

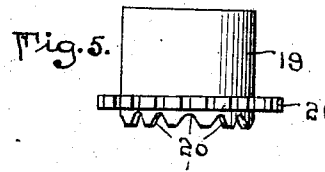
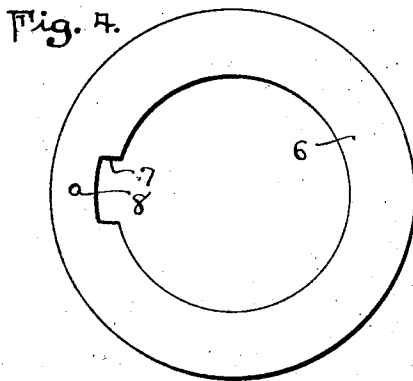
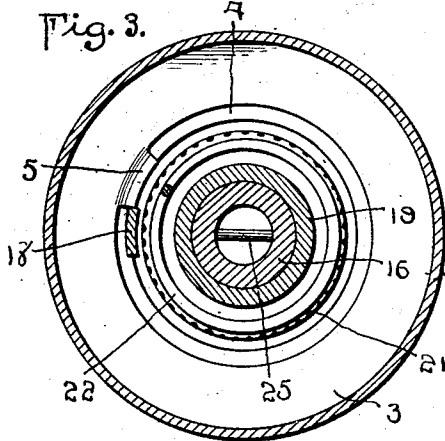
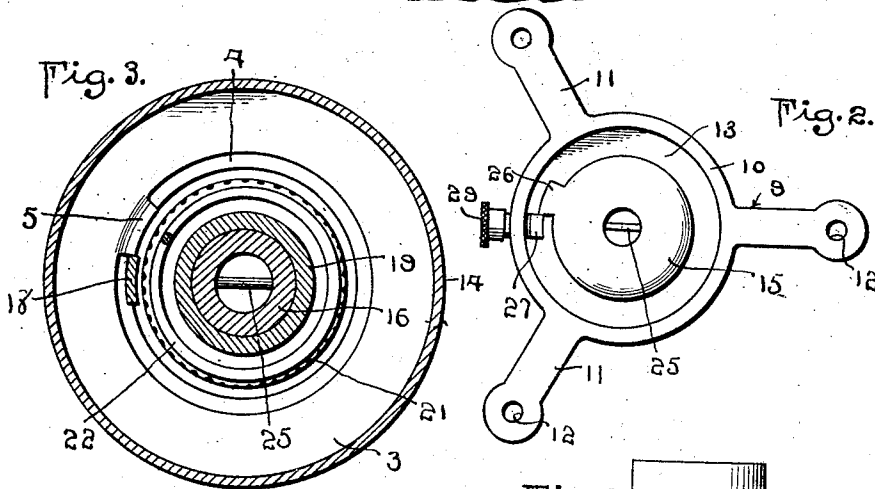
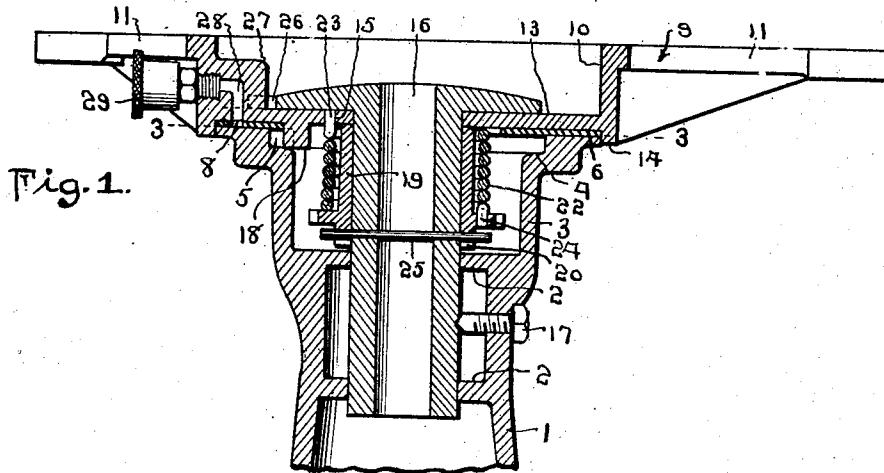
March 30, 1926.

