

E. E. KOKEN, DEC'D.

W. F. KOKEN, EXECUTOR.

BARBER'S CHAIR.

APPLICATION FILED FEB. 7, 1903.

1,098,157.

Patented May 26, 1914.

4 SHEETS-SHEET 1.

Fig. 1.

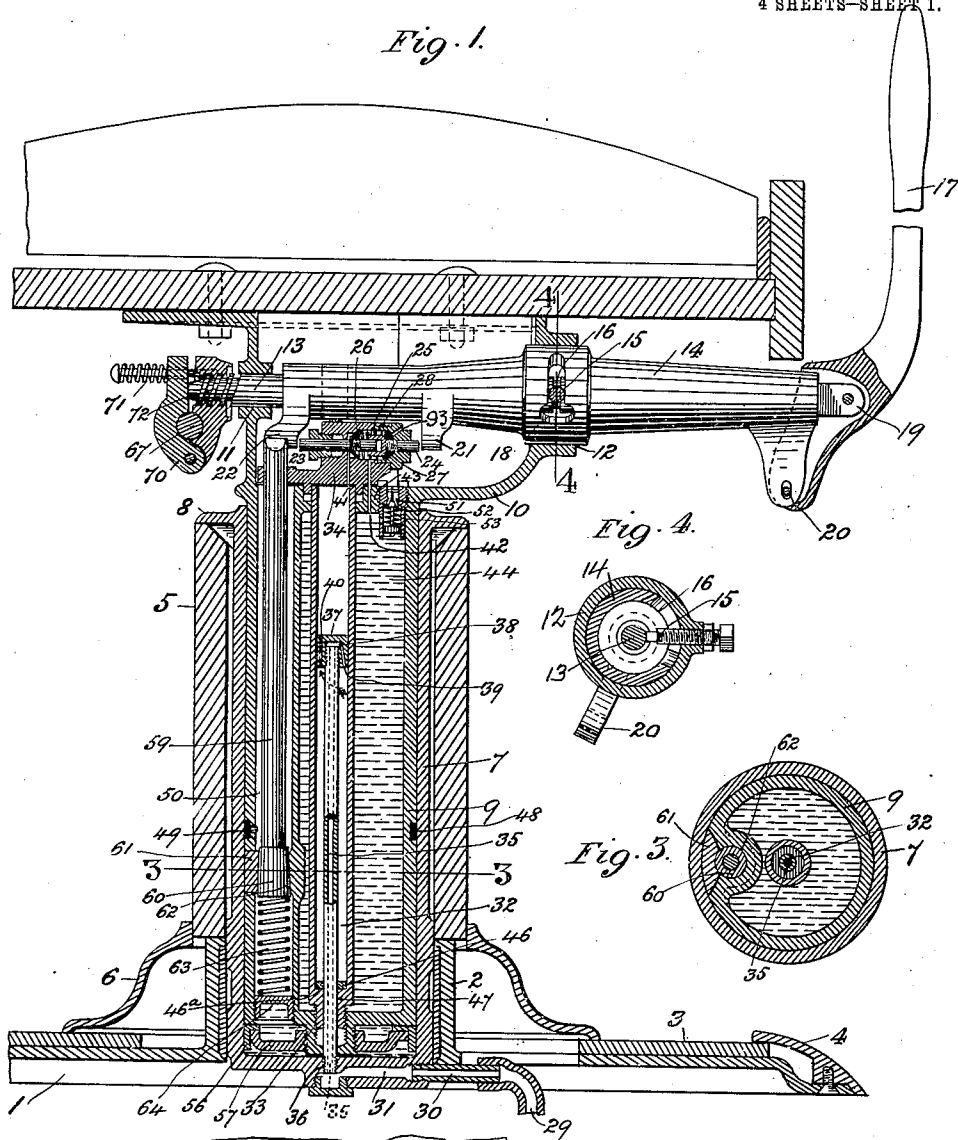
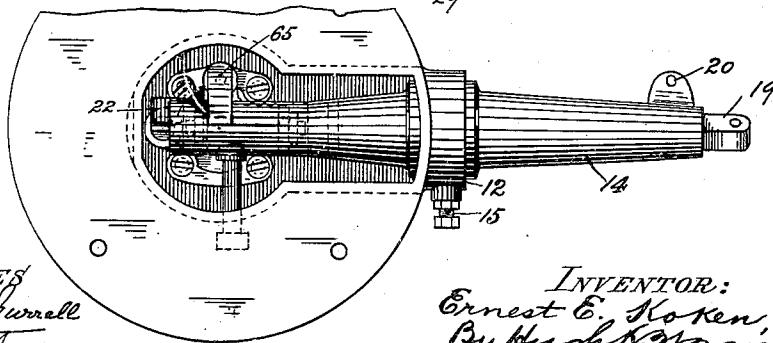


Fig. 4.

Fig. 3.

Fig. 2.



WITNESSES
Edward W. Russell
Jas. G. Jordan

INVENTOR:
Ernest E. Koken
By Hugh N. Wagner,
His Attorney.

E. E. KOKEN, DEC'D.
W. F. KOKEN, EXECUTOR.
BARBER'S CHAIR.

APPLICATION FILED FEB. 7, 1903.

Patented May 26, 1914.

4 SHEETS—SHEET 2.

1,098,157.

Fig. 5.

