

A. F. W. BOWEN.

CASTER.

APPLICATION FILED AUG. 21, 1905. RENEWED MAR. 7, 1908.

899,505.

Patented Sept. 29, 1908.

Fig. 1.

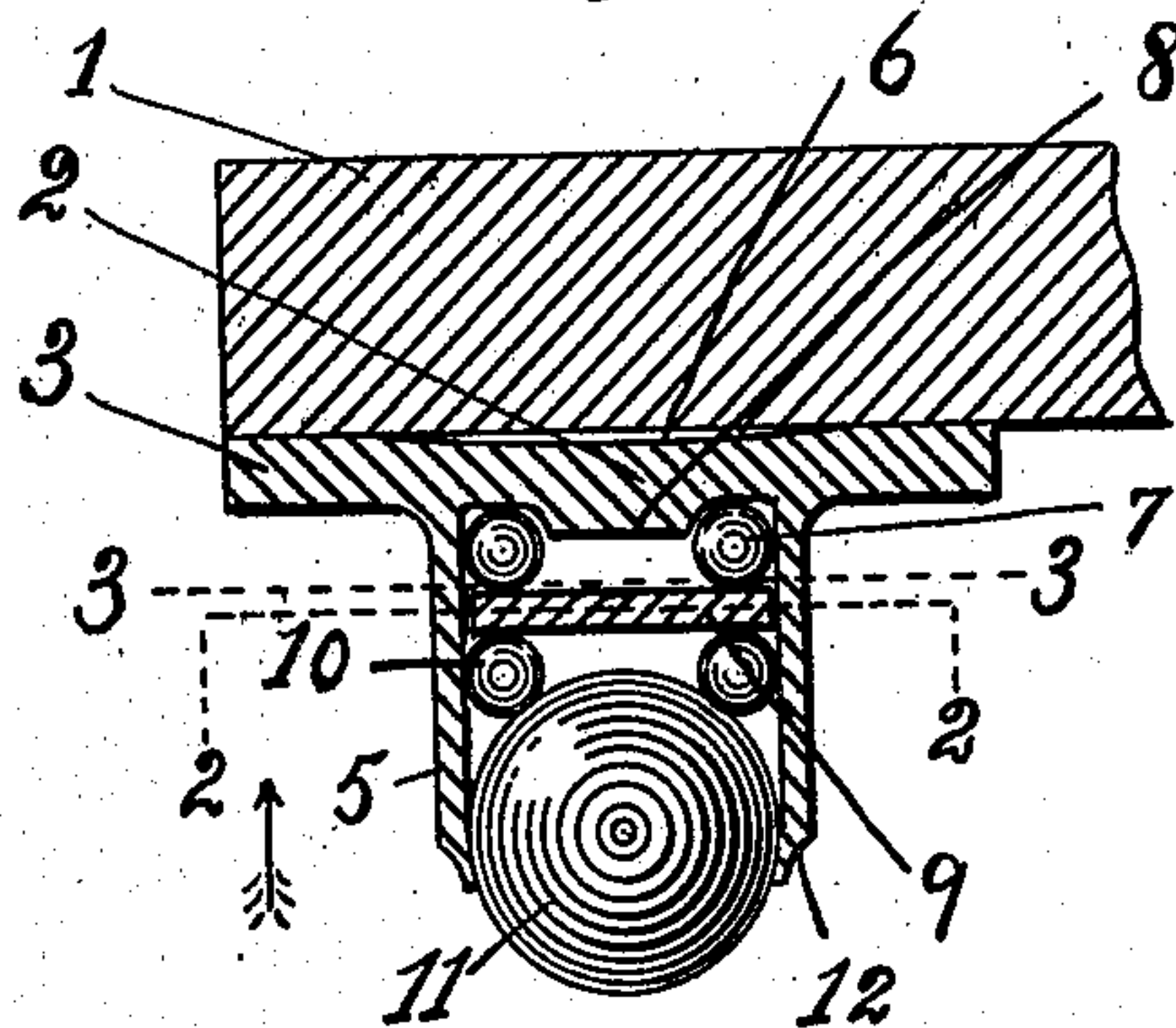


Fig. 2.

