Dec. 29, 1936. W. F. HEROLD 2,065,699

CHAIR BASE HUB

Filed Aug. 3, 1935

Fig. 1.

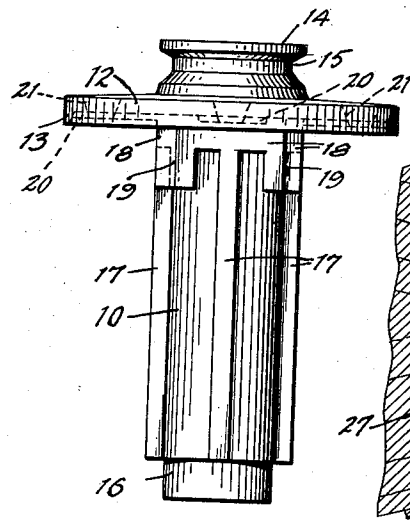


Fig. 3.

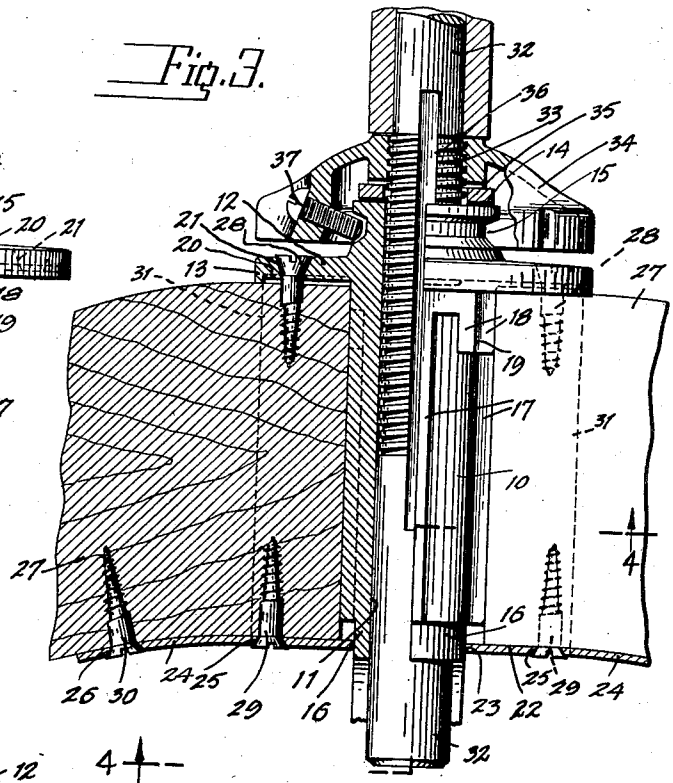
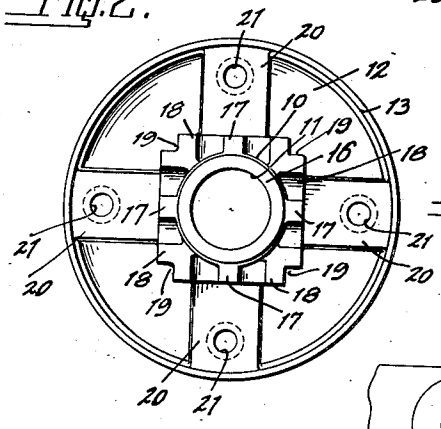
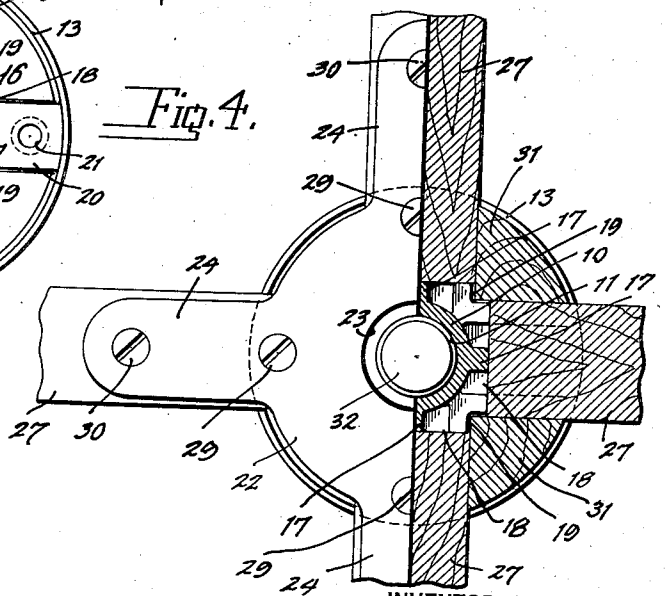


Fig. 2.



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Fig. 4.



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Patented Dec. 29, 1936 2,065,699

UNITED STATES PATENT OFFICE

2,065,699

CHAIR BASE HUB

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Application August 3, 1935, Serial No. 34,489

3 Claims. (Cl. 155—138)

The present invention relates to an improved chair base hub, particularly for swivel type office chairs, an object being to provide a hub, preferably in the form of a one-piece metal casting, to which the ends of the leg members of the chair base may be secured in a manner to rigidly support them against pressures in all directions, and particularly against spreading and lateral movement. A further object is to provide a hub which will not necessitate special shapes at the ends of the leg members but which will permit the leg ends to be cut square, and which will accommodate leg members in which the thickness and height dimensions may vary within substantial limits.

