

[54] **PNEUMATIC STOOL WITH FOOT REST CONNECTED TO SEAT BASE**

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[58] **Field of Search** 297/347, 345, 423, 437, 297/71; 108/147, 141; 248/404, 188.5

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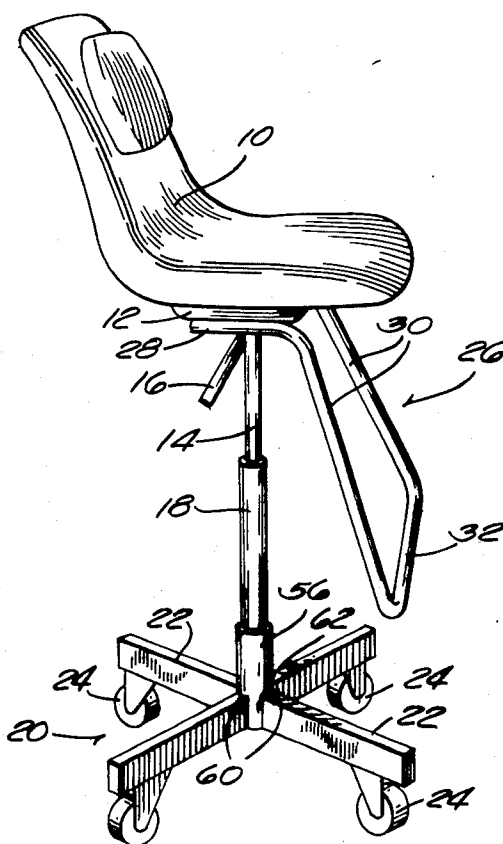
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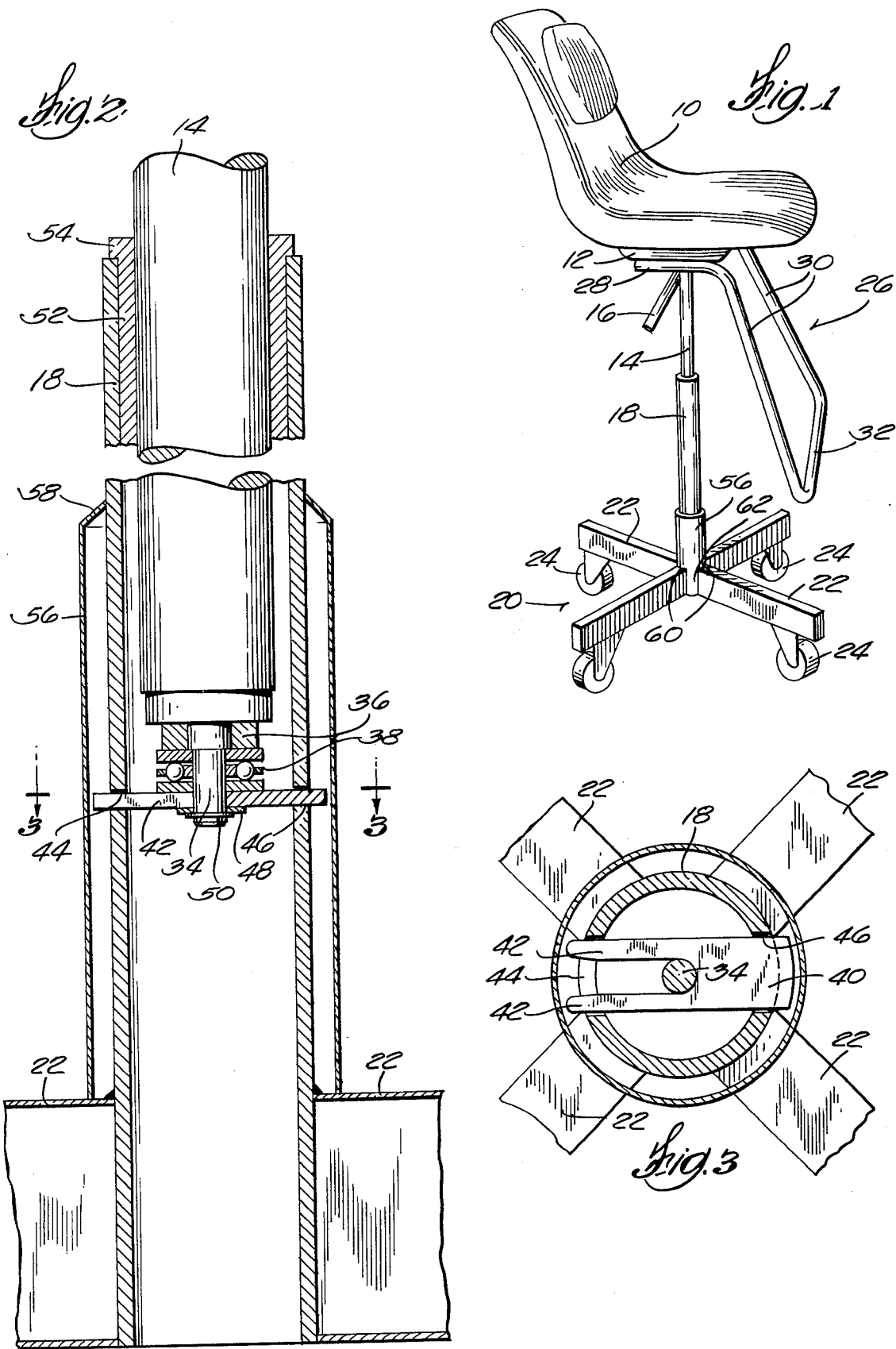
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[57] **ABSTRACT**

