No. 692,632. Patented Feb. 4, 1902.

C. W. COREY.

BALL CASTER.

(Application filed May 18, 1901.)

(No Model.)

Fig. 1.

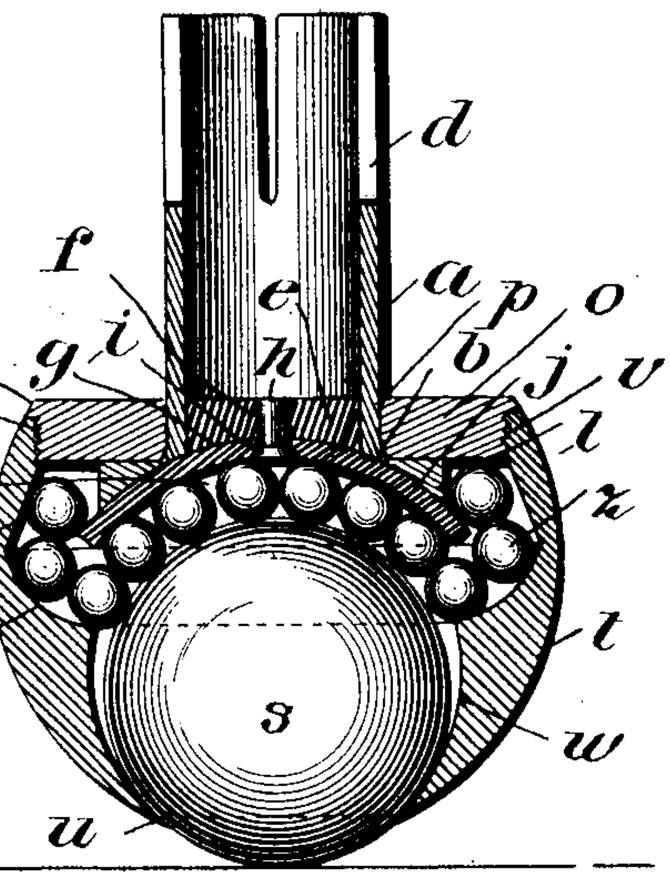
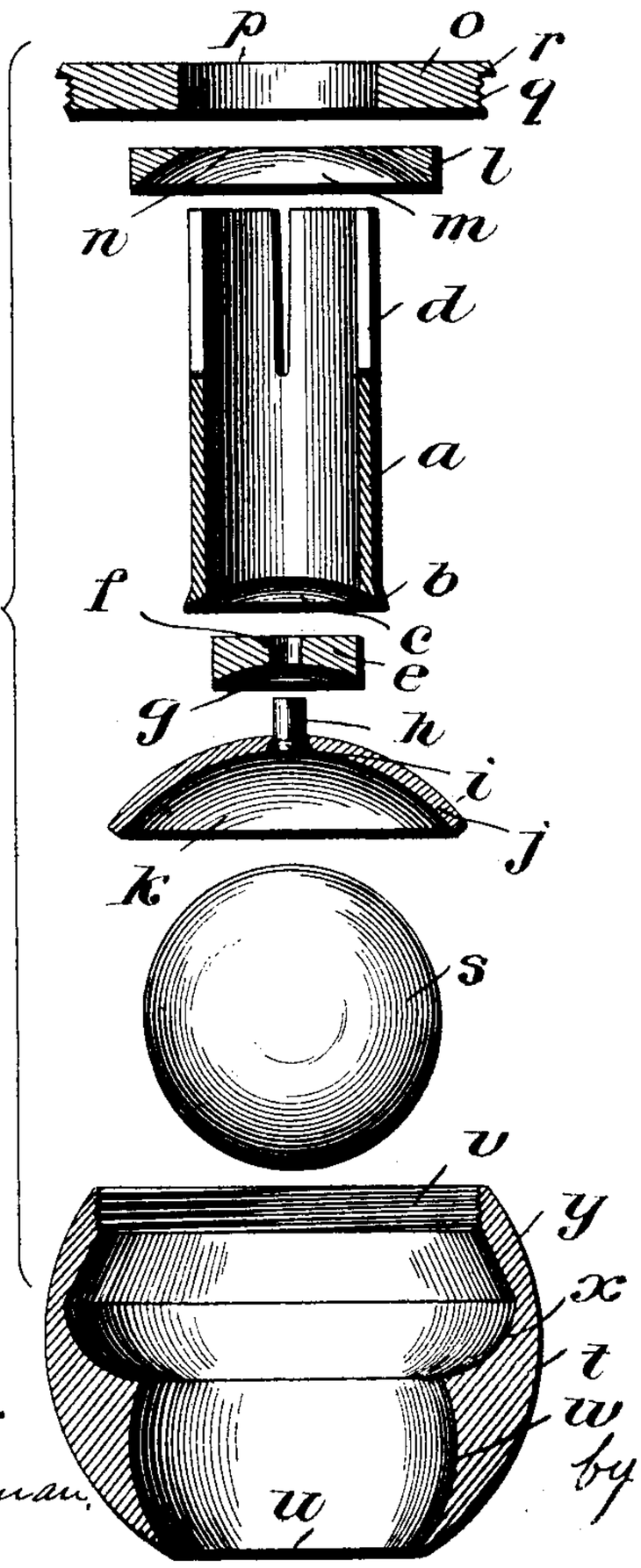


Fig. R.



