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[73] Assignee **Mohasco Industries, Inc.**  
**Amsterdam, N.Y.**  
**Continuation of application Ser. No.**  
**706,389, Feb. 19, 1968, now abandoned.**

[54] **SWIVEL**  
**2 Claims, 3 Drawing Figs.**

[52] U.S. Cl. .... **248/415,**  
**248/425**  
[51] Int. Cl. .... **F16m 11/00**  
[50] Field of Search. .... **248/415,**  
**425, 417; 297/349; 108/139; 211/77, 78, 131, 163;**  
**151/22, 41.76**

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|           |         | <i>Primary Examiner</i> —Francis K. Zugel |         |
|           |         | <i>Attorney</i> —Joseph P. Flanagan       |         |

**ABSTRACT:** A low profile swivel device for chairs or the like.

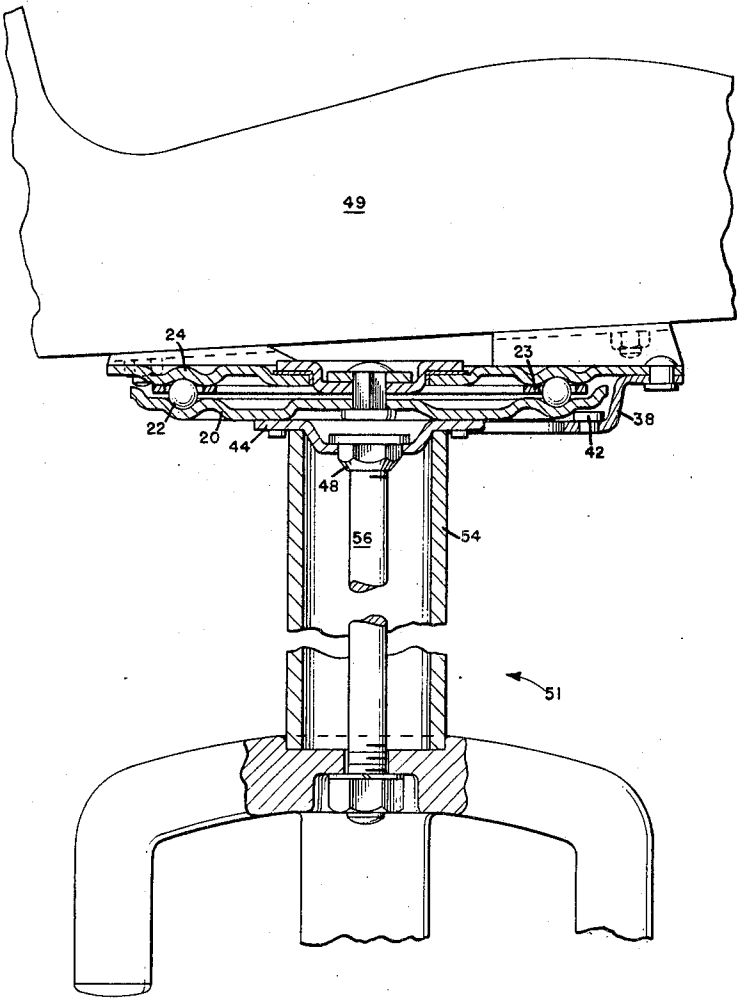


FIG. 1.

