

No. 637,984.

Patented Nov. 28, 1899.

S. D. WRIGHT.
BALL BEARING.

(Application filed Sept. 19, 1898.)

(No Model.)

2 Sheets—Sheet 1.

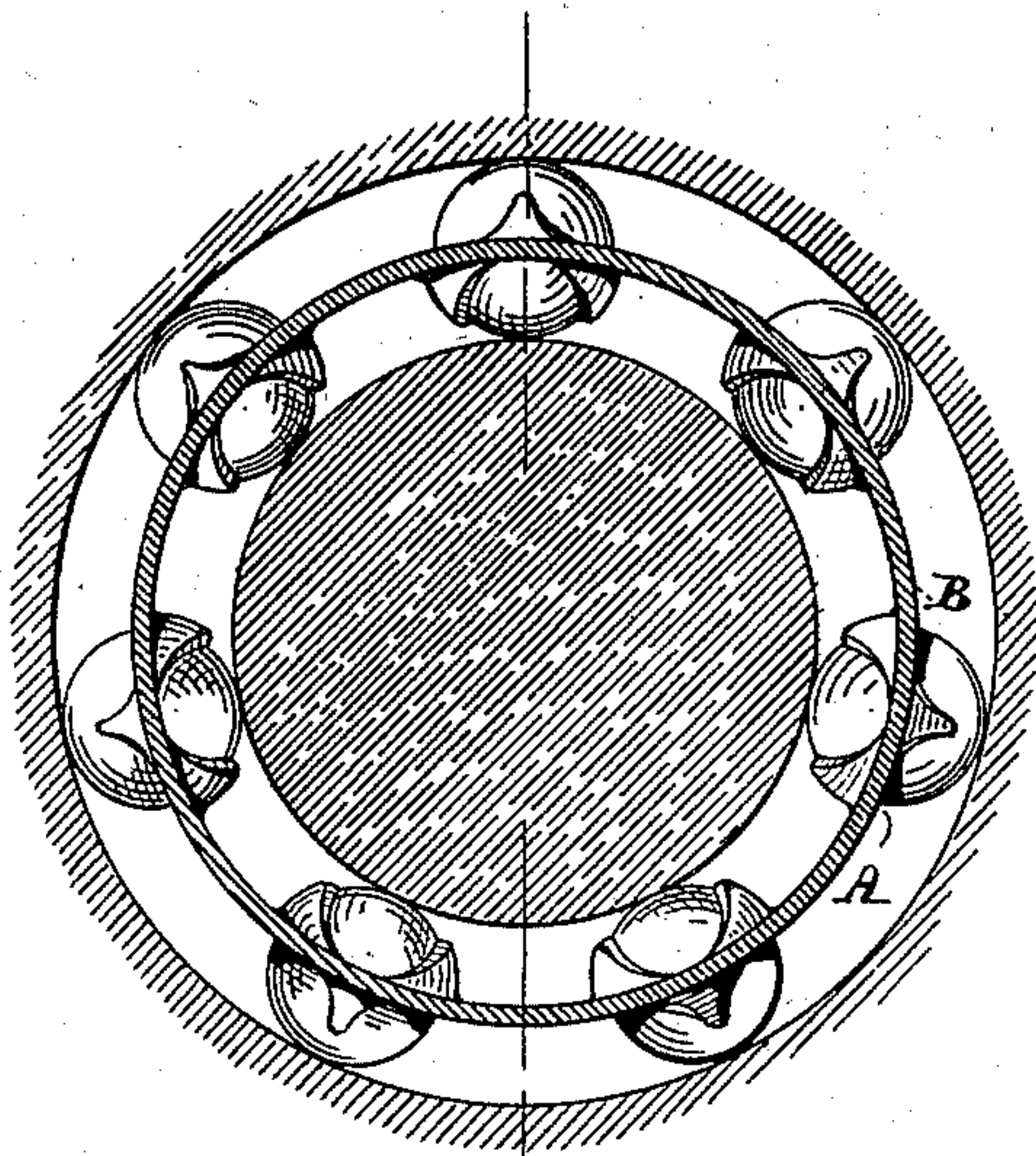


Fig. 1

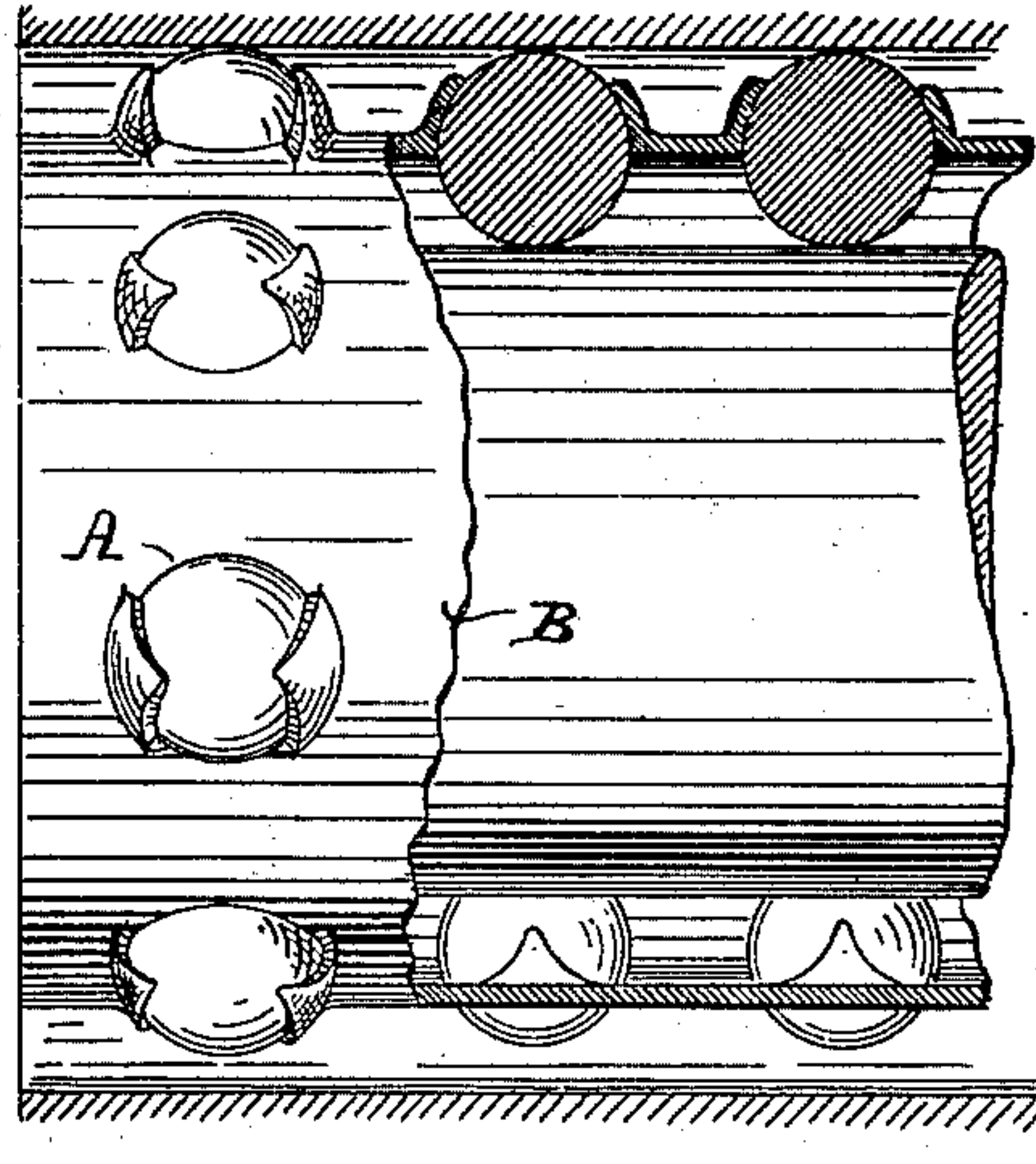


