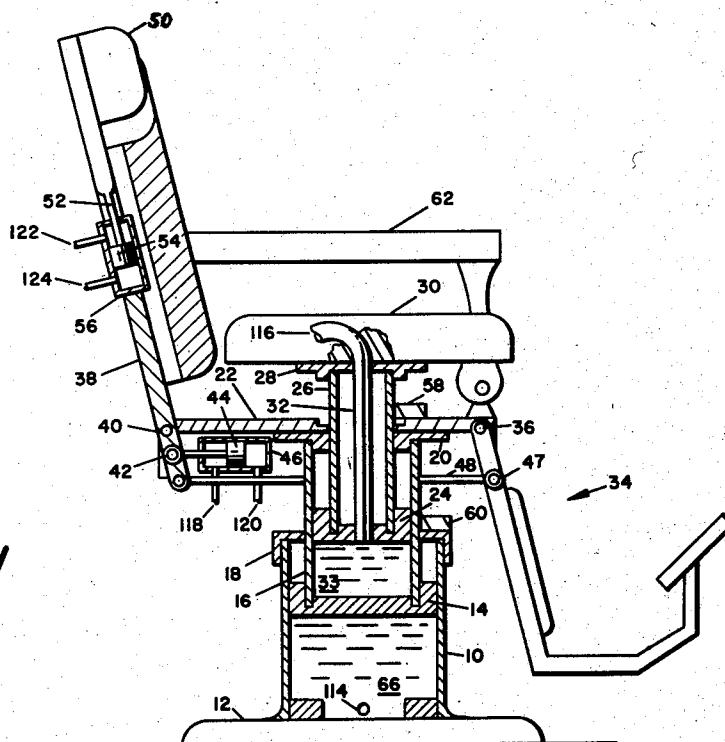


FIG 2

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BARBER CHAIR

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2 Claims. (Cl. 155—25)

This invention relates to an improved barber chair.

As is commonly known, barber chairs in present use may be raised or lowered by the barber to make it convenient for him to give haircuts to persons of different height. Although the seat of most barber chairs is fixed to the rest of the chair, chairs are known wherein the seat may be moved relative to the rest of the chair. By raising the seat relative to the back of the chair, the barber may conveniently give haircuts to children without having to use an auxiliary seat.

Also, in present barber chairs, the various adjustments on the chair must be made manually. For example, hydraulic hand pumps may be used to adjust the height of the chair as a whole and to adjust the height of the seat and mechanical means may be used to adjust the back and foot rest of the chair and also the head rest. All of these manual operations require a considerable amount of the barber's time to properly adjust the chair for each customer, thus increasing the time required for each haircut. Furthermore, since the manual adjustments are somewhat discontinuous and jerky, the customer is subjected to some discomfort.

The present invention relates to improved seat raising means and to automatic means for making the chair adjustments. The seat raising means is made an integral part of the chair and consists of a hydraulic cylinder which is telescoped within another hydraulic cylinder which raises the chair as a whole thus making the chair very simple and inexpensive to construct and reliable in its operation. The automatic means includes electro-hydraulic circuitry for easily making the necessary chair adjustments in a minimum amount of time and in a smooth and continuous manner.

An object of this invention is to provide improved means for raising the seat of a barber chair relative to the rest of the chair, which means is an integral part of the chair and not an accessory.

Another object of the invention is to provide means for controlling automatically the various adjustments on the chair in a smooth and continuous manner.

Other objects and advantages will become apparent from the following detailed description and from the appended claims and drawings:

Figure 1 is a cross section of a barber chair constituting one embodiment of this invention;

Figure 2 is a schematic diagram showing electro-hydraulic circuitry used to operate the chair shown in Figure 1.

Referring now to Figure 1, a cylinder 10 is mounted on a base 12. Disposed within the cylinder 10 is a piston or ram 14 to which is connected another cylinder 16. The cylinder 16 extends through a flange 18 provided over the top of the cylinder 10. A flange 20 is disposed over the top of the cylinder 16 and the frame 22 of a barber chair is supported on the flange.

