

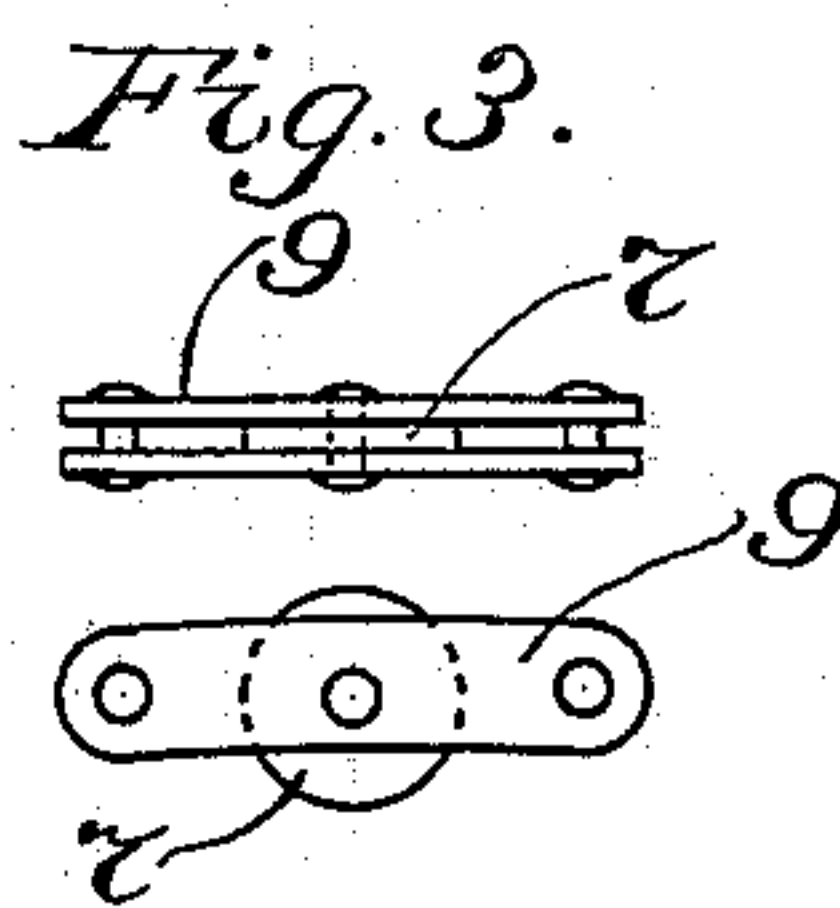
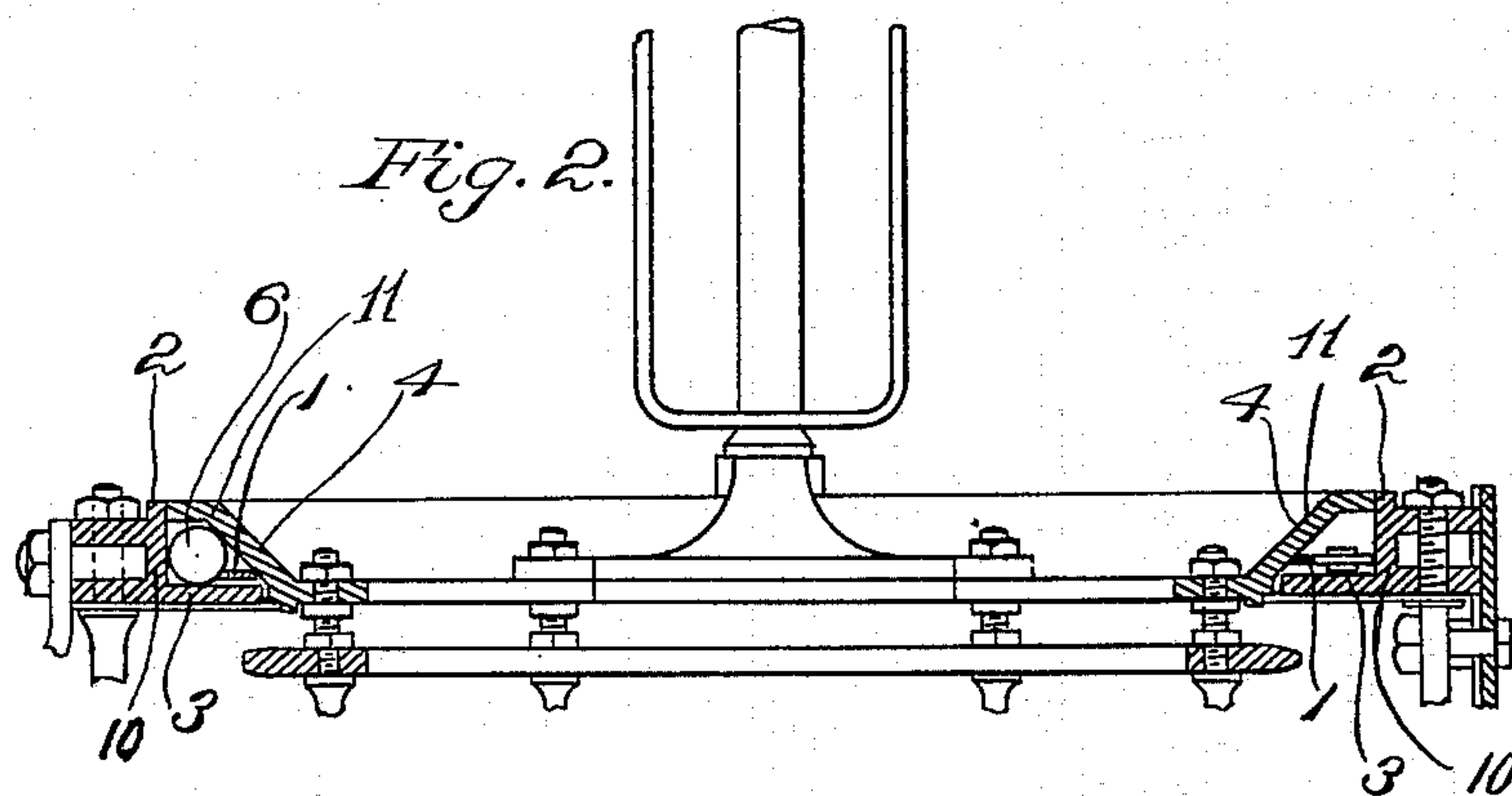
