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ADJUSTABLE STOOL

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FIG. 1.

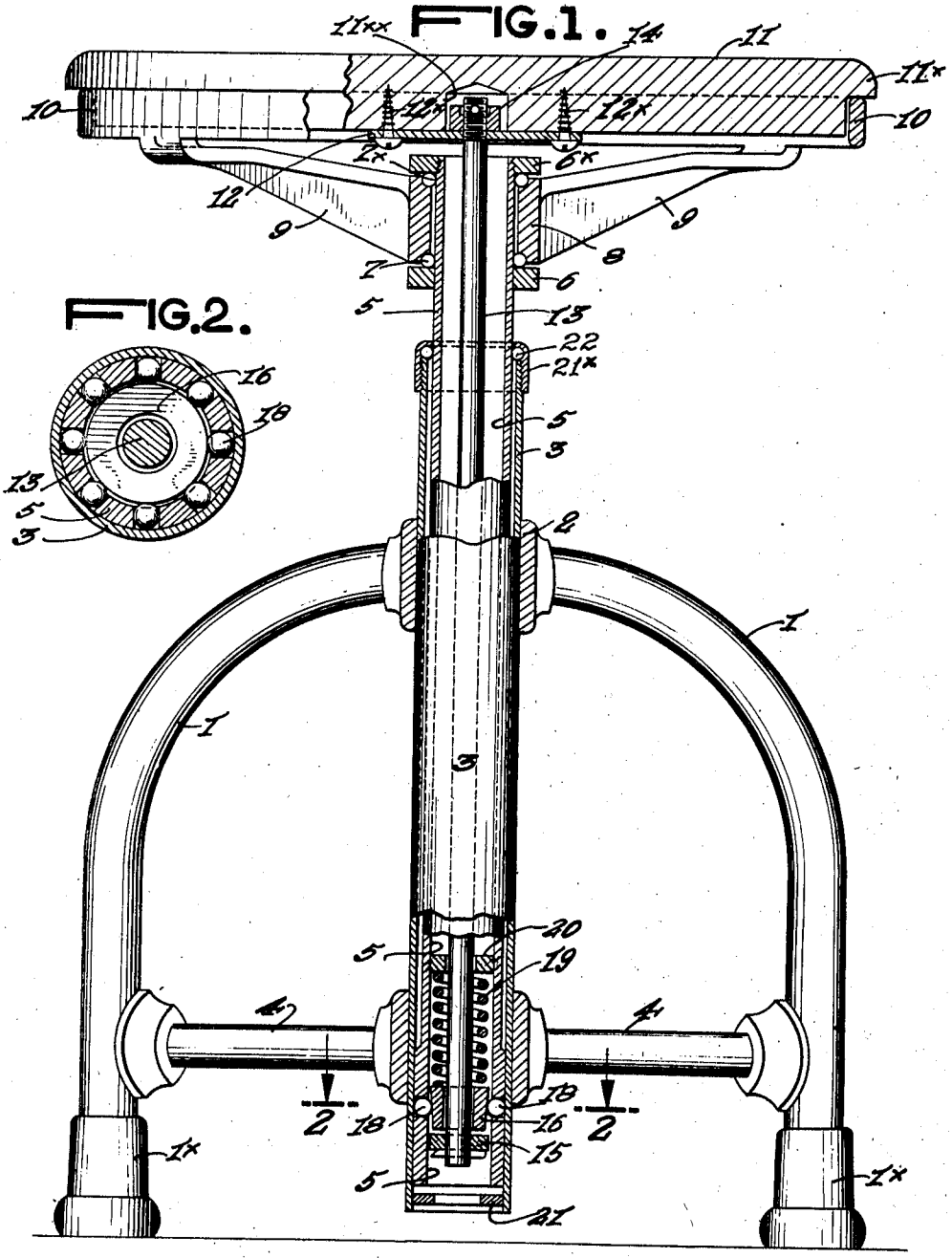


FIG. 2.

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ADJUSTABLE STOOL

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2 Claims. (Cl. 155—94)

The object of the present invention is to provide a stool having a seat mounted for rotation, the arrangement being such that the seat may be readily adjusted to various heights, and when so adjusted, will be automatically locked in said position. The lock-releasing means is free from applied levers or latches and the primary element of said releasing means comprises the upper portion or top member of the seat itself.

The invention will be described with reference to the accompanying drawing, in which:

Figure 1 is a front elevation of an embodiment of the invention, partly broken away in vertical section.

Figure 2 is a horizontal section on the line 2—2, Figure 1.

