

(No Model.)

G. L. BOVEROUX.
BALL CASTER.

No. 601,726.

Patented Apr. 5, 1898.

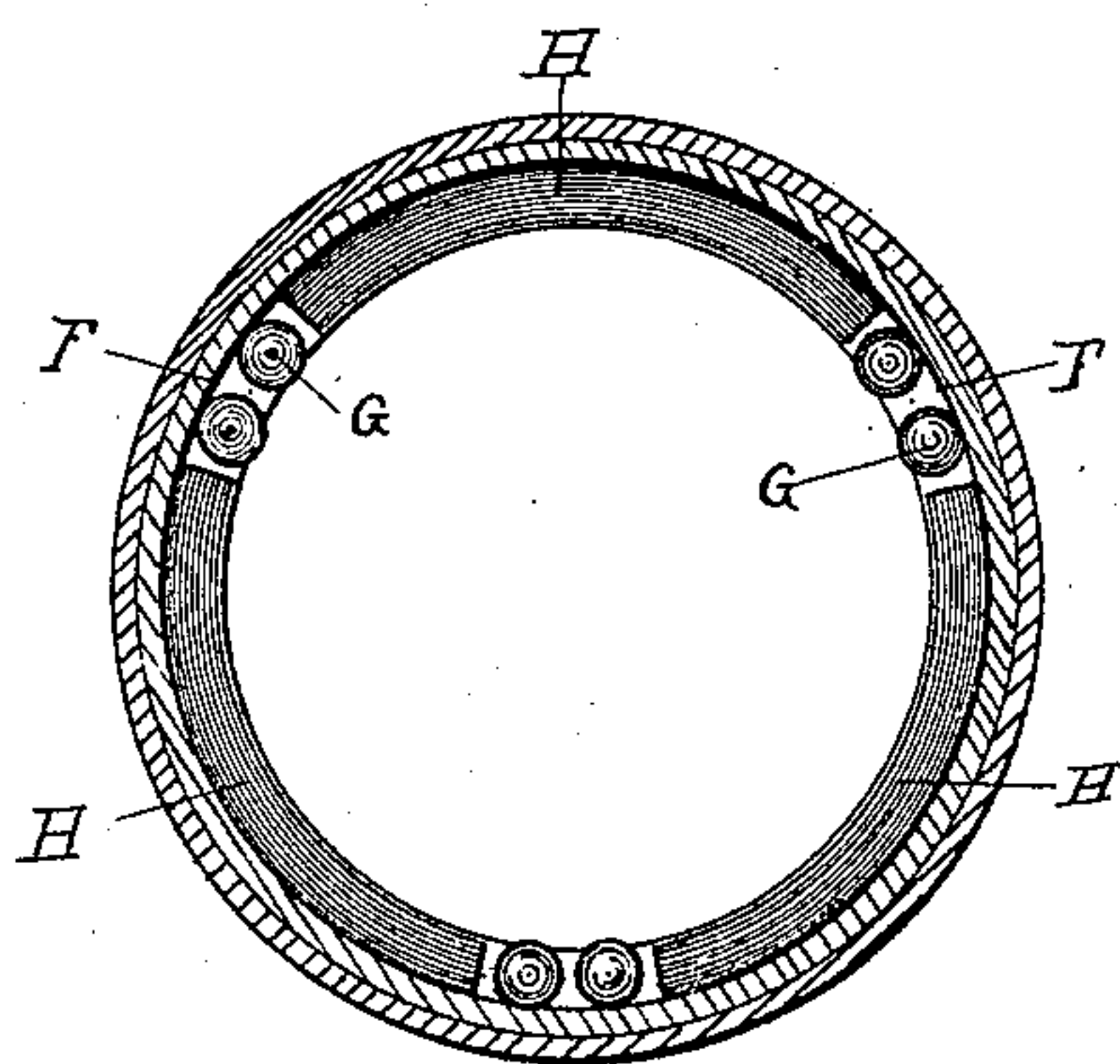


Fig. 2.

