

(No Model.)

J. P. HENRIES.
CASTER.

No. 598,514.

Patented Feb. 8, 1898.

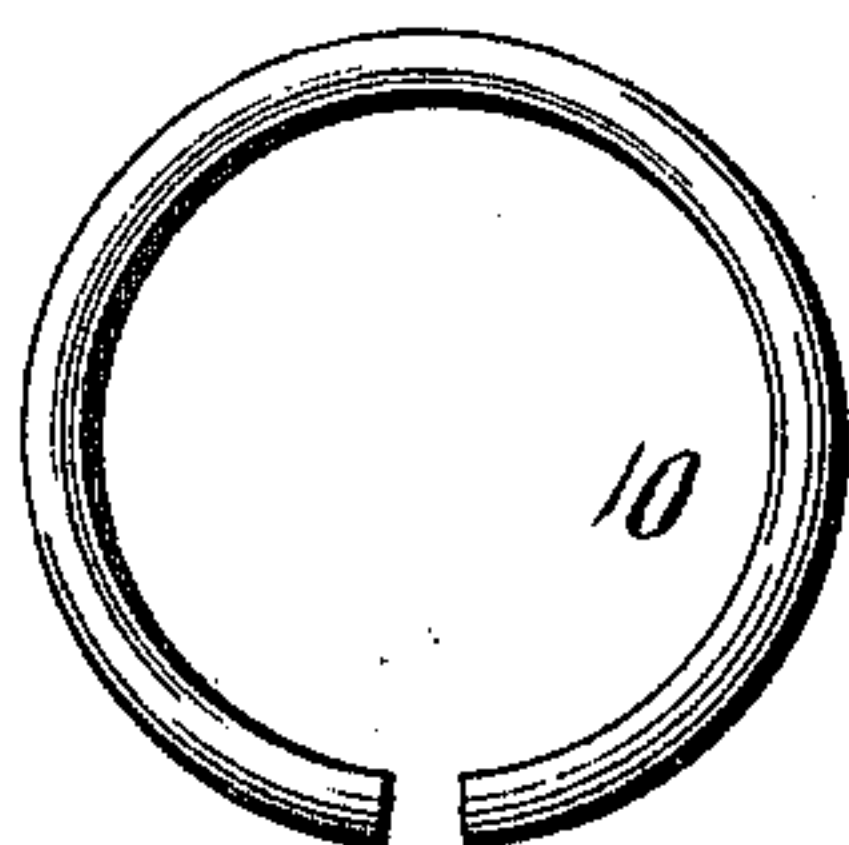
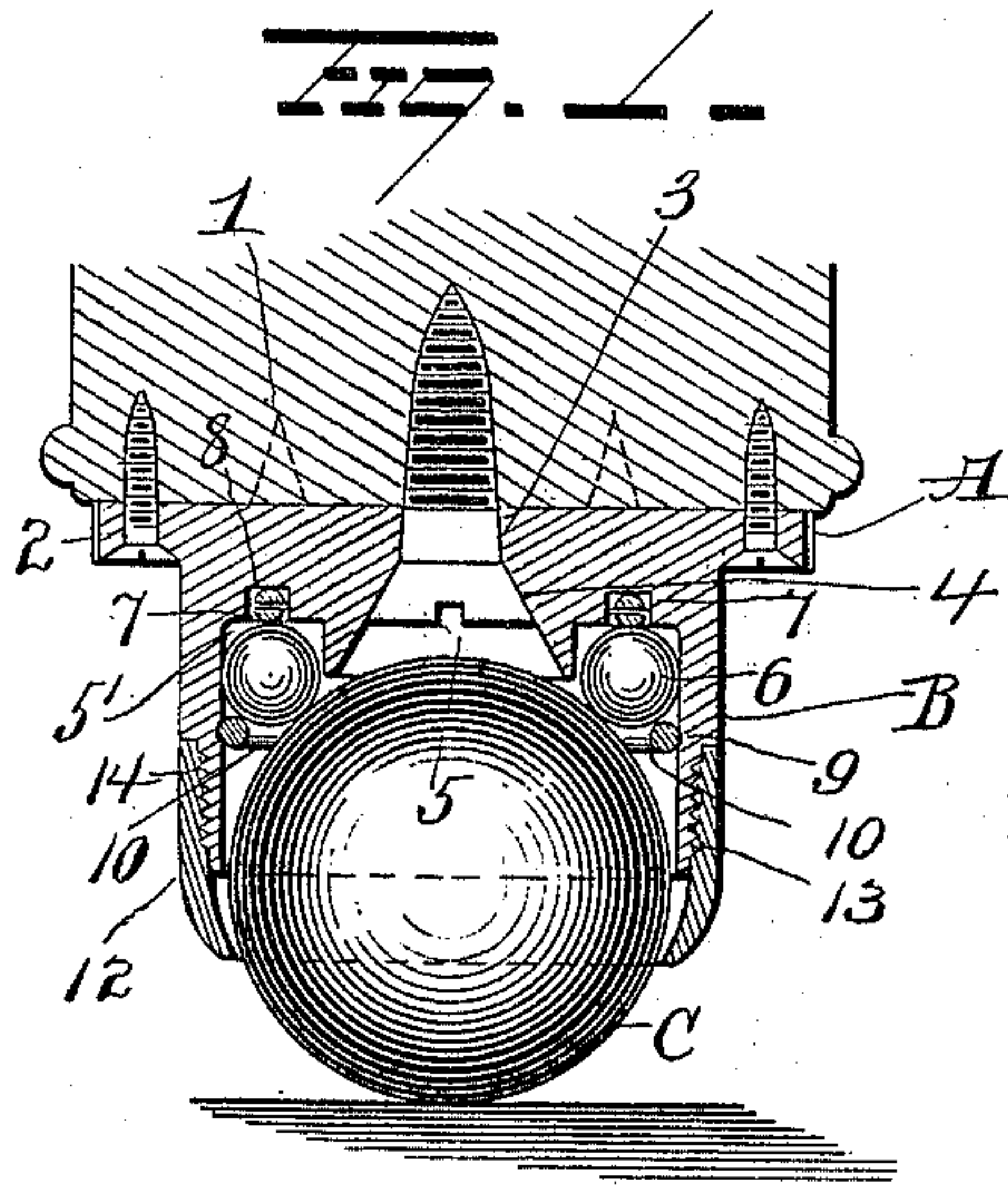