Fig. 2

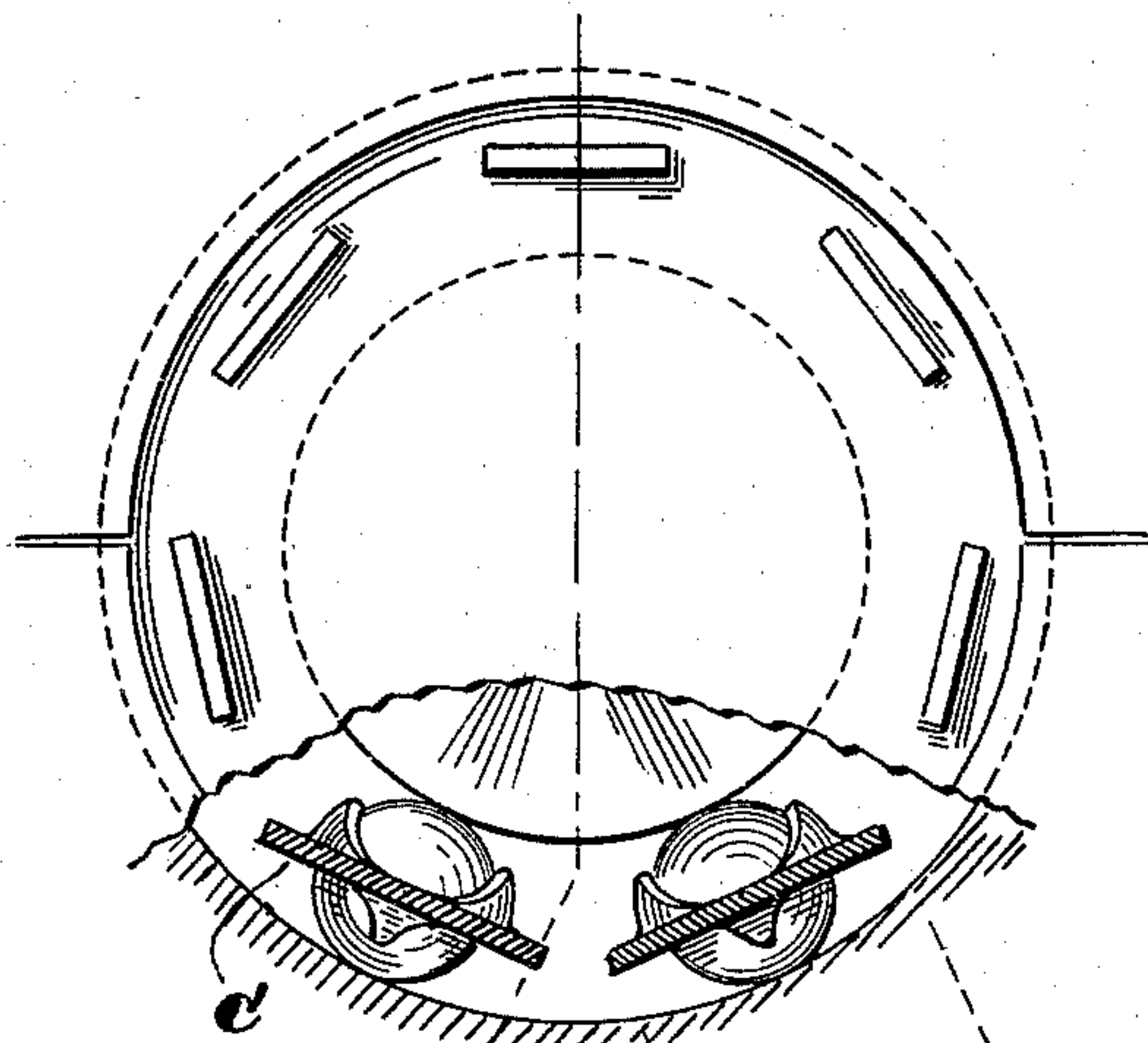


Fig. 3

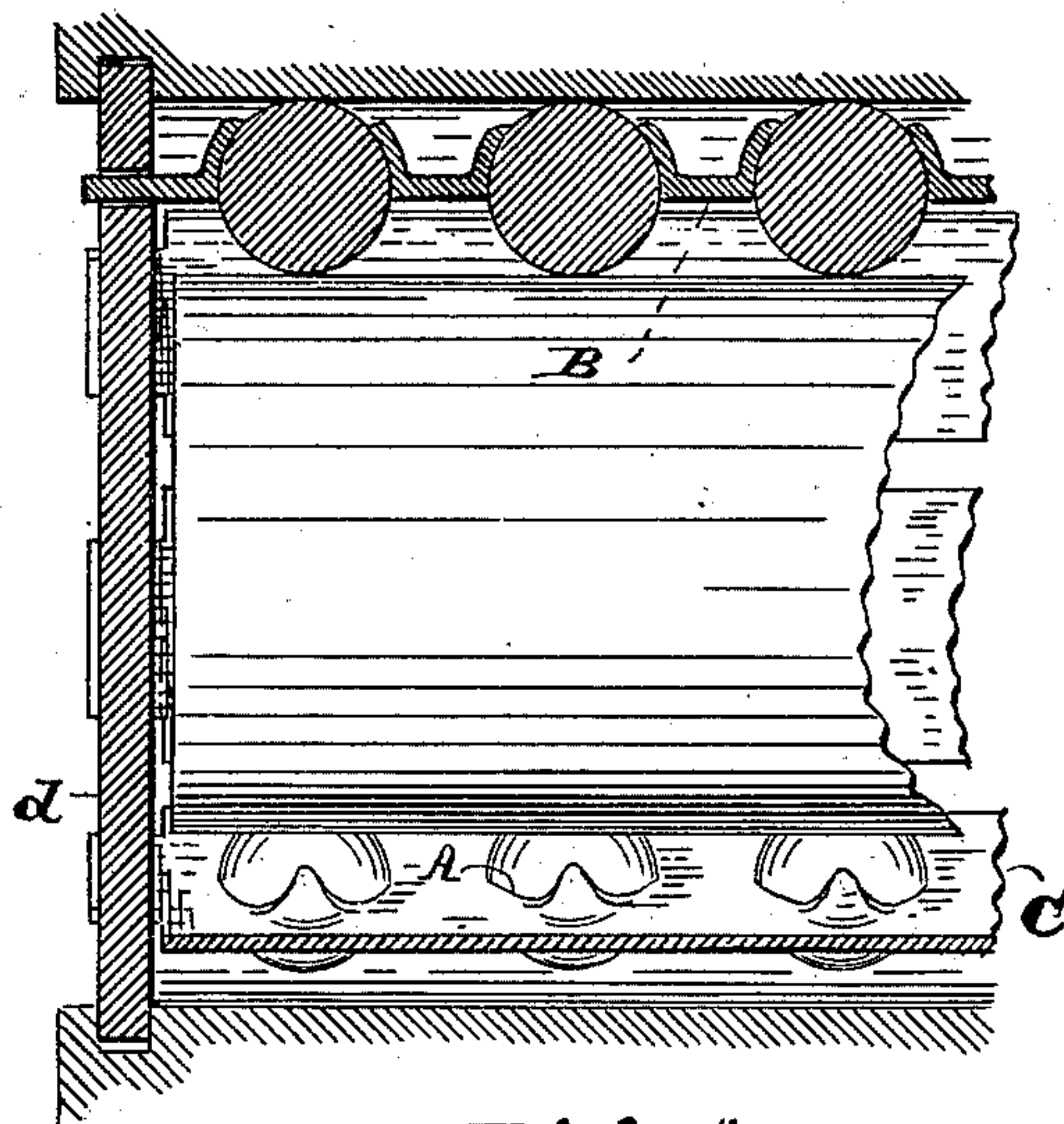


Fig. 4

WITNESSES

B. F. Silliman
John E. Wright

INVENTOR

S. D. Wright
By B. F. Eibler
Att'y

No. 637,984.

Patented Nov. 28, 1899.