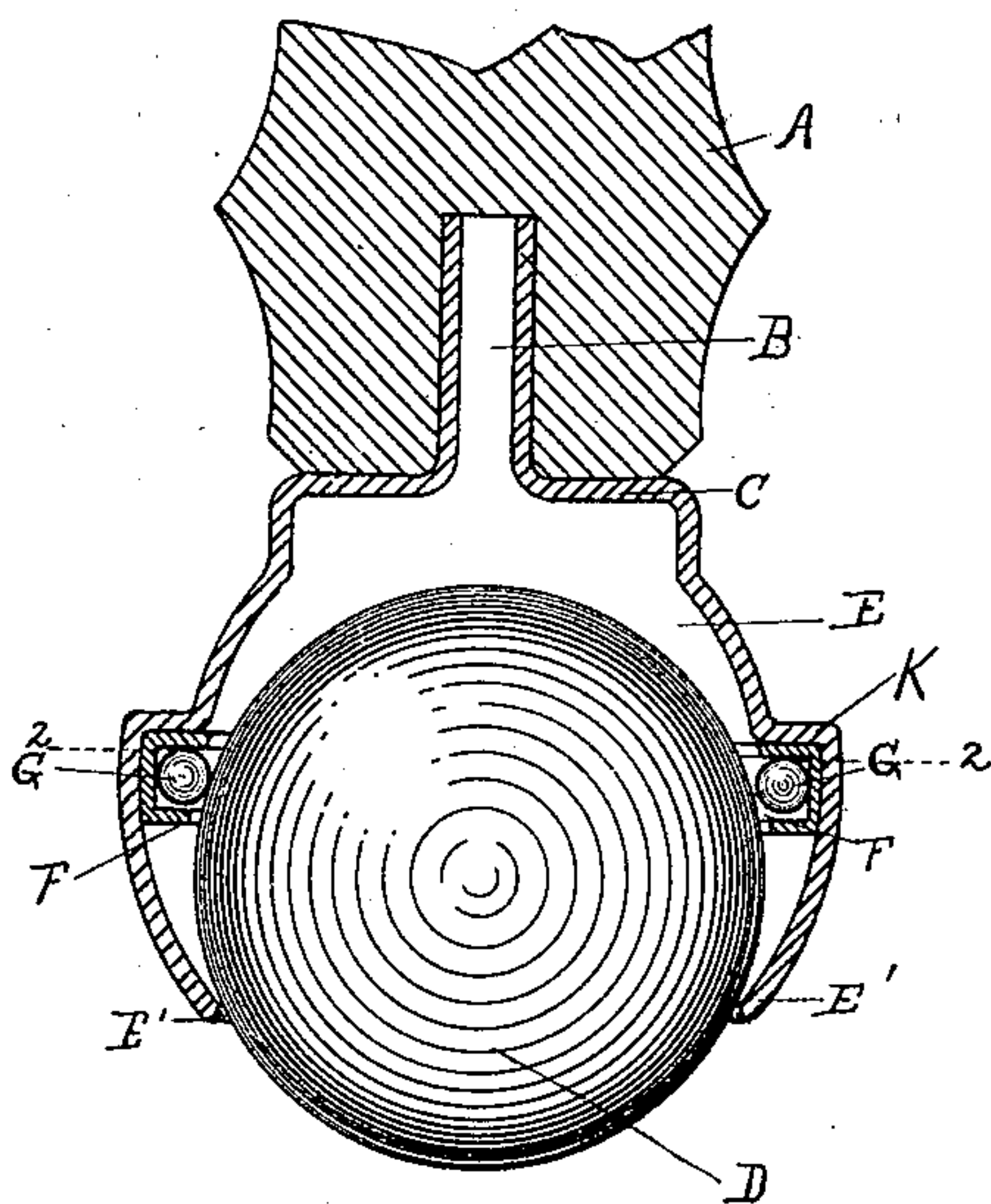


Fig. 1.

