A horizontally adjustable chair in combination with a shampoo bowl unit to be installed in barbershops, beauty parlors, etc. comprising a shampoo bowl unit which is either fixed in place or mounted for concealment in a cabinet and a chair having a seat capable of horizontal and longitudinal travel by means of a glide mechanism. The seat can be locked at a desired position by operation of a lock lever and relating locking members. In such a chair and a shampoo bowl combination, the relative distance between the user's head and the shampoo bowl can be easily adjusted. The chair is also rotatable, vertically adjustable and tiltable.
HORIZONTALLY ADJUSTABLE CHAIR IN COMBINATION WITH A SHAMPOO BOWL UNIT

This invention relates to fixtures for barbershops and beauty parlors and more particularly, to a horizontally adjustable chair in combination with a shampoo bowl unit and which is particularly effective for hair washing in a supine posture.

Hereinafter, there is known to the art a shampoo bowl and a chair unit of a type in which a shampoo bowl is fitted to a wall below a mirror and a chair is disposed confronting said bowl. In such a type of a shampoo bowl and a chair unit, the customer is usually seated on the chair facing the shampoo bowl and the mirror attached to the wall for hair treatment. Then, for hair washing, the chair is turned 180° with its back-rest tilted so that the customer lies on his back. In this position, the hair washing work is performed in the shampoo bowl positioned under the head of the customer. The relative space between the head and the bowl varies depending on sitting conditions, individual differences of customers, etc.

Therefore, it is an object of the present invention to provide a horizontally adjustable chair for adjusting the relative distance between the customer's head and the shampoo bowl by horizontally shifting the chair and setting the back-rest of the chair in any desired tilted position.

It is another object of the present invention to provide a horizontally adjustable chair of the aforesaid type in which the horizontal shifting and locking of the seat at a desired position can be effected by a simple mechanism within the seat which is mounted on a pedestal incorporating a hydraulic cylinder mechanism.

It is still another object of the present invention to provide a horizontally adjustable chair of the aforesaid type in which the shampoo bowl is made to disappear in a cabinet and when it is drawn out of the cabinet for hair washing, the bowl sufficiently projects from the cabinet so that the relative distance between the head in a supine posture and the bowl can be conveniently fixed and the hair washing operation can be easily performed.

Essentially, according to the present invention, there is provided a horizontally adjustable chair in combination with a shampoo bowl unit comprising a shampoo bowl unit and a rotatable, vertically adjustable and tiltable chair which includes a seat; an upper seat; an upper seat plate carrying said seat; a lower seat plate rotatably mounted on a pedestal; a pair of gliding mechanisms longitudinally provided between said upper and lower seat plates on both sides thereof each of which has a first rail fixed to said lower seat plate and a second rail fixed to said upper seat plate, said first and second rails being slidably joined with each other by means of balls provided therebetween for longitudinal reciprocation, said second rail having a plurality of square key holes formed on its surface at regular intervals; a lock bar supported by a lock support; a lock lever provided on either side of the lower seat plate, said lock bar being adapted to engage with and disengage from any one of said square key holes by operating said lock lever; and a spring means mounted on said lock support and giving a rotation drive thereto to maintain the lock bar in a locked position.

Various further and specific objects, features and advantages of this invention will be better understood from the following description of one embodiment of the present invention taken in connection with the accompanying drawings in which:

FIGS. 1 and 2 are schematic views showing the relative positions of a shampoo bowl unit and a chair unit in which FIG. 1 shows a hair treating position and FIG. 2 shows a hair washing position.

FIG. 3 is a perspective view of a horizontally adjustable chair which is one embodiment of this invention;

FIG. 4 is a rear elevational view of the same;

FIG. 5 is a partly cut-away rear elevational view of the same showing a gliding and a locking mechanism of a seat;

FIG. 6 is a perspective view of the locking mechanism of FIG. 5;

FIG. 7 is a partly cut-away side elevational view of a back-rest of the chair showing an erected position of an elbow-rest;

FIG. 8 is a front view of a shampoo bowl unit in a position in which a shampoo bowl is encased in a cabinet; and

FIG. 9 is a perspective view of the shampoo bowl unit in its open position.

In the drawings, characters A and B represent a chair and a shampoo bowl unit respectively.

Referring to FIGS. 1 and 2, usual hair treatments, such as cutting, styling, etc. are performed with the apparatus positioned as shown in FIG. 1. For hair washing, the shampoo bowl B is drawn out of the cabinet and the chair is turned 180°, then its back-rest is tilted backward and arranged so that a customer's head is positioned above the shampoo bowl as shown in FIG. 2.