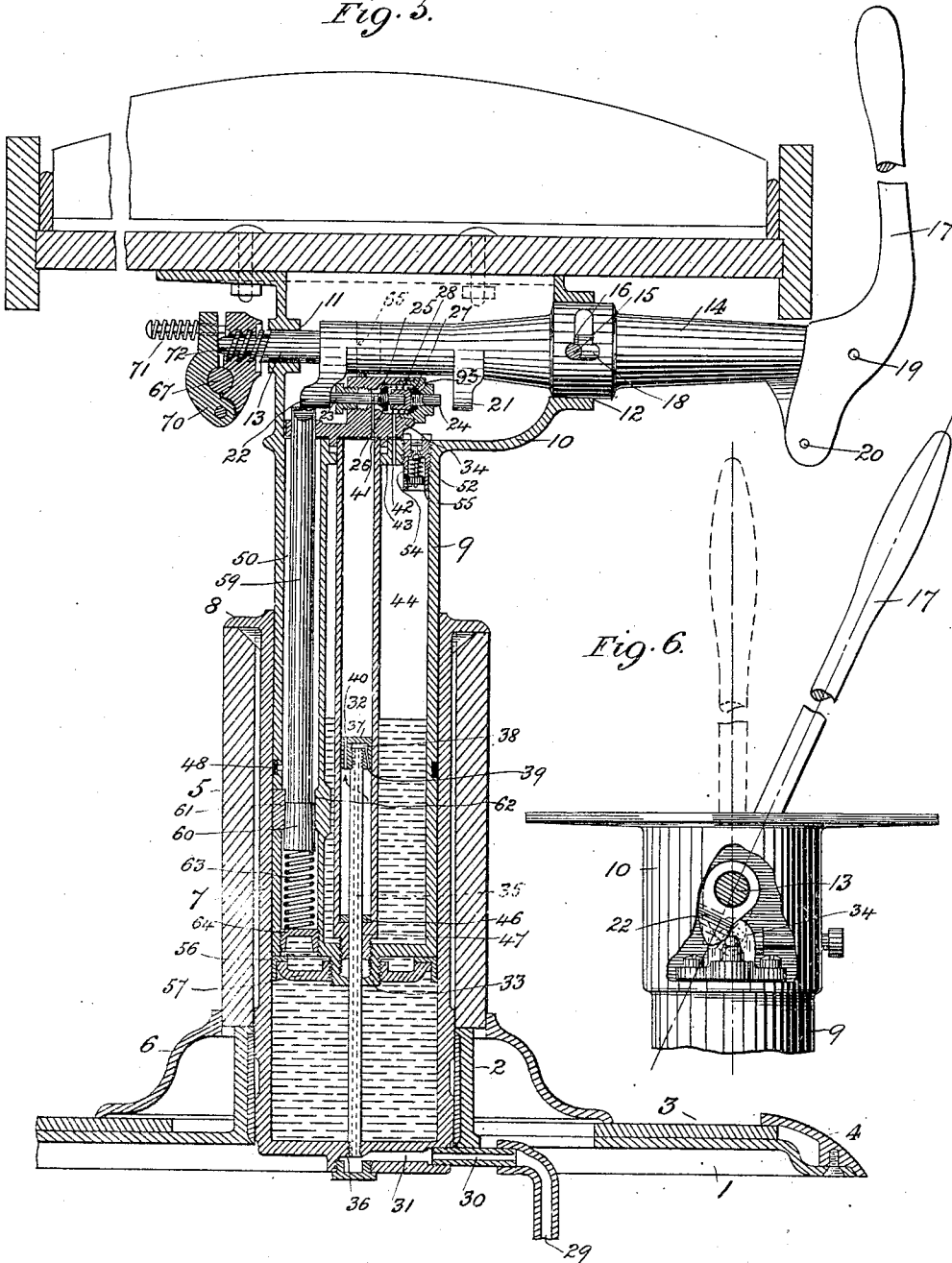
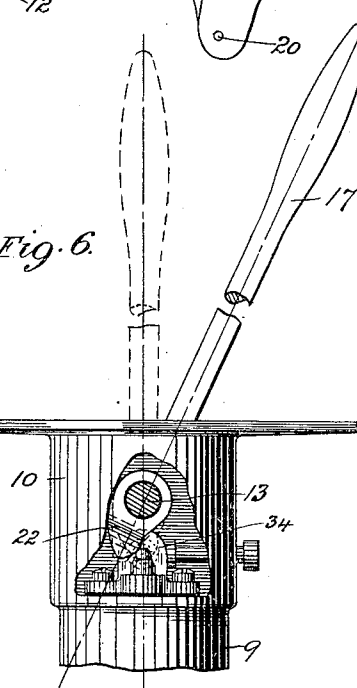


Fig. 6.



WITNESSES
Edward W. Currell
S. G. Johnson

INVENTOR:
Ernest E. Koken,
By Hugh N. Wagner,
His Attorney.

E. E. KOKEN, DEC'D.

W. F. KOKEN, EXECUTOR.

BARBER'S CHAIR.

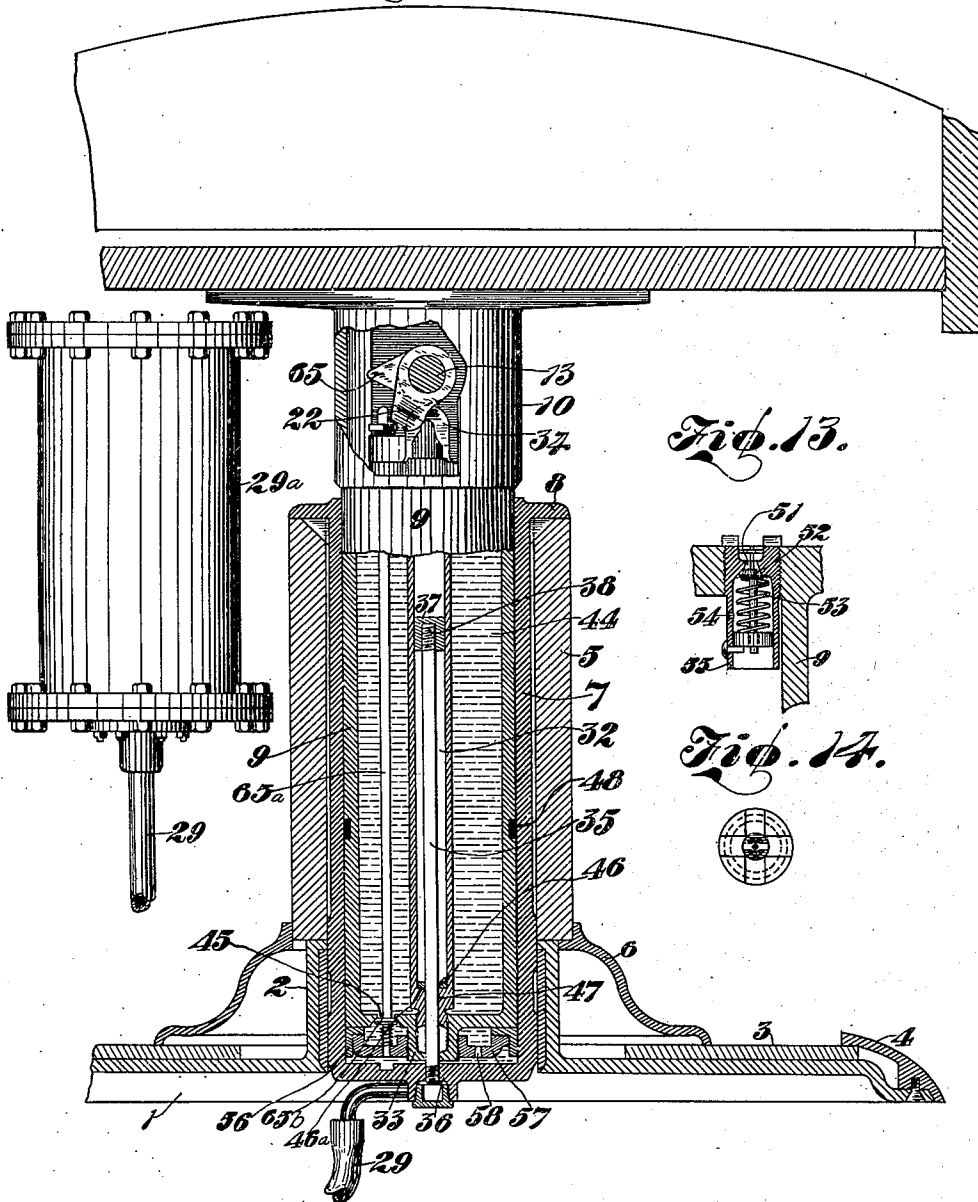
APPLICATION FILED FEB. 7, 1903.

