No. 653,381. Patented July 10, 1900.

W. P. FINK.

BALL CASTER.

(Application filed Mar. 6, 1900.)

(No Model.)

Fig. 1.

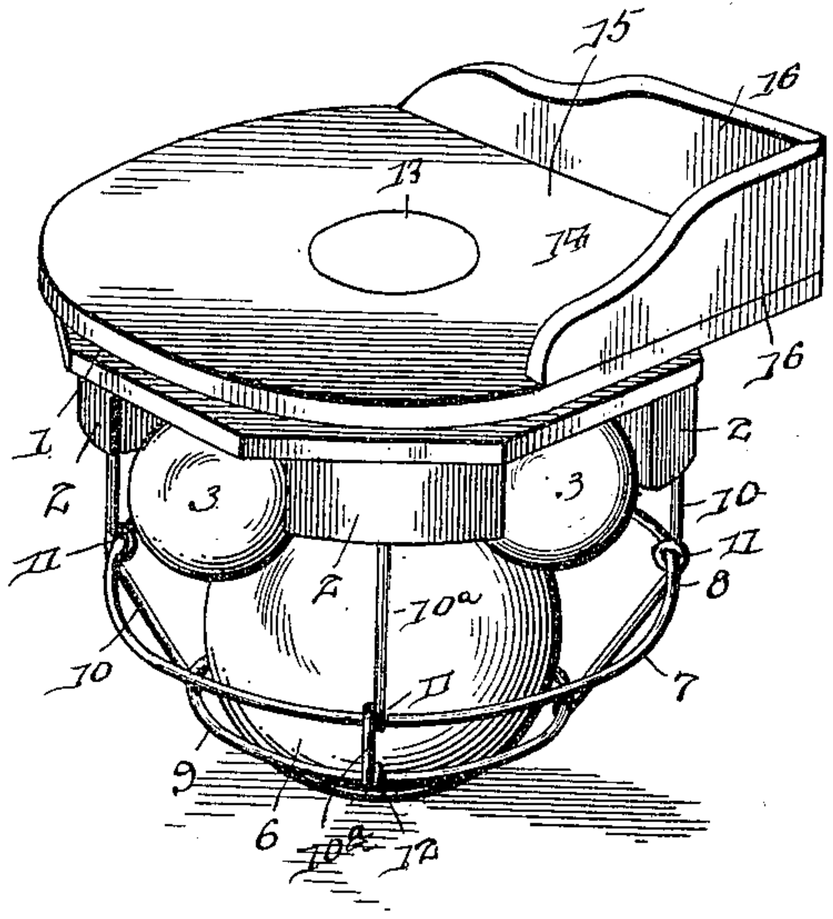


Fig. 2.

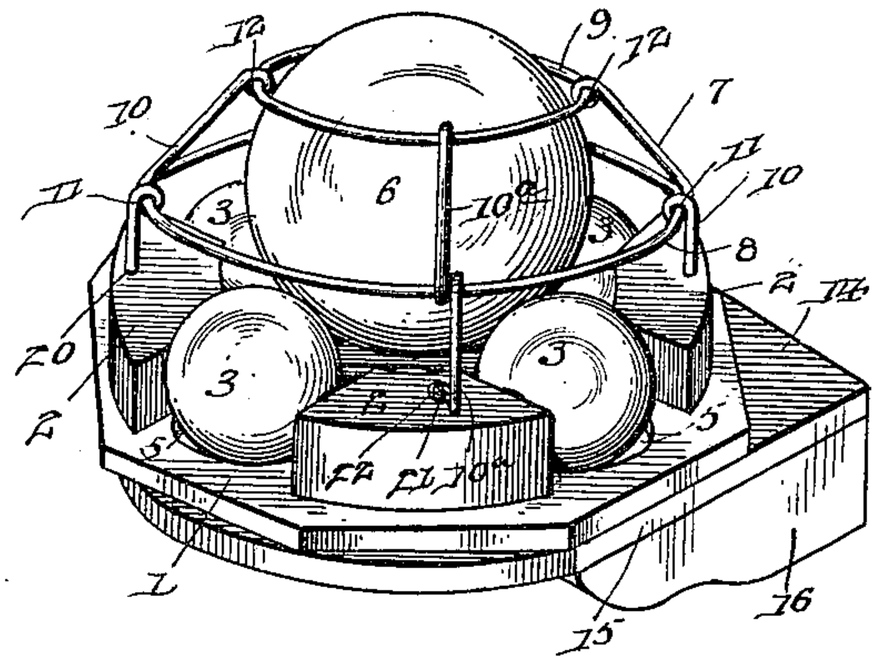


Fig. 3.