FIG. 2.

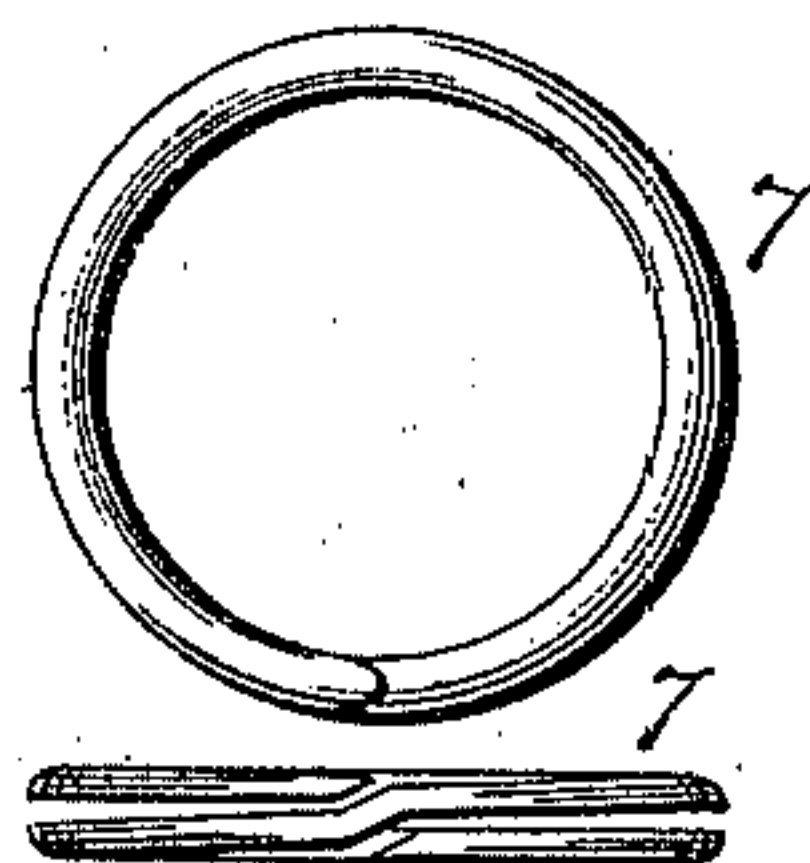
