J. R. EMMERT.

BARBER'S CHAIR.

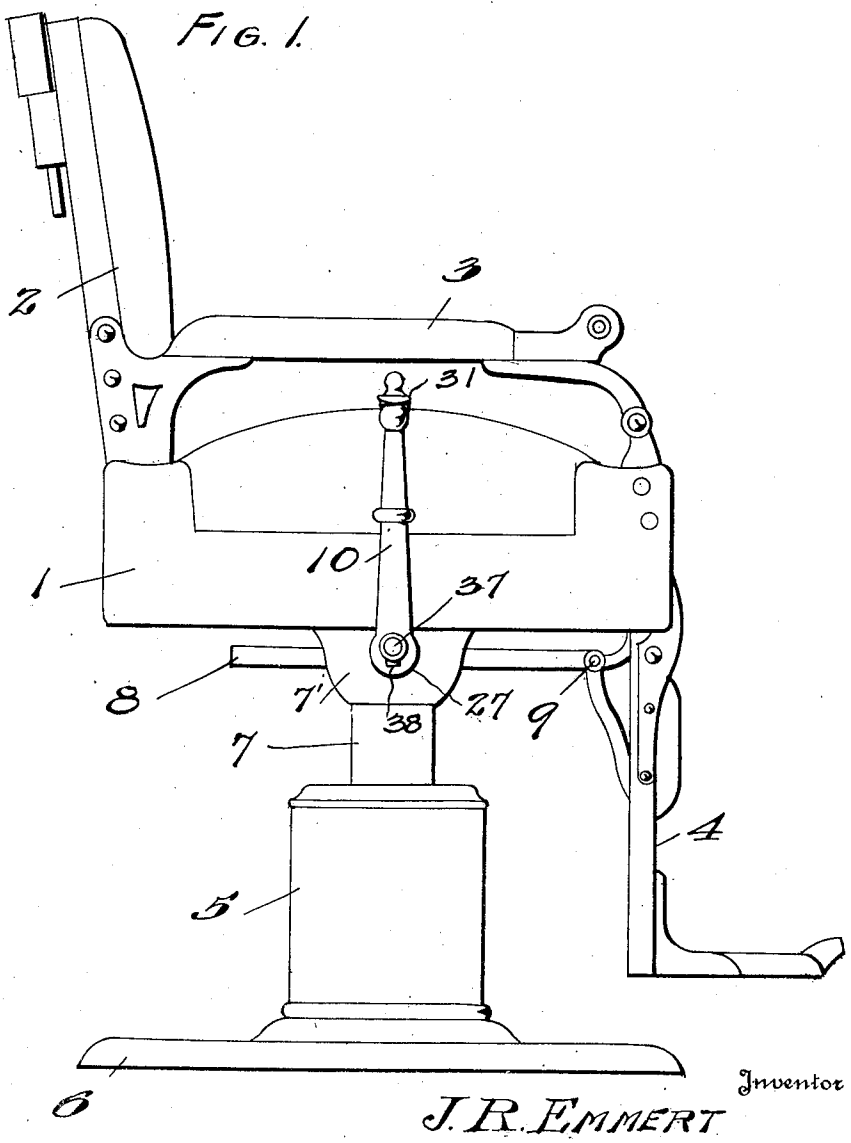
APPLICATION FILED OCT. 29, 1918.

1,347,264.

Patented July 20, 1920.

3 SHEETS—SHEET 1.

FIG. 1.