1,098,157.

Patented May 26, 1914.

4 SHEETS—SHEET 3.

Fig. 7.



Witnesses:

J. Waldo Chrisinger.
Elliott R. Goldsmith.

Inventor:

Ernest E. Koken,
By *Hugh N. Wagner*,
His Attorney.

E. E. KOKEN, DEC'D.

W. F. KOKEN, EXECUTOR.

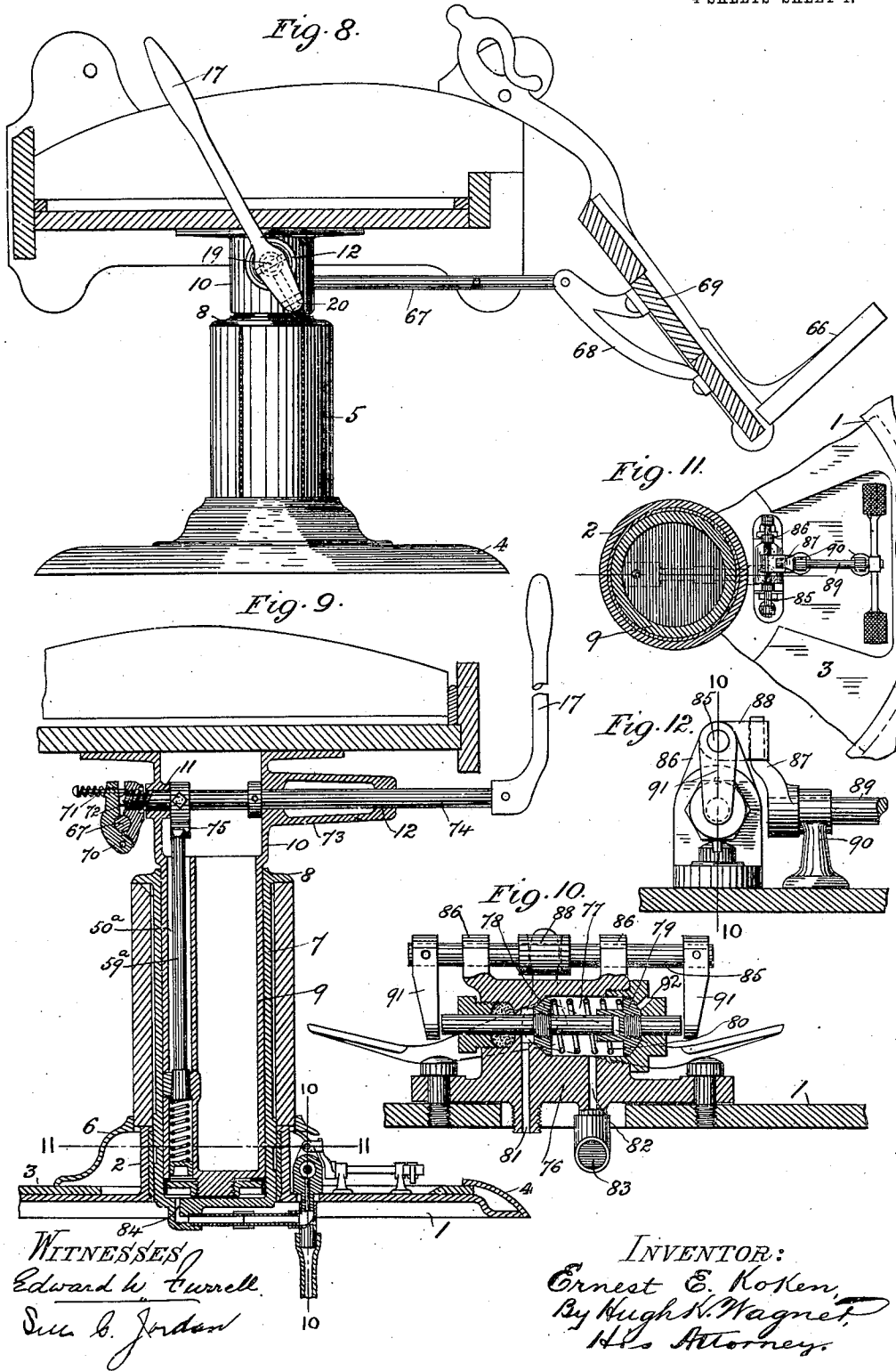
BARBER'S CHAIR.

APPLICATION FILED FEB. 7, 1903.

Patented May 26, 1914.

4 SHEETS—SHEET 4.

1,098,157.



UNITED STATES PATENT OFFICE.

ERNEST E. KOKEN, OF ST. LOUIS, MISSOURI; WALTER F. KOKEN, EXECUTOR OF SAID ERNEST E. KOKEN, DECEASED, ASSIGNOR TO KOKEN BARBERS' SUPPLY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

BARBER'S CHAIR.

1,098,157.

Specification of Letters Patent.

Patented May 26, 1914.

Application filed February 7, 1909. Serial No. 142,402.

To all whom it may concern:

Be it known that I, ERNEST E. KOKEN, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Barbers' Chairs, of which the following is a specification.