Disposed within the cylinder 16 is a piston or ram 24 connected to a cylinder 26. A flange 28 fits over the top of the cylinder 26 and the seat 30 of the barber

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chair is supported on the flange. A tube 32 extends through the flange 28, the cylinder 26 and the piston 24 so as to introduce fluid, such as oil, into the chamber 33 below the piston 24.

A foot rest generally indicated at 34 is pivoted to the frame 22 as at 36 and the back 38 of the chair is pivoted to the frame as at 40. The lower part of the back 38 is connected to a joint 42 which is connected to the shaft of a piston or ram 44 in a cylinder 46 supported on the frame 22. Connected between the lower end of the back 38 and a joint 47 on the foot rest 34 is a cross bar 48. Upon a movement of the piston 44 to the right, the back 38 is caused to pivot rearwardly about the pivot 40 to a reclining position and at the same time the cross bar 48 moves to the right to pivot the foot rest 34 upwardly about the pivot 36. In this way, the back 38, the seat 30 and the foot rest 34 are substantially aligned for giving a customer a shave.

A head rest 50 forming part of the back 38 is connected to a shaft 52 which in turn connects to a piston or ram 54 in a cylinder 56 suitably supported on the back 38.

A brake 58 is mounted on the frame 22 so that it may be moved into contact with the cylinder 26 to prevent any rotational movement of the cylinder and a brake 60 is mounted on the flange 18 so that it may be moved into contact with the cylinder to prevent its rotation. The brakes 58 and 60 may be manually moved into contact with the cylinders when desired by the barber. An arm rest 62 is suitably mounted on the frame 22.

Referring now to Figure 2 there is shown a source 100 for supplying fluid, such as oil, under pressure to a pressure line 102. The source 100 may include an electric motor, a hydraulic pump and a reservoir for the oil. Such units are commercially available for supplying fluid at various pressures. In one embodiment of the invention, a pressure of 100 p.s.i. was adequate for a piston 14 diameter of 3½ inches and a piston 24 diameter of 2½ inches.

The line 102 is connected to the inlets of valves 104, 106, 108 and 110. The valves 104 and 106 may be 3 way closed center valves and the valves 108 and 110 may be 4 way closed center valves. The single exhaust outlets of valves 104 and 106 and the double exhaust outlets of the valves 108 and 110 are connected to an exhaust line 112 which in turn is connected to the oil reservoir in the source 100. The outlet line 114 of the valve 104 is connected to the chamber 66 below the piston 14 in Figure 1. The outlet line 116 of the valve 106 is connected to the top of the tube 32 in the cylinder 26 so as to introduce oil under pressure to the chamber 33 below the piston 24.

The left outlet line 118 of the valve 108 is connected to the left side of the cylinder 46 and the right outlet line 120 is connected to the right side of the cylinder 46. The left outlet line 122 of the valve 110 is connected to the upper part of the cylinder 56 and the right outlet line 124 is connected to the lower part of the cylinder 56.

The electric motor in the source 100 is connected to a source 126 of alternating voltage. The electric motor is also connected to the movable contacts of micro switches (not shown) provided in each of the valves 104, 106, 108 and 110. One way micro switches are provided in the valves 104 and 106 and two way micro switches are provided in the valves 108 and 110. The stationary contacts of all the switches are connected to the source 126.

Handles 128, 130, 132 and 134 are provided on the valves 104, 106, 108 and 110, respectively. In the neutral position of the handle 128, the valve 104 remains

closed. When the handle 128 is moved to the left, the spool in the valve 104 is displaced to the right to open the valve such that the outlet 114 communicates with the high pressure line 102. At the same time, the handle 128 produces a closure of its associated micro switch so as to operate the motor in the source 109 and to pump oil through the line 114 and into the chamber 66. When the handle 128 is moved to the right, the spool of the valve 104 is placed to the left and the outlet 114 communicates with the exhaust 102 to remove oil from the chamber 66. No closure of the switch occurs when the handle 128 is moved to the right and the motor remains inoperative. The handle 130 operates in the same manner to supply and to remove oil from the chamber 33.

