

No. 818,080.

PATENTED APR. 17, 1906.

C. D. DUNHAM.

BALL CASTER.

APPLICATION FILED SEPT. 1, 1905.

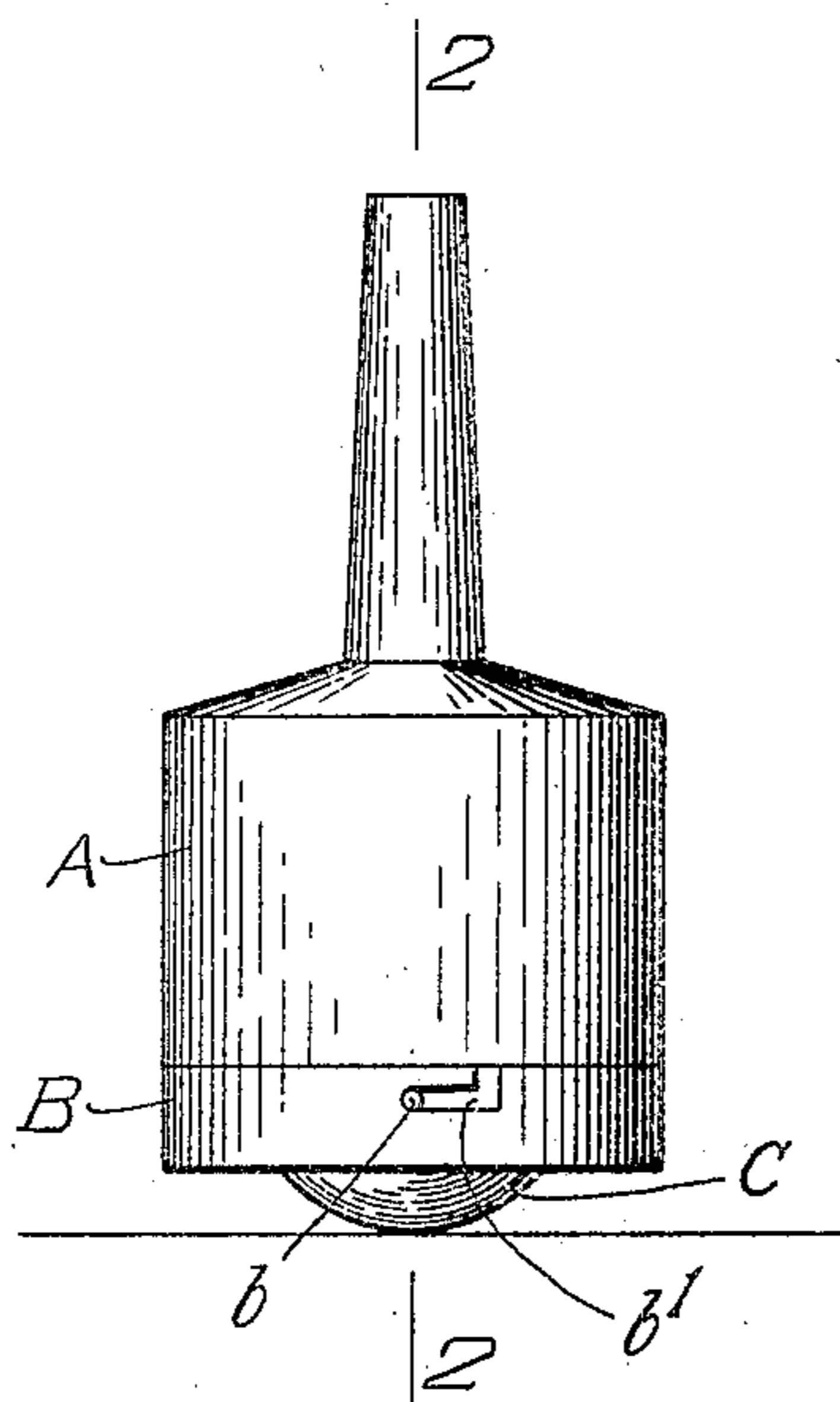


FIG. 1.

