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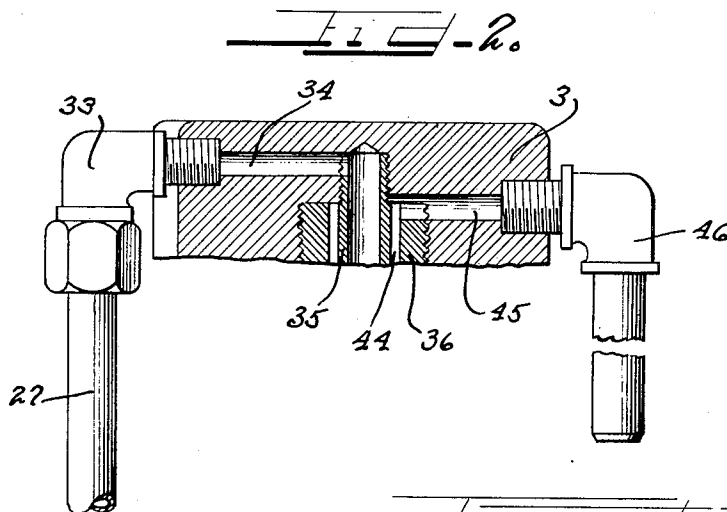
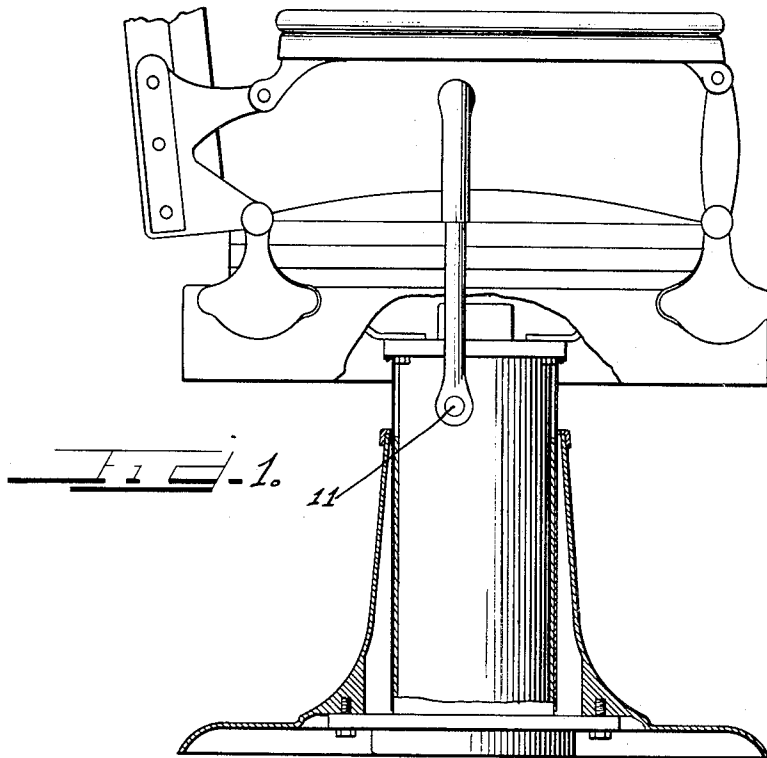
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BARBER CHAIR

Filed June 13, 1932

4 Sheets-Sheet 1



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BY Charles Skells ATTY.

March 20, 1934.