Another object is to provide a hub having a main barrel portion of cylindrical form and upon which skeletonized leg engaging rib members are integrally formed for supporting the leg ends, these rib members being designed to squarely position the leg end against movement in all directions, the skeletonized engaging surface at the same time insuring a more accurate positioning and a firmer engagement of the leg than is the case with other types of hubs, in which there is greater surface contact between the hub and the leg end with greater opportunity for irregularities and variations in the engaging surfaces, this being particularly true of cast metal hubs. It is also proposed to provide a truss-like assembly for the legs in which screws are employed in triangular arrangement, to the end that the strains imposed on the legs are most effectually distributed upon the supporting hub structure.

With the above and other objects in view, an embodiment of the invention is shown in the accompanying drawing and this embodiment will be hereinafter more fully described with reference thereto and the invention will be finally pointed out in the claims.

In the drawing:

Fig. 1 is a side elevation of a chair base hub, according to the exemplary illustrated embodiment of my invention.

Fig. 2 is a bottom plan view thereof.

Fig. 3 is a view, half in vertical section, and half in elevation, of the hub and leg assembly with the swiveling post in place, the forward leg member being removed.

Fig. 4 is a bottom and horizontal sectional view, taken along the line 4—4 of Fig. 3.

Similar reference characters indicate corresponding parts throughout the several figures of the drawing.

Referring to the drawing the chair base hub, according to the exemplary illustrated embodiment of the invention, is preferably in the form of a one piece metal casting and comprising a cylindrical barrel portion 10 having a vertical cylindrical bore 11, a laterally extending circular top plate portion 12 being provided near the upper end having a downwardly extending rim flange 13 at its outer periphery, the inner wall surface of which is slightly tapered. Above the plate 12 there is provided a bearing portion having a flat upper bearing surface 14 to provide a swivel bearing support for the chair seat post, and having in its side surface an annular groove 15 for receiving the locking screw for the post, as will hereinafter more fully appear. At the lower end of the barrel 10 the outside diameter is slightly reduced, as at 16, to receive the lower base plate of the chair base assembly.

At four equally spaced points about the barrel portion 10 there are provided radially projecting relatively narrow ribs 17, and at the upper ends of each of these ribs there is provided an inverted U-shaped rib 18, forming with the ribs 17 four T-shaped skeletonized rib structures, the outer surfaces of which are in four vertical planes forming a square. The tops of the ribs 18 are integrally formed with the under side of the plate portion 12, and at the corners formed by the meeting ends of the ribs 18 there are provided angular recesses 19.

At the under side of the plate portion 12 there are provided four thickened flat reinforcing portions 20, in radially aligned relation with the four rib structures, and each having a screw hole 21 therein.

The bottom plate 22, which completes the hub assembly, has a central aperture 23 for engaging upon the end 16 of the hub and is provided with four radially extending arms 24 for engaging the under side of the four legs, each arm having screw holes 25 and 26 respectively adjacent the aperture 23 and the outer end of the arm.

The chair legs 27 formed of wood have their inner ends cut square, and in the assembled relation these ends abut the T-shaped ribs, the plate 12 engaging above the leg ends and the bottom plate 22 engaging beneath them, and the legs being secured in this relation by screws 28, 29 and 30 respectively engaged in the screw holes 21, 25 and 26 of the plates 12 and 22. Corner pieces 31 are engaged between the legs, these being preferably glued in place, their upper ends being engaged beneath the upper plate 12 within the rim flange 13 and their inner corners being engaged in the recesses 19. It will be observed

that the recesses 19 permit engagement with the hub of legs having a width which may vary to a relatively great extent, and also that the adjustable engagement of the bottom plate 14 on the portion 16 of the hub permits of a substantial height variation.

The normal strain on the legs due to weight imposed on the chair tends to press the upper ends of the leg ends inwardly and at these points the transverse rib portions 18 provide a firm relatively wide flat keystone-like support for such pressure, the triangulated buttress arrangement of the three screws 28, 29 and 30 providing relatively wide rigid support at the bottom where the greatest outward spreading strain is imposed. Because of the concentration of the inward pressure of the upper ends of the legs upon the transverse rib portion 18 any tendency to twist laterally is resisted due to the wide flat engaging and supporting surfaces of the legs and the rib portions 18.

The hub is adapted to support the usual swiveling post which carries the chair seat. As shown in Fig. 3 this post 32 is provided with a threaded portion 33 engaged by an adjustment nut 34, a bearing washer 35 being interposed between the nut and the bearing surface 14 of the hub, this washer being keyed in a key-slot 36 provided in the post. A set screw 37 in the nut projects into the groove 15 of the hub. By rotating the nut 34 vertical adjustment is imparted to the post.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as defined in the appended claims.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. A chair base hub comprising a central tubular portion, and a plurality of equally spaced T-shaped ribs integrally formed upon said tubular portion and having their outer surfaces disposed in different planes, said ribs each adapted to be engaged by the inner end of a chair leg.

2. A chair base hub comprising a central tubular portion, a lateral top plate integrally formed with said central tubular portion, and a plurality of equally spaced T-shaped ribs integrally formed upon said tubular portion and having their outer surfaces disposed in different planes, the upper transverse portions of said ribs being contiguous to said top plate, said ribs each adapted to be engaged by the inner end of a chair leg, and a bottom plate removably engaged with the lower end of said tubular portion, and means for securing said top and bottom plates to the chair legs.

3. A chair base hub comprising a central tubular portion having a plurality of leg supporting means for engaging the inner ends of a plurality of radially extending legs disposed about said hub, each of said means comprising projecting abutment surfaces arranged transversely of the vertical axis of the hub adapted to engage the leg end contiguous to its upper extermity and at each side of the vertical center line of said leg end and a projecting abutment surface adapted to engage the vertical center line of said leg end contiguous to its lower extremity, the leg end transversely at each side of said last mentioned projecting abutment surface being out of contact with the hub.

WALTER F. HEROLD.