This invention relates to certain new and useful improvements in barbers' chairs, and the primary object thereof is to provide novel means whereby the chair is adjusted vertically.

A further object of the invention is to provide a chair which can be readily adjusted by pneumatic and hydraulic means or either.

Broadly, the invention consists in admitting air in a compressed state into a casing containing a fluid, preferably oil, which, through the medium of novel construction hereinafter to be described, performs the function of elevating the chair.

While I desire to employ air in conjunction with oil, by which I attain a very easy action, yet as will be obvious from the following description, either oil or air can be employed separately. I have found, however, that the employment of air alone does not always prove as satisfactory as air and oil together, inasmuch as air is too resilient.

Further objects and advantages will be pointed out in the accompanying description and defined in the appended claims.

In the accompanying drawings in which like numerals of reference indicate like parts throughout the several views—Figure 1 is a transverse vertical section through the pedestal and a portion of the chair seat; Fig. 2 is a top plan view thereof with the chair seat removed; Fig. 3 is a sectional view taken on line 3—3 of Fig. 1; Fig. 4 is a similar view taken on line 4—4 of Fig. 1; Fig. 5 is a view similar to Fig. 1 with the chair shown in elevated position; Fig. 6 is a fragmentary view of the piston casing, parts being broken away; Fig. 7 is a vertical sectional elevation taken at right-angles to Fig. 1; Fig. 8 is a view in side elevation on a reduced scale showing my improvement, the foot rest and a portion of the reclining mechanism; Fig. 9 is a vertical sectional view corresponding to Fig. 1 and showing a modified construction; Fig. 10 is an enlarged sectional view taken on line 10—10 of Fig. 9 and looking from the

left; Fig. 11 is a horizontal sectional view on line 11—11 of Fig. 9; Fig. 12 is an enlarged end elevation of the valve casing and operating gear; Fig. 13 is a vertical section on an enlarged scale through the oil release valve box in the top of the piston chamber as seen in Figs. 1 and 5; and Fig. 14 is a top plan view of the same.

The term pedestal as employed in any claim signifies generically any form of support for the cylinder 7, one form of pedestal being now set forth.

The base casting 1 is formed with a central upwardly projecting sleeve 2. A flat disk 3 rests upon the base casting 1, and incloses the sleeve 2. This disk may be provided with a suitably ornamented face and the outer edge thereof is secured to the base casting by means of a ring 4. An elongated tubular drum 5 formed or ornamented with wood or other material seats upon the upper end of the sleeve 2, while a bell 6 encircles the said sleeve and incloses the lower end of said drum. By providing this bell and drum 5, the interior mechanism of the pedestal can be completely covered by light ornamental pieces.

Arranged within the drum and sleeve 2 is a fixed or stationary cylinder 7, the same being provided at its upper end with an outwardly extending flange 8 which overlies and may be secured in any desired manner to the upper end of the drum 5.

Slidably mounted in the cylinder 7 is a piston 9, the same being formed at its upper end with an enlarged portion constituting a head or casing 10, formed at its upper end with an outwardly extending flange provided with apertures through the medium of which the chair seat can be secured thereto by bolts and the like.

The head 10 is formed at diametrically opposite points with bearings 11 and 12, through which the shafts 13 and 14 pass. These shafts are arranged one within the other and rotate in unison. The outer shaft is also susceptible of longitudinal movement upon the said inner shaft, and to prevent said longitudinal movement of the said shaft I provide a screw threaded pin projecting through the bearing 12 and outer shaft 14, into an annular groove 16, formed in the inner shaft. This pin is provided at

its outer end with a suitable head, and, as will be apparent, by having the inner end thereof abutting against the walls of the groove, longitudinal movement of the outer shaft will be prevented except when the outer shaft is rotated by the handle 17, so that the pin 15 enters the enlargement 18 of the slot in the outer shaft, and to the extent of the length of the enlargement, the outer shaft may be moved longitudinally upon the inner one. The handle 17 is used for the purpose of reclining the chair and thereby operating the footrest, but it is used, also, for the purpose of controlling the vertical adjustment of the chair, and it is pivoted at 19, to the inner shaft and fulcrumed at 20 to the outer one. It will thus be evident, as heretofore described, that both the inner and the outer shafts can be readily rotated in unison, and that when the pin 15 enters the enlargement 18 of the outer shaft a slight longitudinal movement can be imparted to the outer shaft. This movement is for the purpose of actuating the arms or bosses 21 and 22, which, when moved, abut against the valve stems 23 and 24, respectively. The inner ends of these valve stems telescope one within the other, the same being arranged in the air chamber 25, and being normally held apart, and the valves 26 and 27 carried thereby, normally kept seated by the spring 28.

When it is desired to admit air into the air chamber 25, the handle or lever 17 is pushed toward the chair body, the pin 15 at that time being in the enlargement 18, which draws the outer shaft over toward the right hand of Fig. 1, and with it the arms or bosses 21 and 22, which last-mentioned boss strikes the outer end of the valve stem 23, and pushes it inward into the air chamber 25, thus opening the valve 26, which admits air into the air chamber 25. The boss 21 is operated by reverse movement of the lever 17, the same striking the valve stem 24, thus opening the escape valve 27 and allowing the air to exhaust through the port 93.

An inlet tube 29 engages the coupling 30, which is secured in any desired manner in the lower end of the cylinder 7, and communicates with a passage 31 formed in the lower end of the said cylinder.

A chamber 32 is arranged centrally in the piston 9, the same being formed on its lower end with a screw threaded boss the threads of which are adapted to engage the threaded interior of the extension 33 formed on the lower end of the piston. The upper ends of the walls of this chamber 32 project through a depressed portion, formed in the upper wall of the piston and are received in an annular seat formed in the lower face of the casting 34 in which the air chamber 25 is located.

