

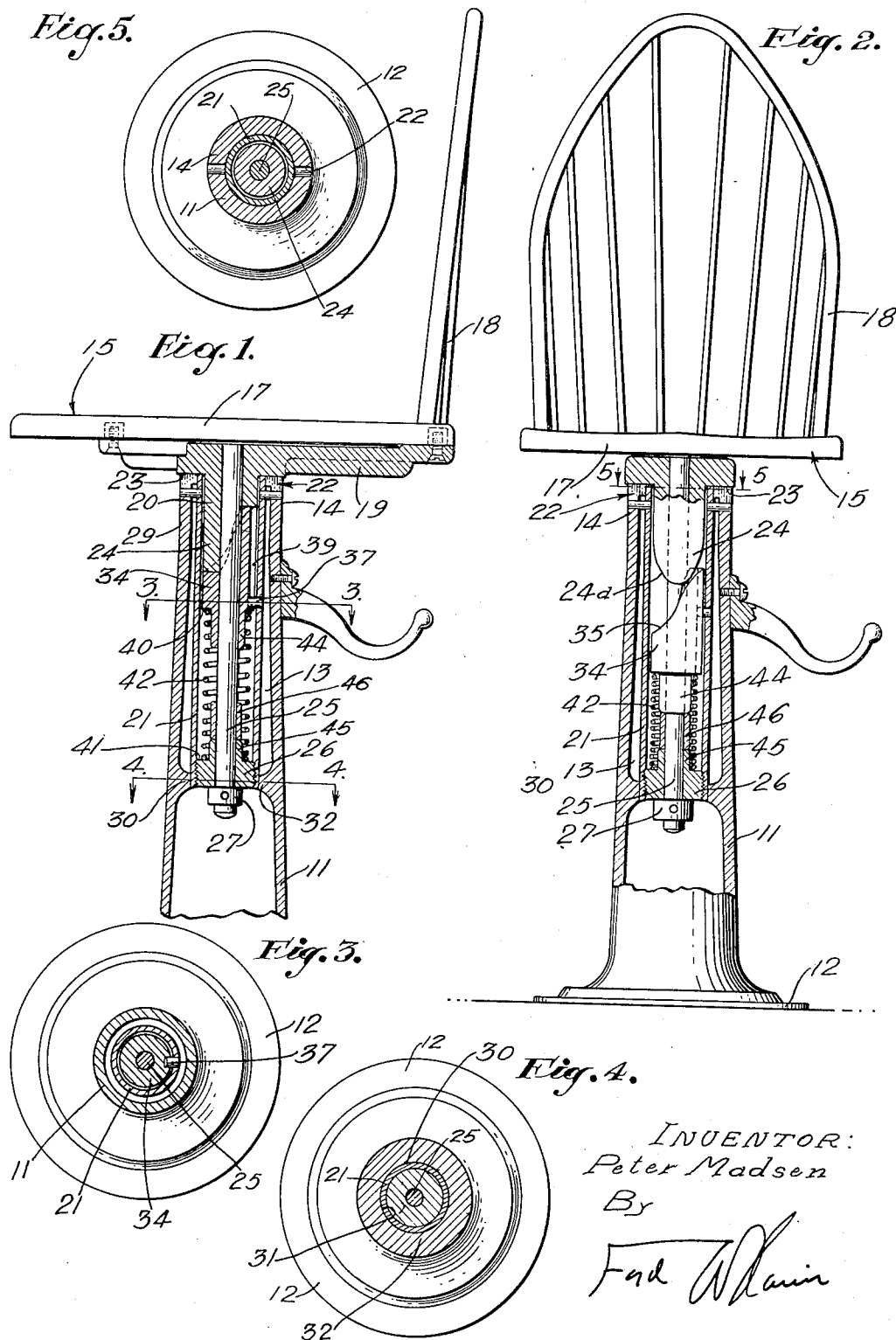
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REVOLUBLE STOOL

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REVOLUBLE STOOL

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My invention relates to stools or lunch counter chairs, the seat members of which are resiliently maintained in positions facing the counter, and which, when revolved from this position and then released, will return to the original or normal position.

