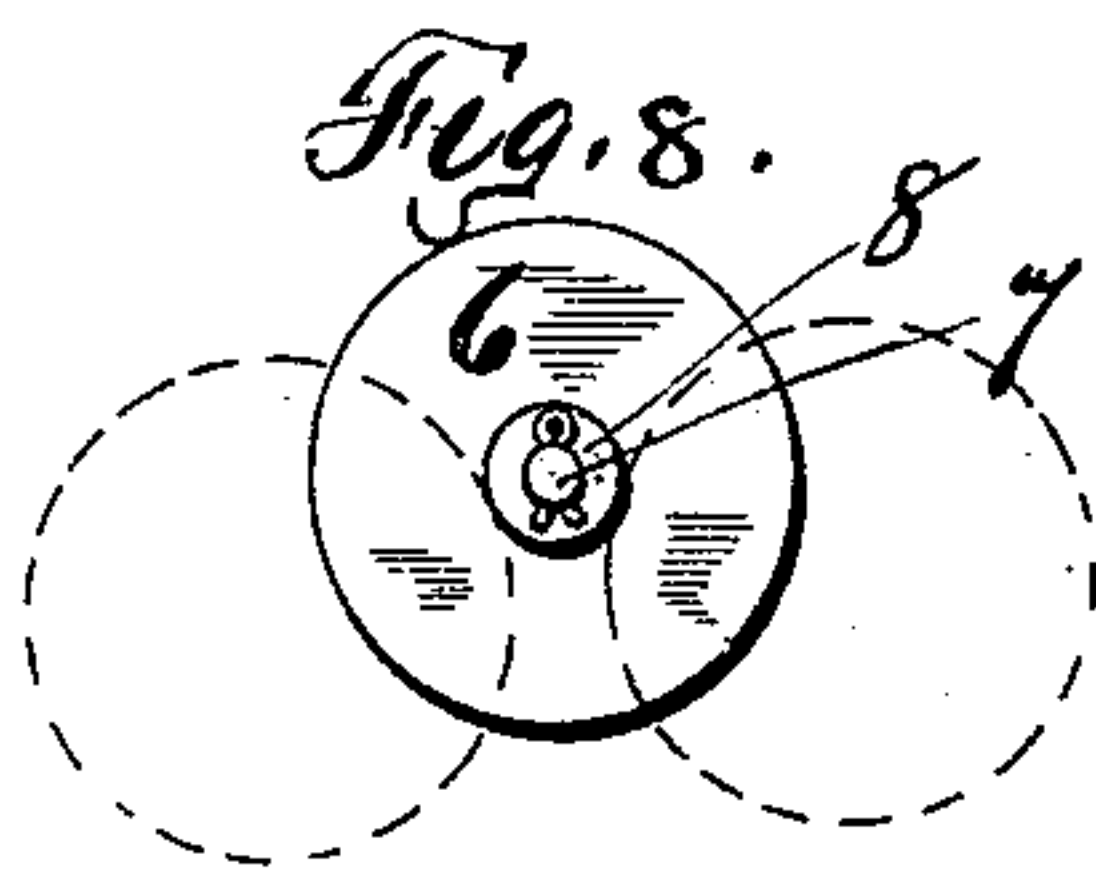
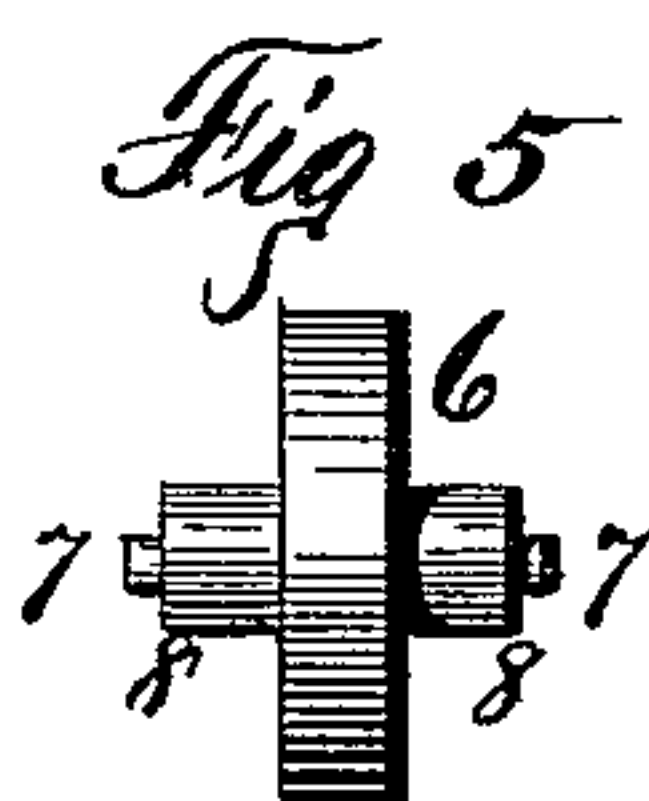