S. D. WRIGHT.
BALL BEARING.

(Application filed Sept. 19, 1898.)

(No Model.)

2 Sheets—Sheet 2.

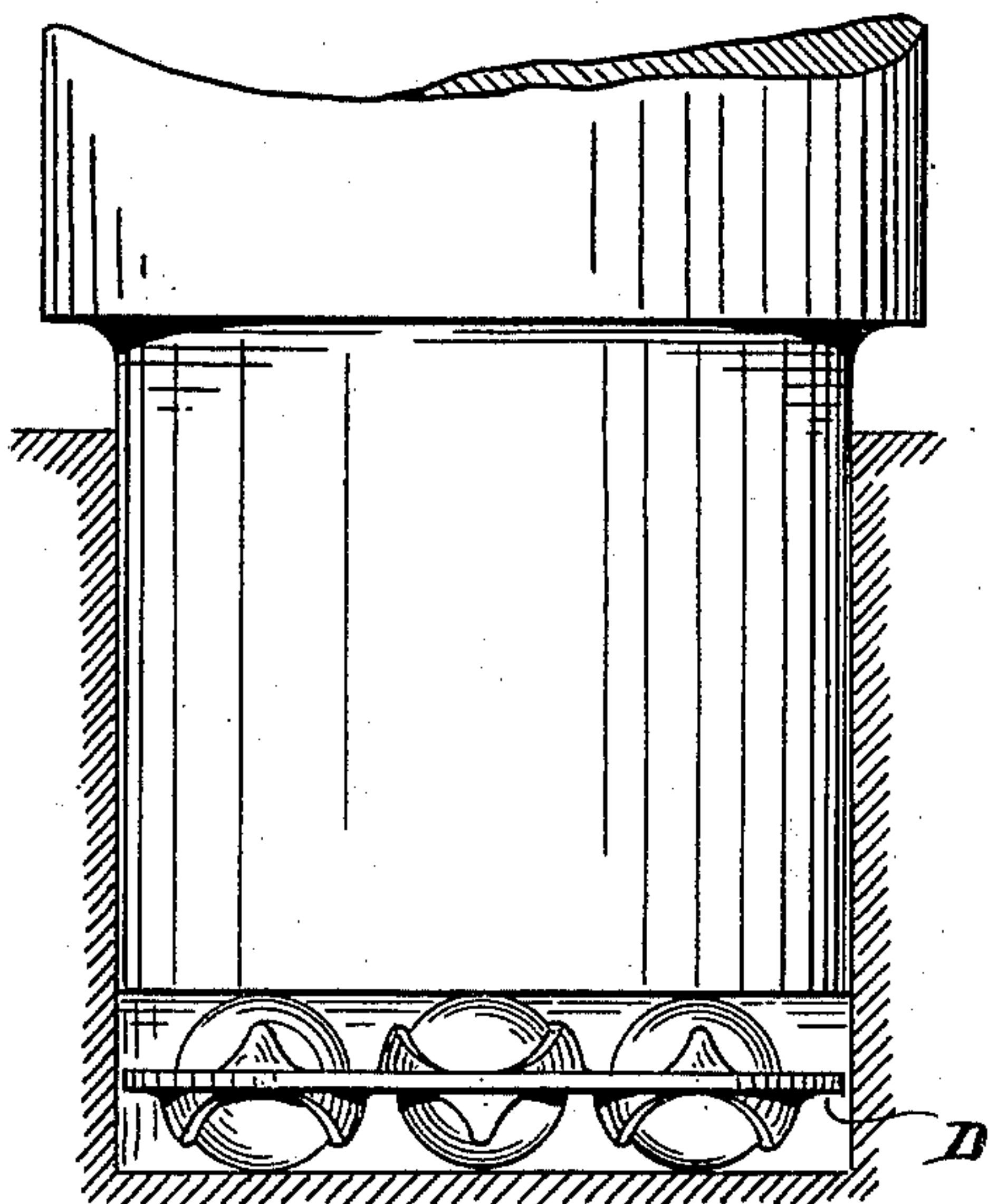


Fig. 5