The path of travel of the air is as follows:

It is brought under pressure from any source of supply (such, for example, as a reservoir or container 29^a, or an air pump) and introduced through the inlet 29, whence it flows through the passage 31, and through the tube 35 which is arranged in the central chamber 32. This tube is screw-threaded and received in an internally screw-threaded opening 36 in the lower end of the cylinder 7, so as to communicate with the passage 31, and is provided at its upper end with a block 37, which is secured thereon in any desired manner but preferably by threaded engagement. A small chamber 38 is formed between the interior of the block 37 and the adjacent end of the tube 35, from which a duct 39 leads out into the large central chamber 32 in the center of the piston, from whence, following the direction indicated by the arrow, it passes through the duct 40 into the said central chamber 32 at a point above the block or cap 37, and thence through the duct 41 formed in the casting 34 into the air chamber 25, provided the valve 26 has been opened as heretofore described. The air then leaves the air chamber through the port 42, formed partly in the casting 34 and the upper wall 43 of the piston, into the interior of the piston, which for convenience I will term the oil chamber 44 at a point above the oil, and as will be evident, the oil will be forced and, driven out from within the piston through the valve opening 45 (see Fig. 7) in the lower portion of the piston. This immediately causes the piston to rise and consequently elevates the chair body; the degree of elevation being controlled by the length of time that the valve 26 in the air chamber 25 is open. It should be noted that the pressure of the air on the oil does not cease instantly when the further admission of the air is cut off, but the air continues to press upon the retreating oil, whereby an easy cushion-like effect is obtained. The leather washer 46 at the bottom of chamber 32 effectually shuts off the pressure of the air through the ducts 39 and 40 when the piston arrives at the highest point of its stroke, because the block 37 moves up and down in the chamber 32 with the movement of the piston 9 (the tube 35 carrying the block 37 being fixed at 36 to the base of the cylinder, but passing slidably at 47 through the base of the piston 9). It will be observed that the striking of the block 37 on the washer 46, supported (as the latter is) by the shoulder 46^a, would also serve to limit the movement of the piston 9, although the fact that the further admission of air is thus cut off makes the stop freer from shock or jar.

When it is desired to lower the chair seat, the shaft 14 is rotated, causing the cam 65 to depress the rod 65^a, which positively opens the valve 65^b, and allows the oil to

flow back into the oil chamber 44 within the piston.

In the use of oil in barbers' chairs it has been found that it has a tendency to work upwardly along the sides of the piston and eventually make its escape over the upper edge of the cylinder 7. This, as will be obvious, is a very undesirable feature, owing to the resulting unclean condition of the shop, and in order to obviate the rising of the oil in the cylinder as just described I provide the piston, at a point a little below its longitudinal center, with a peripheral groove 48 to catch the rising oil, which groove communicates with an outlet 49 which enters or communicates with the chamber of the piston. The oil will thus drop through the outlet 49 into the chamber 50, and, if it eventually finds its way by reason of long accumulation to the top of the said chamber, it will enter within the enlarged upper end or head 10, from whence it will make its way to the port 51, which port is provided with mushroom valve 52 (see Figs. 13 and 14,) said valves being normally kept open by the spring 53, but closed by air under pressure, which is first admitted through the aperture 54, formed in the side wall, and later by the pressure on the base 55 of the valve. This valve is closed only when the air is being admitted under pressure through the port 42 into the oil chamber 44. As a result of this action of the valve, it is to be observed that a quick exhaust of the air is afforded from the top of the piston, as soon as the pressure has been sufficiently reduced by the opening of the valve 27.

By reference to the drawings it will be observed that I provide means whereby the oil is prevented from passing between the walls of the piston 9 and cylinder 7 to any great degree. This mechanism comprises a washer or gasket 56 which is impinged against the lower end of the piston at its edge by means of a cap 57, the same being provided with a threaded aperture in which the threaded extension 33 of the piston is received. I preferably construct this cap so as to form a chamber in which the oil is first admitted from the oil chamber of the piston before being ejected through the port 58 into the cylinder 7 as heretofore described.

The means for preventing the rotation of the chair seat will next be described.

Within the chamber 50 is arranged a plunger 59, the same having its upper end projecting above the piston and being formed on its lower end with a conical enlarged portion 60. This enlarged lower end of the plunger is adapted to engage the movable gripping or friction member 61, which is slidably mounted in an opening through the wall of the chamber. On the

side of the chamber opposite grip 61 is an inclined projection 62, upon which the plunger-head 60 rides when the plunger is elevated, thereby forcing the grip 61 outwardly so as functionally to engage the interior of cylinder 7.

This chair is adapted to be automatically locked, and, in order to produce this result, I arrange in the chamber 50 a spring 63, of the helical type, the same having its upper end abutting against the lower face of the plunger-head 60, and its opposite end bearing against the removable cap 64 which closes the lower end of the said chamber. By this construction the movable member 61 will be normally wedged, and, when it is desired to unlock the chair body, the shaft 14 is rotated by the handle 17 so as to cause the eccentric 22 to engage the plunger 59 and depress the same, thereby moving the wedge or conical member 60 out of engagement with the friction member 61, and thereby leaving the chair body free to rotate. The plunger 59 may be operated by the same eccentric 22 that abuts against the valve-stem 23; or it may be actuated by a separate eccentric mounted on the shaft 14.

In connection with the herein described means for elevating a chair, I have shown means whereby, in combination therewith, the foot rest 66 of the chair can be adjusted and held in any predetermined position. This means comprises a lock-bar 67 which is pivotally attached to a bracket 68 rigidly secured to the apron 69. The inner end of this lock-bar is arranged between the clamping jaws 70 which are so constructed as to automatically grip the rod, the same being thus actuated by the spring 71.

When it is desired to adjust the foot rest the jaws are forced apart by rotating the shaft 14, which, through the mechanism heretofore described, will impart rotary movement to the inner shaft, and said shaft by reason of its inner screw threaded end 72 engaging the opposite free ends of the said jaws as illustrated in Fig. 1, will release the clamp so as to permit the bar 67 to move. When the foot rest has been adjusted to the desired position the shafts 13 and 14 are rotated in a reverse direction, whereupon the spring 71 will operate the jaws of the clamp so that the same will automatically grip the rod and hold the foot rest in its adjusted position.