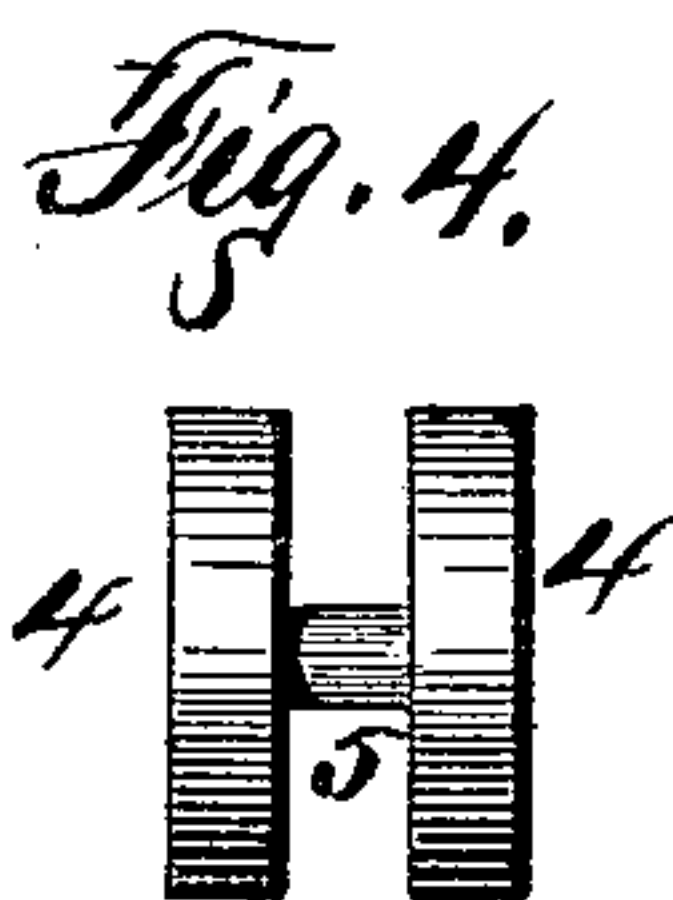
