

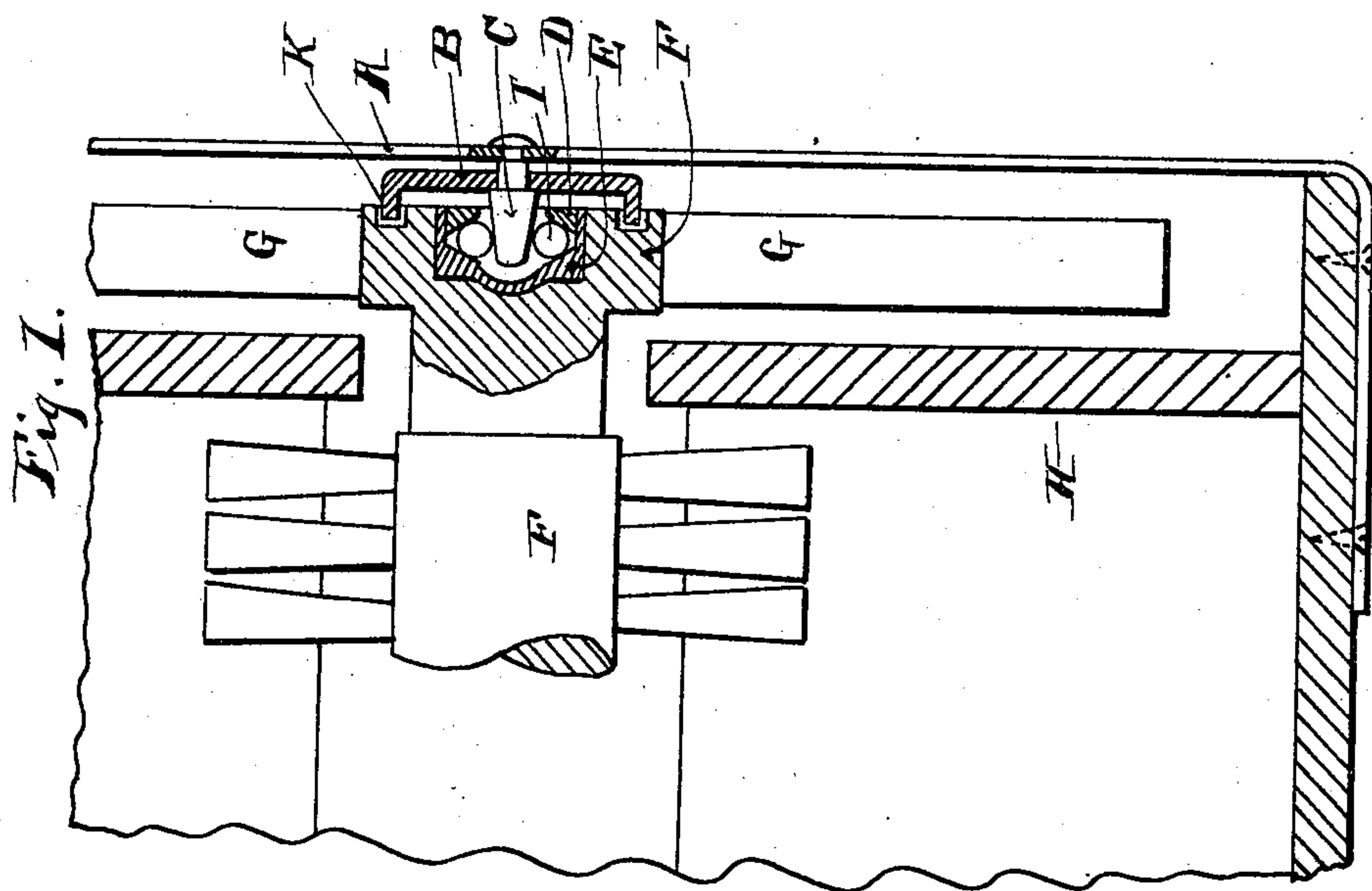