In Figs. 9, 10, 11, and 12 I have illustrated a modified form of my improvement, the same being designed to be operated by foot levers instead of hand operated mechanism as in the preferred form. In this construction it will be further noted that I employ air directly for elevating the chair, instead of admitting air under pressure to force oil in the position to raise the piston and attached chair body. An outwardly extending

tubular bearing 73 is formed integral with the piston and in said bearing is journaled the shaft 74, the same being provided, within the enlarged upper end of the piston, with an eccentric 75, which is adapted to operate the plunger 59^a, located in the chamber 50^a of the piston. The construction of this plunger and the means actuated thereby is identical with that described in the preferred form of my improvement, and, therefore, the description as first recited will apply to this portion of the modified construction. Arranged upon the base casting is a casting 76, in which is formed an air chamber 77. Arranged in this air chamber is a pair of valves 78, 79, provided with oppositely arranged stems, the outer ends of which project through openings in the casting 76, and the inner ones being telescoped one within the other. These valves are normally held closed by a spring 80. The operation of this movement is as follows: Air being admitted through the inlet 81, if the valve adjacent thereto is open, will enter into the air chamber and pass from thence through the duct 82, through the pipe 83, and through the port 84 into the cylinder 7 at a point below the lower face of the piston. The mechanism for opening these valves, as heretofore stated, is, in this form of device, adapted to be operated by foot levers, the same comprising a horizontally disposed rock shaft 89 journaled in uprights 90, which are secured to the base casting, and on the outer end of which are mounted oppositely disposed treadles whereby the said shaft can be partially rotated in either direction. Connected to the inner end of the said shaft is a rearwardly curved arm 87, which, through the medium of the connecting arm 88, reciprocates the shaft 85 journaled in brackets 86 formed integral with the casting 76. Laterally extending arms 91 alternately engage the respective valve stems as their shaft 85 is reciprocated.

When it is desired to lower the chair the operation is the same as in the preferred form, the valve 79 being unseated, which permits the air to exhaust through the port 92.

Having thus described my invention I claim:—

1. The combination with the pedestal and a cylinder arranged therein of a piston operating in the said cylinder, a separate chamber arranged in said piston, a tube secured to said cylinder and projecting upwardly within said separate chamber of the piston, a block mounted on the upper end of said tube and being formed with ducts communicating with said tube and the upper and lower portions of said chamber, means for admitting the air from said chamber into the piston, a washer located at one end of

said chamber to cut off the admission of air into the piston, means for controlling the flow of liquid through the lower end of said piston, and exhausting means.

2. The combination with a cylinder of a piston operating in said cylinder, said piston being formed with separate compartments, ports communicating with one of said compartments and piston proper, valves controlling said ports, a valve arranged in the lower end of the said piston, a locking means, a shaft, and means actuated by the said shaft for actuating said valves and locking means.

3. The combination with a cylinder having a suitable inlet port for the air, of a piston operating in said cylinder, said piston being formed with a separate chamber, means for admitting the air from the inlet port of said cylinder into the separate chamber of the piston, means for admitting the air from said chamber into the interior of the piston, valves controlling said last named means, a shaft journaled in said piston, arms mounted on said shaft, said arms being adapted to unseat the respective valves alternately, a valve in the lower end of the piston, means engaged by one of said arms for operating said last named valve, and means for rotating and reciprocating the said shaft.

4. The combination with a cylinder and a piston mounted therein of a normally unseated valve arranged in the upper wall of the piston and a normally seated valve arranged in the lower end wall, said piston being formed with an exterior groove and an aperture in communication with the upper end of the piston, said groove and aperture cooperating with said normally unseated valve for the purpose set forth, means for forcing liquid from the interior of the piston through the valve in its bottom to raise the piston, and means to open said valve when the piston is to descend.

5. The combination with a cylinder of a piston operating in said cylinder, a shaft journaled in said piston, means for admitting air into said piston, valves controlling said means, means for admitting liquid from said piston into the cylinder at a point below the bottom of the piston, a locking member slidably mounted in the piston, a spring actuated plunger for forcing the said member outwardly, means carried by the shaft for depressing said plunger, and means for actuating said first named valves.

6. The combination with a cylinder provided with an inlet of a piston operating in said cylinder, a member having a chamber communicating with the inlet of the cylinder, an exhaust port in said member, a pair of valves mounted in the chamber of said member and having their stems telescoped, a spring arranged between said

valves for holding the same seated, and means for unseating said valves.

7. The combination with a cylinder and a piston of means for admitting fluid through said piston to said cylinder, valves controlling said means, a shaft, a second shaft inclosing the first named shaft, means for moving said last named shaft longitudinally, and means carried by the last named shaft for operating said valves.

8. In combination with a stationary cylinder, a piston operating therein, a normally unseated valve mounted in the upper end of said piston, said piston being provided with a chamber, means for supplying said chamber with fluid under pressure, a member having ports communicating with said chamber and the interior of the piston proper, a controlling means for said ports, a port for said piston located in the bottom thereof, a controlling valve therefor, and a means capable of rotary and reciprocatory movements for actuating said valve and the controlling means of the ports of said member.

9. In a device of the type set forth, a piston provided with an air inlet port, and a second port adjacent thereto, a normally unseated valve closing said port and provided with an aperture in the valve shell, a cylinder having a valve controlled outlet, means for operating said valve, means for supplying compressed air to the piston, and means for controlling the air inlet port.

10. In a device of the type set forth, in combination with a cylinder, a piston slidable therein, said piston being provided with a hollow head and a chamber in communication therewith, said head being formed with a port communicating with the interior of the piston, a normally unseated valve for closing said port, one wall of the piston being formed with a groove and an opening extending therefrom into the chamber of said piston.

11. In a device of the type set forth, in combination with a cylinder adapted to contain oil or liquid, a piston slidable therein and provided in its upper portion with a normally unseated valve, the piston at a point above said valve being enlarged to form a head, and means whereby escaping oil passing up the sides of said piston will enter said piston head.

12. In combination with a cylinder having an inlet in its bottom, a piston adapted to contain liquid, means whereby communication is established between the said inlet and the interior of said piston, means for permitting the liquid to pass into the cylinder, and means whereby any liquid escaping up the sides of the piston will be returned into the upper portion of the piston.

13. The combination with a cylinder, of a hollow piston arranged to slide in said

cylinder, a fluid inlet at the upper end of the piston and a fluid outlet at the lower end thereof, means normally closing the fluid outlet, means for controlling the inlet port, and means for locking the piston to the cylinder, said means comprising a plunger inclosed by the cylinder, and having a head, and a friction member engaged by said head.

14. The combination with a chair seat of a hollow piston to which the chair seat is secured, a cylinder in which said piston is movable, an inlet at the upper end of the piston, means for controlling said inlet, said piston having an opening in its lower end, a valve normally closing said opening, means above the piston for opening the valves and means for locking the piston to the cylinder, said means comprising a plunger, a friction member in the wall of the piston engaging a part of said plunger, and a spring below the plunger for holding same normally in the locking position.