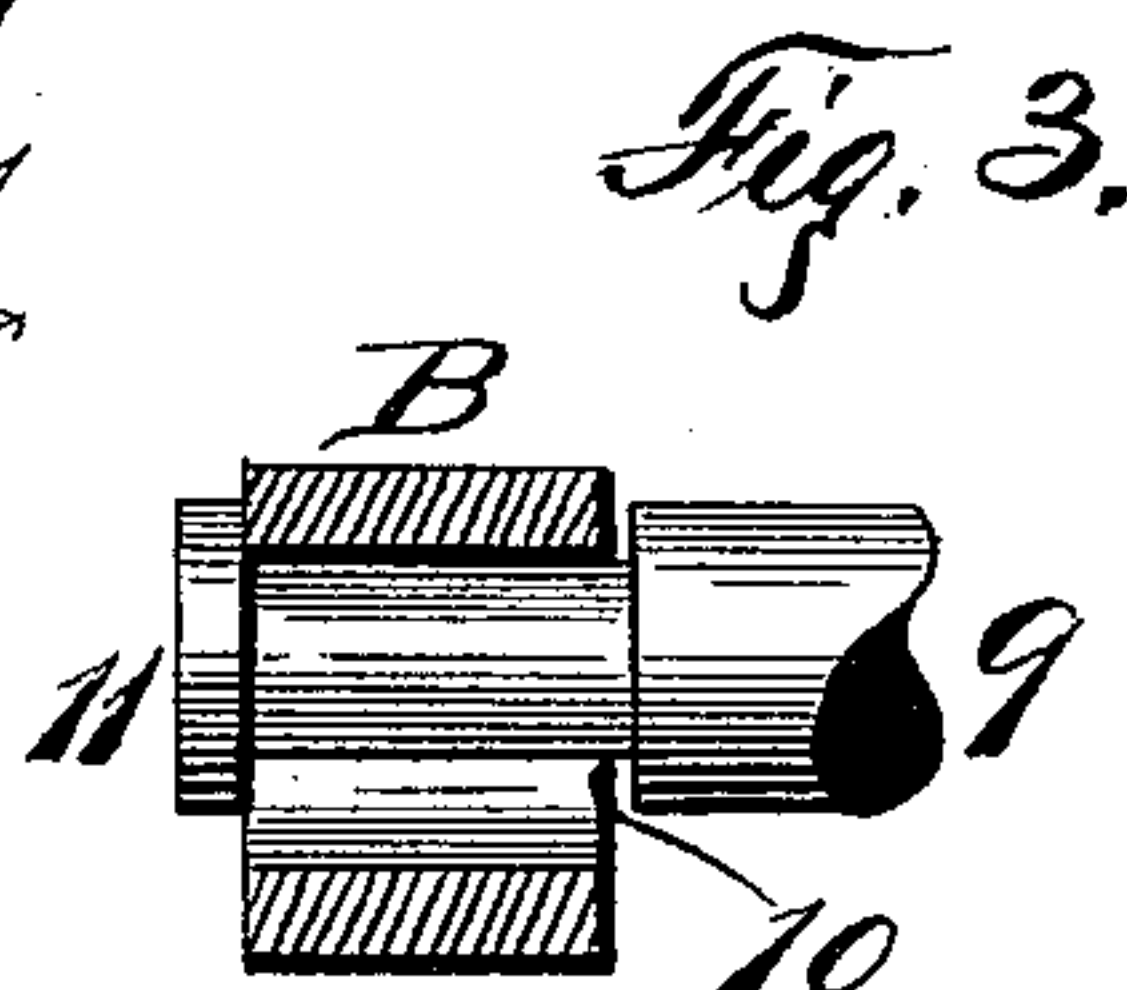
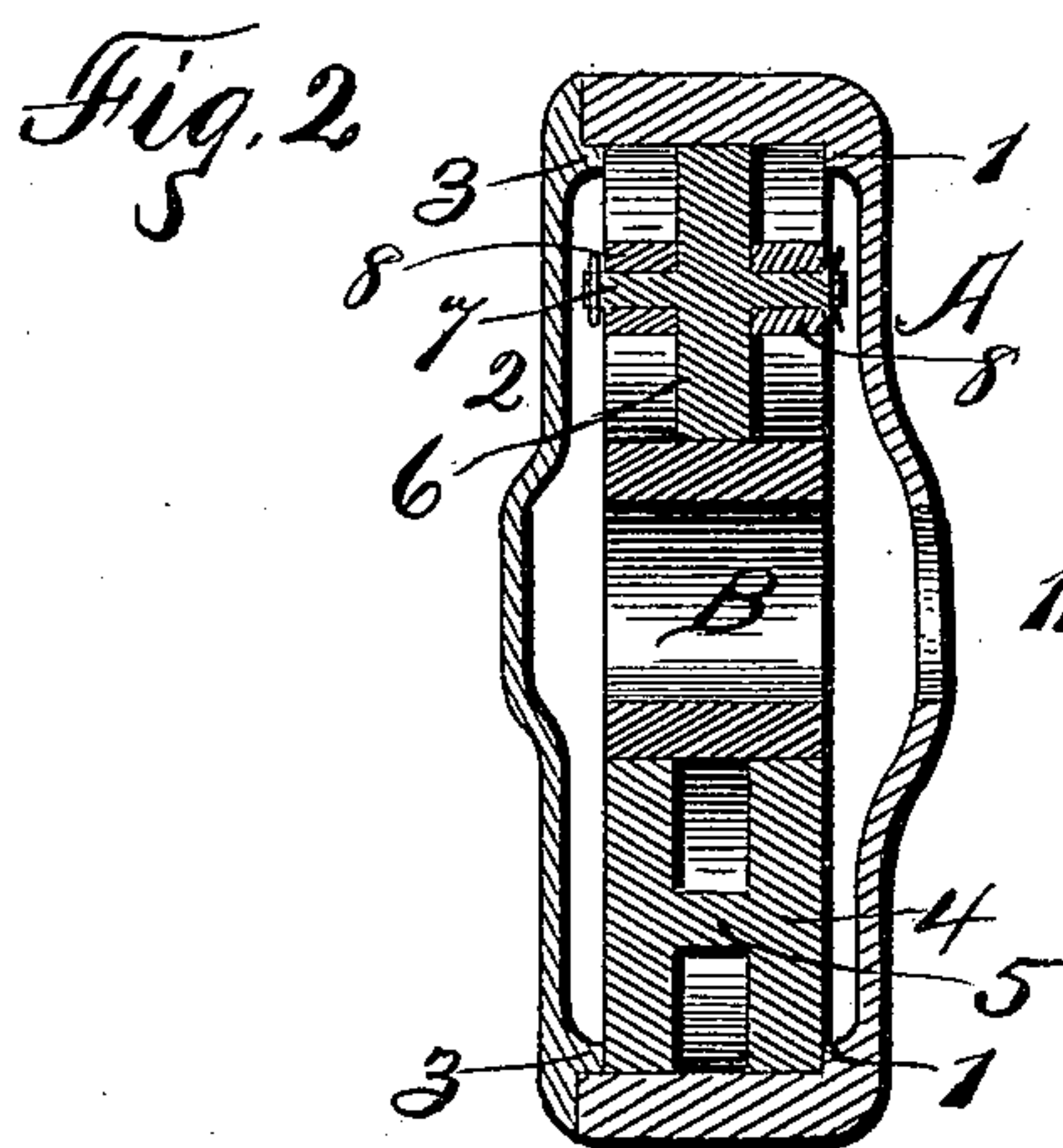