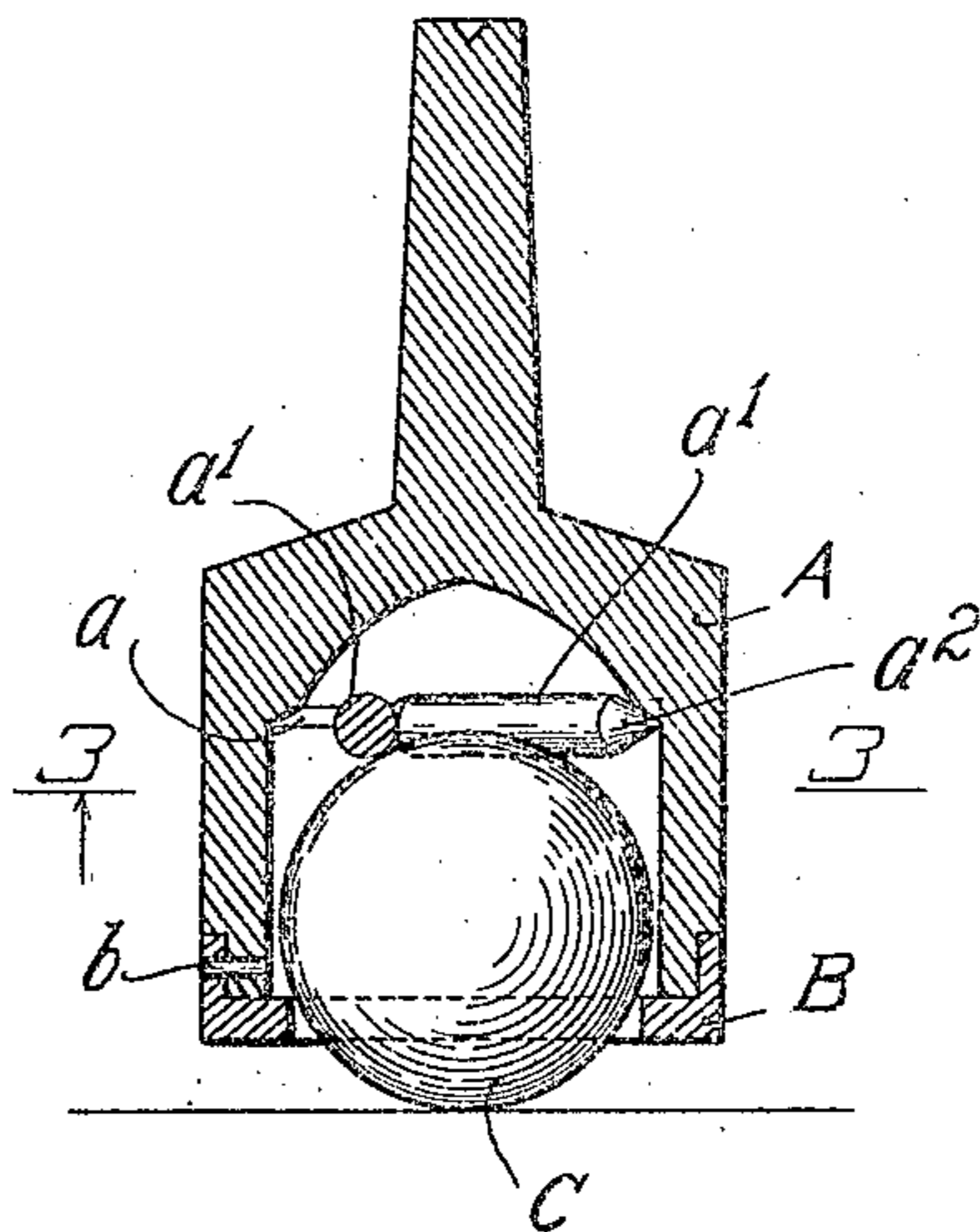


FIG. 2.