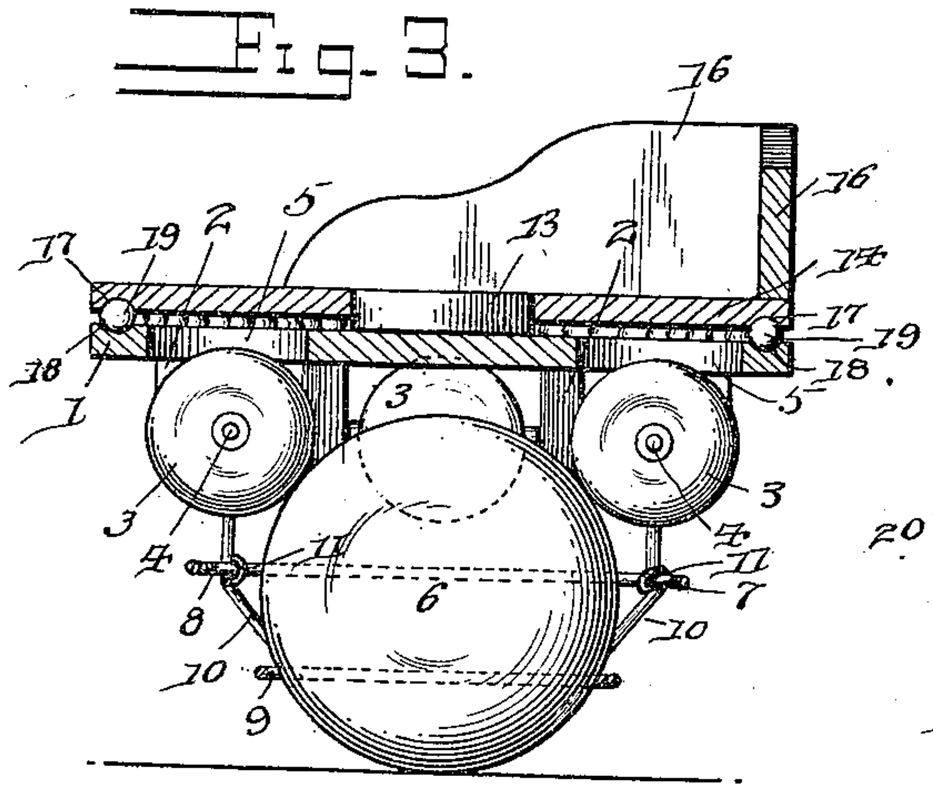
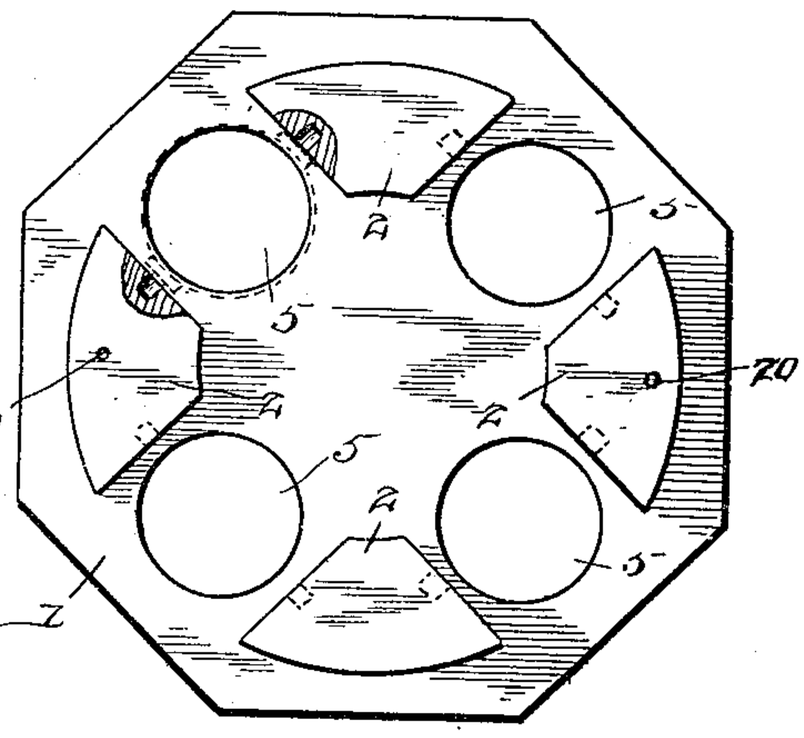


Fig. 4.



Witnesses
F. E. Alden.
H. C. Riley

W. P. Fink. Inventor

By Fitz's Attorneys,

Church & Co.

UNITED STATES PATENT OFFICE.

WILLIAM P. FINK, OF CAPERTON, WEST VIRGINIA.

BALL-CASTER.

SPECIFICATION forming part of Letters Patent No. 653,381, dated July 10, 1900.

Application filed March 6, 1900. Serial No. 7,584. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. FINK, a citizen of the United States, residing at Caperton, in the county of Fayette and State of West Virginia, have invented a new and useful Ball-Bearing Caster, of which the following is a specification.

