

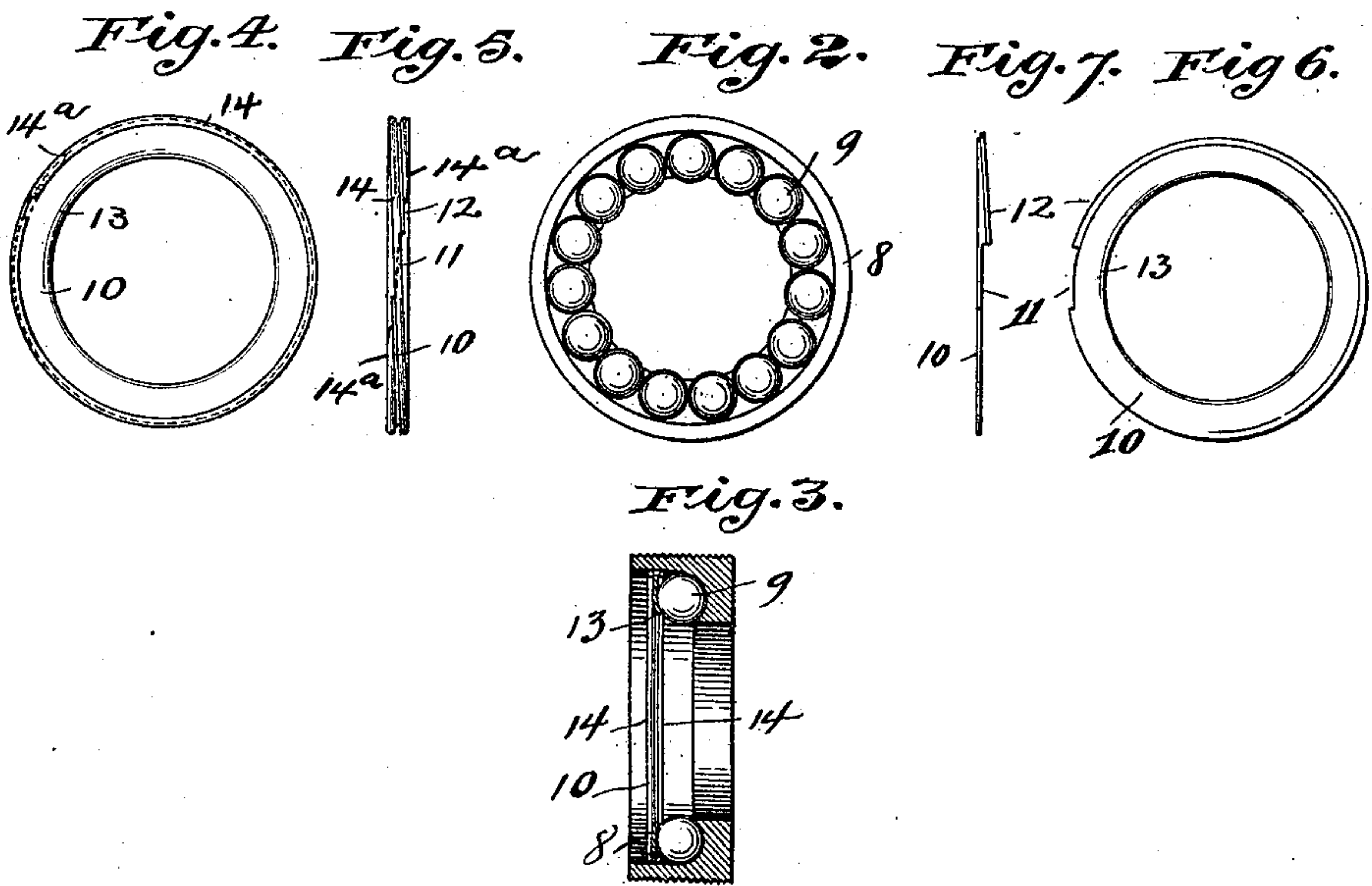
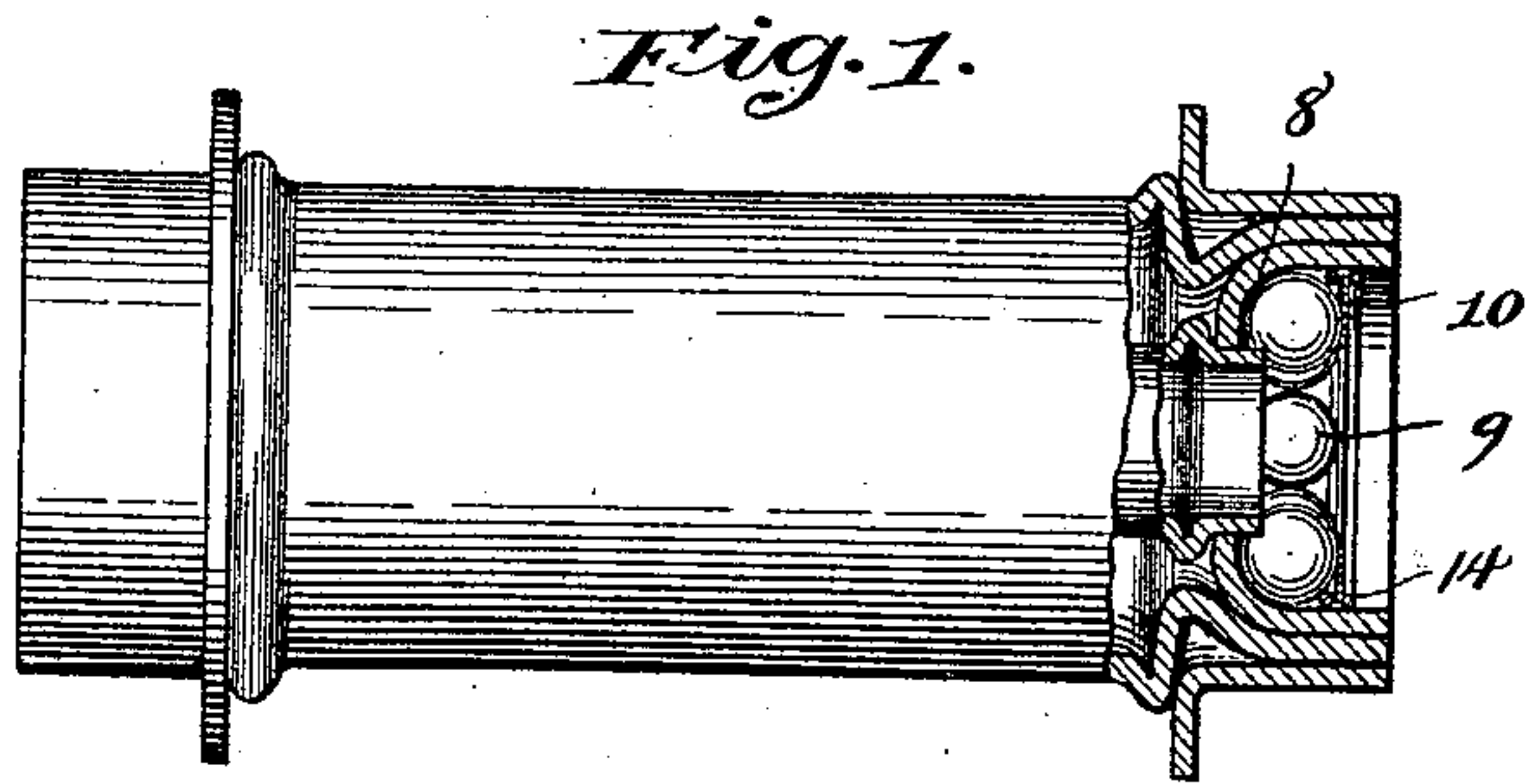
No. 620,096.