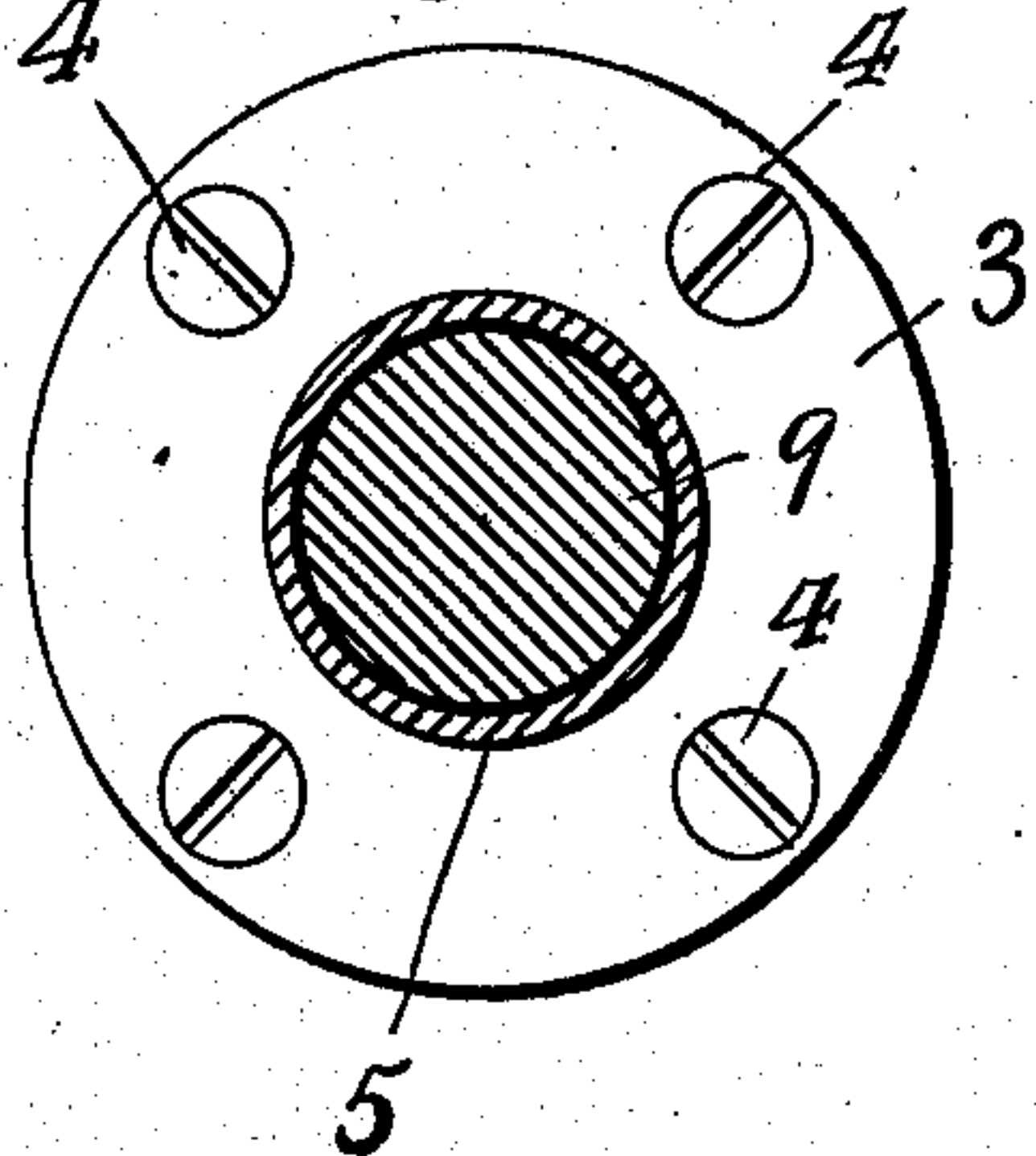


Fig. 5.

