C. E. SCHOSSLER.

STOOL.

APPLICATION FILED SEPT. 18, 1914.

1,194,551. Patented Aug. 15, 1916.

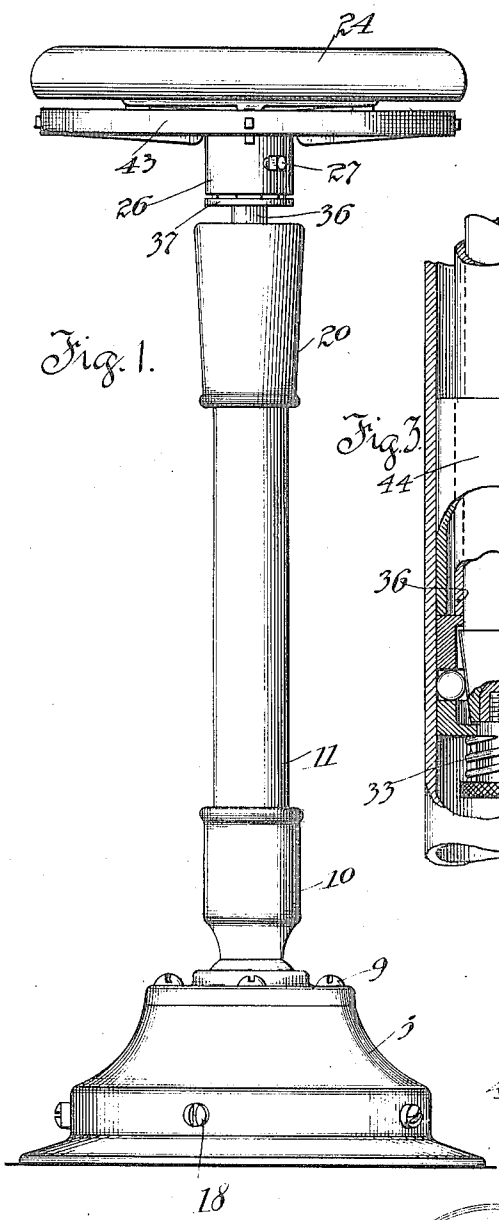


Fig. 1.

Fig. 3.

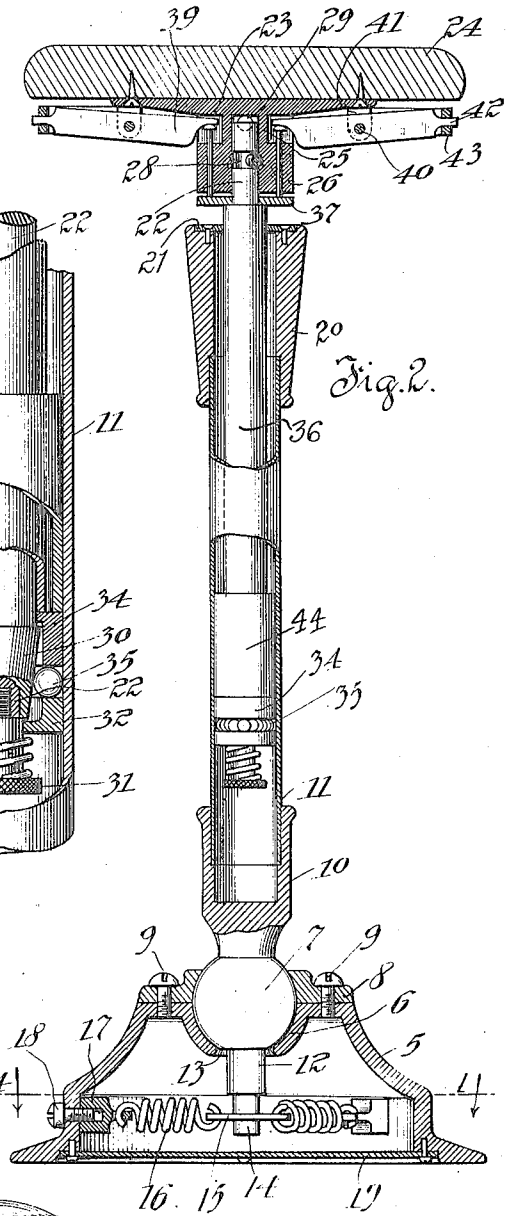


Fig. 2.