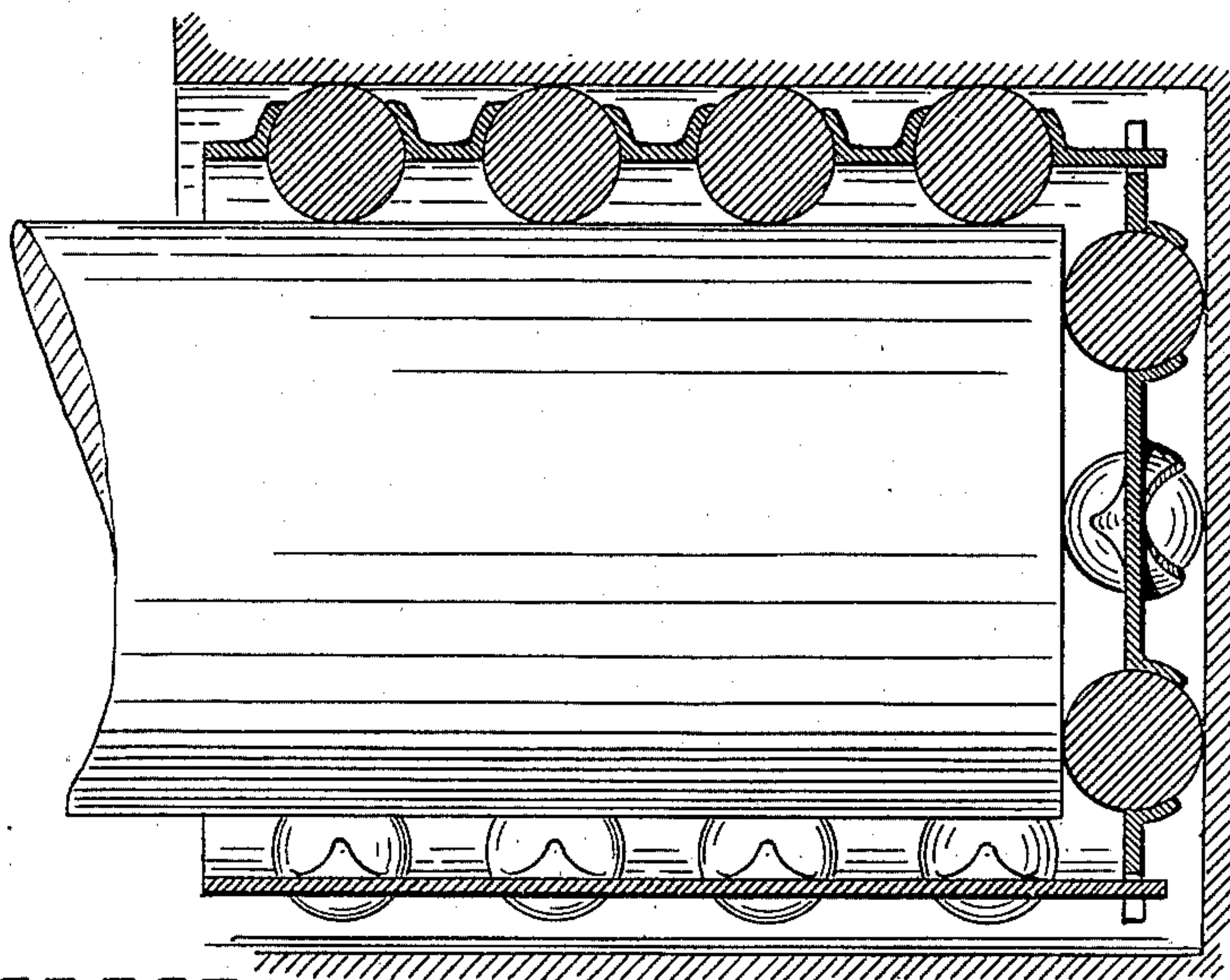


Fig. 6.

WITNESSES

B. F. Silliman

John Enright

INVENTOR

S. D. Wright

BY B. F. Eibler
Atty

UNITED STATES PATENT OFFICE.