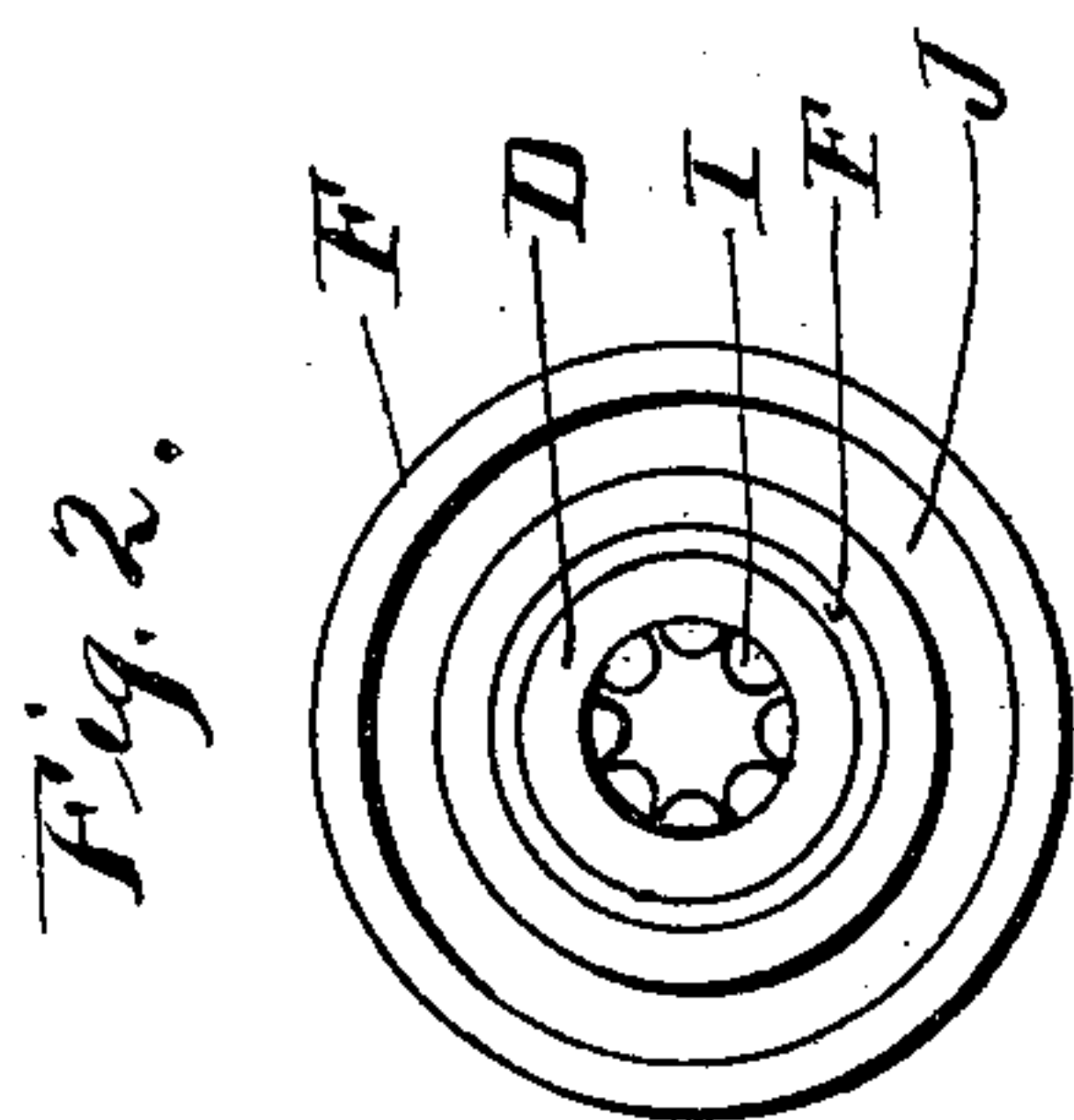
No. 629,518.

