B. C. WOODWARD & H. E. SCAFF.

BALL BEARING CASTER.

APPLICATION FILED OCT. 7, 1908.

908,188. Patented Dec. 29, 1908.

Fig 1

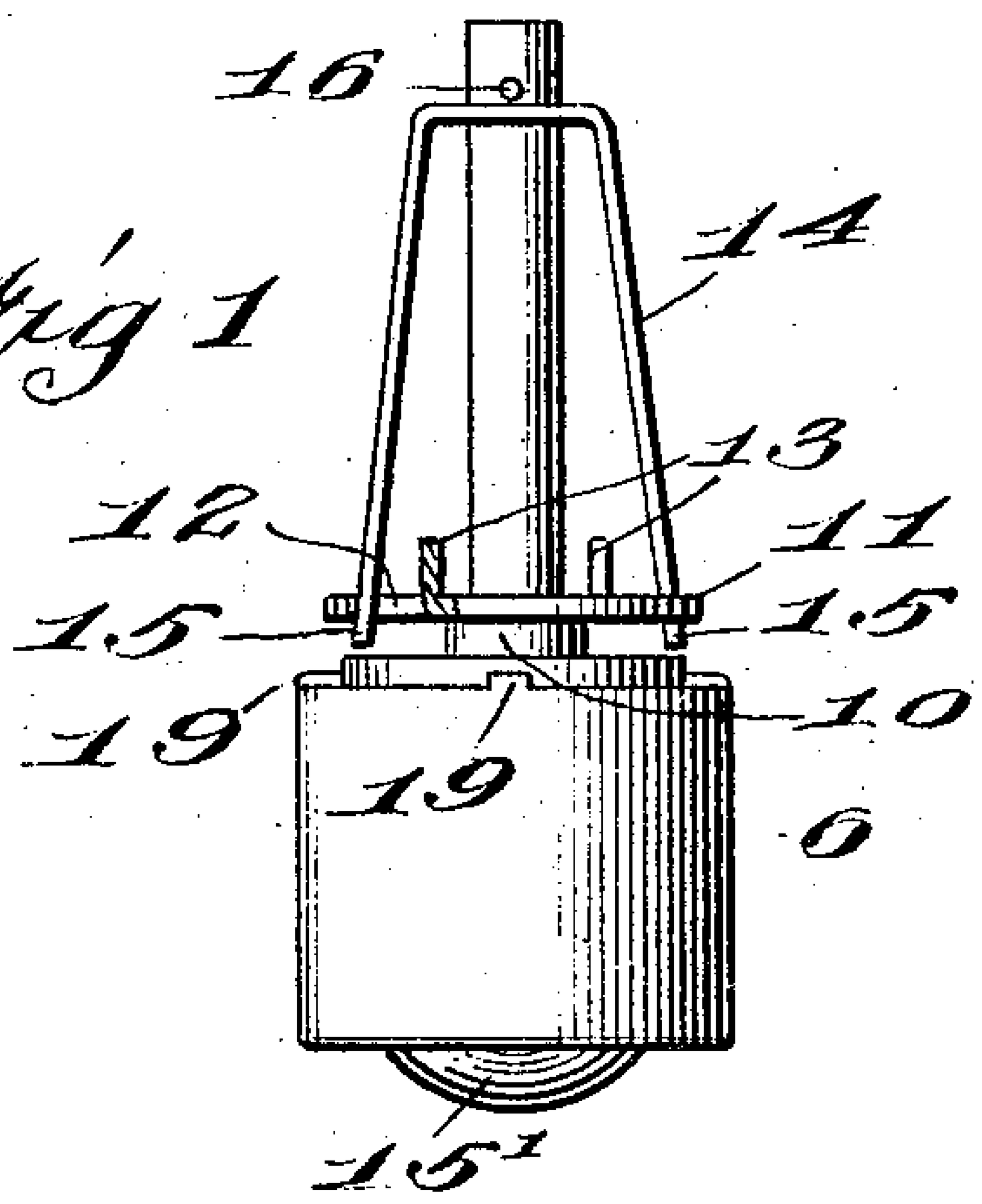


Fig 2.