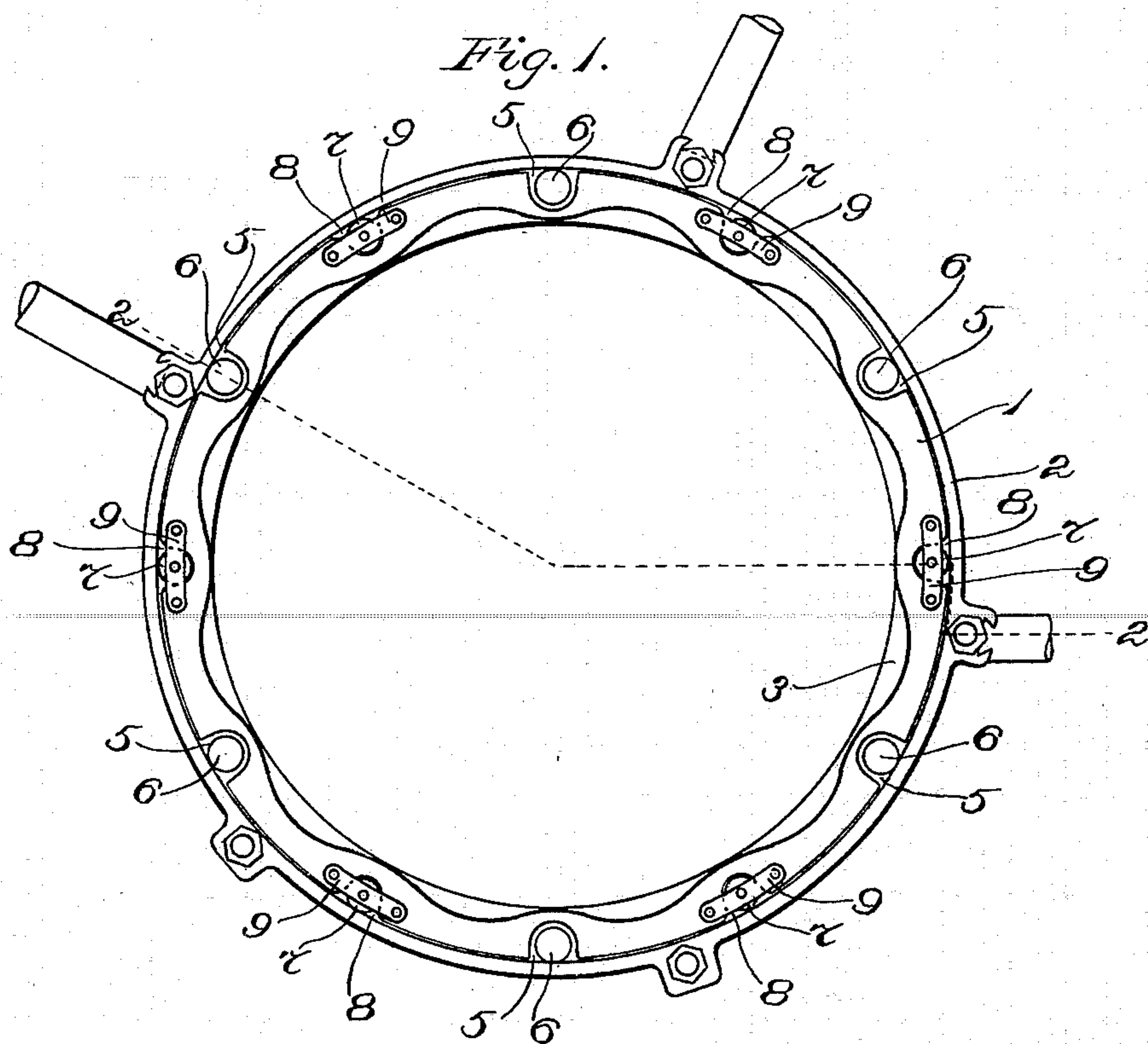
No. 612,390.