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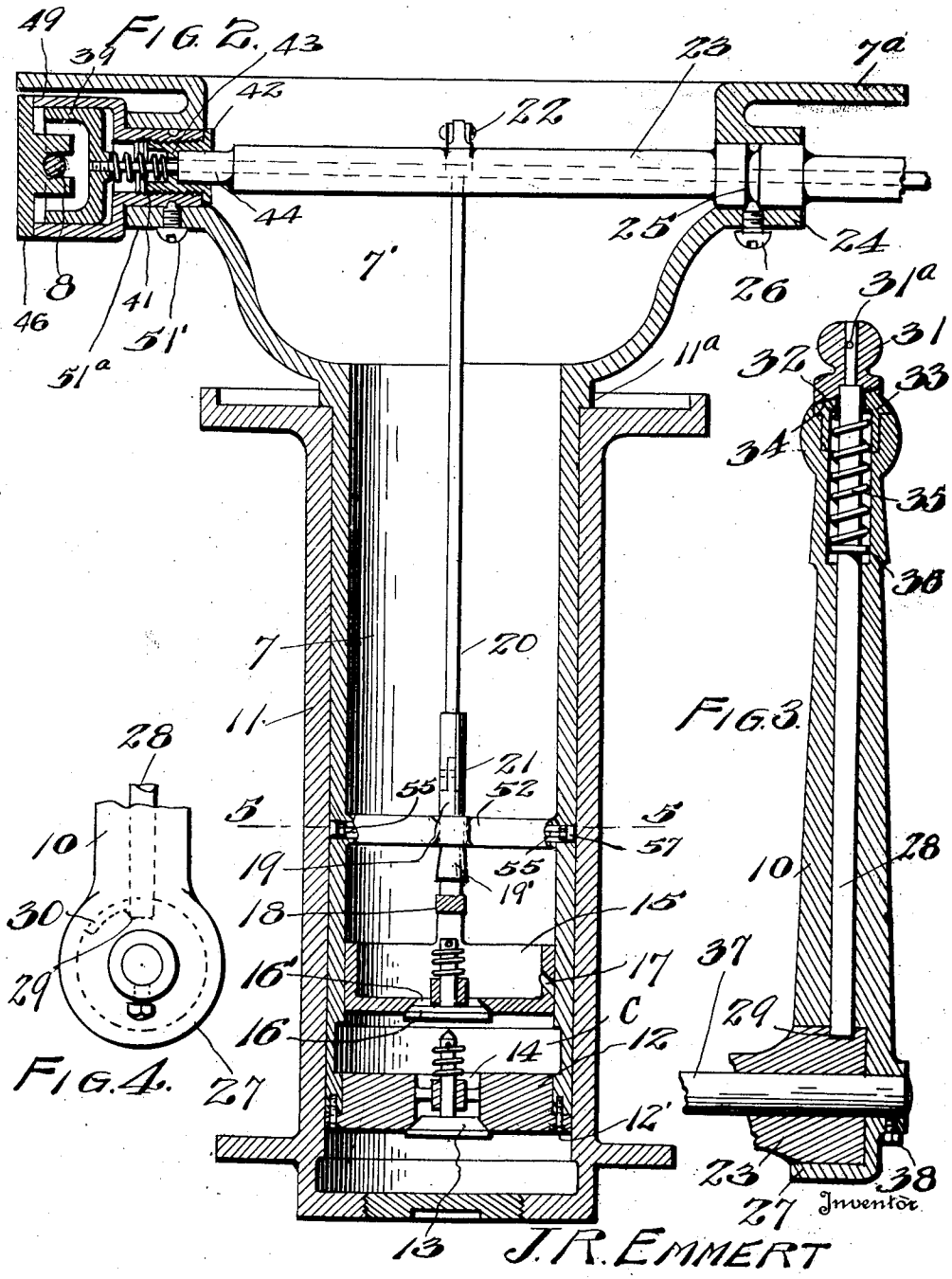
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3 SHEETS—SHEET 3.

FIG. 5.

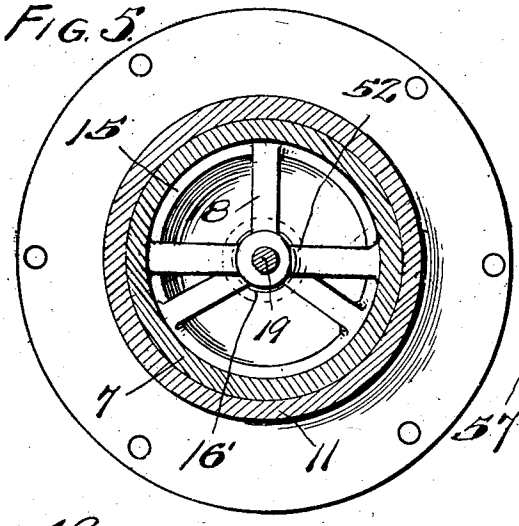
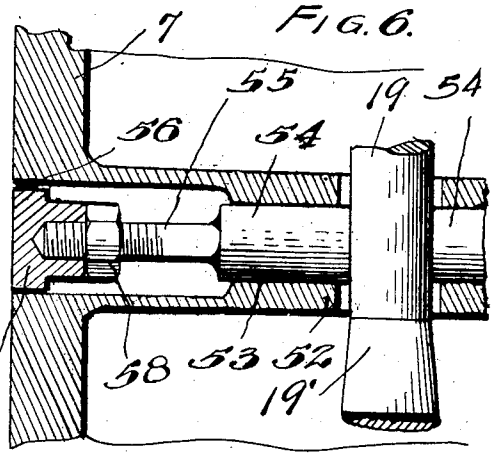


FIG. 6.