SAMSON D. WRIGHT, OF CLEVELAND, OHIO.

BALL-BEARING.

SPECIFICATION forming part of Letters Patent No. 637,984, dated November 28, 1899.

Application filed September 19, 1898. Serial No. 691,276. (No model.)

To all whom it may concern:

Be it known that I, SAMSON D. WRIGHT, a citizen of the United States of America, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ball-Bearings, of which the following is a specification.

My invention relates to improvements in antifriction ball-bearings in conjunction with which a ball-retainer is used; and the object of my improvement is to provide an inexpensive, adjustable, and durable article which may be applied in various forms for the purpose of carrying and spacing balls in bearings of the class as above alluded to. I attain this object in the articles constructed substantially as shown in the accompanying drawings, in which—

Figure 1 represents a cross-sectional view of an antifriction journal-bearing provided with a cylindrical self-contained ball-carrier. Fig. 2 represents a part side and part longitudinal sectional view of said bearing and ball-carrier. Fig. 3 represents a partial end view and part cross-sectional view of a bearing containing a series of ball-carrying strips of which the ends are fastened to a plate and a ring, the latter, however, being not shown. Fig. 4 is a longitudinal sectional view of same. Fig. 5 is a sectional view of a step-bearing with a circular disk carrying balls in like manner as shown in Figs. 1 and 3. Fig. 6 is a sectional view of a spindle-bearing provided with compound side and end ball-carriers.

Like letters of reference denote like parts in the drawings and specification.

The essential or characteristic feature of my invention consists in the formation of an extremely light article which can be manufactured in an expedient manner and which is durable in point of service. Sheet metal or other thin material is preferred in the manufacture of said articles.

The receivers A for the balls are formed by first cutting the material along the dotted lines *a*, as shown in Fig. 3, whereupon the sectors *bb* and *cc* can be stamped or "struck up" from each side in diametrically opposite pairs. However, in this operation only one

pair is formed to fit the balls. The other pair is left "open" to enable insertion of the balls. When the ball or balls are inserted, then the open pair of sectors (wings respectively) are closed onto the ball in such manner as to retain or carry the latter.

Ball-receivers, as above alluded to, may be used in shells or circular casings B or upon flat surfaces, strips C, or disks D. Shells, as shown in Figs. 1 and 2, are first stamped and then rolled.

When ball-carrying strips are used, the same are assembled or secured to a plate *d* and ring. (See Figs. 3 and 4.)

Simply for want of space for the drawings, Fig. 4, the ring is not shown. Nevertheless, such an element would be used in order to retain the strips C equidistant. Combined the strips and rings form a structure technically known as a "cage" and serve as a ball retaining or spacing medium.

For foot-bearings the balls can be arranged in a circular disk, cut and stamped as above described.

In spindle-bearings, Fig. 6, sustaining down and side thrusts as well as end thrusts, a combination-cage may be provided for, consisting of a shell-ball carrier and a disk-ball carrier, which can be connected in any suitable manner.

In all instances, however, the novel feature consists in the formation of the ball-receivers. The same inclose the balls in a manner which admits of a free and easy rolling, but yet holding the balls firmly within the wings *bb* and *cc*. Undue wear is thereby prevented, while in case of natural wear a refitting of the balls can be effected simply by contraction of said wings.

Ball-retainers as above described may be formed of two or more pairs, embracing the balls in diametric opposite direction. While two pairs are the lowest practical limit, there may be, however, three, four, or more pairs used without departing from the nature of my invention.

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

In an antifriction-ball journal-bearing a ball-retainer consisting of sheet metal formed

to suit the bearing, said retainer having substantially triangular spherical wings protruding alternately from each side of said retainer or spacing medium and forming receptacles
5 whereby the balls project at each side of the body of the metal substantially as shown and for the purpose set forth.

Signed by me at Cleveland, Ohio, this 5th day of July, 1898.

SAMSON D. WRIGHT.

Witnesses:

BERNH. F. EIBLER,
MORITZ REINHARD.