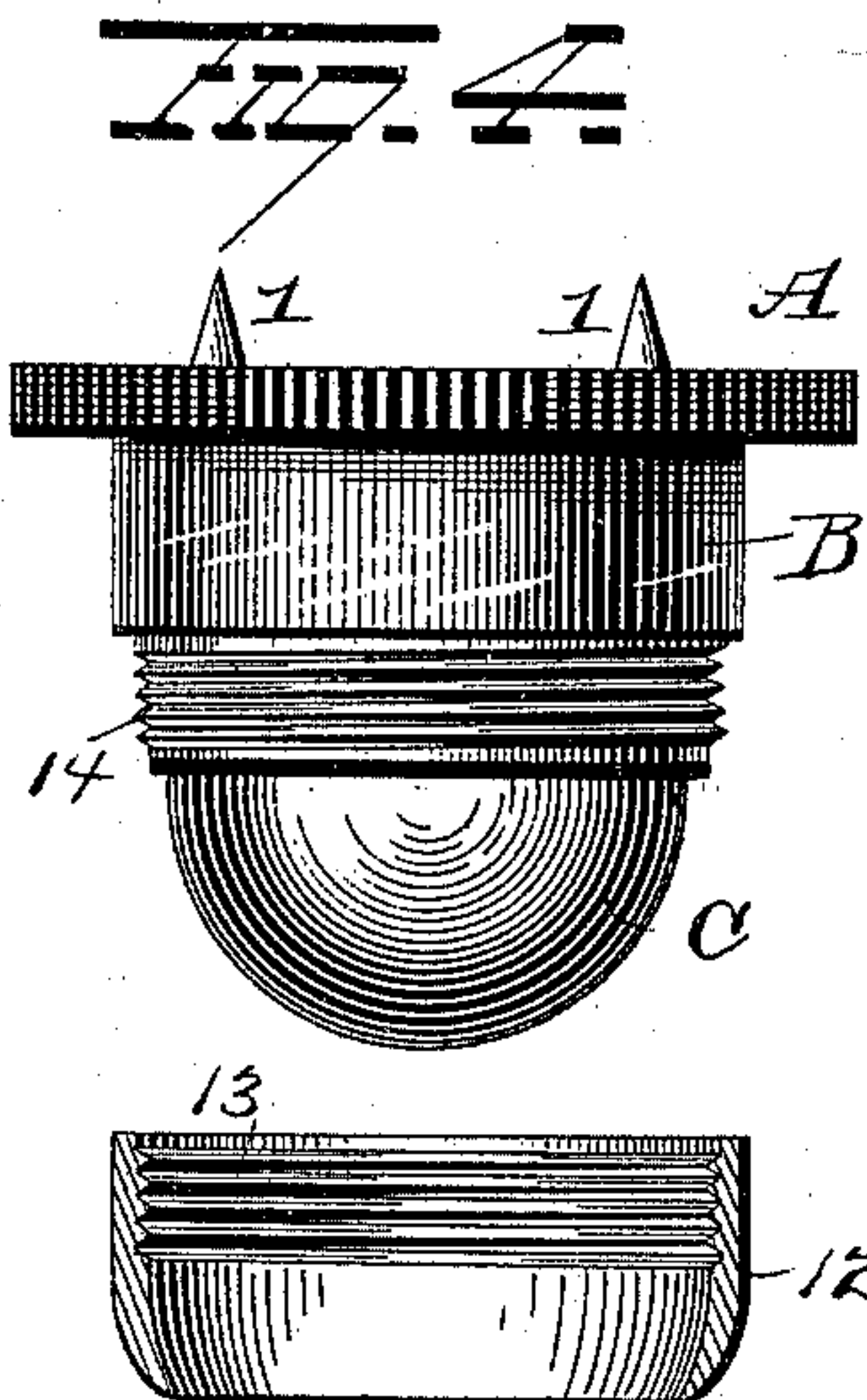
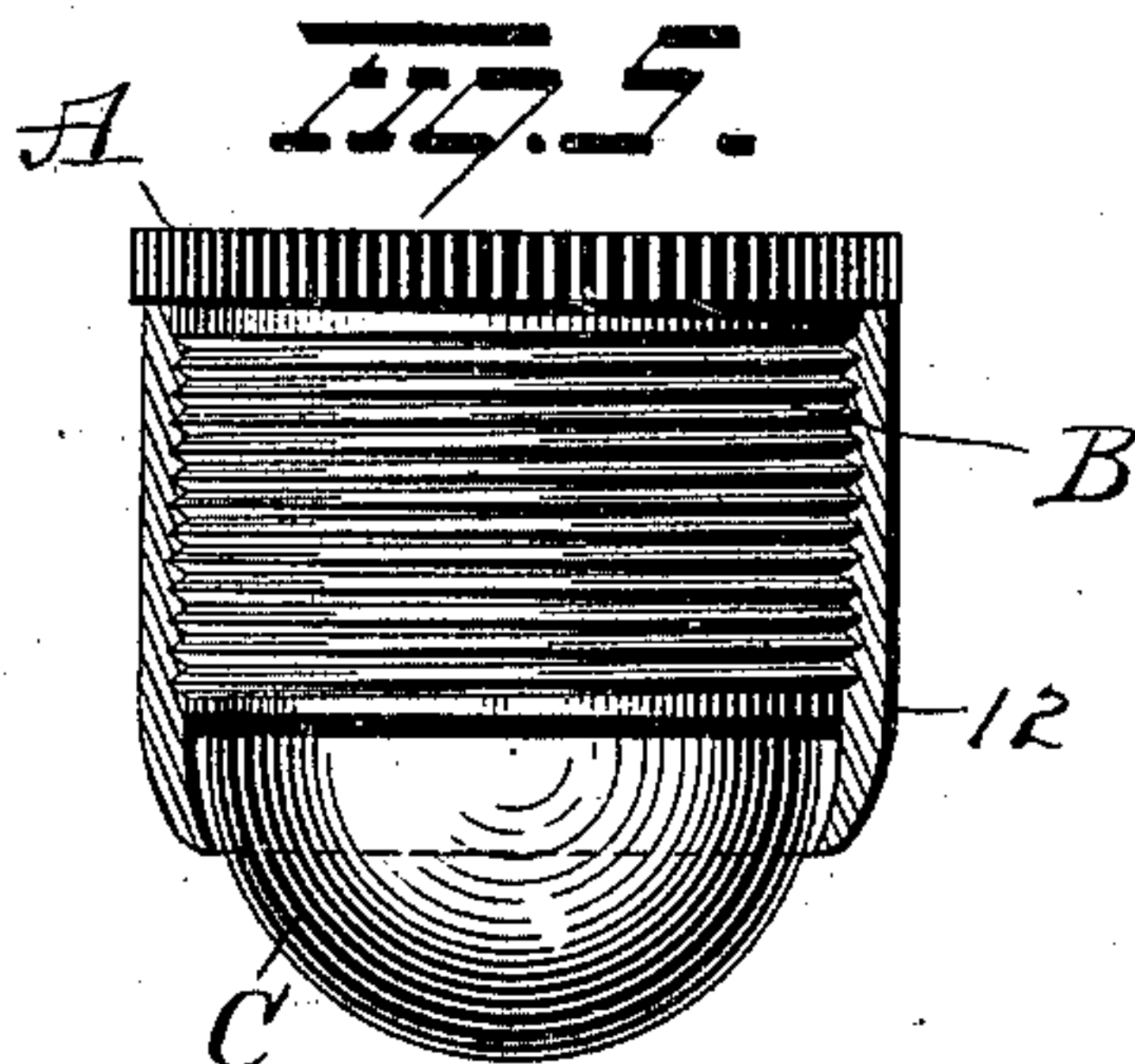