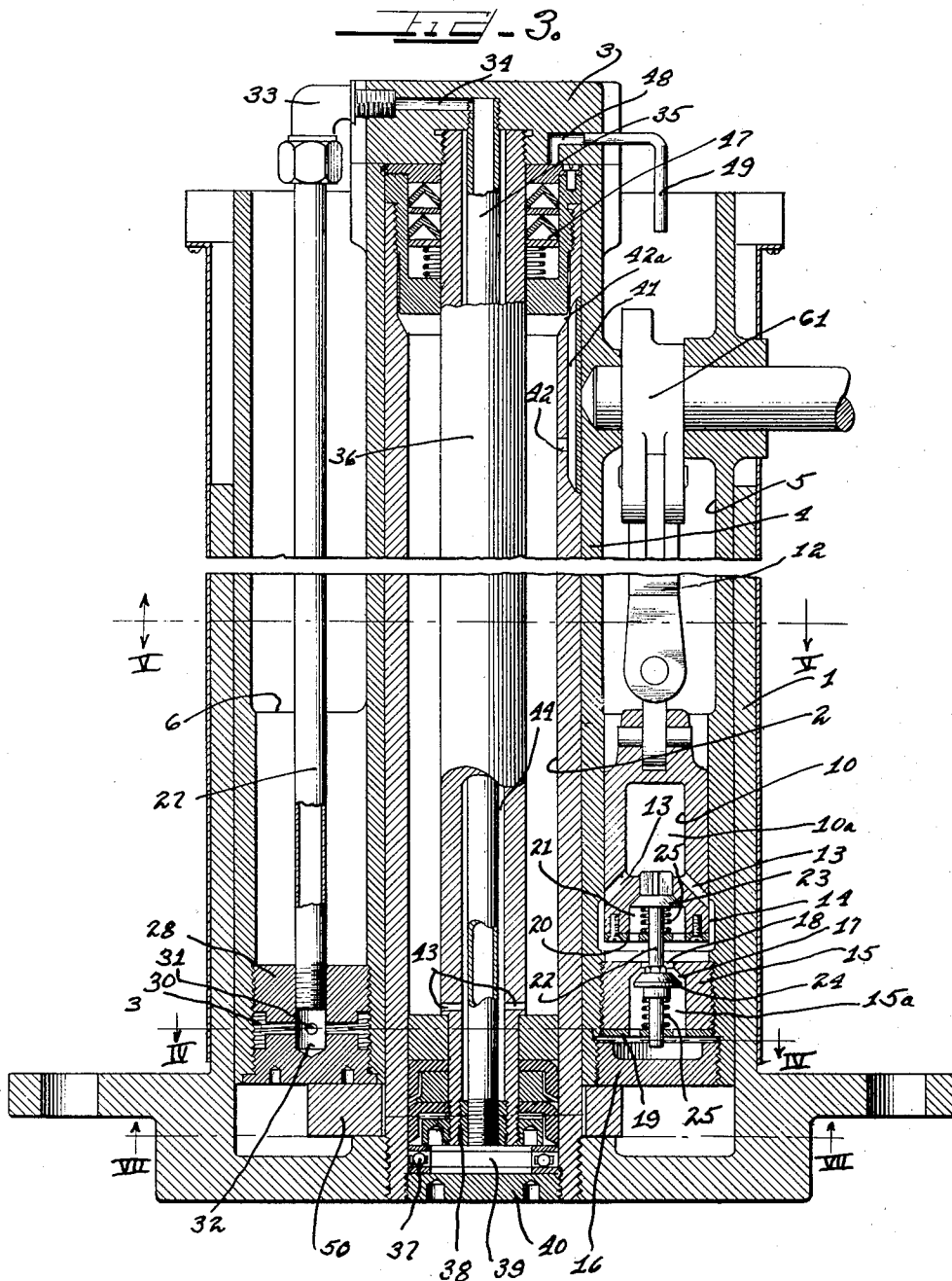
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BARBER CHAIR

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4 Sheets-Sheet 2



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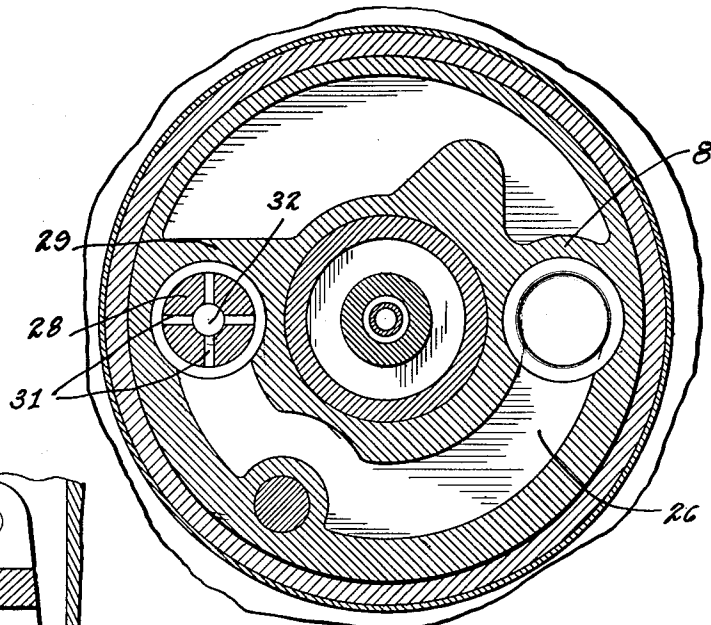
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BARBER CHAIR