In the neutral position of the handle 132, the valve 108 remains closed. When the handle 132 is moved to the left, the spool in the valve is displaced to the right to open the valve 108 such that the outlet 120 communicates with the line 102. When the handle 132 is moved to the right the result is opposite and the outlet 118 communicates with the line 102. Both the left and right movements of the handle 132 produce a closure of its associated two way switch so as to pump oil through the outlet 120 into the right side of the cylinder 46 or to pump oil through the outlet 118 into the left side of the cylinder. The handle 134 may be operated in the same manner to pump oil through the outlet 124 into the lower part of the cylinder 56 or to pump oil through the outlet 122 into the upper part of the cylinder. All of the handles may be conveniently mounted on the side of the frame 22 for ease of operation by the barber.

The operation of the chair disclosed above is as follows. Normally the seat 30 is in its lower position and resting against the frame 22. When the barber desires to raise the chair as a whole he moves the handle 128 to the left so as to introduce oil to the chamber 66 under the piston 14 to raise the piston. When the chair has reached a desired height then the handle 128 is returned to its neutral position to close the valve 104. To lower the chair, the barber would move the handle 128 to the right so as to remove the oil from the chamber 66 as previously described and when the chair has been lowered a desired amount the handle is returned to its neutral position to close the valve 104.

After the barber has adjusted the position of the chair in the manner disclosed above he may then adjust the seat 30 relative to the back 38. By moving the handle 130 to the left, oil is introduced to the chamber 33 to raise the piston 24 and the seat 30. When the seat 30 is at a desired height relative to the back 38, the handle 130 is returned to its neutral position to close the valve 106. The seat 30 may be lowered by moving the handle 130 to the right so as to remove oil from the chamber 33. By adjusting the height of the seat 30, any person may be positioned such that his head is above the back 38 to enable the barber to give a hair-cut with ease.

To give a person a shave, the barber would move the handle 132 to the right so as to introduce oil to the left side of the cylinder 46 through the line 118 for moving the piston 44 to the right. This causes the back 38 to be rotated about the pivot 40 to a reclining position. At the same time the cross bar 48 moves to the right to rotate the foot rest 34 upward about the pivot 36. When the back 38 and the foot rest 34 are properly positioned, the barber would return the handle 132 to its neutral position so as to close the valve 108. Also, by moving

the handle 134 to the right or left, the barber could raise or lower the head rest 50 to a proper position. After giving the shave, the barber can return the back 38 and the foot rest 34 to their initial position by a movement of the handle 132 to the left.

The invention disclosed above has several important advantages. Because the cylinder for raising the seat relative to the back is telescoped within the cylinder which raises the entire chair and is an integral part of the chair, the chair is simple and inexpensive to construct and reliable in its operation. Also, each of the chair adjustments can be made automatically and in a smooth and continuous manner by simply operating the proper handles. This helps reduce the time required for each hair-cut, thus increasing the barber's productivity and, in addition, the jerky motions inherent in making the manual adjustments in present chairs are eliminated, thus increasing the comfort of the person having his hair cut.

Although this invention has been disclosed and illustrated with reference to particular applications, the principles involved are susceptible of numerous other applications which will be apparent to persons skilled in the art. The invention is, therefore, to be limited only as indicated by the scope of the appended claims.

Having thus described my invention, I claim:

1. A barber chair including a hollow cylindrical pedestal member, a chair frame, and a cushioned seat member vertically movable relative to said chair frame, a fluid actuated piston in said pedestal member, a hollow cylindrical sleeve member connecting said piston and supporting said chair frame, a second piston member located in and engaging said sleeve, said sleeve thereby serving as a cylinder in which said second piston operates a second sleeve member connected to said second piston and supporting said seat member, and means for supplying pressure fluid to the chair operating cylinder and the seat operating cylinder to operate the seat member independently of the chair frame.

2. A barber chair having a hollow cylindrical pedestal member, a chair frame and a seat member vertically movable relative to the chair frame, including, a first fluid actuated piston in the pedestal member, a hollow cylindrical sleeve member connected to the first piston and supporting the chair frame, a second fluid actuated piston in and engaging the cylindrical sleeve member, said sleeve thereby serving as a cylinder in which said second piston operates means connected to the second piston for supporting the seat member, means for supplying fluid pressure into the pedestal member to actuate the first piston for movement of the chair frame, and means for supplying fluid pressure into the sleeve member to actuate the second piston for movement of the seat member independently of the chair frame.

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