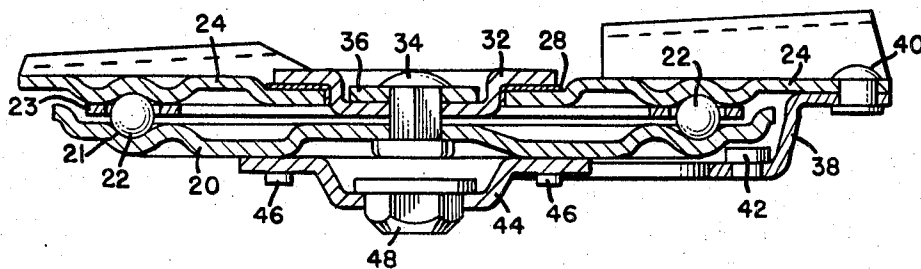
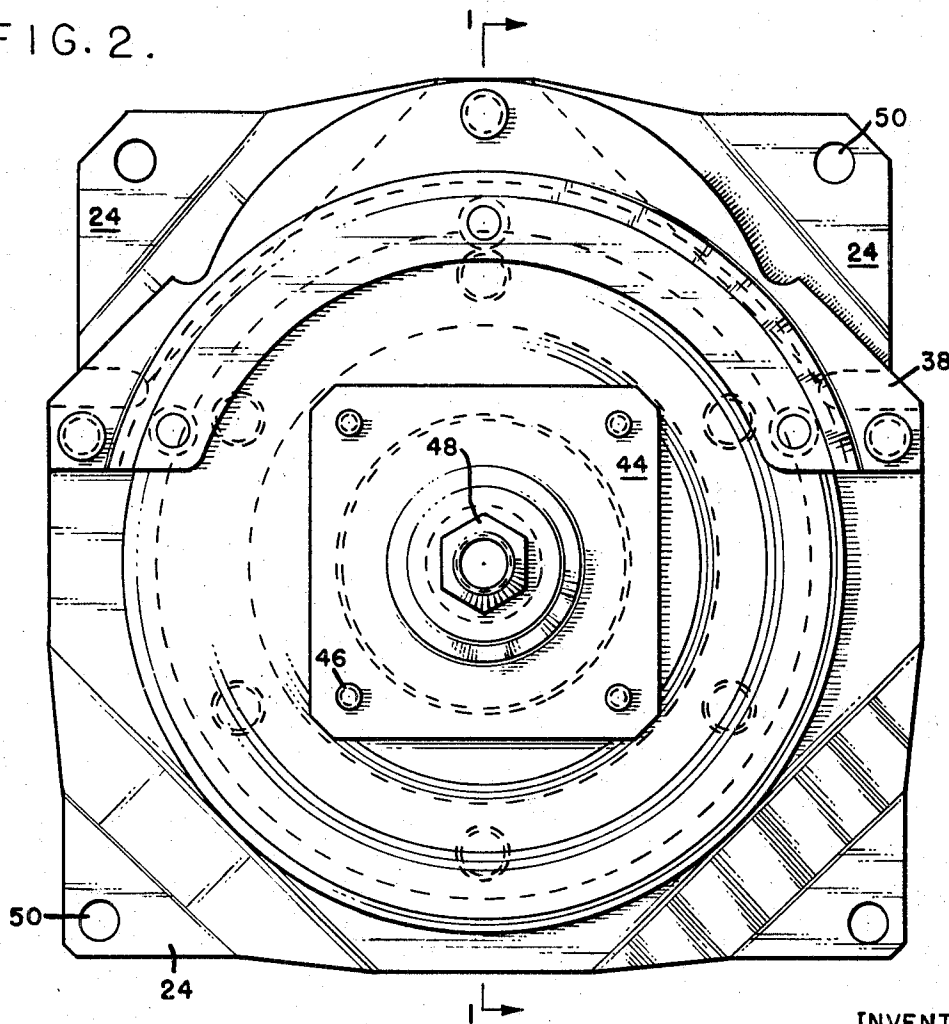


FIG. 2.