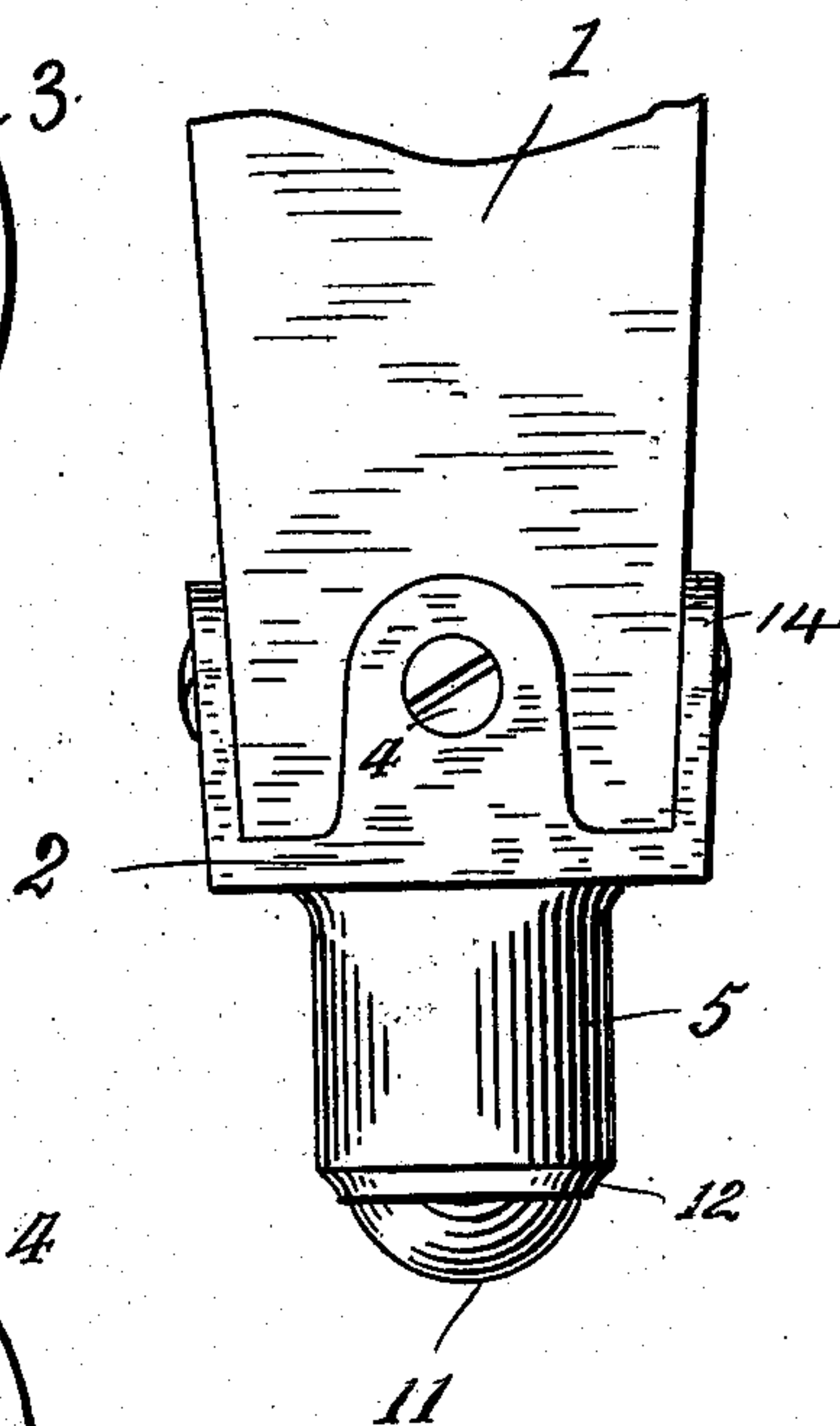
