Dec. 25, 1962 H. J. GARIEPY 3,070,343

SWIVEL HINGE SUPPORT

Filed May 5, 1960

FIG. 1

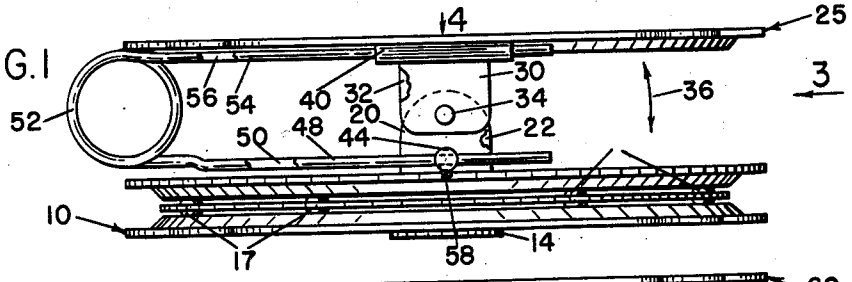


FIG. 2

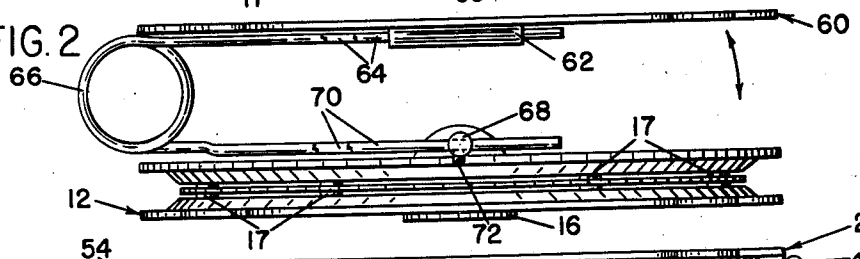


FIG. 3

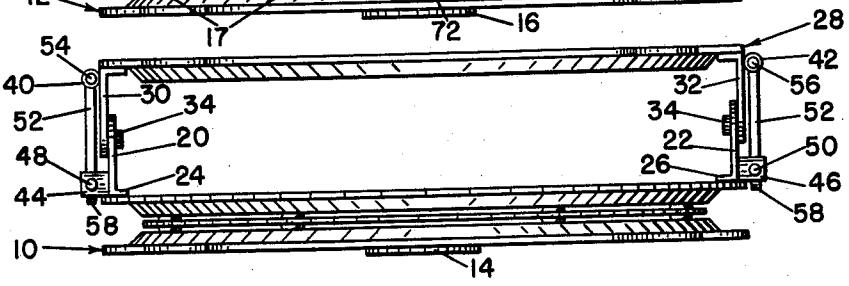
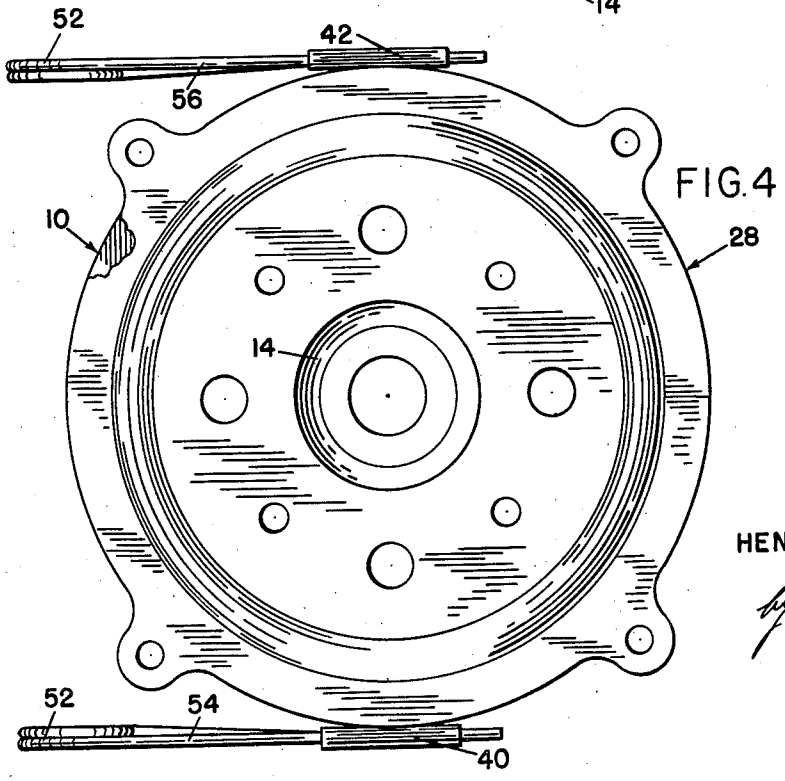


FIG. 4



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SWIVEL HINGE SUPPORT

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This invention relates to a new and improved swivel hinge support embodying the well known swivel base comprising a pair of plates swiveled centrally together and having interposed ball bearings or the like, in combination with upstanding supporting means at the diametrically opposite edges of said plates, said supporting means comprising essentially a pair of springs and in some cases interpivoted leaves or ears supporting in spaced relation to said swivel base a tilting plate which in turn may serve for a support for an object which is to be swivelly and tiltably mounted such as a chair seat or the like, the leaves or ears providing a fixed axis of tilting action for the tilting plate.