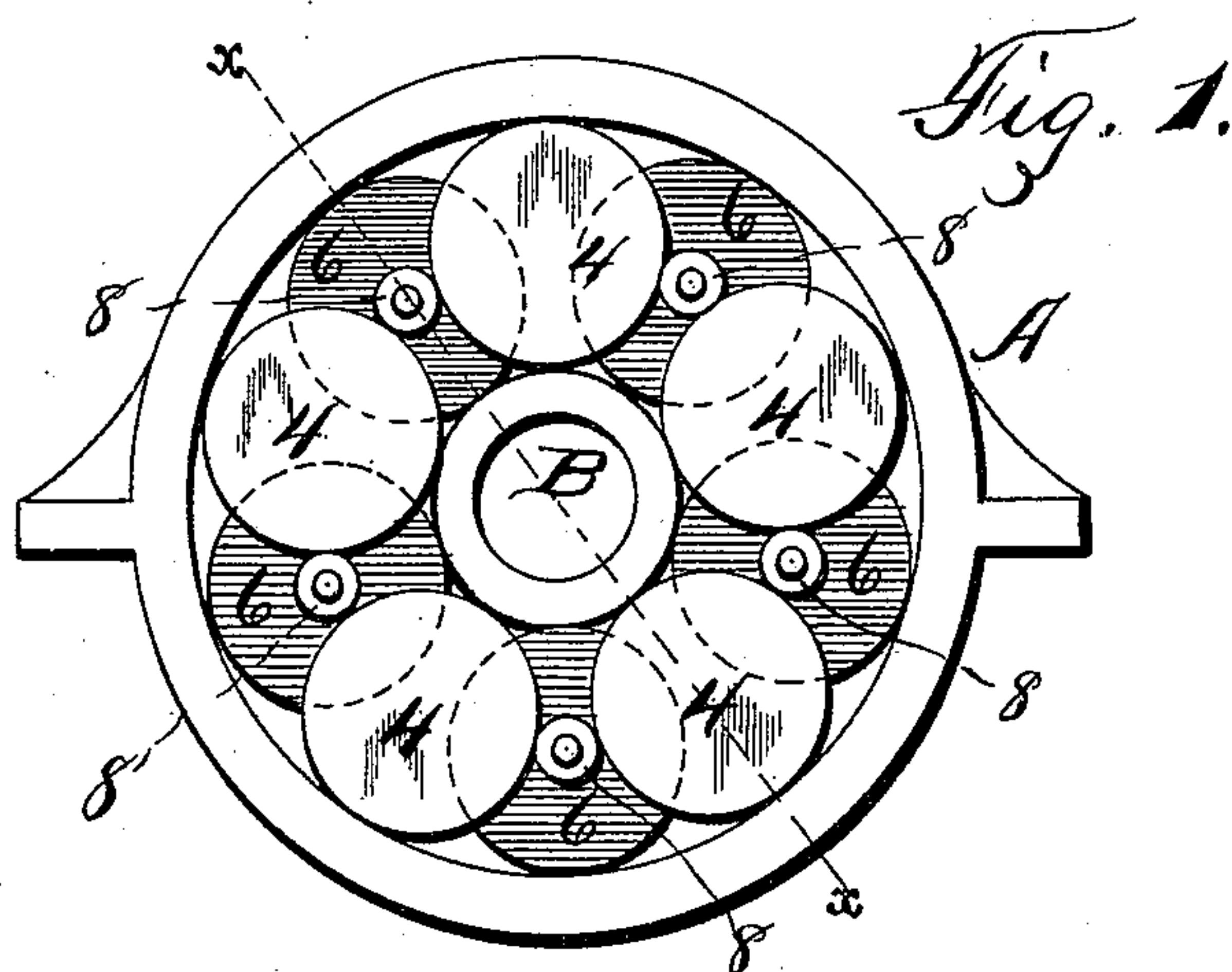