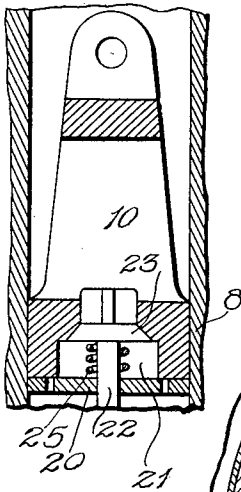
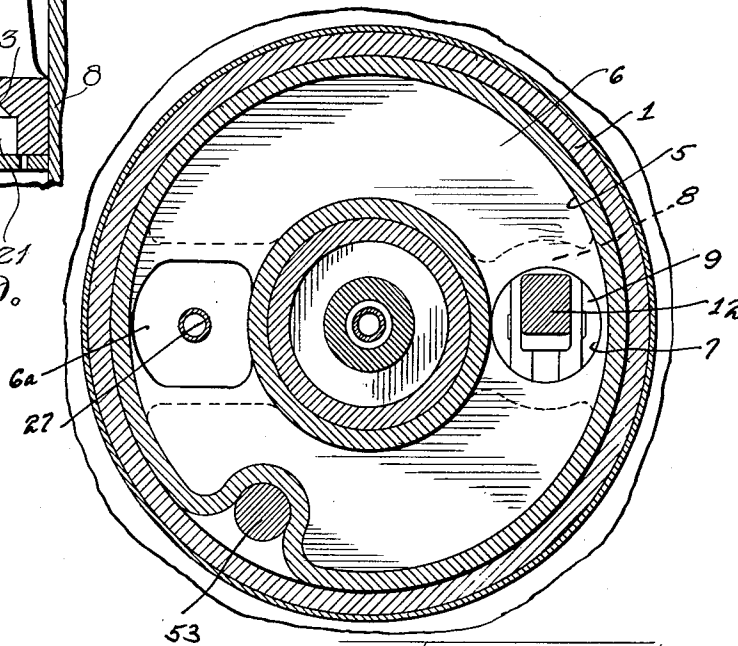
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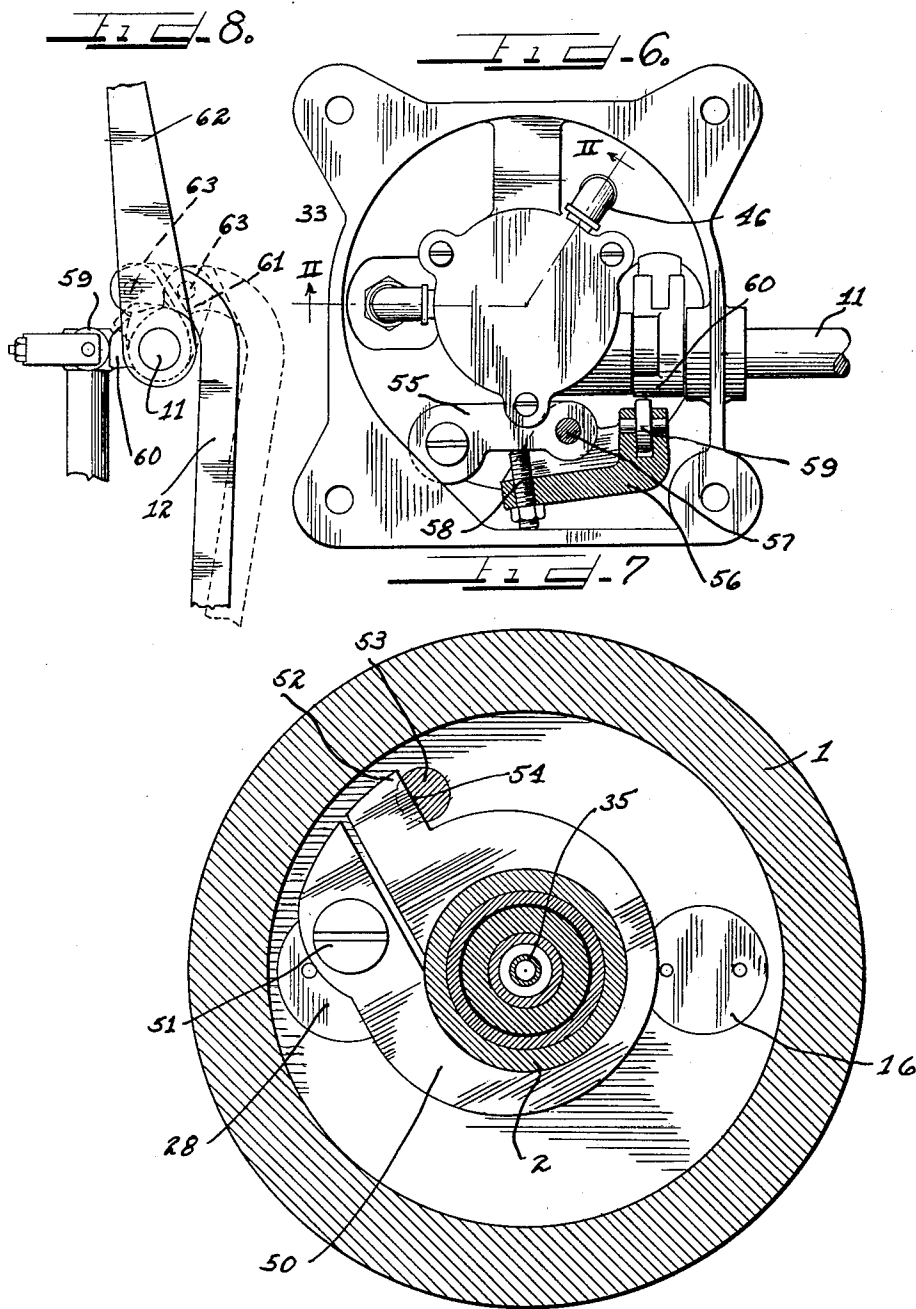
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BARBER CHAIR

