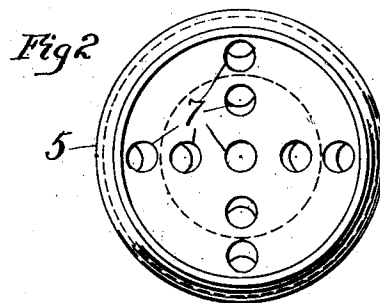
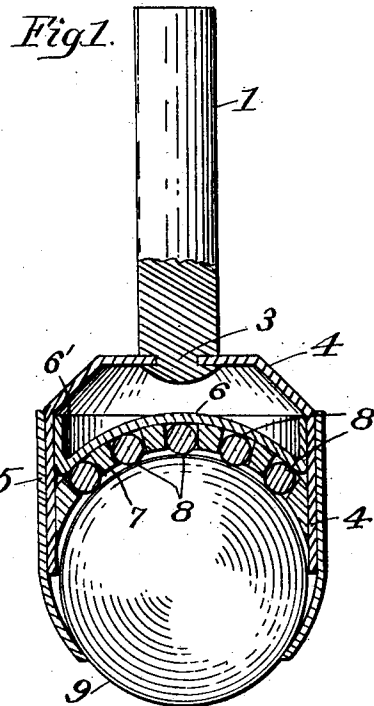
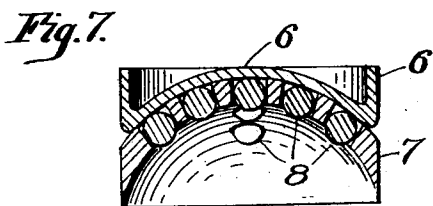
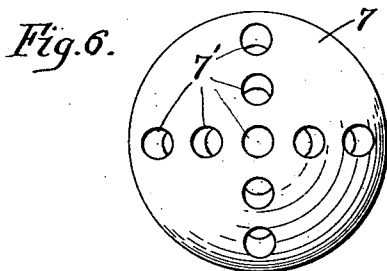
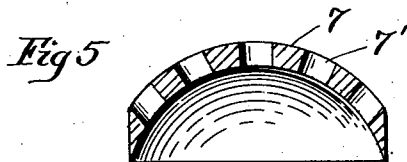
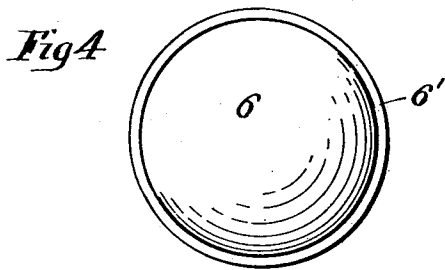
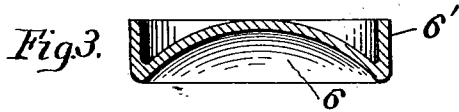


O. R. HOHENSTATT AND H. WIEDERHOLD.
CASTER.

APPLICATION FILED JULY 22, 1920.

1,370,746.

Patented Mar. 8, 1921.



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CASTER.

1,370,746.

Specification of Letters Patent.

Patented Mar. 8, 1921.

Application filed July 22, 1920. Serial No. 398,151.

To all whom it may concern:

Be it known that we, OSCAR R. HOHENSTATT and HENRY WIEDERHOLD, both being citizens of the United States, and residing at Ozone Park, in the county of Queens, State of New York, have invented a new and useful Improvement in Casters, of which the following is a description.

Our invention relates to a caster such as is ordinarily fitted to the lower extremity of the legs of chairs, tables, or other articles of furniture, for the purpose of enabling them to be readily and easily moved about a room. The object of our invention is to provide a caster which will present the least resistance to motion of the article to which it is affixed, and which will enable the latter to be moved equally easily in any direction. A further object of our invention is to provide a caster made entirely of metal, parts of which may be rapidly and economically formed by stamping or drawing sheet metal by the use of dies, and which may be rapidly assembled. To accomplish these objects, the roller of our caster is made spherical in form and operates in contact with a set of bearing-balls. Other objects, advantages and features of our invention will be apparent to those skilled in the art from reading this specification.