Referring to FIGS. 3–7, there is illustrated the chair A. Numerical 1 represents a pedestal, 2 a seat, 3 side walls, 4 elbow-rests and 5 a back-rest. Inside the pedestal 1 is incorporated a conventional hydraulic cylinder with an electric pump whose piston 6 slidably extends from the upper end of the pedestal 1. A base 7 is rotatably mounted on the top of the piston 6 and a lower seat plate 8 is fixed to said base 7 with bolts and nuts 9.

On both sides of the upper face of said lower seat plate 8, there is provided a gliding mechanism 10 comprising a pair of rails longitudinally and slidably joined with each other by means of balls 10c. One of said rails 10a is fixed to the lower seat plate 8 with a bolt and nut 9 while the other rail 10b is fixed to an upper seat plate 11 by a bolt and nut 9.

To said upper seat plate 11 is attached the seat 2 and on both sides of the seat 2 are provided the side walls 3 on each of which an elbow-rest 4 is mounted. Between both said side walls 3, a back-rest 5 is hingedly mounted on the seat 2 by means of an axle 12.

Accordingly, the seat 2 is mounted on the pedestal 1 for horizontal reciprocation by means of said gliding mechanism 10. The seat is selectively and releasably locked in position by the following locking mechanism.

A lock bar 14 operated by a lock lever 13 is provided on one side or the other side of the lower seat plate 8 so that said lock bar 14 can engage with any one of square key holes 10b formed at regular intervals on the rail 10b to lock the seat 2 at a desired horizontal posi-
tion. The lock bar 14 is releasably maintained in engagement with any one of said square key holes 10h because said lock bar 14 is mounted on a lock support 15 to which is coupled a torsion spring 15′. In order to adjust the horizontal position of the seat 2, the lever 13 is operated to disengage the lock bar 14 from the key hole 10h, the seat 2 is horizontally shifted to the desired position and then the lever 13 is again pushed back to its original position so that the lock bar 14 catches the corresponding key hole 10h on the rail 10b thereby to lock the gliding mechanism.

Numeral 16 represents a lever catch provided under the lower seat plate 8 and having a pair of rollers 16a which are usually in contact with each other, but which can be moved apart by resiliency of the material. When an inwardly bent portion 13a of the lever 13 is forced between said pair of rollers 16a, the rollers tightly hold it therebetween to secure the unlocked position of the lock bar 14, as illustrated in broken lines in FIG. 5.

The back-rest 5 is so constructed as to be suspended at a desired tilted angle by operating handles 17 provided on its both sides as in the prior art. A head-rest 18 is extendibly mounted on the top of the back-rest 5.

The seat 2 is of the so-called lounge type and it is difficult for the user to mount it from the front. Therefore, for the purpose of facilitating mounting from the sides, one of the elbow-rests 4 with its fixture 20 is pivotally mounted on an axle 19 formed in the side wall 3. A stop 21 is provided in the side wall 3 to engage with an ear 20a formed in the fixture 20 thereby to restrict a further upward rotation of the elbow-rest 4.

The piston 6 in combination with the seat 2 is rotatably and vertically movably mounted on the pedestal 1. Vertical movement of a pair of pedals 22 equipped on the pedestal 1 as in the prior art locks the piston 6 at and releases it from a desired rotated position. When one of said pair of pedals 22a alone is pressed down, the incorporated electric pump is operated to elevate the seat 2, and when the other pedal 22b alone is pressed down, the incorporated cylinder is deprived of oil pressure to lower the seat 2.

Referring to FIGS. 5, 8 and 9, there is illustrated a shampoo bowl unit. Below a mirror 23 fixed to the wall, there is also fixed a cabinet 24 for the shampoo bowl B. Said cabinet 24 has, in its front face, a vertical opening 24a to which a door 25 is hinged with its axles 26 rotatably supported by brackets 27 provided projectingly from the cabinet 24.

The shampoo bowl B is fixedly provided inside said door and so constructed that, in an open position, the upper end B′ of the rear wall of the bowl strikes the underside of an operating board 28 formed within the cabinet 24 to maintain the bowl in a determined open position. The forward wall of the shampoo bowl has a recess B″ for receiving the back of the head.

As above-described, since the shampoo bowl B in combination with the door 25 is hinged to the cabinet by means of brackets 27 which are extending outward from the cabinet, the bowl can project forward in the open position farther than a conventional one, which makes hair washing work much easier.

For practical use of the horizontally adjustable chair in combination with the shampoo bowl unit according to the present invention, the pair of pedals 22 are operated to turn the chair A by 180°, the bowl B is drawn out of the cabinet 24 and the back-rest 5 of the chair is tilted backward by manipulating the handle 17 to position the head just above the shampoo bowl B.