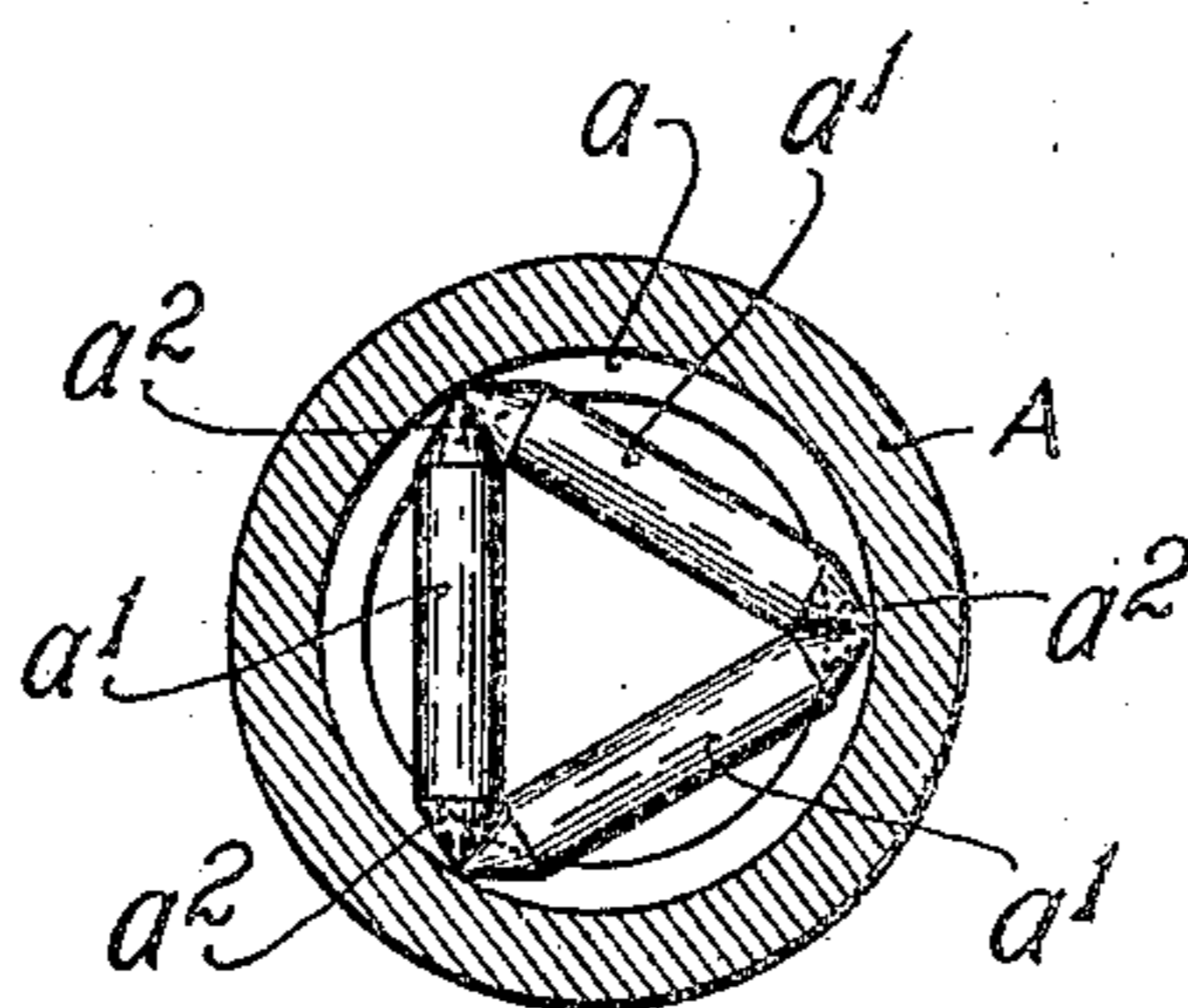


FIG. 3.