(No Model.)

M. A. ANDREWS.
JOURNAL BEARING.

No. 448,871.

Patented Mar. 24, 1891.



Witnesses.
E. V. Mack
Silas J. Hogan

Inventor
Marian A. Andrews
by Smith & Denison
his Attorneys

UNITED STATES PATENT OFFICE.

MARION A. ANDREWS, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF
TO JAMES M. ANDREWS, OF SAME PLACE.

JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 448,871, dated March 24, 1891.

Application filed August 11, 1890. Serial No. 361,608. (No model.)

To all whom it may concern:

Be it known that I, MARION A. ANDREWS, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Journal-Bearings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to journal-bearings of that class known as "anti-friction," and in which the axle fits loosely in a ring of larger diameter internally than the axle, which ring is sustained in the casing by multiple friction-rollers which travel inwardly upon the ring and outwardly upon the inner wall of the casing.

My object is to produce an improved bearing of this class in which the friction-rollers are supported and steadied by anti-friction idlers mounted loosely upon the arbors of single rollers and bearing against the peripheries of double rollers, the single rollers standing partly between the double ones.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of my bearing with the front cap of the casing and also the axle or shaft removed. Fig. 2 is a vertical transverse section on line X X, Fig. 1. Fig. 3 is a sectional detail of the axle or shaft and the loose ring, showing their relations. Fig. 4 is an elevation of one of the double rollers detached. Fig. 5 is a like view of one of the single rollers with the idlers upon the arbors. Fig. 6 is a like view of one of the single rollers and its arbors without the idlers. Fig. 7 shows an elevation and an end view of an idler. Fig. 8 is a front elevation of one of the single rollers and idler.

A is the casing, having a circular and plain inner wall and at the back a shoulder 1. A removable cap 2 closes the casing, and it is provided with a rabbet around the edge, creating an inward rim 3, and the annular space between the shoulders 1 and this rim constitute the outer trackway of the anti-fric-

tion rollers. These rollers are of two kinds, the one 4 consisting of two rollers united by an axle 5 and held apart thereby, being either integral with the rolls or loose in them, and the other 6 comprising a single roll mounted loosely upon or integral with the arbor 7, the ends of which project on either side, as shown. Upon the outer ends of this arbor I mount loosely the idlers 8, which are simply small cylindrical rollers of plain exterior. The faces of the double and single rolls are also plain.

B is the loose ring, of plain exterior and interior, its internal diameter being greater than the diameter of the body of the axle. In this axle I cut a peripheral groove adjacent to the outer end, creating a head 11, and this groove receives the ring and constitutes its trackway. When placed in position, the double and single rollers alternate, the single roll fitting into the space between the rolls of the double roller nearly up to its axle, and so as to bring each idler into contact with two adjacent rolls of two double rollers on both the front and rear. These single and double rollers all travel in their trackway on the inner wall of the casing, and also travel upon the outer face of the loose ring, and steady and support the ring, while the idlers do the same for the rollers, when the loose ring is rotated by the rotation of the axle. The rollers are also steadied by the interlacing of the single and double rollers, and this steadies the ring, and in conjunction with the trackway in the axle and in the casing operates to regulate the end-thrust of the axle.

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

1. A journal-bearing consisting of a casing, a central loose ring, and single and double rollers disposed alternately and interlacing and traveling upon the inner wall of the casing and the periphery of the ring, in combination with an axle grooved to its end to receive the loose ring and of smaller diameter than the ring.

2. A journal-bearing consisting of a casing, a central loose ring, single and double rollers disposed alternately and interlacing and traveling upon the inner wall of the casing and the periphery of the ring, and idlers mounted

loosely upon the arbors of the single rollers
on either side of each single roller, in combi-
nation with an axle grooved to receive the
loose ring and of smaller diameter than the
5 ring.

3. The combination, with the double rollers,
each comprising two disks connected by an
axle, of the single rollers interlacing with the
double rollers and provided with side arbors,

and idlers loose upon the arbors and engag- 10
ing with the disks of the adjacent double
rollers.

In witness whereof I have hereunto set my
hand on this 31st day of July, 1890.

MARION A. ANDREWS.

In presence of—

C. W. SMITH,

HOWARD P. DENISON.