My invention may be broadly defined as having a seat member and a base column on which the seat member is rotatably supported. The seat member has a cam attached thereto, and rotatably supported by the seat member is an operating means which operates on the cam for resiliently maintaining or for returning the seat member to a normal position. The means engages the base column so as to be non-rotatable with respect thereto. When the seat member is moved from normal position, the cam is moved relative to the operating means. The operating means will return the cam and seat member to normal position when the seat member is released.

It is one of my objects to provide a structure in which the seat member and the returning means, which may be termed a normalizing means, are as a unit. This permits the seat member to be readily removed from the base column without any manipulation other than the lifting of the seat from the base column.

It is another one of my objects to provide a structure accomplishing the object aforementioned, in which the operating parts are mounted within the base column which is of a normal size, and also to provide a lunch counter chair in which the seat member does not rise or lower when it is rotated.

Other objects and advantages of my invention will be apparent upon reading the following detailed description of a preferred embodiment of my invention.

In the drawing to which I will refer,

Fig. 1 is a view, partly sectioned, showing my invention with the seat member in normal position.

Fig. 2 is a view showing the seat member rotated through an angle of 90°.

Figs. 3 and 4 are sectional views taken on the corresponding lines of Fig. 1.

Fig. 5 is a sectional view taken on the corresponding lines of Fig. 2.

Referring to the drawing in detail, the numeral 11 represents a column which extends upward from a base flange 12 which rests on the floor. At the upper end of the column 11 is a chamber 13, and the extreme upper end of the column 11 is cylindrical as indicated at 14. Adapt-

ed to be rotatably supported on the column 11 is the seat member 15 of my invention. The seat member 15 has a seat 17 provided with a back 18. Secured to the lower face of the seat 17 is a casting 19 provided with a cylindrical projection 20 which fits into a protective sleeve member 21. The sleeve member 21 has at its upper end a pin and slot connection with the upper end of the column 11 as shown at 22 in Figs. 1, 2 and 5. The projection 20 is surrounded by a shoulder 23 which engages the upper annular ends of the column 11 and the sleeve 21. The shoulder 23 and the upper ends of the column 11 and the sleeve 21 act as a thrust bearing.

Formed on the lower part of the projection 20 is a primary cam 24 which has a lower cam face 24a which is disposed on a mean plane which is substantially at a 30° or 60° angle from vertical. Projecting downward from the casting 19 and concentric with the projection 20 and the cam 24 is a shaft 25. Rotatably disposed on the shaft 25 is a hub 26, the hub 26 being threadedly secured to the lower end of the protective sleeve 21, the hub 26 and the sleeve 21 being retained on the shaft 25 by a lock collar 27.

The lower end 30 of the sleeve 21 is received in a cylindrical shaped opening 31 provided by an inwardly extending flange 32 which defines the lower limit of the chamber 13. The engagement of the lower end 30 of the sleeve 21 and the walls defining the opening 31 maintains the axial alignment between the sleeve 21 and the column 11.

Slidably mounted on the shaft 25 below the primary cam 24 and above the hub 26 is a secondary cam 34 having an upper cam face 35 which is complementary to the cam face 24a. The secondary cam 34 is prevented from rotating relative to the sleeve 21 and the column 11 by means of a pin 37 carried by the sleeve 21 which extends into a vertical groove 39 of the secondary cam 34. Compressed between an upper face 41 of the hub 26 and a lower face 40 of the secondary cam 34 is a spring 42. The spring 42 exerts a pressure in an upward direction against the secondary cam 34, causing the cam face 35 thereof to resiliently engage the cam face 24a of the primary cam 24. Projecting downward from the secondary cam 34 within the spring 42 is a sleeve 44, and projecting upward from the hub 26 within the lower end of the spring 42 is a sleeve 45. Surrounding the shaft 25 between the two sleeves 44 and 45 is a spacer 46.

When the seat member, which includes the seat and back 17 and 18, casting 19, and the cylindrical

cal projection 20, is moved from normal position, as shown in Fig. 1, into the position shown in Fig. 2, which is accomplished by rotating the seat member through an angle of approximately 90°.

the cam 24 is rotated relative to the cam 34. The cam face 24a engages the cam face 35, as will be readily understood, and causes the secondary cam 34 to be pressed downward from the position shown in Fig. 1 into the position shown in Fig. 2 in opposition to the pressure exerted against the secondary cam by the spring 42. The spacer 46 prevents the secondary cam 34 from being forced downward beyond the position shown in Fig. 2 and thus prevents the chair of the seat member from being swung beyond the position shown in Fig. 2. When the seat member is released, the pressure of the cam face 35 against the cam face 24a produces a resultant force in horizontal direction which automatically returns the seat member to the normal position, as shown in Fig. 1. The cams 24 and 34, being symmetric, will permit the seat member to be revolved 90° in either direction.