Witnesses
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UNITED STATES PATENT OFFICE.

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BALL-CASTER.

SPECIFICATION forming part of Letters Patent No. 692,632, dated February 4, 1902.

Application filed May 18, 1901. Serial No. 60,885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. COREY, a subject of the King of Great Britain, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Ball-Casters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in ball-casters; and the object of my invention is to produce a caster of this description which shall be easily made, inexpensive, and which will provide the greatest possible freedom of motion.

With this object in view my invention consists of the construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical cross-section of my improved caster, the antifriction-balls being shown in side elevation; and Fig. 2 is a similar view with the parts detached from each other.

a represents the socket of the caster, which at its lower end is provided with an outwardly-flared portion *b* and a circular portion *c*. The upper end of the socket is provided with slots *d*.

e represents a plug adapted to firmly fit in the lower part of the socket, which plug is provided with a central perforation *f* and has its lower part *g* concave.

j represents a shell, which is made in the shape of a portion of a sphere. In the upper part of this shell is fixed a pin *h*, which has an enlarged portion *i*, firmly fitting in the shell *j*. This shell has a concaved portion *k*.

l represents an annular washer which has a central aperture *n* large enough to inclose the bottom part of the socket *a*. This annular washer also has a concaved portion *m*, adapted to fit over the upper part of the shell *j*.

o is a plate screw-threaded at *q* and provided with a projection *r* for closing the top part of the caster. It is also provided with a central perforation *p*, through which a socket *a* projects.

t represents the main shell of the caster, which is open at the top and bottom.

u represents the lower opening through which the antifriction-ball *s* projects, which ball rests upon the floor below.

The upper part of the shell is screw-threaded at *v* and is adapted to engage with the screw-threads *q* on the top *o*, the portion *r* of the top fitting over the upper part of the shell *t*, so as to make a smooth surface.

The principal objection to overcome in a ball-caster is the proper provision for the greatest freedom of motion of the antifriction-balls, so as to avoid binding or wedging, and in the present application the chief means for accomplishing this lies in the peculiar construction or formation of the raceway or path for the small balls. To this end the shell is hollowed out, as at *w*, in the form of a spherical cavity. Above the portion *w* the shell is hollowed out still more, forming a curved shoulder at *x*, and above the curved shoulder *x* the inner sides of the shell are conical in shape, as shown at *y*, the hollowed-out portions forming an enlarged recess, with sloping walls in the shell immediately above said spherical cavity, the side and lower walls *x* and *y* of said enlarged recess forming, with the shell *j* and the large antifriction-ball *s*, the raceway for the small balls *z*, which are sufficient in number to practically fill the space between the large ball *s* and the shell *j* and also the space between the annular washer *l* and the outer part of the shell *t*. This arrangement of the smaller balls provides for the utmost freedom of their motion, keeping all of the balls active and preventing their binding or wedging.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a ball-caster, the combination with a shell having a substantially spherical cavity in the lower portion thereof, a curved annular shoulder adjacent said cavity and an annular inwardly-inclined portion disposed at an obtuse angle to said curved shoulder, said curved shoulder and inclined portion forming an enlarged recess, having sloping walls,

surmounting said spherical cavity, and the walls of said cavity and enlarged recess forming the inside wall of said shell; of a concave plate projecting into said enlarged recess, a large ball contained within said spherical cavity, and a plurality of smaller balls in said enlarged recess, the parts being so arranged that the smaller balls are divided into two layers, one in contact with said large ball and concave plate and the other in contact with the inner walls of said enlarged recess.

2. In a ball-caster, the combination of a socket-plate flared at its lower end, a top plate in which said socket-plate is secured, said top plate being screw-threaded and provided with a projection, a plug fitted in the lower part of said socket, a concave plate connected to said plug, an annular washer located between said concave plate and said top plate, the main shell of the caster open at the top and bottom and screw-threaded at the top, said shell having a spherical opening in the bottom, said opening being enlarged and curved outwardly about said spherical part, and being inwardly inclined about said enlarged portion, a large antifriction-ball located in said shell and smaller antifriction-balls filling the empty space above said large ball.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES W. COREY.

Witnesses:
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