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE L. BOVEROUX, OF OAKLAND, CALIFORNIA.

BALL-CASTER.

SPECIFICATION forming part of Letters Patent No. 601,726, dated April 5, 1898.

Application filed October 11, 1897. Serial No. 654,881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. BOVEROUX, a subject of the German Emperor, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Casters for Furniture; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in casters for furniture, &c., and more particularly to what are known as "ball-casters," my object being to provide a simple and efficient structure of the character indicated.

The invention consists in the various matters hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional elevation of a leg of a piece of furniture provided with the present caster; and Fig. 2 is a sectional plan view on the line 2 2, Fig. 1.

Referring now more particularly to the drawings, A represents a leg of a piece of furniture, said leg being centrally bored to receive the stem B of the caster. This caster is formed of an integral casing having a head portion C, with a depending portion to produce the cup E, adapted to receive the spherical roller D. At a line in its circumference the casing has an outwardly-extending flange K, and from the outer edge of this flange the casing depends, as shown, the lower edge E' extending inwardly and serving to prevent the roller from falling out of the cup. Anti-friction-bearings for the roller or ball D are provided within the cup, and said bearings will now be described.

An annular box F fits loosely in the casing below the flange K and rests against the same, said box being open upon its inner side, as shown. This box receives the bearing-balls G, upon which the roller rests.

If the entire groove in the box were filled with balls, such a construction would materially increase the cost of the article, the smallest number which can be used being three in all. The balls shown in the drawings are arranged in three pairs at points equally divided about the said groove, and the spaces between the pairs are nearly filled by the

blocks H. The blocks H are so constructed as to rest loosely within the groove and are set back away from the surface of the ball D to permit the same to rest upon the bearing-balls G only.

In arranging the blocks H care is taken to give the balls G sufficient play to allow them to roll around in the groove. In order to complete the entire circuit around the groove, the forward ball of each pair will bear against the end of the block H in front of it and cause the same to slide in the direction of the groove.

The groove is preferably hardened by a process known as "chilling," so as to offer as little friction in the rotation of the ball against the sides and bottom of the groove as possible.

It has been observed that with a construction such as described, wherein the caster-ball D is resting upon three points of bearing consisting of balls, as shown, the balls at two points of bearing will have a rotation in the direction of travel of the caster-ball. In only one position—that is, when the rotary direction of the caster-ball is directly in line with one of the three points—will the travel of any one of the balls be directly across the groove. Further, in its use the caster is seldom moved in a direct line for any considerable distance. The action which is most desired of it is to a certain extent in a circular direction, and in moving in such direction the caster-ball is compelled to rotate on its vertical center, carrying the bearing-balls G around the groove. In this latter action I have found that the balls arranged, as shown in the drawings, with the interposed blocks H act sufficiently well for all purposes of a caster-bearing.

While I have shown a groove rectangular in cross-section, I do not wish to be understood as confining myself to such shape, as the groove may be formed with a single angle and accomplish the same purpose of providing two tangential bearing-points for the bearing-ball; also, I do not wish to confine myself in the arrangement of the interposed blocks loosely mounted in the groove to any particular form of groove, as the function which the blocks serve, that of maintaining the bearing-balls at a prescribed distance from each other, would be accomplished in any other form of groove.

Having thus described this invention, what is claimed is—

5 A caster or the like comprising an integral casing having at a line in its circumference an outwardly-extending flange, the portion of the casing below the flange extending downwardly from the outer edge of the same, an annular box open upon its inner face fitting loosely in the casing below the flange and resting
10 ing against the same, balls in said box, and a

spherical roller fitting in said casing and projecting therefrom, and, at a line above its horizontal diameter, bearing upon the balls in the box; substantially as described.

In testimony whereof I have hereunto set
my hand this 2d day of October, 1897. 15

GEORGE L. BOVEROUX.

Witnesses:

BALDWIN VALE,
MAYNARD HARMS.