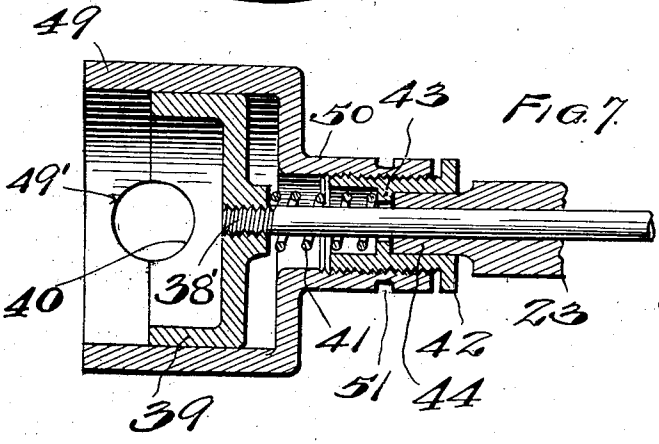


FIG. 7.

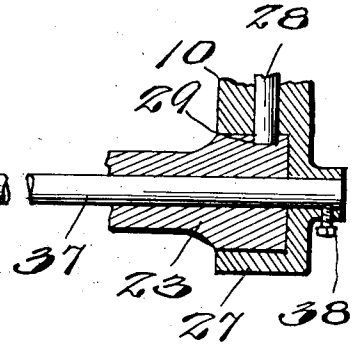


FIG. 8.

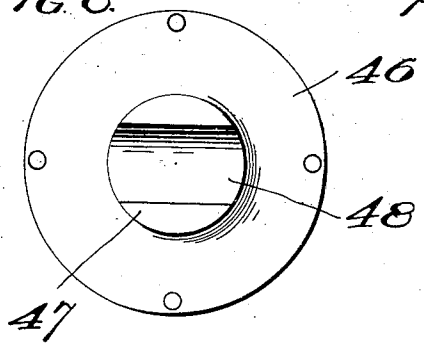
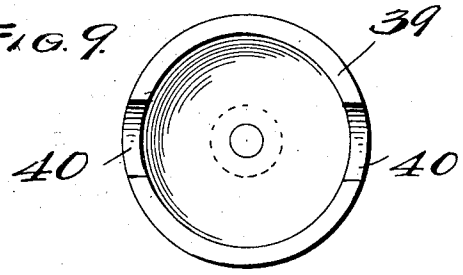


FIG. 9.



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UNITED STATES PATENT OFFICE.

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BARBER'S CHAIR.

1,347,264. Specification of Letters Patent. Patented July 20, 1920.

Application filed October 29, 1918. Serial No. 260,165.

To all whom it may concern:

Be it known that I, JOHN R. EMMERT, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Barbers' Chairs, of which the following is a specification.

The present invention relates to improvements in barber chairs and is designed primarily for the purpose of providing a hydraulic mechanism and actuating mechanism therefor which is comparatively simple in both construction and operation, but quick and efficient in its action, and durable; and also in a novel device for clamping the rock bar or reclining bar used to adjust the chair to horizontal position, and the invention consists in certain novel combinations and arrangements of parts as will be hereinafter more particularly described and pointed out in the claims.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention constructed and arranged according to the best mode I have so far devised for the practical application of the principles of my invention.

Figure 1 is a side elevation of a barber's chair embodying the novel features and combinations of the present invention.

Fig. 2 is a vertical, central sectional view of the supporting parts of the chair and disclosing the hydraulic mechanism and clamping device for the reclining rod.

Fig 3 is an enlarged, sectional view of the operating lever of the chair.

Fig. 4 is an end view of the lower end portion of the lever.

Fig. 5 is a transverse sectional view on line 5—5 of Fig. 2.

Fig. 6 is an enlarged sectional view showing the cross head and connections for the plunger stem operating within the hollow core or piston of the chair support.

Fig. 7 is an enlarged sectional view of the clamping device for the reclining bar or rod of the chair.

Fig. 8 is a face view of the stationary member of the clutch or clamp for the reclining bar, and Fig. 9 is a face view of the movable member of the clutch for the reclining rod.