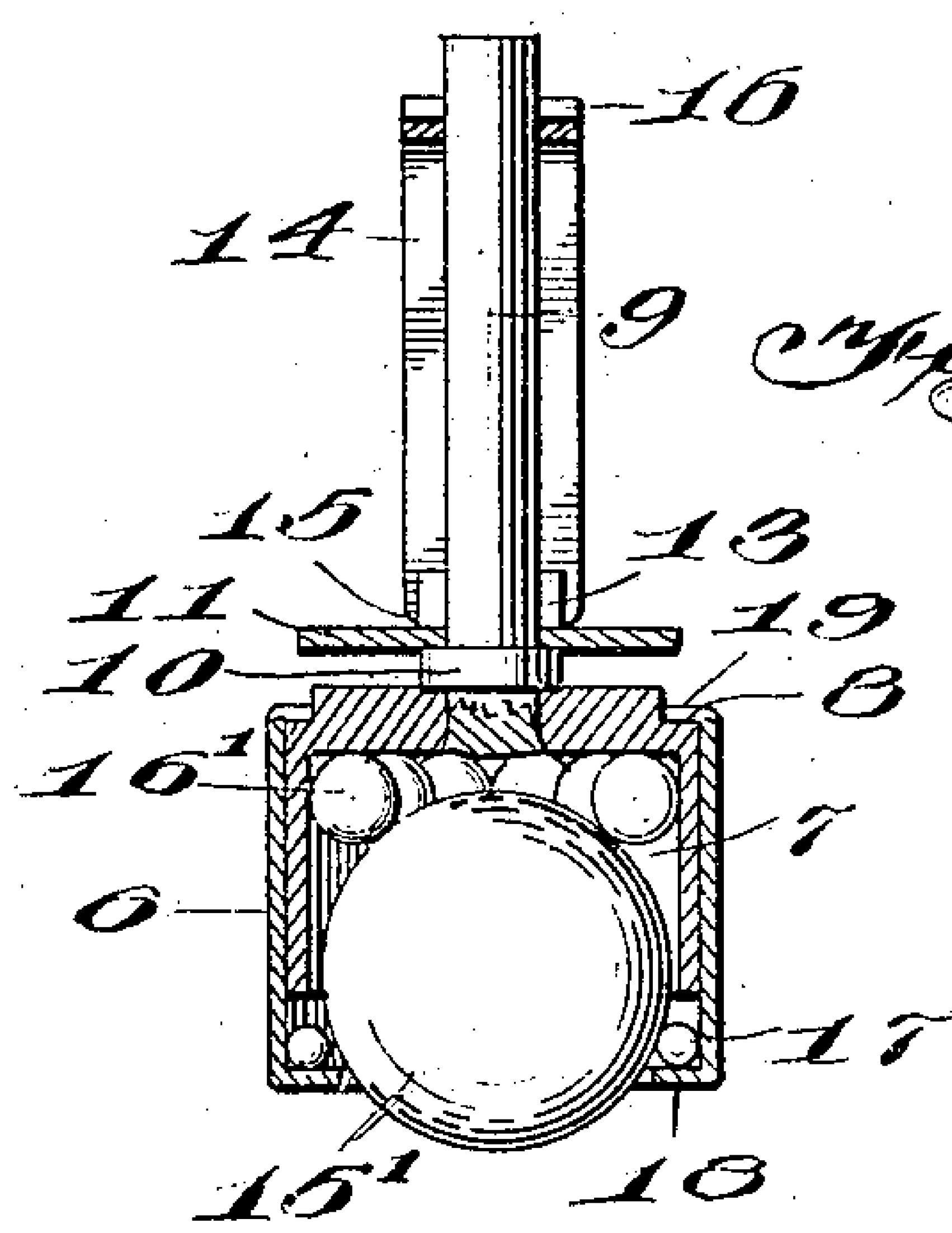


Fig. 3.