Patented Feb. 28, 1899.

W. H. BINNS.
RETAINER FOR BALL BEARINGS.

(Application filed Mar. 22, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM H. BINNS, OF CHICAGO, ILLINOIS.

RETAINER FOR BALL-BEARINGS.

SPECIFICATION forming part of Letters Patent No. 620,096, dated February 28, 1899.

Application filed March 22, 1897. Serial No. 628,557. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BINNS, of Chicago, Illinois, have invented certain new and useful Improvements in Retainers for Ball-Bearings, of which the following is a specification.

This invention relates to a retainer for the balls of ball-bearings, the object of the invention being to produce a simple device which will hold a set of balls within their raceway, and thus prevent their being lost or disarranged when the journal or axle is removed.

The object of the invention is to provide a retainer which while simple in construction will be efficient for the purpose intended and which will not interfere with the proper action of the balls.

To this end the invention consists in a retainer comprising a body portion of annular or ring-like form, its inner edge flanged to form a retaining-lip for the set of balls and with its periphery spirally twisted or threaded, and a spring ring or washer engaging said threaded periphery and serving to frictionally hold the annulus in place within the hollow of the bearing.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation, partly sectional, through one end of the bearing; Fig. 2, an end view with the retainer removed; Fig. 3, a sectional elevation showing the retainer in place; Figs. 4 and 5, side and edge views of the retainer complete, and Figs. 6 and 7 similar views of the annulus with the spring-ring omitted.

In the drawings let 8 represent the cup of a ball-bearing having a raceway therein to receive the set of balls 9, said balls projecting beyond the raceway sufficiently to bear upon the axle, as in the usual construction. To hold these balls in place, I employ a retainer comprising an annulus or body portion 10 of fixed diameter, which may be produced of thin sheet-steel, having its periphery notched, as shown at 11, and its edge from said notch throughout the remaining portion of its circumference spirally offset to produce the spiral thread 12. The inner edge of this annulus is inwardly flanged, as clearly seen at 13, Fig. 3, and its body and said flange

coöperate with the raceway of the cup 8 to form a seat for the balls 9. In order to maintain the annulus 10 in place, I turn thereon a spring-ring 14, which may be conveniently made of spring-wire helically coiled, with its ends overlapping sufficiently to afford the necessary resiliency. The overlapping ends are marked 14^a and are clearly shown in Fig. 5. As there shown, the spring-ring has one complete coil with its terminals slightly separated. This ring is applied to the annulus 10 by extending the spring-ring until the point of the thread 12 is inserted between the body 14 and one of the terminal portions 14^a of the coils, and with the impingement of said coiled portions upon the sides of the thread and the periphery of the annulus the spring-ring will be held laterally, while its tension will afford sufficient frictional holding power to maintain the annulus within the cup 8 and to hold the balls in place. Of course the strength of the spring will be proportioned to its diameter, to the size of the balls to be held, and to the other peculiar requirements of construction and arrangement.

It will be observed that the body of the retainer is not distorted except at its edges, while its side, which contacts with the balls, is in a single or uniform plane, and that its bearing-flange is a true circle corresponding to that of the raceway opposite which it bears.

I claim—

1. A retainer of the class described, consisting of an annulus having a flanged inner edge and a threaded periphery, in combination with an expansible coiled ring engaging said threaded periphery, substantially as described.

2. In a retainer of the class described, the combination, with an annulus having its inner edge flanged and its periphery spirally threaded and provided with a notch in said thread, of a holding-ring composed of spirally-coiled wire adapted to engage the peripheral thread of said body and expansible to engage the cup of the bearing, substantially as described.

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