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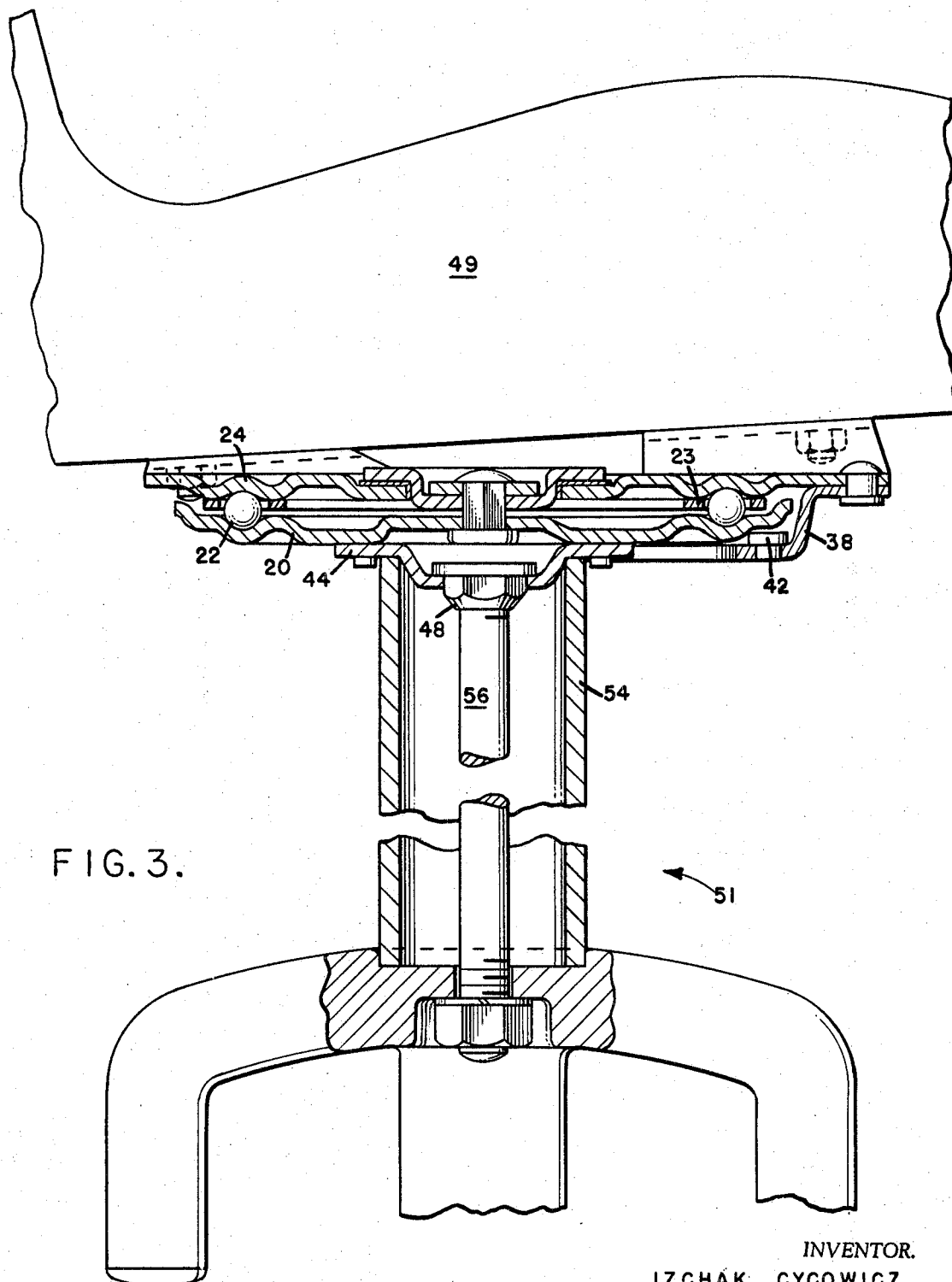


FIG. 3.

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## SWIVEL

This case is a continuation of application Ser. No. 706,389 filed Feb. 19, 1968, and now abandoned.

The present invention relates to a low profile swivel device useful in connection with revolving chairs. More particularly, it is directed to a swivel device which, by means of its novel construction, has improved swiveling characteristics and a more market tendency to resist deformity normally occurring in swivels of this type due to tilting of chairs, on which it may be used, from a normal upright position.

An object of the instant invention is the provision of a swivel device in which the relatively movable parts are free to move with greater ease than in similar swivels heretofore known.

An additional object of the present invention is the provision of a swivel device having a novel retaining member to restrain separation of its relatively movable parts when the chair is tilted backwards.