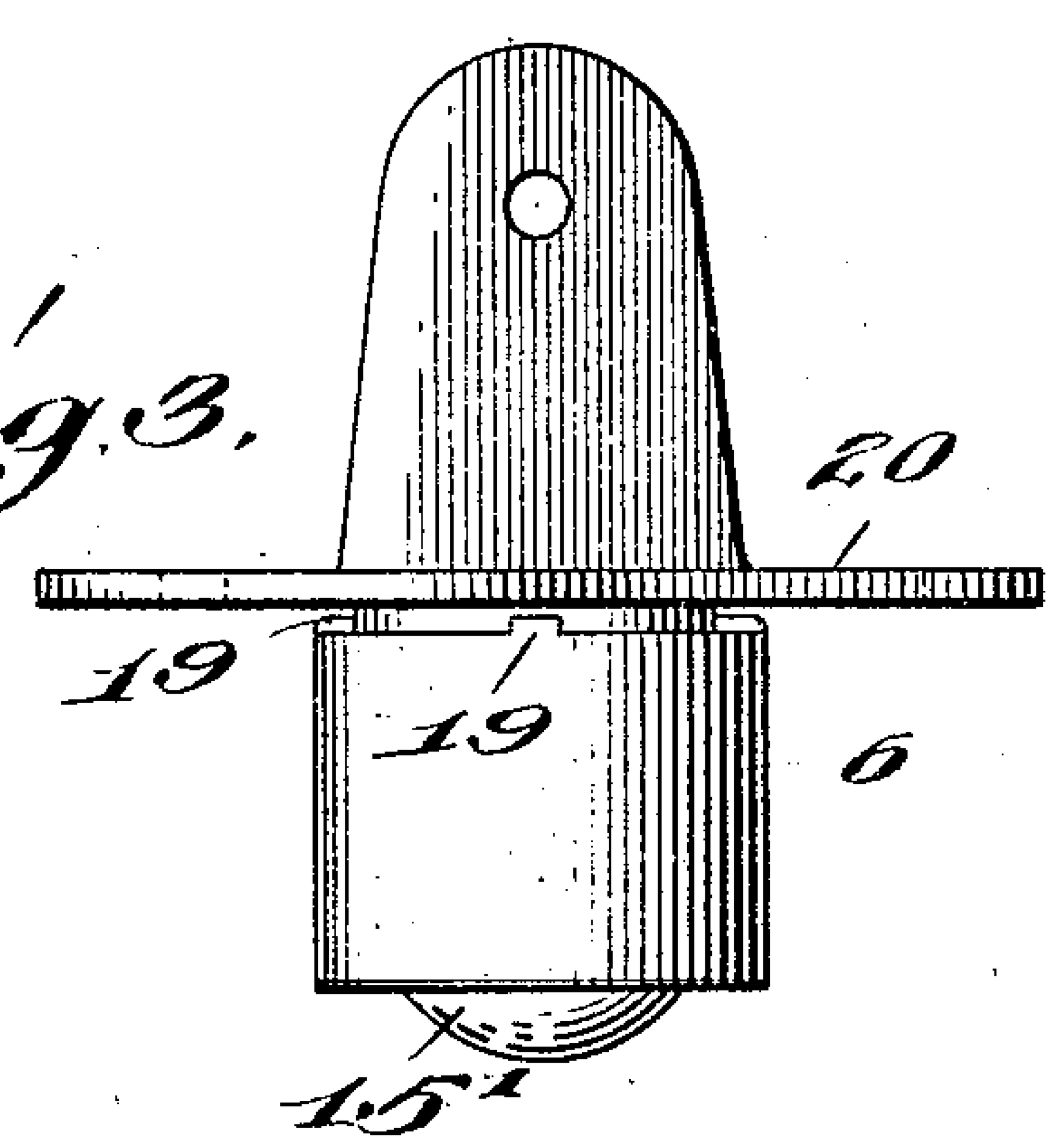