A swivel stool seat is supported by a central column and a pneumatic cylinder which adjusts the height of the seat within a predetermined range. A foot rest is rigidly attached to the seat mounting spider and depends downwardly therefrom. The foot rest turns with the seat and raises and lowers with the seat. The bottom of the pneumatic cylinder is supported by a retainer fork that extends through horizontal slots in the central column. A thrust bearing is positioned between the retainer fork and the lower end of the pneumatic cylinder. A generally cylindrical shroud removably covers the portion of the column that includes the horizontal slots for the retainer fork to hide the retainer fork from view.

4 Claims, 3 Drawing Figures





PNEUMATIC STOOL WITH FOOT REST CONNECTED TO SEAT BASE

BACKGROUND OF THE INVENTION

This invention relates to swivel stools which are adjustable in height and has for its principal object to provide an improved swivel stool of this general type.

SUMMARY OF THE INVENTION

A swivel stool seat is supported by a central column and a pneumatic cylinder which adjusts the height of the seat within a predetermined range. A foot rest is rigidly attached to the seat mounting spider and depends downwardly therefrom. The foot rest turns with the seat and raises and lowers with the seat. The bottom of the pneumatic cylinder is supported by a retainer member that extends through horizontal slots in the central column. A thrust bearing is positioned between the retainer member and the lower end of the pneumatic cylinder. A generally cylindrical shroud removably covers the portion of the column that includes the horizontal slots for the retainer member to hide the retainer member from view.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of one illustrative embodiment of the invention.

FIG. 2 is an enlarged fragmentary longitudinal sectional view of the lower portion of the cylindrical supporting column shown in FIG. 1.

FIG. 3 is an enlarged fragmentary cross-sectional view taken on the line 3—3 of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows one illustrative embodiment of the invention which includes an integrally molded plastic seat and backrest shell 10 which is rigidly attached to a conventional mounting spider 12. The mounting spider 12 is pivotally supported by a hand operated pneumatic cylinder 14 which can be raised and lowered by means of an operating lever 16. The inner details of pneumatic cylinder 14 are not shown in the drawings because cylinder 14 is a conventional prior art unit with inner details which are not germane to the invention.

The upper end of pneumatic cylinder 14 is rigidly attached to spider 12 by conventional means not shown in the drawing. The lower end of pneumatic cylinder 14 is rotatably supported within a central cylindrical column 18 which in turn is supported by a conventional base 20. The base 20 includes four horizontal legs 22 which radiate outwardly from the bottom of column 18 and are movably supported by four conventional casters 24. The column 18 and legs 22 are preferably made of steel and may be welded together at the base of column 18 or joined together by any other suitable fastening means.