Filed June 13, 1932

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

1,951,508

BARBER CHAIR

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11 Claims. (Cl. 155—25)

This invention relates to a barber chair and concerns itself with various improvements for facilitating the operation of the chair when it is adjusted. One of the objects of the invention is to provide a pump actuating mechanism that causes the unlocking of the chair before any undue pressure is imparted to the liquid that causes the elevating and lowering of the chair.

Another object of the invention is to simplify the structure and operation of such a chair.

Other and further objects will become apparent from the following description and disclosure.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claims.

In the accompanying drawings which illustrate a preferred form of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is an elevational view of a barber chair showing the casing for the pedestal in section and involving my improved features;

Figure 2 is an enlarged sectional view taken upon the line II—II of Fig. 6;

Figure 3 is an enlarged vertical sectional view thru the pump casing illustrating certain features thereof;

Figure 4 is an enlarged sectional view taken upon the line IV—IV of Fig. 3 looking in the direction of the arrows;

Figure 5 is an enlarged sectional view taken upon the line V—V of Fig. 3 looking in the direction of the arrows;

Figure 6 is a top plan view of the pedestal showing certain parts in section for operating the brake;

Figure 7 is an enlarged sectional view taken upon the line VII—VII of Fig. 3 looking in the direction of the arrows;

Figure 8 is a fragmentary elevational view of the pump actuating mechanism; and

Fig. 9 is a fragmentary sectional view through the piston and piston chamber taken substantially in a plane at right to the plane of Fig. 3.

Referring now to the drawings, especially to Fig. 3, it will be observed that there has been illustrated a stationary casing comprising the cylindrical walls 1 and 2 and a vertically reciprocable casing consisting of the cylindrical walls 4 and 5, the former of which supports the head 3. The space between the walls 4 and 5 is divided by a horizontal web 6 which forms a partition substantially midway of the height of the chamber formed between the walls.

The partition 6 has a cylindrical aperture 7 (Fig. 5) and in registry with this aperture and located therebelow, there is a pump piston cylinder or chamber formed by the arcuate walls 8 which extend between the walls 4 and 5. A pump piston 10 is mounted in this cylinder for reciprocating movements. This pump piston is connected to a driving shaft 11 journaled in the reciprocable casing by means of suitable link mechanism 12. The piston 10 has an opening 10a which is in communication with the oil reservoir thereabove due to the fact that the upper portion of the piston has sloping sides through which such opening extends.