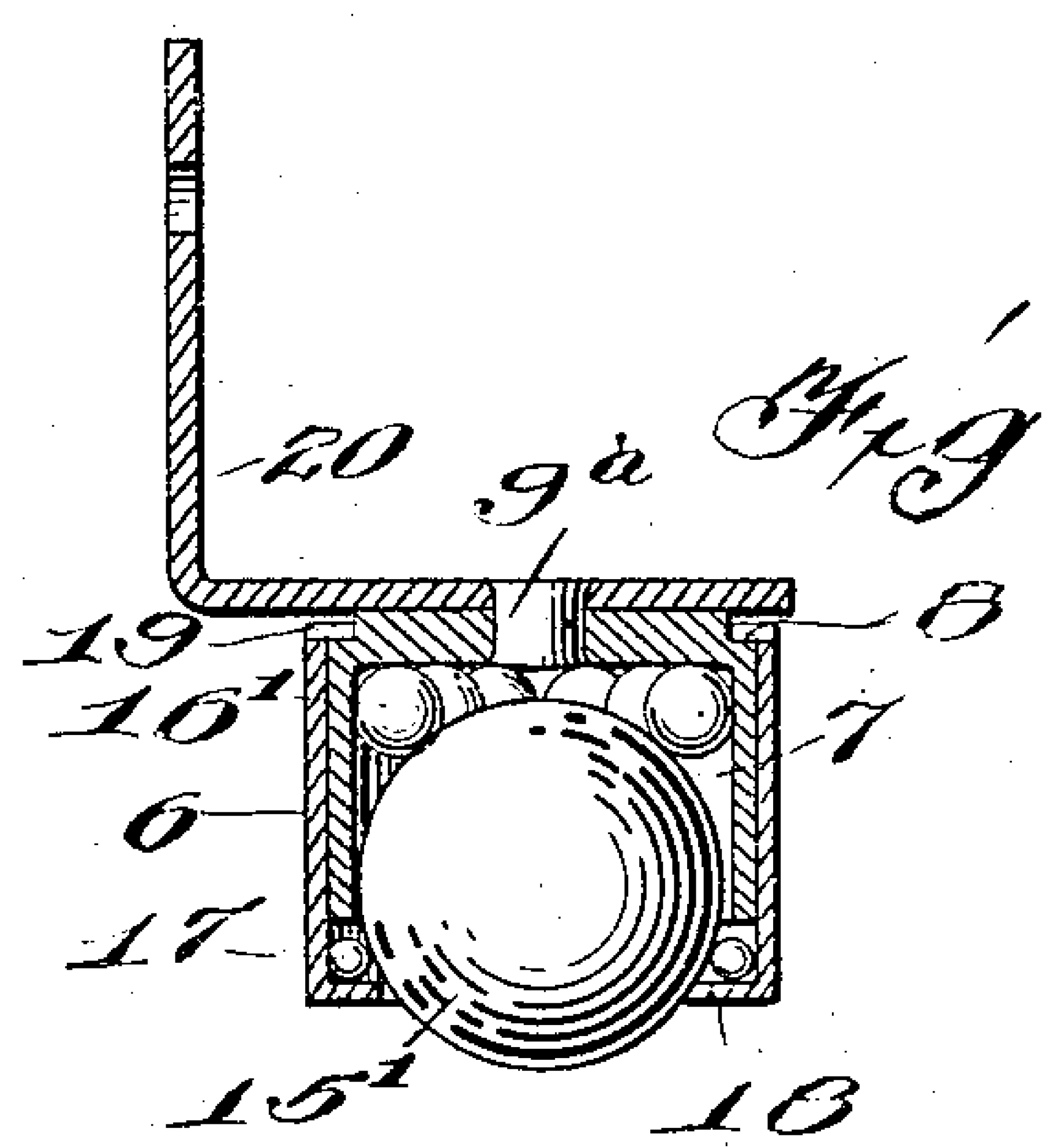


