I. WESTON.

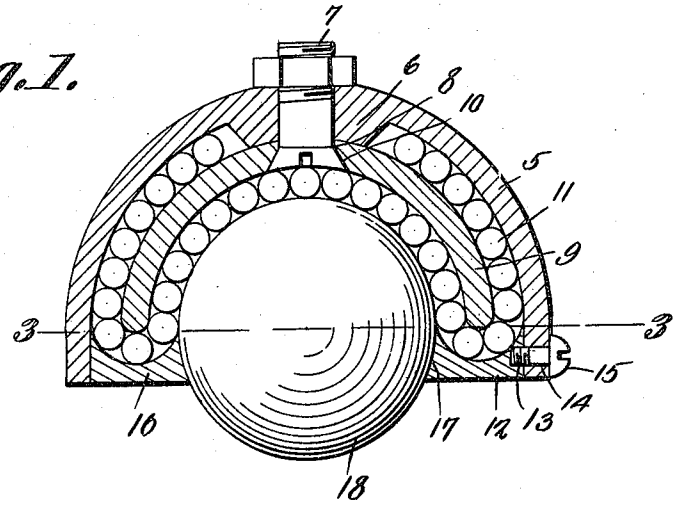
BALL BEARING CASTER.

APPLICATION FILED APR. 26, 1919.

1,311,477.

Patented July 29, 1919.

Fig. 1.



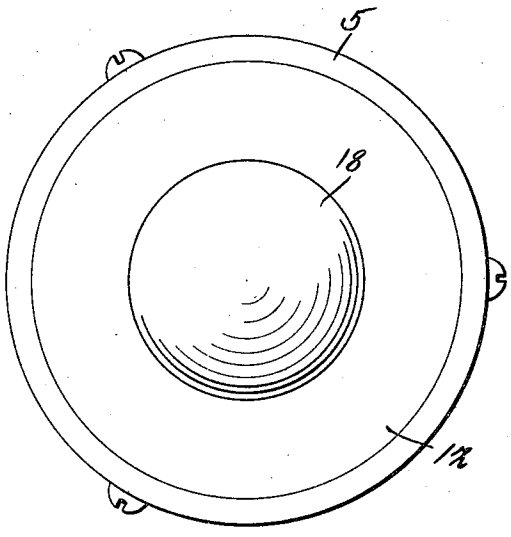


Fig. 2.

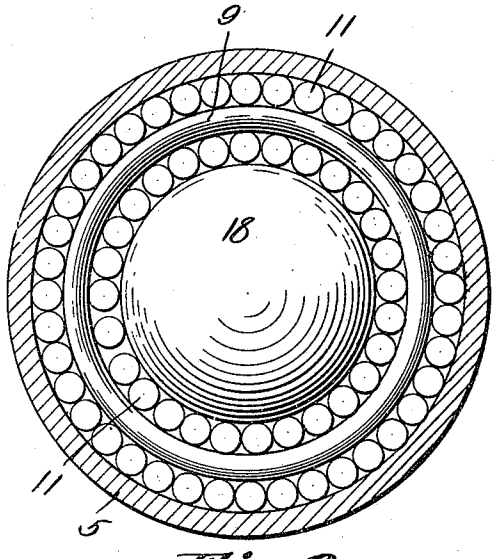


Fig. 3.

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IRA WESTON, OF PUEBLO, COLORADO.

BALL-BEARING CASTER.

1,311,477. Specification of Letters Patent. **Patented July 29, 1919.**

Application filed April 26, 1919. Serial No. 292,903.

To all whom it may concern:

Be it known that I, IRA WESTON, a citizen of the United States of America, and resident of Pueblo, in the county of Pueblo and State of Colorado, have invented certain new and useful Improvements in Ball-Bearing Casters, of which the following is a specification.

This invention relates to ball bearing casters and particularly to casters having novel means whereby the balls may travel in raceways of novel construction so that the said balls will not bind during the operation of the said caster, and furthermore providing for the operation of balls of this character without the employment of lubricant which would prove disadvantageous when applied to casters on articles of furniture, which casters have to be moved over rugs, carpets and the like.

A further object of this invention is to produce a caster of the character indicated which can be assembled without the exercise of undue skill since the parts thereof may be produced by the usual casting process and said parts can be finished expeditiously and inexpensively, so that the finished product will have strength and durability, whereas the supporting ball may rotate without undue friction.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a sectional view with the supporting ball in elevation;

Fig. 2 illustrates an underneath plan view of a caster embodying the invention; and

Fig. 3 illustrates a sectional view on the line 3—3 of Fig. 1, the ball being shown in unbroken lines.

In these drawings 5 denotes a shell or body having an apertured boss 6 at its center for the reception of a bolt or other fastening 7 by which the shell will be secured to an article of furniture. The boss extends inwardly and has a concaved face 8 forming a seat for the inverted cup 9 which cup is also provided with an aperture 10 for the reception of the bolt.

The cup stands away from the inner wall of the shell leaving a space the width of which permits the diameter of the anti friction balls 11 which may run therein. In other words, the space between the shell and the cup constitutes a race way in which the balls travel and the distance between the shell and the cup is determined by the depth of the bushing.

A face plate 12 has threaded recesses 13 and the shell 9 has apertures 14 for the screws 15 which are threaded in the recesses in the edge of the face plate so that the face plate is held in place thereby. The inner surface of the face plate is provided with a trough or channel 16 which in the operative position of the parts is directly under the edge of the cup, the space between the bottom of the trough and the edge of the cup being equal or approximately equal to the space between the cup and the shell so that the balls may travel under the end of the cup in passing from the race way between the shell and the cup to the concaved surface of the cup.

The face plate has a central aperture 17 which is of slightly less diameter than that of the supporting ball 18 and the surface of the face plate at the aperture is shaped to conform approximately to the contour of the ball so that the ball may freely rotate after the parts are assembled and yet the ball will not drop through the aperture of the face plate.

As shown in Fig. 1, balls are interposed between the supporting ball 18 and the cup so that as the supporting ball rotates, the anti friction balls may travel in any direction and therefore the supporting ball may move in any direction with equal facility. That is to say, if an article of furniture is being pushed in one direction, it can be moved in any direction at an angle to that in which it was first moved with equal facility since the anti friction balls have a raceway coextensive with the inner surface of the cup and they may travel in any direction in the cup with the same freedom.

I claim—

1. In an anti friction caster, a shell having an internal boss with a concaved surface, an inverted cup secured to the said boss, the said cup being spaced from the

shell to form a raceway, a face plate having a channel in its inner surface under the edge of the said cup to form a raceway around the edge of the cup, said face plate having a central aperture, a supporting ball in the said aperture and anti friction balls in the race way and in a space between the supporting ball and the under surface of the cup, and means for securing the face plate to the shell.

2. In an anti friction caster, a shell having an internal boss with a concaved inner surface, the said boss being of a depth equal to a race way to be formed in the shell, an inverted cup lying against the concaved surface of the boss, means for securing the cup in place, a face plate secured in the shell, said face plate having an aperture therein, a supporting ball in said aperture, the aperture of the face plate being of less diameter than the supporting ball, anti friction balls in the race way between the shell and the inverted cup and in the space between the ball and the said inverted cup, the said face plate having an annular trough in its inner face under the edge of the cup to form a race way between said cup and said face plate.

IRA WESTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."