

No. 652,128.

Patented June 19, 1900.

W. J. MARTIN.
CASTER.

(Application filed Mar. 7, 1900.)

(No Model.)

Fig. 1.

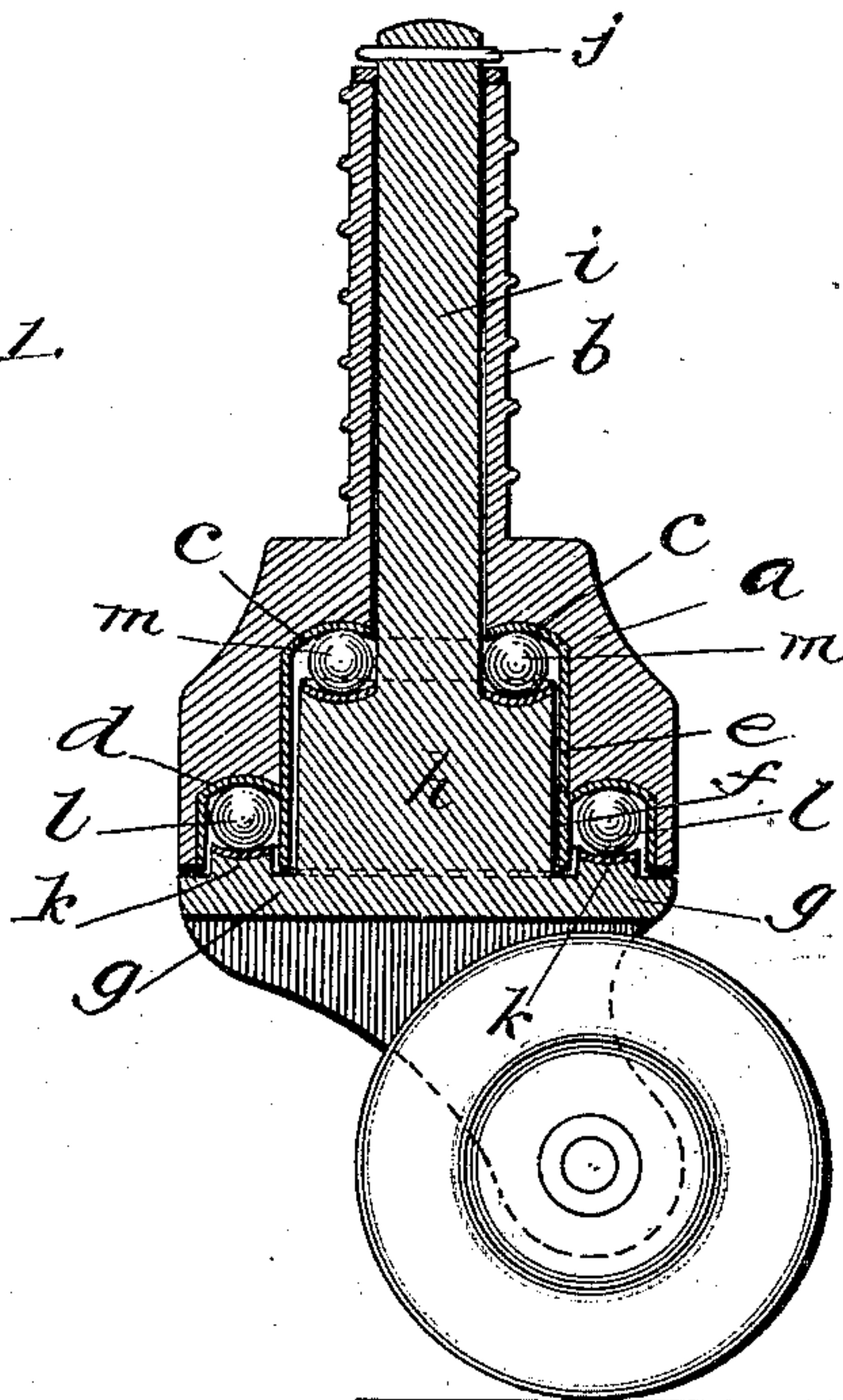
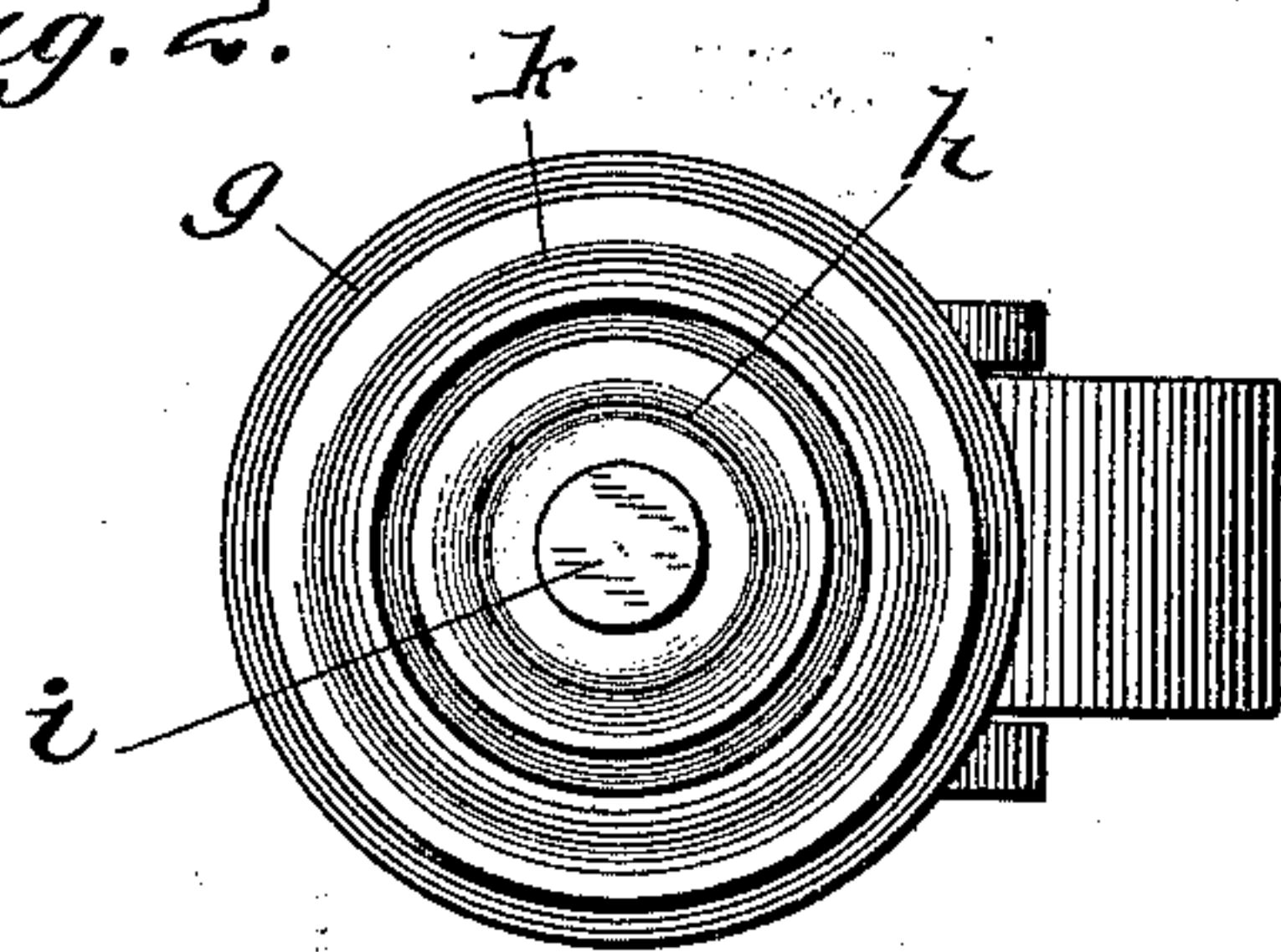