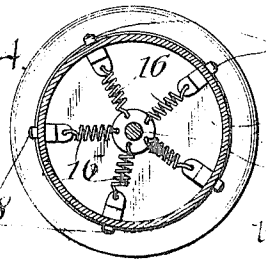


Fig. 4.

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UNITED STATES PATENT OFFICE.

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STOOL.

1,194,551. Specification of Letters Patent. Patented Aug. 15, 1916.

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To all whom it may concern:

Be it known that I, CARL EMIL SCHOSSLER, a subject of the King of Denmark, residing at Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Improvement in Stools, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to stools, particularly dental stools, and its object is to produce a highly improved article of this class.

As is well known to persons familiar with articles of the class to which my invention relates, a dental stool should be so constructed that the vertical position of the seat may be readily adjusted by the dentist while he is at work, and, moreover, the seat-carrying post or standard should be so mounted that the same may be inclined in any direction within certain limits.

My invention is particularly concerned with the provision of mechanism whereby the seat may be readily adjusted as desired, and whereby the seat-post may be inclined from the vertical in any direction.

My invention is more fully set forth in the following description wherein reference is made to the accompanying drawings, in which—

Figure 1 is a side elevational view of the stool of my invention; Fig. 2 is a vertical sectional view of the same; Fig. 3 is a fragmentary sectional view illustrating the clutch mechanism for retaining the seat-post at any one of a plurality of positions within the hollow standard, and Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 2, looking in the direction indicated by the arrows.

Similar reference numerals refer to similar parts throughout the several views.

As is clearly shown in the drawings, the stool of my invention comprises a hollow base 5 having a depression or socket 6 formed in the top thereof. Disposed in the socket 6 and arranged to turn therein is a ball 7, this ball being retained in position by a collar 8 so conformed as to permit the ball to turn in the socket 6. The collar 8 is retained in position by means of a plurality of screws 9, as illustrated. Formed integral with the ball 7 is a hollow cylindrical portion 10 arranged to have the lower end of a hollow standard 11 sweated, threaded, or otherwise secured therein. Also formed integral with the ball 7 is a stem 12 which projects through an aperture 13 into the base 5 and is provided with a lower portion 14 of reduced diameter. Encircling the portion 14 of the stem 12 is a washer 15 having a plurality of apertures formed therein. At 16, 16 I have illustrated a plurality of coiled springs, each one of which has one end thereof disposed in one of the apertures in the washer 15, and the other end thereof attached to an eye-nut 17 threaded upon the end of a screw 18 passing through the base 5. The base 5 is provided with a closure plate 19 which keeps the dust and dirt out of the base and otherwise protects the parts contained within the base. It will be seen that the tension of the springs 16, 16 may be readily adjusted by means of the screws 18, and that the springs 16, 16 normally tend to retain the hollow standard 11 in a vertical position. The standard 11 may, however, be inclined from the vertical in any direction within certain limits, but when released is returned to a vertical position by the springs 16.

Secured to the upper portion of the hollow standard 11 is a hollow casting 20, the upper end of which is provided with a head plate 21 secured in position by means of suitable screws, as illustrated. Projecting into the hollow standard 11 is seat-post 22. At 23 I have shown a circular plate upon which may be secured in any suitable manner a seat or cushion 24, said plate being provided with a central boss 25 having a lower portion 26 of increased cross-section. The central boss 25 is hollow to receive the upper end of the seat post 22, the said seat-post 22 being retained in position by means of a set-screw 27 passing through the boss 25 and entering an annular groove 28 in the seat-post. The upper end of the seat-post 22 is hollowed out to receive an anti-friction ball 29, as illustrated in Fig. 2.

As is most clearly shown in Fig. 3, an inverted cone-shaped element 30 is retained upon the lower end of the seat-post 22 by means of a shoulder screw 31 threaded into the lower end of the seat-post. Disposed around the shoulder-screw 31 and located below the cone-shaped element 30 is an ele-

ment which may be termed the lower ball cup 32. This lower ball cup rests upon a coiled spring 33, which normally tends to move said lower cup upwardly. Disposed around the upper portion of the cone-shaped element 30 and indicated at 34, is what may be called the upper ball cup, and located between said ball cups and around the cone-shaped element 30 is a plurality of balls 35. Resting upon the upper ball cup 34 and encircling the seat-post 22 is a sleeve 36, upon the upper end of which is disposed a collar 37. Passing through the enlarged portion 26 of the boss 25 and engaging the collar 37 is a plurality of pins 38, each one of which is engaged at its upper end by one end of a lever 39. Each of the levers 39 is pivotally mounted at 40 to a lug 41 formed integral with or otherwise carried by the plate 23 supporting the seat 24. The outer ends of the levers 39 are reduced at 42 and enter apertures in an annulus 43 disposed in immediate proximity to the bottom of the seat or cushion 24. There may be any desired number of the levers 39. In ordinary constructions, I find it desirable to utilize approximately five levers.