Patented July 25, 1899.

F. C. MASON.

BALL BEARING FOR CARPET SWEEPERS.

(Application filed Jan. 18, 1899.)



WITNESSES.

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UNITED STATES PATENT OFFICE.

FRANCIS C. MASON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE
BISSELL CARPET SWEEPER COMPANY, OF SAME PLACE.

BALL-BEARING FOR CARPET-SWEEPERS.

SPECIFICATION forming part of Letters Patent No. 629,518, dated July 25, 1899.

Application filed January 16, 1899. Serial No. 702,338. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS C. MASON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented new and useful Improvements in Ball-Bearings for Carpet-Sweepers, of which the following is a specification.

This invention relates to certain new and useful improvements in ball-bearings for carpet-sweepers; and the invention consists in combining with the brush-roller of a carpet-sweeper a bearing comprising a ball-cup and an annulus, forming a ball-race having two inclined bearing-surfaces, the annulus serving to retain the balls in said race, a pintle extending through said annulus and engaging the balls in said race, and a spring-support for the pintle.

In carpet-sweepers it is necessary to remove the brush-roller frequently for the purpose of cleaning the same. Hence it is necessary that the balls should not become displaced by the removal of the brush, and the objects of the invention are, first, to so construct the brush-roller that the end of the roller will contain the antifriction-balls and will prevent the same from escaping when the brush is removed from the case; second, to provide a ball-bearing which when placed in position will prevent the balls from rattling and will retain the balls in position to operate effectively, and, third, to combine with the ball-bearing brush of the class described a device for preventing ravelings and other material from winding around the journal-bearing of the brush-roller. These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a horizontal sectional view through the center of the brush-roller and also illustrating a portion of the case and my preferred form of attaching the cross-piece or end support of the bearing-pintle. Fig. 2 shows an end view of the brush-roller.

Similar letters refer to similar parts throughout both views.

H shows the case of the carpet-sweeper, constructed in any suitable form.

A shows the end band, which is preferably a spring extending from side to side of the

carpet-sweeper case and forming in the example of my invention shown in the drawings not only a support for the pintle, but means for withdrawing the pintle from the brush-roller.

B shows the circular-plate, which is provided with a flange K, which flange K is adapted to engage with the annular slot in the end of the brush-roller or the brush-roller pulley.

C is the pintle, preferably conical in shape, as shown in the drawings. By constructing the pintle in conical form it will always when in place have a positive bearing upon the balls, which are closely arranged in circular series, so that the balls cannot rattle when the carpet-sweeper is in use.

D is an annulus secured in the ball-cup of the brush-roller and adapted to retain the balls in position when the brush-roller is removed.

E is a ball-cup, the balls being adapted to revolve in the ball-race formed by the annulus D and the cup E.

F is the brush-roller.

G are the drive-wheels.

I are the balls, which are closely arranged in circular series.

J is the annular groove, into which the flange K passes when the brush-roller is in place.

K is the flange on the plate B.

The brush-roller is prepared by cutting out a cavity in the end thereof for the reception of the annulus D, the ball-cup E, and the balls I, the whole being held in position by means of the plate B. I do not desire to limit myself to the particular form of the device for the bearing of the balls, as other well-known devices may be used. This part of my invention relates to a brush-roller having a ball-chamber in the end of the brush-roller and suitable mechanism for retaining the said balls in place, said balls being adapted to engage with the pintle C.

In the drawings I have shown A as a spring end band; but it will be evident that other means may be utilized for the purpose of supporting the movable pintle C. The number and size of the balls will of course be adapted to the size of the pintle to be used; but in any case I prefer to arrange them closely in the cone-bearing in circular series,

so that they will not accidentally fall therefrom when the brush-roller is removed.

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

1. The combination with a shaft or spindle, of a bearing therefor comprising a ball-cup and an annulus, forming a ball-race having two inclined bearing-surfaces, one of said surfaces being formed by said cup and the other by said annulus, and the annulus serving to retain the balls in said race, a pintle extending through said annulus and engaging the balls in said race, and a support for the pintle.

2. The combination with a shaft or spindle, of a bearing therefor comprising a ball-cup and an annulus, forming a ball-race having two inclined bearing-surfaces, the annulus serving to retain the balls in said race, a pintle extending through said annulus and engaging the balls in said race, and a spring-support for said pintle.

3. The combination with a shaft or spindle, of a bearing therefor comprising a ball-cup and an annulus, forming a ball-race having two inclined bearing-surfaces, one of said surfaces being formed by said cup and the other

by said annulus, and the annulus serving to retain the balls in said race, a conical pintle extending through said annulus and engaging the balls in said race, and a support for the pintle.

4. The combination with a shaft or spindle, of a bearing therefor comprising a ball-cup and an annulus, forming a ball-race having two inclined bearing-surfaces, the annulus serving to retain the balls in said race, a conical pintle extending through said annulus and engaging the balls in said race, and a spring-support for said pintle.

5. The combination with a shaft or spindle having an annular groove and a ball-receptacle in the end thereof, of an annulus adapted to retain the balls in said receptacle, a pintle adapted to pass through said annulus, a plate having an annular flange extending into said groove, and a support for said pintle and plate.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANCIS C. MASON.

Witnesses:

EDWARD TAGGART,

CHRISTOPHER HONDELINK.