Fig. 2.



Witnesses
George D. Richards
Geo. M. Coppenhaver.

Inventor.
William J. Martin
By David Davis
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM J. MARTIN, OF DANVILLE, PENNSYLVANIA.

CASTER.

SPECIFICATION forming part of Letters Patent No. 652,128, dated June 19, 1900.

Application filed March 7, 1900. Serial No. 7,699. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. MARTIN, a citizen of the United States, and a resident of Danville, county of Montour, State of Pennsylvania, have invented certain new and useful Improvements in Roller-Casters, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view, and Fig. 2 a plan view, of the roller-carrying part detached.

The object of this invention is to provide an antifriction furniture-caster of the roller type which will be simple and durable and which will take up and minimize the severe lateral strains or thrusts resulting from suddenly shifting the furniture about; and it consists of certain novel features of construction hereinafter fully described, and pointed out in the claims appended.

Referring to the drawings by letters, *a* designates the body of the caster, which is substantially cup-shaped and is provided with a central upward-extending threaded tube *b* to enable it to be firmly but removably secured in the wooden leg of an article of furniture. The cup is provided with a central opening, which forms, in substance, a continuation of the tube *b* and around which is formed a ball-race *c*, and into the cup or socket is fitted a lining of sheet-steel *e*. Outside of the central cup is formed a supplemental ball-race *d*, which is also lined with sheet-steel, both these linings being pressed into shape and fitted into the cup and ball-races sufficiently tightly to be held in place. The lining *e* depends to a point on about a level with the lower face of the cup *a*, this depending part forming an annular flange *f*. It will be observed that the ball-race *c* is placed well up in the caster and close to the central pin *i* of the rotary part and that the ball-race *d* is located outside of the upper race and concentric therewith and near the lower edge of the caster-body.