15. The combination with a pedestal and a chair seat of a hollow piston to which the chair seat is secured, a cylinder in which the piston operates, a fluid inlet and outlet to and from the piston, means for controlling the fluid admitted through said inlet, means for locking said piston against movement, and means for positively actuating the locking means and fluid-inlet-controlling means, said actuating means comprising a pair of rotatable shafts arranged one within the other and extending through the head of the piston, means carried by one of said shafts for engagement with the locking and inlet-controlling means for operating the same, a valve operated by said shaft for controlling said piston outlet, and means for exhausting said fluid.

16. The combination with a pedestal and a chair seat of a hollow piston to which the chair seat is secured, a cylinder in which the piston operates, a fluid inlet and outlet to and from the piston, means for controlling the fluid admitted through said inlet, means for locking said piston against movement, means for positively actuating the locking means and the fluid-inlet-controlling means, comprising a rotatable shaft carrying means for engagement with the locking means and fluid-inlet, controlling means, a valve operated by said shaft for controlling the piston outlet, and means for exhausting said fluid.

17. A barber's chair embodying a cylinder and a piston therein having an outlet, inlet, and exhaust, independent means for controlling the outlet, inlet, and exhaust, means for conducting pneumatic pressure to said inlet, and unitary means having provision for successive independent movements whereby said outlet, inlet, and exhaust controlling means are operated.

18. A barber's chair embodying a cylinder

der and a piston adapted to contain a liquid therein, said piston having an air exhaust, a liquid outlet, and an air inlet, a valve for each of said exhaust, outlet and inlet openings, means for conducting air to said inlet, and unitary means for successively operating said outlet, inlet, and exhaust valves.

19. A barber's chair embodying a cylinder and a piston therein, said piston having an outlet with means for controlling said outlet, a fluid chamber carried by the piston and having a port leading into the piston and an exhaust, means for controlling said port and exhaust, means for conducting fluid pressure to said chamber, and connected means for operating the inlet-controlling means independently of the exhaust-controlling means.

20. A barber's chair, embodying a cylinder and a piston provided with inlet and outlet ports, said outlet being below said inlet, valves for said ports, means for conducting fluid to the inlet port, means for locking the piston against rotation, and means capable of rotary and longitudinal movement for operating said locking means and valves.

21. In a barber's chair, a cylinder and a piston therein, means for conducting and controlling pneumatic pressure for reciprocating said piston, means for locking the piston against rotation, and means capable of rotary and reciprocatory movement for operating the pneumatic controlling means and locking means.

22. In a barber's chair, a cylinder with a piston therein, said piston being adapted to contain a liquid, a suitably controlled outlet in the piston, an air chamber having a suitably controlled inlet and a port leading into the piston, means for supplying compressed air to such air chamber, means for operating the piston-outlet-controlling means and the air-chamber-inlet-controlling means, and means for automatically cutting off the supply of air to said air chamber when the piston is at the limit of its upward stroke.

23. In a barber's chair, a piston formed with a closed bottom, said piston being adapted to contain a liquid and having an outlet in its bottom, depressible means for controlling said outlet, a suitably controlled inlet to the piston interior, spring-pressed means for controlling said inlet, means for supplying compressed air to the piston interior through the inlet thereof, and means for depressing said outlet-controlling means and for actuating said spring-pressed inlet-controlling means.

24. In a barber's chair, a cylinder, a piston operating therein and adapted to contain a liquid, a chamber having a suitably controlled outlet leading into the piston, said piston having a suitably controlled outlet, means for supplying fluid in a compressed state into said chamber, means for

cutting off the supply of compressed fluid in said chamber when the piston has reached its uppermost position, and means for exhausting the fluid from the top of piston.

25. A barber's chair embodying a cylinder and a piston adapted to contain liquid therein, said piston having an inlet, a liquid outlet, and an exhaust, means for conducting and controlling pneumatic pressure to said piston inlet, means for controlling said exhaust, a device for controlling said outlet, and connected means for operating said outlet-controlling device in advance of the exhaust-controlling means.

26. A barber's chair embodying a cylinder and a piston adapted to contain liquid therein, said piston having a liquid outlet, an air inlet and an exhaust, means for conducting and controlling pneumatic pressure to said piston inlet, independent controlling means for the outlet, inlet, and exhaust, connected means for operating each of said controlling means, and a lever for actuating said operating means.

27. A barber's chair embodying a cylinder and a piston therein, said piston having an inlet, an outlet, and an exhaust, means for conducting and controlling fluid pressure to said inlet, means for controlling the outlet, means for controlling the exhaust, and connected means for operating the outlet-controlling means in advance of the exhaust-controlling means.

28. A barber's chair embodying a cylinder and a piston adapted to contain liquid therein, said piston having an inlet, a liquid outlet, and an exhaust, means for conducting and controlling pneumatic pressure to said inlet, means for controlling said exhaust, means for controlling said outlet, and a shaft carrying devices for operating each of said controlling means.

29. In combination with a cylinder having a hollow piston reciprocating therein, a chamber in said piston and means to convey a fluid under pressure to said chamber, said means being also adapted to limit simultaneously the upward movement of the piston and to cut off the pressure of said fluid, and means suitably to control the fluid pressure.

30. In combination with a cylinder and a hollow piston reciprocating therein, said piston having three chambers, means for locking the piston in place being disposed in one of said chambers, a piston-propelling fluid being contained in another of said chambers, means for forcing said piston-propelling fluid out of its chamber being admitted through the third of said chambers; and means for controlling said other means.

31. In combination with a cylinder having a hollow piston reciprocating therein, said piston being actuated by fluid under

pressure introduced into said piston valves, a rock shaft and means mounted on said shaft, to actuate said valves thereby to control admission and discharge of said fluid, and to permit said piston, after having been actuated by said fluid, to return to normal position.

32. In a barber's chair, a cylinder and a hollow piston therein, said piston having a suitably closed outlet in the base thereof, a fluid normally contained in said piston, a chamber adapted to receive a fluid under pressure, and having a suitably controlled outlet leading into the piston interior, means for conducting fluid under pressure into said chamber, means for operating said piston outlet and said fluid chamber outlet, and means for exhausting said fluid.

33. In a barber's chair, a cylinder having a hollow piston reciprocating therein, said piston having a chamber and adapted to contain a fluid exterior of said chamber, said piston having an outlet port in the base thereof, and an inlet, means for supplying fluid under pressure from said chamber into said piston through said inlet, means for controlling and operating said inlet, separate means controlling and operating said outlet, and means for exhausting said fluid.