Referring to the drawing, it will be seen that the base of my adjustable stool comprises any suitable number of legs 1, three being sufficient, these legs being preferably formed of bent metallic tubes secured at their top to a ring 2 which embraces the supporting tubular standard 3. The legs may be reinforced by horizontal tubular arms 4. It will be understood that the base may be constructed by any suitable elements and in any suitable form. The elements illustrated are desirable because they may be quickly and inexpensively formed and possess substantial strength relative to weight. The tubular leg members may be closed at their base by cup-like feet 1*x*.

Within the tubular standard 3 is slidably disposed a tubular bearing member 5. Near its top, bearing member 5 has welded or otherwise secured thereto a supporting ring 6 which may directly receive ball-bearing members 7 upon which rests the hub 8 of the primary seat supporting member. From the hub are projected a suitable plurality of arms 9 carried by an annular supporting member 10.

At the top of tubular bearing member 5 the latter may be threaded to receive an internally threaded cap ring 6*x* overlying ball-bearings 7*x* complementary to the lower set of ball-bearings 7.

Normally supported by annular member 10 is the seat 11, the latter being formed with an annular flange 11*x* to rest upon the top of member 10, that part of the seat below the flange lying loosely within member 10.

Secured to the underface of seat 11 is a plate 12, the latter being centrally apertured to receive a rod or shaft 13 which extends downwardly within tubular bearing member 5. The seat 11 is apertured at 11*xx* to receive the upper end of the rod and a nut 14 threaded on the upper end of the rod. The nut may be castellated to receive a cotter pin or other form of locking device and the upper end of the rod or shaft 13 may be apertured to receive such a locking member. The plate 12 may be secured to the seat 11 by any suitable means as by the screws 12*x*.

To the lower end of the rod or shaft 13 is fixed an annular plate or washer 15 and surrounding the shaft immediately above the washer 15 is a metal cone 16. Within standard 3 and surrounding washer 15 is the lower portion of the tubular bearing member 5 in which is formed apertures for the ball-bearings 18, the latter being confined by the innerface of the standard 3 and the outerface of cone 16. The cone is engaged by a spiral spring 19, the top of which abuts an annular plate 20 through which shaft 13 projects, the plate being welded or otherwise secured to bearing member 5. If desired, the lower end of the tubular standard 3 may be reinforced by an internal ring 21.

In the operation of my adjustable stool, and referring to the position of the elements illustrated in Figure 1, it will be seen that the user may grasp the extended peripheral margin of the seat at any point and may raise it upward in such manner that the seat-supporting annular member 9 will serve as a fulcrum. Such movement of the seat will raise the shaft 13 and cause fixed collar 15 to engage the cone 16, the upward movement of the latter releasing frictional engagement of the bearings 18 with the tubular standard 3. Thereupon the tubular bearing member 5 may be raised by this movement, and continued movement of the tubular bearing member 5 through the seat-supporting member 9. When the seat has been adjusted to the desired height the seat may be dropped relatively to the seat-supporting member 9 and spring 19 thus being released will return the cone to the position of Figure 1, the movement of the cone restoring frictional engagement of the bearing members with the tubular standard 3.

It will be seen that the construction provides latching means so related to the seat that the weight of an occupant upon the seat is not thrown upon the bearing members 18, the frictional pressure of the bearing members being predetermined by the action of spring 19. Hence binding of the seat-holding means is provided. It will also be seen that the seat and its immediate supporting members rotate freely upon the bearing member 5, the latter remaining fixed

during said rotation so that both disturbance and wear of the locking means is avoided during such rotation. The top of the tubular standard **3** may be threaded to receive an internally-threaded aperture cap **21***x* which retains the ball-bearings **22** seated upon the upper end of the tubular standard.

Having described my invention, what I claim and desire to secure by Letters Patent, is as follows:

1. A stool comprising a frame, a seat-supporting ring carrying at its base a bearing hub, a seat adapted to be supported by the ring, a tubular member vertically supported by the frame, a second tubular member rotatable within the first tubular member and upon which the said hub is mounted for rotation, means on said second tubular member for holding the hub against endwise movement thereon, a shaft connected to the seat and extending downwardly through the second tubular member, a cone on said shaft, movable friction means carried by the second tubular member and adapted to be actuated by said cone when the latter is moved downward and to be released when the latter is move upwardly.

2. A stool comprising a frame consisting of a central tubular member and legs connected thereto, a second tubular member rotatable within the first member and formed near its lower end with an apertured portion, ball bearing members in said apertured portion and engaging the first tubular member, a shaft within the second tubular member, a cone on the shaft and adjacent said ball bearings, a seat secured to the upper end of the shaft, a seat-receiving ring having a depending hub rotatable upon said second tubular member, and means carried by the second tubular member for restraining the said ring against endwise movement relatively to the second tubular member.

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