Patented Oct. 18, 1898.

J. P. ARCHDEACON.  
SEPARATOR FOR BALL BEARINGS.

(Application filed Nov. 8, 1897.)

(No Model.)



Witnesses:

Oscar F. Gill  
Robert Wallace.

Inventor  
John P. Archdeacon  
by W. A. Leopeland  
Attorney.



# UNITED STATES PATENT OFFICE.

JOHN P. ARCHDEACON, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO FRANK L. WHITCOMB, OF SAME PLACE.

## SEPARATOR FOR BALL-BEARINGS.

SPECIFICATION forming part of Letters Patent No. 612,390, dated October 18, 1898.

Application filed November 8, 1897. Serial No. 657,733. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN P. ARCHDEACON, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Separators for Ball-Bearings, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a separating device for balls; and the object of my invention is to provide a separator-plate to travel on the inner face of an inclosing box.

My invention consists of a separator-plate having the novel construction and combination of devices therewith as will be described, and particularly pointed out in the claims at the end of the specification.

My invention is especially intended for use in a ring-box having rotary cones which support an axleless sprocket and which forms the subject of another application for a patent by me, filed September 23, 1897, Serial No. 652,698, but I do not intend to limit my claim to use with an axleless sprocket.

In the drawings, Figure 1 is a side elevation of a ring-box, showing the separator and balls, the cone and sprocket being removed. Fig. 2 is a section on line 2 2 through the box and cone. Fig. 3 is a side elevation and plan of one of the cylinders or rollers and bearings for the separator.

The separator-plate 1, which is preferably a flat ring, lies within the box 10 and is just encircled by the flange-rim 2. It lies as close to the flat side 3 of the box 10 as permitted by the thickness of the side bearing 9 and extends toward the apex of the angular space formed by the flat side 3 of said box and the inclined face 4 of the cone 11. The separator-plate has formed in its periphery a series of curved notches 5, spaced at suitable intervals to receive the balls 6. These notches are sufficiently large to permit loose action of the balls, so that the balls will contact with the separator on only one side of the notch—to wit, on the side toward the direction of travel. Between the notches 5 for the balls 6 there are rollers or cylinders 7, set into the

periphery of the separator-plate and journaled therein, which travel on the inside face of the rim 2 and form bearings to relieve the frictional contact of the separator with the rim 2 during the rotation. These rollers or cylinders are preferably small steel rollers set into notches 8 in the periphery of the separator and journaled in the side bearing-strips 9, which are pinned to the sides of the separator. The inside face of the separator is preferably of a serpentine form, the inward turns being opposite the notches 5 and 8.

The balls form the main bearings for the cone, the separator-plate being for the purpose of keeping the balls separated and equally spaced. The separator rotates within the box or case, and the antifriction rollers or cylinders 7, which are journaled to the separator, serve as wheels which support the separator and travel around on the inside face of the rim of the inclosing box and prevent a rubbing contact of the separator with the rim.

What I claim as my invention is—

1. A separator-plate having notches in its periphery and balls in said notches, in combination with rollers in the periphery of said plate intermediate of said notches, said rollers being journaled in bearings fixed to said plate, substantially as described.

2. In combination with a fixed annular box having a flanged rim and a side projecting radially inward, a rotary cone surrounded by said box, balls for said cone, and an annular separator-plate lying within said box next to the side wall thereof, there being notches in the periphery of the separator to receive the balls, and rollers or cylinders in the periphery which travel on the inside rim of the box, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 27th day of October, A. D. 1897.

JOHN P. ARCHDEACON.

Witnesses:

WILLIAM A. COPELAND,  
EDITH J. ANDERSON.