Another object of the invention is the provision of a swivel device having a novel means of connection to the supporting pedestal of a chair or the like to prevent binding of the relatively movable parts when the swivel is tightly connected to such pedestal.

These and further objects of the invention will appear from a reading of the specification taken together with the drawings in which:

FIG. 1 is a sectional view along the line 1-1 of FIG. 2.

FIG. 2 is a bottom plan view of the swivel of the instant invention.

FIG. 3 is a side view with parts broken away and sectioned showing a chair assembly incorporating the swivel of the present invention.

Referring to FIG. 1, a lower supporting plate 20 is shaped in such a manner as to provide a channel 21 in which are a plurality of ball bearings 22. The ball bearings 22 are retained in spaced-apart relation in such channel by means of a retaining ring 23. An upper plate 24 overlies the ball bearings and retaining ring 23. A bearing member 28 which may be made of nylon or any other suitable material having the characteristics of low frictional resistance rests atop the upper plate 24, and a retaining member, such as a cupped washer 32, retains the bearing member 28. The above assembly is held together by a rivet member 34 having a square cross section which passes through similarly shaped central openings in the plate member 20, the cupped washer 32, and a washer 36 overlying the cupped washer 32. Should it be desired to do so, the washer 36 may be eliminated and the washer 32 suitably thickened in its central area.

A retaining lip 38 is secured to the upper plate member 24 by means of a plurality of rivets 40. Such retainer lip depends from the upper member 24 and underlies a portion of the plate member 20. Secured to such retainer lip are a plurality of bearing buttons 42, which bearing buttons may be constructed of the same material as the bearing member 28.

A cupped plate member 44 is secured to the underside of the plate member 24 by rivets 46. The plate member 44 receives a flanged threaded nut 48 in an aperture formed therein. The nut 48 has its uppermost thread, FIG. 1, distorted to act as a stop for a threaded member which is threaded into such nut as described below.

The swivel is attached to the underside of a chair seat 49 by bolts, screws, or the like passing through openings 50 formed in the upper plate member 24, and is secured in abutting relationship to a collar 54 of a supporting pedestal assembly 51 by a threaded member 56 passing through said collar 54.

The construction of the above swivel is such that when the threaded member 56 is threaded into the nut 48 there is a minimum of compressive force applied between the upper and lower plate members 20, 24. Thus, no matter how tightly the assembly is screwed down on the pedestal member 56 the swivel of the instant invention will not tend to bind and make swiveling of the chair to which it is attached difficult. Additionally, whenever the chair is tilted backwardly, the retaining member 38 will tend to prevent separation of the plates 20 and 24, thus tending to lessen any deformity of the swivel by repeated tilting of the chair.

The upper plate 24 is free to rotate relative to the lower plate 20 wherever the chair is rotated. Should the chair be tilted rearwardly, the action of the retainer 38 assists in preventing separation of the upper and lower plates 20, 24 in their front portions, and if the chair is rotated while in such tilted position, the frictional resistance between the retainer 38 and plate 20 is minimized by virtue of the bearing buttons 40 contacting the underside of the plate member 20.

I claim:

1. A swivel comprising, upper and lower opposed plates mounted in spaced-apart relation for rotation with respect to each other, a retaining member secured to and depending from said upper plate, said retaining member underlying said lower plate to restrain separating movement of said upper and lower plates relative to each other when tilting force is imparted to said swivel, said lower plate having a cup-shaped member attached thereto, threaded coupling means carried by said cup-shaped member for threadably engaging a coupler attached to a pedestal-type base, said coupling means comprising a nut having a threaded interior surface and an angular exterior surface, said nut having a flange extending in a direction away from and normal to said threaded bore, said flange and said angular surface cooperating with said cup-shaped member to restrain movement of said nut relative to said cup-shaped member, said nut member having stop means integral therewith to limit movement of said coupler toward said swivel.

2. The invention of claim 1 wherein said coupling means is removably mounted in an opening formed in said cup-shaped member.

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