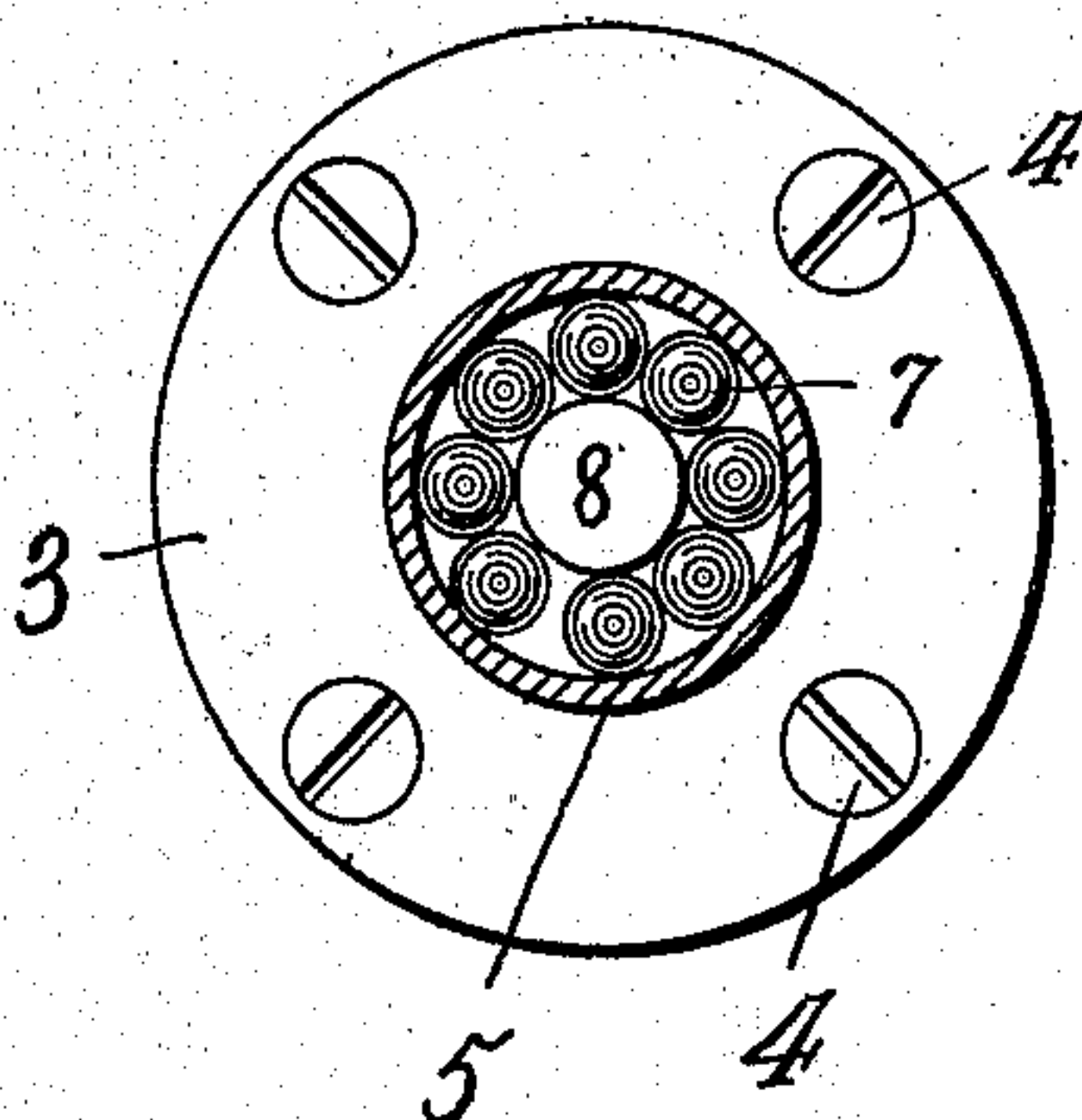