Further objects of the invention include the provision of a swivel hing support as above stated including a hinge construction, said hinge being an elongated U-shaped spring member, a sliding tubular support on one plate and a rotating boss-like support on the other plate, said supports receiving the respective ends of said U-shaped spring member, the rotary support being provided with means for clamping the respective leg of the U-shaped spring member thereto, the result being that the spring itself acts as a support for the tilting plate and the same is tilted with a bodily motion on an indeterminate axis.

The invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

Reference is to be had to the accompanying drawings, in which:

FIG. 1 is a view in side elevation illustrating one form of the invention;

FIG. 2 is a similar view illustrating the other form of the invention;

FIG. 3 is a view in front elevation, looking in the direction of arrow 3 in FIG. 1; and

FIG. 4 is a plan view, looking in the direction of arrow 4 in FIG. 1.

In carrying out the present invention, I utilize a conventional swivel base generally indicated by the reference numeral 10. This swivel base is the same as that indicated by the reference numeral 12 in FIG. 2. In general, this base comprises a pair of pressed plates with swivel means at the center thereof as at 14 in FIG. 1 or 16 in FIG. 2. The swivel may comprise a large hollow rivet or the like but in any event the two plates comprising the respective swivel plates 10 and 12 are swivelly mounted one on the other and there may be interposed ball bearings or the like which are generally indicated at 17.

In the case of FIG. 1, at diametric points on the upper one of the swivel plates 10 I provide upstanding ears 20, 22 which may be welded or otherwise secured thereto by inturned legs or the like 24, 26. There is a tilting plate generally indicated at 28 and at the diametrical opposite edges thereof this is provided with like plates or brackets 30, 32 which are pivotally mounted on the ears 20 and 22 by pins 34 or the like, the pins 34 being diametrically aligned and forming an axis for the tilting action of plate 28 on swivel base 10 as indicated by the arrow which is indicated at 36 in FIG. 1.

Welded or otherwise secured to the swivel plate 28 there are a pair of diametrically opposite tangentially mounted tubular members 40, 42 and mounted on the plate 10 there are a pair of diametrically opposing swivelling bosses 44, 46. The bosses are apertured to receive the legs 48, 50 of U-shaped springs 52 and the tubular members slidably receive the legs 54 and 56 which form the opposite terminal portions of the springs 52. It is to be noted that the legs 54 and 56 are slidably received diametrically of the bosses 44 and 46 and setscrews at 58 are provided to secure the legs 48 and 50 in their respective bosses in adjusted position therein. At the same time, the legs 54 and 56 are slidably arranged in the tubular members 40 and 42, and if desired the positions of the springs can be easily changed to bring the closed ends of the springs closer to or farther from the axis of pins 34 to vary the spring resistance to the tilting action. When plate 28 is tilted there is a slight rectilinear sliding action of legs 54 and 56 in the members 40 and 42, but the set screws 58 hold the legs 48 and 50 fixed.

The construction of FIG. 2 is the same as above described except that the supporting ears 20, 22, 30 and 32 are omitted, and this provides a different spring action. The tilting plate 60 in FIG. 2 is supported directly on the springs so that tubular members 62 receive legs 64 of springs 66 and the bosses 68 receive legs 70 but in this case the bosses are secured in fixed position and cannot rotate. The position of the leg 70 can be adjusted in fixed bosses 68 and held there by the set screw 72.

However, due to the lack of an axis of tilt for plate 60, the action is that this plate tends to rock or tilt on an indeterminate axis located adjacent or in the coil at the closed ends of the U-shaped springs 66, rather than on a diametrical axis as defined by the pins 34.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A device of the class described comprising a base plate, a pair of spaced mounting members on said base plate arranged generally centrally at opposite edges thereof, said mounting members extending at right angles thereto, a tilting plate, said base plate and said tilting plate being generally similar in size and shape and the tilting plate lying just above the base plate in general conformance thereto, spaced ears on said tilting plate arranged generally centrally at opposite edges thereof and extending downwardly into and in conformation with said mounting members, said ears and mounting members being pivoted together in pairs on a common axis, and resilient means tending to maintain said tilting plate in parallel relationship with respect to the base plate, said resilient means comprising a pair of upright U-shaped springs and means on the respective plates receiving the individual legs of the springs, the leg-receiving means on one plate providing for sliding motion of its leg during tilting of the tilting plate, and the leg-receiving means on the other plate including means to fix its respective spring leg against sliding motion.

2. A tilting support comprising a swivel plate, a pair of spaced upright U-shaped springs mounted thereon, a pair of bosses on the plate, said bosses being apertured

and each boss aperture slidably receiving a leg of a spring therein, means to secure the legs in the bosses in adjustable but fixed relation thereto, a tilt plate, a pair of tubular members on the tilt plate, the other legs of the U-shaped springs being slidably received therein.

3. The support of claim 2 wherein the bosses are fixed.

4. The device of claim 1 wherein the closed end of the U-shaped springs is located adjacent and between corresponding edges of the base and tilting plate.

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