The invention relates to improvements in ball-bearing casters.

The object of the present invention is to improve the construction of ball-bearing casters and to provide a simple and comparatively-inexpensive one possessing great strength and durability and adapted to reduce the friction to a minimum and capable of being advantageously employed on heavy safes and analogous articles.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a ball-bearing caster constructed in accordance with this invention. Fig. 2 is a similar view, the caster being inverted. Fig. 3 is a vertical sectional view. Fig. 4 is a reverse plan view of the body of the caster.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates the body of the caster, consisting of a horizontal polygonal plate provided at its lower face with depending approximately sector-shaped lugs or enlargements 2, having parallel contiguous faces and spaced apart to form recesses for the reception of ball-shaped rollers 3, which are provided at opposite sides with journals 4, arranged in suitable bearings. The lugs or enlargements are detachably secured to the body by means of bolts or other suitable fastening devices to enable the ball-shaped rollers to be readily assembled, and the polygonal body 1 is provided above the balls with openings 5, into which the ball-shaped rollers project, to enable the parts to be compactly arranged.

Any desired number of ball-shaped rollers may be employed, and they are arranged in a series around the upper portion of a large ball 6, which rests upon the floor or other supporting-surface and which fits against the ball-shaped rollers, as clearly shown in Fig. 3 of the drawings. The large main ball, which is arranged within a cage 7, is adapted to revolve freely when the caster is moved over the floor or other supporting-surface, and it will be clear that the friction is reduced to a minimum. The ball-shaped rollers present convex bearing-faces to the ball 6 and are preferably provided at their opposite sides, adjacent to the lugs 4, with flat faces surrounding the journals.

The cage, which is circular and tapering, as clearly illustrated in Figs. 2 and 3 of the drawings, is composed of upper and lower rings 8 and 9 and connecting-braces 10 and 10^a, secured at their upper ends to the lower faces of the lugs 2 and provided with eyes 11 and 12, through which the upper and lower rings pass. This cage, which surrounds the main ball, clears the same when the caster is in use, and it will retain the ball in position should the caster be raised from the floor or removed for any purpose. The braces 10 have their upper ends fitted in sockets 20, formed in the adjacent lugs, as clearly indicated in Fig. 4 of the accompanying drawings, and the said braces 10 are retained in the sockets by the braces 10^a, which are secured to the contiguous lugs. The braces 10^a are provided at their upper ends with eyes 22, through which pass fastening devices 21, which also engage the lugs.

The polygonal body is provided at its upper face with a central pivot 13, consisting of a circular enlargement and arranged in a circular opening of a corner-plate 14, provided with an angular portion 15 and having vertical flanges extending upward therefrom. The vertical flanges 16, which are arranged at the angular extension, as clearly shown in Fig. 1, are adapted to fit the corner of a safe or a heavy piece of furniture or analogous object, and the corner-plate may be secured to the same in any suitable manner.

In order to reduce the friction to a minimum and enable the body to turn freely independently of the ball and the corner-plate, the latter and the body are provided at their adjacent faces with annular grooves 17 and 18, forming a circular ball-race and receiving an annular series of antifriction-balls 19, as clearly indicated in Fig. 3 of the drawings.

It will be seen that the ball-bearing caster is simple and comparatively inexpensive in construction, that it possesses great strength and durability, and that it reduces the friction to a minimum and is especially adapted for use on safes and other heavy articles. It will also be apparent that the large ball which rests upon the floor or other supporting-surface is adapted to rotate freely in any direction, and that the body which carries the ball-shaped rollers is also capable of rotating on the corner-plate. Furthermore, it will be apparent that as the ball-shaped rollers are permanently journaled in the blocks or lugs of the body they will not become displaced and do not depend on the ball to maintain them in proper position, and the said ball is permitted a greater amount of movement relative to the ball-shaped rollers to accommodate itself to the same than could be the case were the rollers mounted in open bearings. The ball will adjust itself to the ball-shaped rollers and will provide an even frictionless bearing at all times.

What is claimed is—

1. A ball-bearing caster comprising a body, detachable lugs mounted on the body and having bearings, rollers having journals arranged in the bearings, a large ball fitting against the rollers, a cage spaced from the rollers and from the large ball and interlocked with the lugs, and fastening devices retaining the cage in engagement with the lugs, substantially as described.

2. A ball-bearing caster comprising a body, a plate pivoted to the body, lugs arranged at the lower face of the body and provided with bearings, rollers journaled in the bearings, a large ball, and a depending cage provided with upper and lower rings and having braces 10 and 10^a connecting the rings, the upper ends of the braces 10 fitting in sockets of the adjacent lugs, and the other braces 10^a being provided with eyes and secured to the lug by fastening devices passing through the eyes, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM P. FINK.

Witnesses:
B. E. BARE,
B. F. SELBE.