For a detailed description of the preferred form of our improved caster, reference may be had to the accompanying drawing forming a part of this specification, in which Figure 1 is substantially a transverse sectional view thereof; Fig. 2 is a plan view of the lower end of the caster with the caster ball and the bearing-balls removed; Fig. 3 is a diametral sectional view of the concavo-convex bearing plate; Fig. 4 a plan view thereof; Fig. 5 is a diametral sectional view of the ball separator; Fig. 6 a plan view thereof, and Fig. 7 a diametral sectional view showing the bearing plate, ball separator and bearing-balls in their respective operative positions.

In all figures, similar reference characters relate to similar parts.

The preferred form of our invention is provided with a shank or shaft 1, which is of standard size to fit the recess in the lower extremity of the leg of the piece of furniture to which the caster is to be affixed. Riveted to the shank 1 (as shown at 3) is a

casing, made up of two parts, an inner separating member 4 and an outer retaining member 5 and within which is contained a rolling member and anti-friction bearing-balls, as hereinafter described. The lower portion of the part 4 and the upper portion of the part 5 are cylindrical in form, their relative sizes being such that this portion of the part 5 fits around this portion of the part 4 with a driving fit. They are preferably made of die drawn or stamped sheet metal. The bearing plate 6 is composed of drawn or die formed sheet metal and the central portion has spherical surfaces, the lower one of which is concave. It also has an annular flange 6'. The size of this flange 6' is such that it fits snugly within the upper part of the cylindrical portion of the part 4 and abuts against the dome or beveled portion thereof. Positioned beneath the bearing plate 6 is a second ball separator 7, the upper surface of which is complementary to the lower surface of the bearing plate. The ball separator is provided with a number of ball-chambers 7', within which are a similar number of anti-friction bearing-balls 8, which are thereby kept separated and correctly located as shown. The thickness of the ball separator is such that, when its upper surface is in contact with the lower surface of the bearing plate, the bearing-balls 8 project an appreciable distance downward from the ball-chambers. The rolling member is a large steel caster ball 9 having substantially the same diameter as that of the interior of the cylindrical portion of the supporting part 4 of the casing. This caster ball is seated in the casing in such a manner that its upper surface is in contact with the bearing-balls 8,—the center of curvature of the concave and convex portions of the bearing plate 6, the ball separator 7, and of the caster ball 9 being at the same point. The lower portion of the part 5 is contracted around the ball 9, leaving, however, sufficient clearance to allow to the ball freedom of motion.

From the foregoing description, it will be seen that our invention provides a ball-bearing caster in which the caster ball 9 may turn equally freely in any direction. A particular advantage over the usual type of caster is that, in view of the fact that the caster ball is positioned vertically beneath

the weight supported by the caster, the article of furniture to which the casters are attached can be moved along one line and then immediately along another line at any angle with the first line without any change in the relative positions of the parts of the caster; for it is well known that, with the usual type of caster in which a roller is rotatable only in a vertical plane, smooth and easy motion is never accomplished when the article of furniture to which the casters are attached is moved in the manner suggested. Other advantages of our invention will be immediately apparent to those skilled in the art.

Although we have described but one form of our caster, we are aware that various modifications in detail and in the arrangement and combination of its parts may be made by those skilled in the art without departure from our invention, and we desire protection for all modifications of our caster that come within the scope of our invention as defined in the appended claims.

Having thus described our invention, what we claim is:—

1. A caster comprising in combination, a recessed sheet metal casing, a separate concavo-convex sheet metal bearing plate seated therein, a caster ball retained within said casing, a ball separator in contact with said bearing plate and having ball-chambers therein, and bearing-balls in the chambers of said ball separator.

2. A caster comprising in combination, a cylindrical recessed supporting casing, a separate concavo-convex sheet metal bearing plate seated therein, a cylindrical outer casing engaging said supporting casing frictionally and having a contracted lower end, a caster ball retained within said supporting casing by said contracted end, a ball separator between said ball and said bearing plate, and bearing-balls carried in said separator.

OSCAR R. HOHENSTATT.
HENRY WIEDERHOLD.