The seat member may be removed from the column 11 by lifting it upward therefrom. The cam 24 and the operating means, which consists of the secondary cam 34, spring 42, the shaft 25, the hub 26, the collar 27, and the sleeve 21, are all attached to the seat member and are removable therewith. The provision of these parts as a unit makes it possible to remove the seat member from the column 11 without dismantling any of the working parts.

It is possible to accomplish this feature of removability by associating the hub 26 with the seat member through the medium of the shaft 25 so that the thrust of the spring 42 both in an upward direction and in a downward direction is applied to the shaft. Since the shaft is connected to the seat member and to the hub 26, the parts acted upon by the spring 42 will not be spread apart. The column 11 does not take any of the thrust forces of the spring 42. In order to prevent the secondary cam 34 from rotating with the seat member and the primary cam 24, it is necessary to connect the secondary cam with the column 11. This is accomplished by making the secondary cam non-rotatable with respect to the sleeve 21 which is non-rotatable with the column 11 by means of the pin and slot connection 22.

It is desirable to employ the sleeve 21 because it acts as a protective medium for the operating parts. It would be possible, however, to eliminate the sleeve and to extend the pin 37 inward from the column. This construction would not be as desirable as the present construction in view of the fact that in installing the seat member on the column 11 it would be necessary to align the slot 39 and the pin 37. It would be possible, however, in this proposed modification of the invention to make the exterior surface of the secondary cam 34 polygonal in shape and to elevate the inwardly extending flange 32 to the horizontal plane occupied by the secondary cam 34 and to provide a polygonal opening 31 adapted to receive the cam 34. In this instance there would be less trouble in aligning the cam with the opening in the flange 32 than in aligning the slot 39 and the pin 37. Care would have to be exercised in lowering the lower portion of the operating means through the opening 31.

These alternative forms of my invention have been pointed out in order that my invention will not be construed as being limited to the preferred embodiment illustrated in the drawing. The essential features of the invention may be enumerated as including: first, the providing of the seat member and the operating means as a unit in order that the seat member may be removed without dismantling any of the operating parts; and second, the providing of a structure of the character just pointed out in which the operating parts are conveniently enclosed.

I claim as my invention:

1. In a stool having a base column and a seat member revolubly mounted thereon, the combination of: a first cam attached to said seat member; a second cam engaging said first cam; means resiliently urging said second cam against said first cam; a shaft extending from said seat member; a hub rotatably carried by said shaft; a compression spring between said second cam and said hub; restraining means preventing relative movement between said hub and said base column; and means for preventing relative rotational movement between said hub and said second cam.

2. In a stool having a base column and a seat member revolubly mounted thereon, the combination of: a first cam attached to said seat member; a second cam engaging said first cam; means resiliently urging said second cam against said first cam; a shaft extending from said seat member; a hub rotatably carried by said shaft; a protecting means supported by said hub and enclosing said second cam and said hub; restraining means preventing relative rotation between said protecting means and said base column; and means preventing relative rotation between said second cam and said protecting means.

3. In a stool having a base column and a seat member revolubly mounted thereon, the combination of: a first cam attached to said seat member; a second cam engaging said first cam; means resiliently urging said second cam against said first cam; a shaft extending from said seat member; a hub rotatably carried by said shaft; a compression spring between said second cam and said hub; a protecting means supported by said hub and enclosing said cams and said hub; and restraining means preventing relative movement between said protecting means and said base column, said restraining means including projections on said protecting means engaging engageable faces of said base column.

4. In a stool having a base column and a seat member revolubly mounted thereon, the combination of: a primary cam attached to said seat member; a shaft extending from said seat member through said primary cam; a secondary cam slidable on said shaft; a hub rotatable relative to said shaft; means interposed between said hub and said secondary cam for resiliently urging said secondary cam against said primary cam; a protecting means supported by said hub and enclosing said cams and hub; means for preventing relative movement between said hub and said base column; and means for preventing rotational movement of said secondary cam.

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