1,578,784

J. S. WALTON

SWIVEL CONNECTION

Filed Feb. 23, 1924



INVENTOR.

J. S. Walton.

BY

L. G. Bruce

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOSEPH S. WALTON, OF LOS ANGELES, CALIFORNIA.

SWIVEL CONNECTION.

Application filed February 23, 1924. Serial No. 694,777.

To all whom it may concern:

Be it known that I, JOSEPH S. WALTON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Swivel Connection, of which the following is a specification.

This invention relates to improvements in swivel connections for swivel chairs.

10 The primary object of the invention is to furnish a swivel connection for chairs formed mainly of cast elements.

Another object of the invention is to furnish a swivel connection which will prevent the chair seat from wobbling.

Another object is to provide a swivel connection having improved means for tensioning the spring employed for returning the chair seat to a predetermined position.

20 A further object is to furnish a swivel connection having means for continuously lubricating the same.

With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, the invention consists of the novel features hereinafter described in detail, illustrated in the accompanying drawing and more particularly pointed out in the appended claims.

30 Referring to the drawing:

Figure 1 is a vertical sectional view of a swivel connection adapted to form part of a swivel stool or chair.

25 Fig. 2 is a top plan view of the same on a reduced scale.

Fig. 3 is a horizontal sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a plan view of a fiber disk forming part of the construction.

40 Fig. 5 is a side view of an adjustable sleeve forming part of the device.

In the drawing, 1 designates the base of a swivel stool, which is provided with inwardly extending flanges 2 and an upwardly extending cup 3.

The cup as shown in Figs. 1 and 3 has an internal annular shoulder 4 interrupted at one point by an inwardly extending stop lug 5.

50 Resting on the upper edge of the cup 3, is a fiber disk 6, shown detached in Fig. 4. This disk has a recess 7 and an aperture 8 for purposes hereinafter explained.

55 Resting on the disk, is the chair spider 9 having a central hub 10 and radially ar-

anged arms 11, the latter having apertures 12 to receive the screws employed for securing a seat to the spider.

The hub has an inwardly extending annular flange 13 which contacts with the disk 6, and the hub also has a depending flange 14, which engages the edge of the disk and the edge of the upper end of the cup 3.

60 Resting on the flange 13 is the head 15 of a hollow bolt 16. The stem of this bolt extends downwardly into the flanges 2 and is detachably locked in position by a screw 17. At this point it will be noted that the bolt 16 and the base 1 are stationary and that the spider 9 may rotate relatively to these parts. The flange 13 of the spider has on its under side a depending stop lug 18 which cooperates with the stop 5 to limit the degree of rotation of the spider. The lug 18 extends into the recess 7 of the disk 6, so that said disk is forced to partake of the movements of the spider.

80 A sleeve 19 surrounds the stem of the bolt 16 and is provided at its lower edge with teeth 20, and a milled flange 21 is integral with the sleeve.

Surrounding the sleeve is a coiled spring 22 having its upper end 23 anchored in the flange 13 of the spider and its lower end 24 anchored in the flange 21.

85 In order to tension the spring, the flange 21 is turned by hand to wind up the spring, and then the pin 25 is passed through apertures in the stem of the bolt and between diametrically opposite teeth 20 of the sleeve 19. Then as the spring tends to unwind, the inclined faces of the teeth 20 which are engaging the pin 25, have a tendency to ride on the pin and force the sleeve 19 upward, so that the sleeve forces the flange 13 against the head 15 and thus prevents the spider from wobbling.

From this it may be seen that the sleeve 19, pin 25 and spring 22 form resilient means for forcing the stop 18 towards the stop 5.