34. A barber's chair having a cylinder and a hollow piston reciprocating there-within, a passage through said piston, a chamber thereabove, a passage from the chamber to the piston, and valves within the chamber controlling both of said passages.

35. A barber's chair having a cylinder and a hollow piston reciprocating there-within, a chamber adjacent to said piston, means for conveying fluid under pressure into said chamber, means for conveying said fluid therefrom to a point where it actuates the piston, means for exhausting the fluid, and a pair of valves having telescoping stems within the chamber, said valves controlling the fluid.

36. A barber's chair having a cylinder and a piston reciprocating therewithin, means for introducing fluid under pressure into the piston, thereby to cause fluid pressure between the cylinder and the piston base, thereby to actuate the piston, and means intermediate the cylinder and piston to lock the piston in position.

37. A barber's chair having a cylinder and a piston reciprocating therewithin, means for introducing fluid under pressure into the piston, thereby to cause fluid pressure between the cylinder and the piston base, thereby to actuate the piston, valves controlling said fluid, means to lock the piston in position, and a lever controlling said valves and said locking means.

38. The combination of a chair-seat, a hollow piston which bears the same, a cylin-

der within which the piston reciprocates, a chamber carried on said piston, means to conduct fluid therefrom to a point where it actuates the piston, means for exhausting the fluid, and valve-means within the chamber to control said fluid.

39. The combination of a chair-seat, a hollow piston which bears the same, a cylinder within which said piston reciprocates, a chamber carried on said piston, extensible means to conduct fluid under pressure into said chamber, means to conduct fluid from said chamber to a point where it actuates the piston, means for exhausting the fluid, and valve-means within the chamber to control said fluid.

40. In a barber's chair, a cylinder, a hollow divided piston having a closed bottom movable therein and adapted to carry a body of liquid in one of its divisions, and having an outlet in said closed bottom, a chamber carried by the piston having communication with the other division thereof, an exhaust for said chamber communicating with the first division of the piston, and means whereby fluid may be admitted to said chamber through the second division to thereby enter the interior of the first named division of the piston to act on the surface of the body of liquid therein to expel same through the piston outlet.

41. In a barber's chair, a cylinder, a hollow piston movable in the cylinder and having a valved outlet in its bottom, a chamber carried by the piston and having a fluid inlet and a controlled fluid outlet which latter communicates with the piston interior, means whereby fluid under pressure may be admitted to said chamber through the fluid inlet, and means to simultaneously operate the valves of said piston outlet and said fluid outlet.

42. In a barber's chair, a cylinder, a hollow piston movable therein, stationary means whereby fluid may be introduced into said piston, an outlet at the piston base, means carried by the piston for engagement with said stationary means whereby the piston upon reaching its extent of upward movement automatically closes said fluid introducing means, and means whereby the fluid may be exhausted to allow the piston to descend.

43. In a barber's chair, a cylinder, a hollow piston movable therein, a fluid outlet in the piston base, means movable with the piston whereby fluid under pressure may be admitted to the piston top, a fluid exhaust for said means, and means for admitting fluid under pressure to said first means, said last named means extending through said hollow piston, and means whereby the last named means is sealed when the piston reaches a predetermined point in its upward movement.

44. In a barber's chair, a cylinder, a hollow piston movable therein, a fluid outlet in the piston base whereby fluid under pressure may be admitted between the piston and cylinder bases to effect raising of the piston, controlled means whereby fluid may be admitted to the top of the piston, and exhausted therefrom, and means extending through the piston interior for conveying fluid under pressure to said controlled means, and means, whereby the piston automatically seals said fluid conveying means when the piston reaches the limit of its upward movement.

45. In a barber's chair, a cylinder, a hollow piston reciprocating therein, said piston having a closed base and being adapted to receive fluid therein and having an outlet for the fluid at its base whereby the fluid may when under pressure enter between the piston and cylinder bases to thereby effect raising of the piston, valve controlled means whereby fluid under pressure may be admitted to and exhausted from the piston, said piston being also adapted to contain a body of liquid, which liquid when fluid under pressure is caused to act on the surface of the liquid is ejected from said outlet in the piston base to enter between the piston and cylinder bases to thereby effect raising of the piston.

46. A pneumatic and hydraulic barber's chair, embodying a cylinder, a hollow divided piston therein having a closed bottom formed with an outlet in said closed bottom, means whereby fluid is conducted into one division of the piston, controlled means whereby fluid is taken from said first division of the piston and led into a second division thereof, the latter communicating with said piston outlet, whereby the fluid enters between the piston and cylinder bases to effect raising of the piston and whereby said second division of the piston may be caused to contain a body of liquid, the fluid from the first division being conducted into the second division to expel the liquid from the latter to enter between the piston and cylinder bases to effect raising of the piston.

47. In a barber's chair, a cylinder, a hol-

low piston having a closed bottom movable therein, a valved outlet in said piston bottom, a chamber at the upper end of the piston having a valved outlet leading into the piston interior, said piston being adapted to contain a liquid, means to actuate said valve of the piston outlet, means to convey a supply of fluid under pressure to said chamber, and means to actuate said valve of the chamber to permit said fluid under pressure to enter the piston interior and by acting on the surface of the liquid therein to force the latter through the piston outlet in the space between the closed bottom of the piston and the cylinder base, thereby effecting raising of the piston.

48. In a barber's chair, a cylinder, a hollow piston movable therein, said piston having a closed bottom formed with an outlet, a valve for said outlet, a chamber at the top of the piston, means to conduct fluid under pressure to said chamber, a valve to control said fluid conducting means, a passage between said chamber and the piston interior, a valve for controlling said passage, said chamber having an exhaust port, a valve for controlling said exhaust port, and means having separate devices for successively operating all of said valves.

49. In a barber's chair, a cylinder, a hollow piston therein having a closed bottom with a valved outlet in the bottom, a chamber on top of the piston having a valved fluid outlet which communicates with the piston interior, a valved fluid inlet for said chamber, means to supply fluid under pressure to said inlet, a valved exhaust for said chamber and a manually operable member movable to various positions and having a plurality of independent devices thereon for actuating all of said valves when moved to its various positions.

In testimony whereof I have affixed my signature in presence of two witnesses this 27th day of January, 1903.

ERNEST E. KOKEN.

Witnesses:

MAUD E. LETCHER,
A. E. WAGNER.