The wall opening 10a has a plurality of sloping ducts 13 leading from the lower end thereof and these ducts communicate with the pump chamber which is slightly enlarged at its lower end as indicated at 14 when the piston is at the bottom of the chamber.

Below the piston 10, there is a hollow plug 15 threaded in the pump chamber which is closed at its bottom by a suitable cap 16 in threaded relation with the walls of the pump chamber. It will be noted that the plug 15 has a central passage 15a that terminates in an upper valve seat 17 and a restricted inlet port 18 at its upper end. Upon the bottom of the plug 15 there is a perforated plate 19 and upon the bottom of the piston there is a perforated plate 20 which extends over a recess 21 in the bottom of the piston that terminates in a valve seat.

A valve stem 22 extends thru the plates 19 and 20 and is guided thereby. This stem carries a valve 23 that fits the valve seat in the recess of the piston and a second valve 24 that fits the valve seat 17 in the plug 15. A coil spring 25 is confined between the plate 19 and the valve 24 and a second coil spring 25 is confined between the plate 20 and the valve 23. When the piston is elevated, the valve 23 will open and the fluid will flow therethrough and when the piston descends the fluid will be forced thru the passage 26 below the partition 6 (Fig. 4) that leads to a fluid elevating tube 27 which is supported at its lower end in a plug 28 threaded in the walls of the reciprocating casing and in a web 29 (Fig. 4) that connects the lower portion of the wall. This plug is provided with a circumferential groove 30 and inlet ports 31 extending from such groove and communicating with a central bore 32 in the plug into which the elevating pipe 27 is threaded.

The fluid put under pressure by the pump is elevated in the tube 27 which extends thru an

aperture 6a in the partition 6 (Fig. 7) and which has an elbow 33 communicating with a passage 34 in the head 3. The passage 34 communicates with a fluid descending tube 35 threaded at its upper end in the head 3 and extending thru a hollow column 36 which is likewise threaded at its upper end in the head 3. The column 36 extends downwardly into the cylindrical casing 2 and is formed with a piston head at its lower end which is adapted to be seated and to rotate upon a bearing 37 when in its lowered position. The fluid tube 35 is secured in the lower end of the column 36 by means of a bushing 38 and discharges into the fluid compression chamber 39 therebelow and which is formed by the wall of the casing 2 and a plug 40 screwed into the bottom of the casing. The discharged fluid which is under pressure will act upon the piston head on column 36 and elevate the same.

The fluid pumped into the compression chamber will elevate the reciprocal casing and in order to relieve the pressure when the casing has been elevated to a point near the top, a relief chamber 41 has been formed in the wall 2 of the stationary casing and an inlet port 42 extends to such chamber from the space within the cylindrical wall 2. When the piston head on the column 36 has been elevated above the inlet port 42 by the fluid therebeneath, some of such fluid will enter through port 42 into the relief chamber 41 and when this relief chamber becomes filled, the fluid which is of course under pressure will be forced through port 42a into the compression chamber which slopes outwardly at the port 42a to accommodate some of the excess fluid. When the piston head descends most of the fluid in the relief chamber will flow through port 42 into the compression chamber and together with any fluid that has escaped through port 42a and that has not entered the column in its elevated position will find its way into column 36 through port 43. It will be noted that the tube 35 is spaced from the wall of the column 36 to provide a suitable passage 44 for the relief fluid. The upper end of the passage 44 communicates with a passage 45 (Fig. 2) in the head 3. A pipe 46 which communicates with the passage 45 is adapted to discharge the relief fluid back into the reservoir of the reciprocable casing to be acted upon by the pump.

When the pumping operation ceases and the pump piston is lowered, valve 24 will be opened and the compressed fluid in the compression chamber can escape to the reservoir thru ducts 13.

The upper end of the column 36 is provided with a bearing 47 and in the event that any fluid should find its way therein it may escape through a passage 48 and a return pipe 49 that discharges into the reservoir.