Fig 4



Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN CLEMENT WOODWARD AND HENRY EDWARD SCAFF, OF NASHVILLE, TENNESSEE.

BALL-BEARING CASTER.

No. 908,188. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed October 7, 1908. Serial No. 456,537.

To all whom it may concern:

Be it known that we, BENJAMIN CLEMENT WOODWARD and HENRY EDWARD SCAFF, citizens of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Ball-Bearing Casters, of which the following is a specification.

This invention relates to ball bearing casters, and has for its object to provide a caster improved particularly with respect to the manner in and means by which the balls are supported, the device including a large ball with anti-friction balls at the top thereof which support the weight, and balls at the side thereof which support the lateral thrust.

The device is so constructed that it will roll easily in any direction without dragging, and it can be quickly and readily assembled or taken apart. This latter feature is advantageous in case of the breakage of any of the bearing balls.

The advantages will further appear from the following description and the accompanying drawings in which—

Figure 1 is a side elevation of the caster; Fig. 2 is a vertical sectional view thereof; Fig. 3 is a side elevation of a modification adapted for trunks and the like; Fig. 4 is a central vertical section of the device shown in Fig. 3.

Referring specifically to the drawings, 6 indicates an outer cylindrical shell or casing which fits at a snug fit over the side walls of a cup 7 which is reduced at the top to form a shoulder 8. The spindle 9 is riveted at its lower end to the top of this cup, so that the cup will turn with the spindle, the cup resting against a shoulder 10 on the spindle. The spindle has thereon a disk 11 which rests upon the top of the shoulder 10, and this disk has recesses 12 therein formed by tongues 13 struck up on opposite sides of the spindle. A spring 14 is mounted upon the spindle, with the reduced ends 15 of its branches fitting in the slots 12, and this spring is held on the spindle by a cotter 16 at the top. The spring serves to fit in the socket in the article to which the caster is applied and to hold the caster in place. The main or large ball 15 is mounted in the cup, resting against a ring of balls 16 which roll or turn in the corner of the cup. The shell 6 also supports a ring of balls 17 which support the ball at the sides and hold the ball in the cup, the shell having an annular flange 18 at its lower edge upon which the balls 17 rest. The shell is held in place on the cup by means of clips 19 produced at the upper edge thereof which when the parts are assembled are struck in over the shoulder 8. To remove the shell and the balls it is necessary simply to pry out the tongues 19 with a screw driver or similar implement and pull off the shell 6.

In the modification shown in Figs. 3 and 4, instead of the long spindle 9, a short spindle 9^a is used projecting from the lower angle of a corner bracket 20 which is adapted to fit upon the corner of a trunk or the like. The structure of the casing and balls is the same as above described.

All the parts can be readily produced, the spindle being cast or turned and the shell, cup, spring, bracket, and disk, being stamped out of sheet metal. The invention, however, is not limited to any particular manner of producing the parts, nor is it limited to the exact structure shown, since various modifications may be made within the scope thereof.

With the forms shown in Figs. 1 and 2 the spindle, if necessary, will turn with the casing, but the ball 15 is freely movable in all directions and will carry even very heavy articles without dragging or binding.

We claim:

A caster comprising a spindle, an inverted rotatable cup mounted on the spindle and having cylindrical sides, a shell fitting on the outside of the cup and rotatable therewith and having an inwardly projecting flange at the lower end, a ball within the cup and shell, a ring of anti-friction balls in the corner between said ball and the top and sides of the cup, and a ring of anti-friction balls between the side of the ball and the shell and resting on said flange.

In testimony whereof, we affix our signatures in presence of two witnesses.

BENJAMIN CLEMENT WOODWARD.
HENRY EDWARD SCAFF.

Witnesses:
J. L. RICHARDSON,
H. D. NICHOLS.[1]