A foot rest 26 which is formed from one piece of steel tubing is rigidly attached to spider 12 by welding the horizontal portions 28 thereof to the spider, although other suitable fastening means such as bolts could be employed if desired. The foot rest 26 has a pair of downwardly extending leg portions 30 and a horizontal foot supporting bar 32 that extends between the bottom of leg portions 30. Since footrest 26 is rigidly attached to spider 12, it rotates when seat 10 is rotated

and moves up and down when seat 10 is moved up and down. This is an important advantage of the invention in terms of comfort for the seated person. In the past, the stool footrest was fastened to the base of the stool and stayed stationary when the seat was moved either sideways or up and down.

The exposed steel parts of the stool are preferably chrome plated or enameled to protect the steel and present a pleasing appearance.

Another important feature of the invention involves the means for mounting the pneumatic cylinder 14 within central column 18. As shown in FIG. 2, a solid shaft 34 which is threaded to accept a hexagonal nut 36 projects downward from the bottom of pneumatic cylinder 14. A thrust bearing 38 surrounds the shaft 34 and is supported by a retainer fork 40 which has forked legs 42 (see FIG. 3) which embrace shaft 34 and provide a seat for thrust bearing 38. The retainer fork 40 slides through two horizontal slots 44 and 46 in central column 18, the lower margin of slots 44 and 46 serving to support the ends of the retainer fork 40, while the center of fork 40 supports the thrust bearing 38. The bottom of shaft 34 is prevented from being withdrawn from its engagement with retainer fork 40 by means of a washer 48 (see FIG. 2) and a retainer ring 50 which holds washer 48 in place against the bottom of retainer fork 40.

Pneumatic cylinder 14 is centered within column 18 by a hollow cylindrical bushing sleeve 52 having an upper flanged edge 54 which rests on top of column 18. The inside diameter of bushing sleeve 52 is slightly larger than the outside diameter of pneumatic cylinder 14 to permit cylinder 14 to rotate within bushing 52.

The lower end of column 18 is covered by a cylindrical shroud 56 which is larger in diameter than column 18 and has an inclined upper edge 58 which is shaped like a truncated cone. The lower edge of shroud 56 is slotted at four locations 60, two of which are visible in FIG. 1, to receive the four horizontal legs 22 and slide down between legs 22 as at 62 (see FIG. 1) to cover the joints between legs 22 and column 18. Shroud 56 also covers the ends of retainer fork 40 which extends outwardly from the slots 44 and 46 in column 18. If it is desired to remove the retainer fork 40, access thereto can be obtained by simply sliding the shroud 56 upwardly until the ends of retainer fork 40 are exposed.

What is claimed is:

1. A swivel stool comprising a base including a hollow cylindrical column, a pneumatic cylinder enclosed at its lower end within the upper end of said column, a flat retainer member for supporting the lower end of said pneumatic cylinder, at least two horizontal slots formed in said column for receiving and supporting said retainer member, a thrust bearing positioned between the upper surface of said retainer member and the lower end of said pneumatic cylinder, a mounting spider attached to the upper end of said pneumatic cylinder, and a seat attached to the upper side of said mounting spider and wherein a shaft extends downwardly from the lower end of said pneumatic cylinder, and wherein one side of said retainer member is forked to embrace said shaft.

2. The swivel stool defined in claim 1 and further comprising a hollow bushing sleeve located within the top portion of said column, the inside diameter of said bushing sleeve being slightly larger than the outside diameter of said pneumatic cylinder, and a lower portion

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of said pneumatic cylinder being rotatably supported within said bushing sleeve.

3. The swivel stool defined in claim 1 and further comprising a hollow cylindrical shroud covering the portion of said column including said slots for receiving said retainer member.

4. A swivel stool as defined in claim 3 and further

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comprising a plurality of legs radiating outwardly from the bottom of said column for supporting the same, and a plurality of slots formed in the bottom of said shroud for receiving said legs to cover the joints between said legs and said column.

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