Fig. 3.



WITNESSES:

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CASTER.

No. 899,505.

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To all whom it may concern:

Be it known that I, ANNIE F. W. BOWEN, a citizen of the United States; residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Casters, of which the following is a specification.

This invention relates to an improvement in casters, the object of the invention being to provide an improved form of caster which will run more freely and with less friction than those heretofore used, in which the parts will be held securely in place, which will be more compact and less liable to breakage and collection of dust, and which can be used to support very heavy articles as well as light ones.

In the accompanying drawing, Figure 1 is a vertical section of the caster; Fig. 2 is a cross section on the line 2—2 of Fig. 1, looking in the direction of the arrow; Fig. 3 is a cross section on the line 3—3 of Fig. 1 looking in the direction of the arrow; Fig. 4 is a side elevation showing a modified form of caster; Fig. 5 shows a further modification.

Referring to the drawing, 1 indicates the article to which the caster is applied, which may be any one of the articles for which casters are used, as, for instance, a piano leg, table leg, truck, stoves, safes or the like. 2 indicates the body of the caster which is provided with a circular flange 3 secured to the article by screws 4 and with a cylindrical sleeve 5. The upper surface of the flanged portion of the body is slightly depressed in the center, as shown at 6, the better to fit to the article to which it is attached in case of any irregularities on the under surface thereof. In the upper end of the sleeve 5 is a circular series or race of balls 7 which are maintained in their annular arrangement by means of a central boss or protuberance 8. These balls run upon a circular plate 9, which revolves freely within the tubular portion 5 of the caster, said plate 9 revolving freely upon a circular series or race of balls 10, which in turn revolve upon the upper portion of the main ball 11. Said ball is retained in place by spinning the lower edge of the tubular portion of the caster inwards or closely around said ball, as shown at 12.

In operation the weight of the article is

transmitted to the main ball 11 through the ring of balls 7, the plate 9 and the ring of balls 10. These balls and plate always revolve and rotate freely, because there is no chance of their getting out of place, or locking. The plate 9 resting upon the ring of balls 10 maintains them always in position, and in like manner the ring of balls 7 is maintained in position by means of said plate 9 and the central boss or protuberance; hence the caster will at all times run freely and does not need a lubricant.

In Figs. 1, 2, 3, the caster is shown as attached to the article of furniture, or other article, by means of screws through the circular flange, this is not an essential part of the invention, as the caster may be secured in any other desired manner without departing from the spirit of the invention. Thus in Fig. 4 the upper part of the caster may be shown with a central socket 13 in which the rounded end of the leg fits; and in Fig. 5 it is shown with upstanding lips or lugs 14 which are secured to the sides of a square leg.

I claim:—

1. A caster provided with a main ball adapted to roll upon the ground, a ring of balls around the top of said main ball, a plate supported upon said ring of balls, a second ring of balls supported upon said plate, and a body inclosing said main ball, plate, and rings of balls, and having a circular groove to confine the upper ring of balls in a circular path, the plate being free to rotate between the two rings of balls, substantially as described.

2. A caster having a sleeve, a main ball fitting snugly within the sleeve, a ring of balls in the upper portion of the sleeve, a second ring of balls upon the main ball, and a plate freely movable between the two rings, said plate and sleeve being conformed to confine the upper ring of balls in a circular path, and said plate, sleeve, and main ball being conformed to confine the lower ring of balls in a circular path substantially as described.

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

ANNIE F. W. BOWEN.

Witnesses:

F. M. WRIGHT,
BESSIE GORFINKEL.