FIG. 3.



Witnesses
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CASTER.

SPECIFICATION forming part of Letters Patent No. 598,514, dated February 8, 1898.

Application filed April 27, 1897. Serial No. 634,104. (No model.)

To all whom it may concern:

Be it known that I, JABEZ PHILLIP HENRIES, of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Casters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in casters for furniture, the object being to provide a substantial article which can be easily and cheaply made and placed on the market at a comparatively small cost.

A further object is to provide an article which will occupy but little space and which at the same time will be ornamental and attractive in appearance.

With these objects in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional view of my improved caster with its several parts assembled. Figs. 2 and 3 are views of the springs upon which the balls travel. Fig. 4 is a detail of the removable shell, and Fig. 5 is a view of a modification.

A represents a disk, and B a barrel or socket integral therewith and sufficiently less in diameter than the disk so that the outer portion of the disk constitutes a flange. This disk A is preferably provided with integral pins 1 1 or screw-holes 2 2, or both, if desired, whereby it is fastened securely in place on the lower end of a furniture-leg. A central hole 3 is also desirable to receive a large-sized screw to assist in securing the caster in place. Surrounding this central hole 3 is an enlargement 4, countersunk internally, as at 5, to receive the head of the central screw, and the annular space 5', formed outside of this enlargement, constitutes a ball-race for the ball-bearings 6 6. Within this space 5' a case-hardened steel or other hard-metal bearing-ring 7 is placed, preferably in a groove 8, and in another shallow groove 9 in the inner wall of the barrel B a similar keeper-ring 10 is sprung.