It will be seen that when the operator of the stool shown in the drawings raises the annulus 43, a number of levers 39 are operated, and the pins 38 are depressed, thus thrusting the sleeve 36 downwardly. The upper and lower ball cups 32 and 34, the balls 35, and the cone-shaped member 30 constitute a detent for retaining the seat-post at any desired position relative to the hollow standard 11. The weight of the seat and seat-post normally holds the cone-shaped member 30 in position to thrust the balls 35 outwardly in engagement with the hollow standard 11. When the operator is seated upon the stool, the force tending to move the balls 35 outwardly is greatly increased, and the seat-post is securely locked to the standard 11. When the seat is raised, the cone-shaped member 30 moves slightly with respect to the balls 35, and permits said balls to move inwardly out of engagement with the hollow standard 11, thus unlocking the seat-post from the hollow standard 11. When the seat-post is to be lowered, the sleeve 36 is forced downwardly by operating the levers 39, thus reducing the circumference of the ball train 35 and permitting the seat-post to be lowered.

At 44 in Figs. 2 and 3 of the drawings I have illustrated a sleeve 44 which limits the upward movement of the seat-post.

While I have illustrated my invention in the particular embodiment herein described, I do not wish to be limited to this particular construction, but wish to claim any equivalents thereof which may suggest themselves to those skilled in the art to which my invention relates.

What I claim as new, and desire to secure by Letters Patent of the United States is:

1. Apparatus of the class described comprising a hollow standard, a seat-post movable within the standard, a seat carried by the seat-post, a conical element carried by said seat-post, clutch balls disposed around said conical element, said conical element arranged to engage said balls and force the same into engagement with the standard, a sleeve disposed around said seat-post arranged when operated to engage and move the balls relatively to said conical element and standard to fully release the seat-post, and means for operating said sleeve.

2. A stool of the class described comprising a hollow standard, a seat-post movable within the standard, a seat carried by the seat-post, balls carried by the seat-post, said seat-post comprising a portion arranged to force said balls into engagement with the standard, and manually-operable means for engaging and moving said balls independently of the seat-post to release the seat-post from the standard.

3. A device of the class described comprising a hollow standard, a seat post movable within the standard, a seat carried by the seat post, a cone formed upon the seat post near the lower end thereof, a pair of sleeves disposed around the seat post, a train of clutch balls between the sleeves and encircling said cone arranged to lock the seat post to the standard, a shoulder on the seat post at the lower end thereof, an expansion spring acting between said shoulder and the lower sleeve, and means for moving the upper sleeve to engage and move the clutch balls against the tension of said spring and independently of the seat post to fully release the seat post from the standard.

4. A stool comprising a standard, a seat post telescopically mounted thereon, a seat carried by the seat post, a cone carried by the seat post, clutch devices interposed between the cone and standard arranged to cooperate with the cone to lock the post to the standard, and positively acting mechanical releasing mechanism for moving the clutch devices to a position to release the post from the standard.

5. A stool comprising a standard, a seat post telescopically mounted thereon, a seat carried by the seat post, a cone carried by the seat post, clutch devices interposed between the cone and standard arranged to cooperate with the cone to lock the post to the standard, and positively acting mechanical releasing mechanism for rendering the clutch devices inoperative to fully release the post from the standard.

6. A stool comprising a hollow standard, a seat post telescopically mounted therein, a seat carried by the seat post, a cone carried by the seat post, clutch devices inter-

posed between the cone and standard arranged to coöperate with the cone to lock the post to the standard, and positively acting mechanical releasing mechanism for rendering the clutch devices inoperative to fully release the post from the standard.

In witness whereof, I hereunto subscribe my name this 10 day of September, A. D. 1914.

CARL EMIL SCHOSSLER.

Witnesses:
C. S. BIGELOW,
M. H. MCFELLIN.