The rotative part of the caster consists of a disk *g*, carrying the usual roller and provided with a central upward-extending cylindrical part *h*, between whose upper end and the ball-race *c* is confined the upper series of antifriction-balls *m*, and from the cen-

ter of the part *h* rises the shaft or rod *i*, which extends up through tube *b* and is locked therein by a transverse pin *j*, passing through its upper end at a point above the top of the tube, a suitable washer being interposed between said pin and the top of the tube. Formed on the upper side of the disk *g* is an annular flange *k*, which works between the flange *f* and the depending outer edge of the cup, antifriction-balls *l* being confined between this flange and the ball-race *d*. The bearing-surfaces of the parts *h* and *k* form the lower halves or parts of the respective raceways and are preferably lined with sheet-steel to minimize the wear. It will be observed that thus employing two horizontal series of antifriction-balls, one being placed lower down and outside of the other, the friction caused by the weight will be minimized, as also will be the severe lateral strains and thrusts devices of this sort are constantly being subjected to in use. It will also be observed that lateral vibration of the rotary part will be reduced to a minimum, and the only parts that will come in contact under normal use of the device will be the contacting surfaces of the balls and raceways. It will be noted also that the depending flange *f* and the outer depending edges of the cup prevent the ingress of dust to the raceways, especially to the upper raceway, said flange extending beyond both bearing-faces of the lower halves of the raceways carried by the rotary member.

It is obvious that should the parts of the caster be made of hard metal the steel linings may be omitted.

A further essential advantage is derived from locating the inner race above the outer raceway, in that the upper raceway will thereby be kept almost entirely free of dust, as the dust in order to reach said upper raceway will have to not only pass under the depending flanges of the upper member of the caster, but will also have to pass up through the narrow space between the enlargement *h* and the wall of the socket.

What I claim, and desire to secure by Letters Patent, is—

1. In combination, a socket and means for fastening it to a furniture-leg, said means consisting of a tube adapted to enter the leg, and

said socket or cup having formed in it two raceways, one in its upper part around the central opening, and the other outside of the aforesaid ball-race and near the lower face of the cup, and a plate or disk carrying a roller and provided with a central cylindrical enlargement fitting up into the cup and having a central shaft or pin extending up through the tube, antifriction-balls between the upper end of said cylindrical part and the upper ball-race, and antifriction-balls confined between the lower ball-race and the disk, the walls of this ball-race extending close to the disk and preventing any lateral movement of the balls on the disk and forming a dust-seal for the upper raceway, as and for the purpose set forth.

2. A furniture-caster, comprising an upper stationary member adapted to be attached to an article of furniture and having a central socket formed in its under side, one half of a raceway being formed in the top of this socket and the upper half of another raceway being formed in the under side of the stationary member outside of the socket and in a plane below the inner raceway, and a lower rotary member carrying a floor-roller and provided with a cylindrical enlargement working in the socket of the upper member and having the lower half of a raceway on its upper end, this lower member being also provided with an upward-extending annular flange k on its upper face which enters and works in the lower raceway on the upper member, the upper edge of this flange forming the lower half of the outer raceway, and two series of antifriction-balls in the respective raceways, substantially as set forth.

3. In combination, a socket provided with means for fastening it to an article of furniture and formed with a central cylindrical pocket in its underside, the top of said pocket forming a raceway, and with an annular channel surrounding said pocket and of less depth than the pocket, the top of said channel forming a raceway, and a flange f between the pocket and the channel; with a plate or disk formed with a cylindrical enlargement adapted to fit the pocket in the socket, the upper surface of this enlargement forming the lower half of the upper raceway and a raised circular raceway fitting in the channel of the socket its upper surface extending above the lower end of the flange f , whereby

said flange forms a dust-seal, and a set of balls on each raceway.

4. The combination of a socket adapted to be secured to an article of furniture and formed on its under side with the upper halves of two raceways, one of said ways being above the other, the lower one being outside of the upper one; with a disk rotatably secured to the socket and formed with the lower halves of the raceways and carrying a floor-roller; a set of balls on each raceway, and a depending dust-seal carried by the socket between the upper and lower raceways and extending below the upper surface of the lower raceway.

5. A furniture-caster, comprising an upper stationary member adapted to be attached to an article of furniture and being provided in its under side with the upper halves of two concentric ball-races, and a lower rotary member carrying a floor-roller and upon its upper side provided with the lower halves of said ball-races, two series of balls, and a dust-seal consisting of an annular flange carried by one of said members and extending beyond the bearing-faces of the ball-races carried by the opposite member, said annular flange being located at a point between the two ball-races.

6. A furniture-caster, comprising an upper stationary member adapted to be attached to an article of furniture and having a central socket formed on its under side, one half of a raceway being formed in the top of this socket and the upper half of another raceway being formed in the under side of the stationary member outside of the socket and in a plane below the inner raceway, and a lower rotary member carrying a floor-roller and provided with a cylindrical enlargement fitting up into the socket of the upper member and having the lower half of a raceway on its upper end, this lower member being also provided with the lower half of another raceway outside of and below the upper raceway, and two series or sets of balls in said raceways.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 6th day of March, 1900.

WILLIAM J. MARTIN.

Witnesses:

FRANK MAGILL,
A. H. GROVE.