The ring 8 constitutes a very essential feature of the invention, as it not only forms a track for the balls, but it also serves the more important purpose of retaining the balls in constant touch with the main ball or roller. This ring is made of half-round metal and bent in the form of a spiral spring and forced nearly together like a key-ring. It is case-hardened to give it great elasticity and resiliency, and its spring action is such that it always keeps every ball against the main ball or roller, no matter what the position of the parts. The outer ring 10 coöperates with the enlargement 4 to retain the balls in the annular space 5'. As this keeper-ring 10 is removable by the simple act of springing it out of its groove or seat 9 it may not only be removed at pleasure, but also the balls may be removed and also the bearing-ring 8 may be removed. In this way the parts may all be removed or renewed, and also in this way the caster may be easily put together when made.

C represents the main ball or roller. This is inserted into the barrel and the ball-bearings rest upon it. The barrel is preferably of sufficient length to reach about to the central axis of this ball or roller C, so that these parts are really sufficient to form a complete caster, and so long as the furniture upon which the caster is placed is not lifted from the floor the barrel will retain the ball or roller in its socket. To absolutely prevent the ball or roller from leaving the barrel or socket at all times—as, for instance, when it is lifted—the removable shell 12 is provided. This shell is internally threaded, as at 13, and these threads are screwed upon threads 14 on the exterior of the barrel B. This entire shell is made in a solid ring, as shown, and its outer edge extends inward slightly to embrace and retain the ball or roller C beneath its largest diameter, so that it cannot drop out.

In the modification the outer edge of the disk is milled. In fact, so far as this feature is concerned all these disks might be milled on the edge, as this provision would be most desirable in any casters held in place by a single centrally-located pin or screw whereby this portion of the caster could be held firmly while the shell is removed. In other respects in this modified form the principal difference

consists in screwing the shell up close to the lower surface of the flange.

In conclusion attention may be called to a number of advantages possessed by the present invention over former constructions, and, first, the amount of metal or other material employed is reduced to a minimum and the several parts are more compactly combined than heretofore; secondly, the caster may be easily applied or removed at any time and its several components may be as readily assembled in manufacturing or taken apart, if desired, or renewed at any time; thirdly, it is strong—that is to say, there are no parts to catch in carpets or hangings which will either injure or be injured; fourthly, by forming the lower edge of the shell in a continuous and solid ring and not dividing it into lobes or points there is no danger of the main ball or roller becoming forced out or getting loose and wobbly in its socket; fifthly, dust and moisture are excluded by virtue of the shell so closely embracing the ball or roller; sixthly, all lateral pressure is sustained by the barrel or socket itself and not by the shell, which consequently may be ground down very thin and light; seventhly, the ball-race is made hard and round to reduce the friction to a minimum; eighthly, the bearing-ring being loose in the space 5' it will tilt a trifle when the main ball or roller is on an incline or tilted, thus causing all the rest of the balls to bear down evenly upon the main ball or roller C. Many other advantages might be mentioned, and allusion may be made to the fact that these casters may be made of any well-known material desirable for the purpose. They may of course be made in different sizes and proportions and otherwise varied in details without departing from the spirit and scope of my invention, and hence

I do not wish to be limited to the precise construction herein set forth; but,

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

1. In a caster, the combination with a barrel or socket, of a hard-metal bearing-ring loose in the socket, balls adapted to run on this ring, and a spring keeper-ring for retaining the balls between it and the bearing-ring.

2. In a caster, the combination with a barrel or socket having balls therein and a keeper-ring, of a bearing-ring made in the form of a spiral spring and bearing outwardly on each ball.

3. In a caster, the combination with a disk constructed to be secured to a furniture-leg, a barrel or socket integral with the disk, and an enlargement within the barrel or socket whereby an annular space is formed around the enlargement, of a loose bearing-ring, a removable keeper-ring, and balls held in the space formed between the wall of the barrel or socket, the enlargement and the two rings.

4. In a caster, the combination with a barrel or socket, ball-bearings therein, means for retaining the balls in place, and a main ball or roller, of a resilient bearing-ring located in the barrel or socket and engaging each ball for retaining all the ball-bearings in constant touch with the main ball or roller.

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

JABEZ PHILLIP HENRIES.

Witnesses:

CLARENCE S. MCCLELLAN,
GEORGE SPICER.