A split brake member 50 surrounds the lower portion of the stationary wall 2. One end portion of the brake member is attached to the plug 28 as indicated at 51 (Fig. 7). The other end portion of the brake member is provided with a shoulder 52 with which an operated rod 53 is adapted to cooperate. This rod 53 has a flat portion 54 which may be rotated into parallel relation with the shoulder 52 for releasing the brake. When the rod is slightly rotated from the position shown in Figure 7 the brake band will be put into frictional engagement with the casing 2.

The brake operating rod 53 extends upwardly adjacent the shaft 11 and has an arm or lever 55

(Fig. 6) fixed to its upper end. A second arm or lever 56 is pivoted intermediate its ends to the free end of the arm 55 as indicated at 57. One end of the arm 56 is provided with an adjustable screw 58 that engages the arm 55. The other end of the arm 56 is provided with a roller 59 that lies in the path of a cam 60 on the shaft 11. The arms 55 and 56 constitute in effect an adjustable lever that is actuated by the cam 60 for rotating rod 53 to brake applying position and holding the same in such position. The throw of the lever can be varied by adjustment of the screw 58. It will of course be understood that rod 53 is only rotated a small amount to cause one edge of the flat portion 54 to close the split ring 50 which is sufficiently resilient to snap or rotate the rod back to the position shown in Figure 7 as soon as the cam 60 releases the lever 55—56.

It is desirable that the brake band 50 be released before any appreciable pumping action takes place. To this end, the link 12 is pivoted to a crank arm 61 (Fig. 8) secured to the shaft 11. The upper end of the link 12 is curved as shown in Figure 8 so that the crank arm can readily move beyond the upper dead center point. In this position shown in Figure 8, the cam 60 is in engagement with the roller 59 on the adjustable lever on the rod 53 and is holding the rod 53 in brake applying position. Consequently when the shaft 11 is initially rocked by lever 62, the cam 60 will release the adjustable lever 55—56 before any appreciable pumping action takes place since the upper pivot point 63 of the link 12 will rise until dead center is passed. This movement will be sufficient to allow the spring or resilient action of the brake band to rotate the rod to the position shown in Figure 7.

In the operation of the chair, the shaft 11 is oscillated by the handle 62. If the parts are in the position shown in Figure 8, the rod 53 is slightly turned from the position shown in Figure 7, the brake is applied and the cam 60 is holding the rod 53 in brake applying position. If the handle 62 is now swung downwardly, the cam 60 will pass the roller 59 and the spring action of the brake band will rotate rod 53 to the position shown in Figure 7 and this will occur before any pumping action takes place as previously explained. Of course during pumping action, the handle 62 is not elevated to such an extent as to actuate the lever 55—56. When the pumping operation ceases, the handle 62 is raised to the position shown in Figure 8 to apply the brake.

During the pumping operation, the fluid will be forced thru the valve passage 15a and the passage 26 to the elevating tube 27, up the elevating tube and down the tube 35 to the compression chamber 39 for elevating the reciprocable casing. Any undue pressure in such chamber is adapted to be relieved when the movable casing has been elevated by the relief passage 41 as previously set forth.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. In a barber chair, a stationary column, a split brake shoe surrounding said column, a vertically movable member, means for attaching said brake shoe to said member, said brake shoe having a shoulder, a vertical rod having portions at different distances from the center for engag-

ing said shoulder, and means for rotating said rod for controlling said brake shoe.

2. In a barber chair, a stationary column, a casing reciprocable with respect to said column, 5 a resilient brake member surrounding said column and having one end attached to said casing, the other end of said brake member having a shoulder, a vertical rod adjacent said shoulder, said rod having a reduced portion for engaging 10 said shoulder for releasing said brake member and a curved portion for engaging said shoulder and applying said brake, a lever on said rod, a pump piston in said casing, a shaft, a crank thereon, a link connected to said piston and having a 15 curved upper portion connected to said crank, a cam upon said shaft for actuating said lever for applying said brake when said crank is beyond upper dead center, said cam moving to release said brake while said crank moves over dead 20 center and before any actual pumping takes place.

3. In a barber chair comprising relatively reciprocable members, a resilient brake band having an end attached to one member and surrounding the other member, the other end of said 25 brake band having a shoulder, a vertical rod having parts differently spaced from the center for engaging said shoulder, a lever on said rod, a shaft, a cam upon said shaft for actuating said lever for applying said brake band, a fluid piston, 30 a crank upon said shaft, a link connecting said crank and piston, said cam being in brake applying position when said crank is beyond upper dead center, and moving to brake band releasing position while said crank moves over dead center 35 and before said piston is effectively operated.