In order to illustrate the invention I have depicted in the drawings a standard style of barber's chair using the seat portion 1, which is adjustable as to height, the adjustable back 2, the arm 3 and the apron 4, the back and apron being coupled together for adjustment to reclining position in usual manner, while the outside drum or casing 5 and base 6 in Fig. 1 are of usual construction. The elevating core or cylinder 7 has the usual bowl 7′ attached to the chair seat frame by means of the flange 7ª (Fig. 2) and the longitudinally disposed reclining bar 8 is pivoted at 9 to operate the apron and chair back and hold them in adjusted position.

By means of the operating lever 10 the core 7 is moved within the stationary cylinder 11 which is fixed to the base of the chair in the usual manner, and when in normal position the core rests upon the upper end of the cylinder or casing 11 through the medium of the annular shoulder 11ª of the core. The core is revoluble within the cylinder as usual and is formed with an open end in which is fitted the head 12, screws 12′ or other means being employed to secure the head to the core. The head 12 carries the lower of a pair of valves, as 13, spring pressed, and adapted to close the port 14 opening vertically through the head, and the upper of the two valves is indicated at 16 to close the port 16′ in the piston head 15 that is vertically reciprocable in the core 7, the plunger and two valves being necessary to lift the core by hydraulic action on the oil in the cylinder 11 below the core and in the chamber C formed just above the head 12 of the cylinder.

The piston head 15 in the form of an open, hollow cylindrical cup is provided with ports as 17 through which oil may flow into the chamber C when the plunger or piston head is lowered sufficiently to permit this action. The upper part of the piston is formed with a three-arm spider 18 and a rigid stem 19 projects thereabove and is connected with the long link 20 through the pivot joint 21 and at 22 the long link is pivoted to an arm on the rock shaft 23. The rock shaft is a tubular member that is rocked through the action of the operating lever 10, and is supported in a bearing boss 24 of the bowl 7′ and provided with an annular groove 25 into which the screw 26 is fitted to prevent longitudinal movement of

the shaft, but to permit rocking or oscillating movement thereof. At its lower end the lever 10 is fashioned with a socket 27 to receive the shaft 23, and a rod or bar 28 in the form of a detent is passed through the lever to engage a notch 29 formed as a depression at the end of an annular or circumferential groove 30 in the end of the tubular rock shaft in which the detent is to be engaged when the clutch for the reclining bar 8 is released. The detent 28 is a round bar and revoluble in the lever 10, and at its upper end is provided with a fixed turn button 31, a pin 31ª being used to secure the button to the bar. The button has a cam face 32 at its under side which coacts with a bushing 33 and the bushing also has a cam face 34 to co-act with the cam head or button 31. The bushing 33 also confines a spring 35 between itself and the flange 36 on the detent so that when the cam head is turned the detent is withdrawn from the notch 29 against the tension of the spring, and when it is resting in the notch is held there by the spring. The lever is operatively connected with the rock shaft only when the detent is held in the notch 29, but the lever is permanently fixed to a releasing rod or clutch rod 37, which is located within the tubular shaft, through the set screw 38 passing through a cap on the lever end and bearing against the end of the release rod.

The clutch device for the reclining rod embodies two members of which the flanged disk 39 is a movable element and is threaded on the release rod 37 at 38′, the threads on the rod being left hand threads so that by turning the operating lever 10 the flanged disk may be made to act as a movable nut when the release bar is turned. The flanged disk is provided with semi-circular notches 40 to clamp against and frictionally engage the rod 8, and a coiled protractile spring 41 surrounding the release rod bears against the disk and against a sleeve nut 42 which has a central partition 43 through which the rod passes and against which the spring bears directly. This sleeve nut also forms a bearing for the tubular rock shaft 23 and the shaft has a reduced journal member 44 revoluble in the sleeve.

The movable member of the clutch co-acts with a fixed member 46, which is a circular disk formed with a central boss 47 notched at 48 to accommodate the reclining rod, and the disk is secured to a cylindrical housing 49, which is also provided with openings as circular openings 49′ to accommodate the reclining rod.

The housing has a reduced neck or sleeve 50, with an annular groove 51, and the set screw 51′ threaded in the hollow boss 51ª holds the housing in the boss against displacement.