100 It will of course be understood that the parts must be detached from the base when the flange 21 is turned by hand, and if no means were provided for preventing the movement of the spider 9 at this time, the spider would turn with the sleeve 19 and the spring could not be wound. In order to take care of this, however, the head 15 is provided with an outwardly extending lug 26 which is adapted to engage an upwardly

105
110

extending lug 27 provided on the flange 13. When these lugs are engaging one another, the flange 21 may be turned until the spring is tensioned to a desired degree, and then the
 5 pin 25 is inserted in order to hold the spring in tension. After this the stem of the bolt may be inserted into the flanges 2 and the screw 17 may be tightened to lock the parts
 10 in position. Then when the spider 9 is turned by an occupant in leaving the stool, the spring in unwinding will bring the stop 18 into engagement with the stop 5, so that the stool seat will be held in a desired position when it is unoccupied.

15 In order to lubricate the track on which the fiber disk 6 slides, the hub of the spider is provided with a passageway 28 communicating at its lower end with the aperture 8 of the disk and provided at its upper end
 20 with an ordinary grease cup 29.

From the foregoing it may be seen that I have provided a novel swivel connection particularly adapted for revolving chairs. Most of the elements of this connection may
 25 be made from cast metal and the parts cooperate to hold the stool seat against wobbling, while the lubricating mechanism prevents friction and renders the movement of the seat noiseless.

30 It is apparent that various changes may be made in the details disclosed without departing from the spirit of the invention as expressed in the claims.

What I claim and desire to secure by
 35 Letters-Patent is:

1. A swivel connection including a base, a stem rigidly connected to said base and having a laterally extending head, a spider having a portion rotatably mounted between
 40 the head and base, stops for limiting the rotation of the spider, said head being arranged to prevent upward movement of the spider, and resilient means for forcing one of said stops toward the other stop and
 45 normally holding said stops in contacting relation, said base being provided with a cup on which the spider rotates, and the resilient means for forcing one of said stops toward the other stop being located in said cup and
 50 including a sleeve rotatably mounted on said stem, detachable means for holding the sleeve in a fixed position relatively to the stem, and a coiled spring arranged in the cup and having one of its ends connected to
 55 the sleeve and its other end connected to the spider.

2. A swivel connection for chairs including a base provided with a track, a spider rotatably mounted on the track, a bolt rigidly
 60 secured to the base and having a head constantly bearing upon the spider, stops for

limiting the rotation of the spider relatively to the head, a sleeve rotatably mounted on the bolt, a coiled spring surrounding the sleeve and having one of its ends connected
 65 to the latter and its other end connected to the spider, and means for adjustably locking the sleeve to the bolt for tensioning the spring and holding the sleeve in contact with the spider.

3. A swivel connection for chairs including a base provided with a track, a spider rotatably mounted on the track, a bolt having a head engaging said spider, means for
 70 limiting the rotation of the spider relatively to the head, a sleeve rotatably mounted on the bolt, a coiled spring surrounding the sleeve having one of its ends connected to the latter and its other end connected to the spider, and means for locking the sleeve
 80 to the bolt.

4. A swivel connection for chairs including a base having a cup at its upper end, a spider rotatably mounted on said cup, a bolt having a head engaging said spider, and a stem
 85 extending into the cup, means for detachably securing the stem to the base, stops for limiting the rotation of the spider relatively to the base, other stops for limiting the rotation of the spider relatively to the head of
 90 the bolt, a sleeve rotatably mounted on the stem of the bolt and having one of its ends engaging the spider, a coiled spring surrounding the sleeve and having one of its ends secured to the spider and its other end
 95 secured to the sleeve, the other end of said sleeve being provided with teeth having inclined side edges, and a pin connected to the bolt and extending between certain of the teeth of said sleeve.

5. In combination, a stool base having a cup at its upper end provided with an annular horizontal track, a seat spider rotatably mounted on said track, a stem extending
 100 into said cup and having a disk-shaped head arranged above the spider, cooperating stops on the spider and head for limiting the rotation of the spider, means for locking said stem to the base to prevent rotation of the stem, cooperating stops on the cup and
 105 spider for limiting the rotation of the latter, a sleeve surrounding the stem and provided with inclined teeth, a pin passing through the stem and engaging spaces between certain of said teeth, and a coiled spring surrounding the sleeve and having one of its
 115 ends connected to the spider and its other end connected to the sleeve.

In testimony whereof I hereunto affix my signature.

JOSEPH S. WALTON.