4. In a barber chair, a pair of relatively reciprocable members, a resilient brake attached to one member and surrounding the other member, said 40 brake having a shoulder, a rod having portions differently spaced from the center for engaging said shoulder and means for actuating said rod for applying said brake.

5. In a barber chair, a stationary casing having spaced concentric vertical walls, the inner 45 wall forming a vertical chamber, a movable casing having spaced concentric vertical walls positioned, and slidably fitting between the walls of the stationary casing, a head attached to the movable casing, a vertical column attached at 50 its upper end to said head and having a piston head at its lower end slidably fitting the wall of said vertical chamber, a fluid conveying tube extending through said column, a fluid pump in said movable casing, a fluid elevating tube in 55 said movable casing connected to said head and communicating with said fluid conveying tube whereby the operation of said pump will force the fluid up said elevating tube and down said conveying tube and beneath said piston head for 60 elevating said column and movable casing.

6. In a barber chair, a stationary casing having spaced concentric vertical walls, the inner wall forming a vertical chamber, a movable casing having spaced vertical walls positioned, and slidably fitting between the walls of said stationary 65 casing, a head carried by said movable casing, a column secured to said head and having a piston head slidably fitting the wall of said vertical chamber, a fluid pump carried by said movable casing, and means forming a fluid passage from 70 said pump to the top of said column and through said column for exerting upward pressure upon said piston head.

7. In a barber chair, a stationary casing hav-

ing a central vertical fluid chamber, a movable casing in telescopic relation with said stationary casing, a head attached to said movable casing, a column in said vertical chamber attached to said head and having a piston head slidably fitting 80 the wall of said vertical chamber, a fluid pump carried by said movable casing, means forming a fluid passage from said pump to said head, said column having a passage therethrough communicating with said first mentioned passage whereby 85 the fluid may be pumped through said vertical column and beneath the piston head thereon for elevating said movable casing.

8. In a barber chair, a stationary casing having two concentric chambers, a movable casing slidably mounted in one chamber and having a vertical column in the other chamber, said column 90 having a fluid passage extending therethrough and having a piston head slidably fitting the wall of said chamber, a pump carried by said movable casing, and means for forming a fluid passage 95 from said pump to the top of said column for communicating with said passage whereby fluid may be pumped beneath said piston head.

9. In a barber chair, a stationary casing having a pair of concentric chambers, a movable casing slidably mounted in the outer chamber, a hollow column upon the movable casing extending into the inner chamber and having a piston 100 head at its lower end slidably fitting the wall of said inner chamber, a tube in said column for carrying fluid from the top to the bottom thereof, said tube being spaced from the interior wall of said column, a pump carried by said movable casing, means forming a passage from said pump 105 to the top of said tube, a fluid relief chamber in the wall of said inner chamber and fluid ports in said column communicating with the space surrounding said tube for the purpose set forth.

10. In a barber chair, a stationary casing having an inner cylindrical wall defining a vertical chamber, a movable casing in a telescopic relation with said stationary casing, a brake band surrounding said cylindrical wall and attached 115 to said movable casing, a vertical rotatable rod extending through said movable casing and having means for actuating said brake band, a pump in said movable casing, a shaft journaled in said movable casing, a crank arm on said shaft, a link connecting said pump and crank, said link having 120 a curved end at its connection with said crank, a lever on said vertical rod, a cam on said shaft for actuating said lever, said crank being beyond upper dead center when said brake band is applied, said cam actuating said lever while said 125 crank arm moves toward and over dead center.

11. In a barber chair, a casing having a cylindrical chamber, a movable member supported in said casing and having a hollow column extending into said chamber, said column having a piston 135 head fitting within said chamber, a tube within said column, means for forcing fluid to the top of said column and downwardly through said tube to a point below said piston head, and means for relieving the pressure in said chamber at the 140 upper limit of movement of said movable member comprising a relief chamber in the wall of said casing having an inlet port for admitting fluid when said piston head is elevated thereabove and an outlet port for the escape of fluid above said 145 piston head, said column having a port for receiving such escaped fluid.

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