Within the core 7 is located a cross head 52 to provide a bearing for the reciprocating stem 19 of the piston head 15, and the cross head is formed with a pair of alined sockets 53 to receive the opposed and diametrically arranged braces, each of which is formed with a head 54 and a threaded stem 55. Diametrically arranged openings 56 are provided in the wall of the core 7 to receive the complementary threaded blocks or nuts 57 seated therein, and a lock nut 58 is provided adjacent each fixed nut to lock the parts in rigid relationship.

In order to hold the chair against revolving, the lever 10 is thrown over to its extreme position in order to draw up the link 20 and stem 19 so that the cam or tapered portion 19′ of the stem may engage the two heads 54 and force the two supports or braces 55 outwardly so that the nuts 57 will frictionally engage the interior face of the cylinder 11 and effectually prevent relative movement of the core and cylinder.

In operating the chair the adjustment of the back, arms, seat and apron is accomplished by movement of the back, as the parts are coupled together in usual manner for this adjustment. In adjusting the chair for altitude the hydraulic or pumping action is utilized and actuated from the single lever 10. The non-compressible fluid employed in the core and cylinder is usually oil, and by the action of the lever 10 the fluid is forced from the core into the cylinder below the head of the core to elevate the core and the chair seat supported by the core. It will readily be seen that when the tubular shaft 23 is rocked by movement of the lever 10 the stroke of the lever in one direction will pull up the piston 15 and automatically lift the valve 16 permitting oil to pass through the port or seat 16′ into the chamber C, then the reverse stroke of the lever will oscillate the rock shaft and force the piston 15 down closing valve 16 and opening valve 13 to permit passage through the port or seat 14 of oil from the chamber C, and in this manner continued complete strokes of the lever 10 will force the oil through valve opening 16′, chamber C, and valve opening 14, lifting the core and its supported chair to the desired adjustment, then by throwing the lever to extreme position, the two nuts 57 may be made to frictionally engage the cylinder, as described to prevent rotation of the chair. Preferably the piston 15 is of maximum area in order that the oil may be pumped quickly into the cylinder to raise the chair with a minimum number of strokes of the lever 10. Downward or lowering movement of the chair frame and core is accomplished by turning the lever 10 forward, to the right in Fig. 1, until the extreme position of the lever is reached so that the piston, through its valve

16 will encounter and open the valve 13, permitting oil to be forced, by the weight of the core and chair, up through port 14 into chamber C, and thence through port or ports 17 from the chamber C into the interior of the core 7.

The clutch for the reclining bar 8 is operated by the lever 10 by first turning the button or head 31 to lift the detent 28 out of the socket 29 thus disconnecting the rock shaft 23 from the lever, and then the release rod 37 may be revolved within its tubular rock shaft 23. The threads 38′ on the release rod are preferably left hand threads, so that by turning the threaded end of the rod in the nut or movable clutch member 39 the member is withdrawn from engagement (through notches 40) with the reclining bar 8 against tension of spring 41. The clutch member is not entirely freed from the reclining rod 8, but the frictional engagement is reduced between the reclining rod and the fixed and movable members of the clutch as to permit the rod to slide freely through the notches 40 and 48. By turning the lever in the opposite direction the rod is clamped between the two clutch members, to fix the back, apron etc. in adjusted upright or reclining position as desired.

What I claim is:—

1. The combination in an adjustable chair with its frame, reclining bar and housing, of a closure for the housing having a notched boss to receive the bar, a movable disk within the housing having a notched flange to co-act with the notched boss for holding the reclining bar, and a clamping bar threaded into the disk whereby the disk may be caused to slide and the clutch controlled.

2. The combination with a fixed cylinder of a core revoluble therein and formed with opposed openings, of a locking device comprising a tubular cross head and a pair of braces radiating therefrom, brake blocks at the end of each brace to engage the cylinder, and a reciprocable member in the cross head having means for extending the braces to cause frictional contact between the blocks and the cylinder.

3. The combination with the fixed cylinder, and core having opposed openings, of a cross head and diametrical braces therein, brake blocks in said openings at the ends of said braces, and an operating stem in the cross head having cam faces to engage said braces and cause frictional contact between the blocks and the wall of the cylinder.

4. The combination in an adjustable chair with a supporting cylinder, of a revoluble core having opposite openings and a cross head, members radiating from said cross head adapted to engage the cylinder through said openings, a valved piston forming a chamber above the valved bottom of the core, said piston having a port in its wall and a stem reciprocable in the cross head, and means on the stem to engage said members for the purpose described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN R. EMMERT.

Witnesses:
FRANK J. PAIK,
EMIL PAIDAR.