FIG. 4.

WITNESSES

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CALEB D. DUNHAM, OF BOSTON, MASSACHUSETTS.

BALL-CASTER.

No. 818,080.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed September 1, 1905. Serial No. 276,686.

To all whom it may concern:

Be it known that I, CALEB D. DUNHAM, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Ball-Casters, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates to that class of casters in which a sphere or ball is retained within a socketed holder so as to partially protrude therefrom, said ball being in movable engagement with means interposed between said ball and said socket.

The object of my invention is to provide interposing means between said ball and said socket which shall permit said ball to freely rotate within said socket and to eliminate the possibility of binding which obtains in most of the casters of this class now upon the market. I accomplish these objects by the means hereinafter specified and as illustrated in the accompanying drawings.

Figure 1 shows my invention in perspective. Fig. 2 is a vertical section on line 2 2 in Fig. 1. Fig. 3 is a horizontal section along line 3 3 of Fig. 2, the ball-caster being removed. Fig. 4 is a detail of one of the rollers a' .

A represents the holder, having its interior recessed so as to form a socket, as shown in Fig. 2.

B is a removable cap forming the lower part of holder A and projecting beyond the inside walls of holder A, so as to form a retaining-ring which will permit ball C to partially protrude from holder A.

b is a pin which may be used to interlock with slot b' , cut in B. It is obvious that there are many other well-known means for causing holder A and cap B to interlock. Within the socket of holder A, I form shoulder a , preferably so constructed that the surface thereof shall be elevated at an angle bringing its inner edge somewhat higher than its outer edge. $a' a'$ are cylinders or rollers which are preferably formed with conically-shaped ends, as at $a^2 a^2$, and the angle of said end corresponds to the angle of said inclined surface. I preferably have but three of these rollers and arrange them in a triangular position within said socket. By this arrangement ball C is in movable engagement with said rollers in such manner as to cause said

rollers to operate substantially as bearings for said ball.

While I preferably have but three rollers and preferably form the interior of holder A so as to have shoulder a inclined at an angle as shown in Fig. 2, it is not necessary for me to and I do not limit myself to this construction. Neither it is necessary that the rollers $a' a'$ be formed with conically-shaped ends. The rollers $a' a'$ have no fixed stationary bearings, and, in addition to the revolving motion which each of such rollers has independent of every other roller and each upon its own axis, all of the rollers have a simultaneous lateral endwise movement around the interior of holder A. This is equally true whether three or more rollers be employed, whether or not their ends be conically-shaped, and whether or not shoulder A be inclined as shown in Fig. 2.

It is obvious that the adoption of three rollers permits the movable engagement of each of said rollers with said ball and with each other. It is also equally obvious that should a larger number of rollers be employed it would also permit the movable engagement of each with said ball and that in either event said rollers are adapted to rotate simultaneously and concentrically about an imaginary fixed point, which is the center of the diameter of said socket, thereby permitting the rollers readily to adjust themselves with relation to ball C, so as to reduce the friction to the minimum whenever the object to which said caster is attached is moved.

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

1. The combination of a socket, a ball movably held therein and a plurality of rollers interposed between said ball and said socket, said rollers being so arranged as to rotate simultaneously and concentrically within said socket and so as to act as movable bearings for said ball.

2. The combination of a holder having a socket, a ball movably held therein, and a plurality of rollers interposed between said ball and said socket, said socket having an inclined face on its inner wall and said rollers being in movable engagement with said ball, said inclined face and each other.

3. The combination of a holder having a socket, a ball movably held therein, and a

plurality of rollers each having substantially
conically-shaped ends, said socket having an
inclined face on its inner wall, the angle of
which corresponds to the angle of the ends of
5 said rollers, and said rollers being so arranged
as to be in movable engagement with said
ball, said inclined face and with each other.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

CALEB D. DUNHAM.

Witnesses:

GEORGE B. HEATON,
ARTHUR P. HARDY.