The individual difference in distance between the shampoo bowl B and the seat 2 of the chair can be adjusted by shifting said seat horizontally by means of the lever 13 thereby to position the head just above the shampoo bowl B.

It should be noted that the horizontally adjustable chair can be employed in combination with a fixed type of a shampoo bowl unit which is similarly deemed as constituting the present invention without departing from the scope of the claims.

As apparent from the foregoing description, the horizontally adjustable chair in combination with the shampoo bowl unit according to the present invention can readily adjust the relative distance between the head and the shampoo bowl by horizontally shifting either of the bowl and the chair and by setting the back-rest of the chair in any desired tilted position, thereby positioning the head just above the shampoo bowl for easy hair washing.

What is claimed is:

1. A horizontally adjustable chair, especially for use in barbershops and beauty parlors, comprising:
   a. support pedestal having vertically extendible means extending upwardly therefrom;
   b. a lower seat plate mounted on said vertically extendible means for rotation with respect to said pedestal;
   c. a seat having an upper seat plate mounted on the underside thereof, with said upper seat plate being disposed above said lower seat plate;
   d. a pair of spaced-apart glide mechanisms mounted between said upper and lower seat plates adjacent the opposite sides of the seat, each of said glide mechanisms comprising a first elongated rail fixed to the lower seat plate and a second elongated rail fixed to the upper seat plate, said rails extending lengthwise of the seat, and a series of rolling bearing elements disposed between said rails so that said second rail is supported for longitudinal movement relative to said first rail;
   e. one of the rails of said glide mechanisms having a series of longitudinally spaced-apart locating means thereon;
   f. a movable lock support mounted in fixed association with the other rail of said one glide mechanism and having a lock member mounted thereon and selectively engageable with said locating means to reseasably lock said rails to each other;
   g. a lock lever connected to said lock support for moving said lock member into and out of engagement with said locating means; and
torsion spring means coupled to said lock support for resiliently urging said lock member into engagement with said locating means.

2. A horizontally adjustable chair according to claim 1, in which said seat has a seat back mounted for tilting movement about a horizontal axis relative to the remainder of said seat.

3. A horizontally adjustable chair according to claim 1, in which said locating means comprises a series of key holes in said one rail of said one glide mechanism and said lock member is a lock bar extendible into said holes.

4. A horizontally adjustable chair according to claim 3, in which said rails each have a pair of vertically and
sidewardly offset, substantially horizontal flanges, with each flange being opposed to and vertically spaced from a flange on the other rail, and said rolling bearing elements are balls disposed between opposed flanges of the two rails.

5. A horizontally adjustable chair according to claim 3, in which said lock support is an elongated rod extending substantially parallel with said rails, bracket means attached to said lower seat plate, said rod being supported by said bracket means for pivotal movement about an axis extending parallel to said rails; said torsion spring means comprising a coil spring encircling said rod and connected at one end to said rod and connected at the other end of said bracket means.

6. A horizontally adjustable chair according to claim 1, wherein said lock support is adapted to be disposed under the lower seat plate and having a pair of roller elements adapted to hold in an inwardly bent portion of said lock lever therebetween when the lever is disposed to unlock said lock member.

7. A horizontally adjustable chair according to claim 1, wherein said chair further comprises a pair of side walls on both sides of said seat; an elbow-rest pivotally mounted on each of said side walls; and a stop provided in each of the side walls to limit rotation of the elbow rest.

8. A horizontally adjustable chair according to claim 7, in combination with a shampoo bowl unit comprising a shampoo bowl having a recess in its forward wall thereby to receive the back of the head of a person in said seat.

9. A horizontally adjustable chair in combination with a shampoo bowl unit according to claim 8, wherein said shampoo bowl unit further comprises a cabinet fixed to a wall below a mirror and having a vertical opening in its front side and a door hingedly supported in said opening by means of axles on both sides, each of said axles being rotatably supported by a bracket projecting outward from said cabinet, said shampoo bowl being fixed to said door inside the cabinet.

10. A horizontally adjustable chair in combination with a shampoo bowl unit according to claim 9, wherein said shampoo bowl unit further comprises an operating board provided within said cabinet in the upper part thereof, the upper end of the rear wall of said shampoo bowl being adapted to abut against the underside of said operating board in its open position thereby to maintain the bowl in a determined open position.

* * * * *
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,810,673 Dated May 14, 1974

Inventor(s) Nagayoshi Shoji

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 5, line 14; change "of" to ---to---.
Col. 6, lines 2 and 3; change "Claim 7" to ---Claim 1---.

Signed and sealed this 1st day of October 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR. C. MARSHALL DANN
Attesting Officer Commissioner of Patents