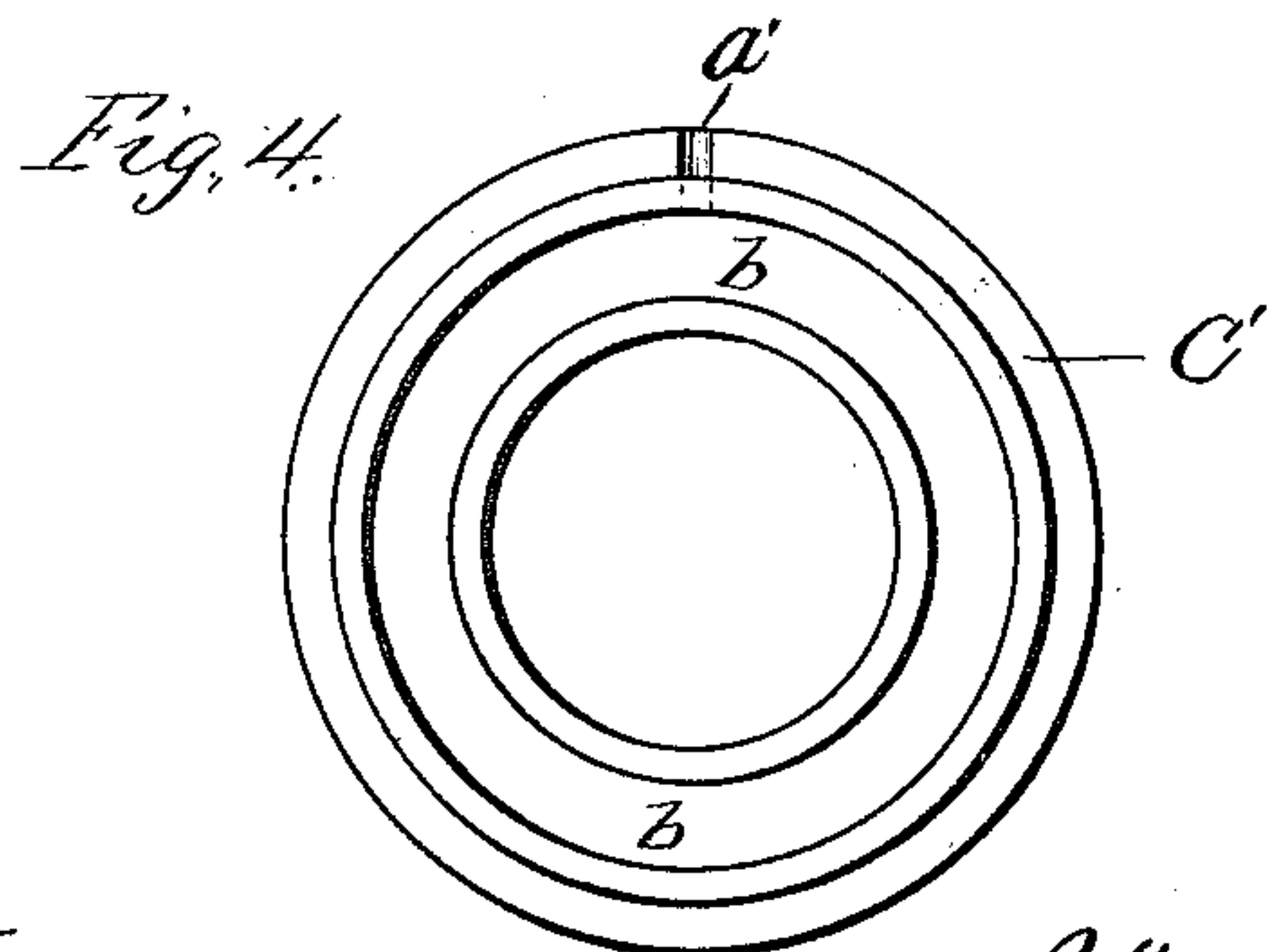
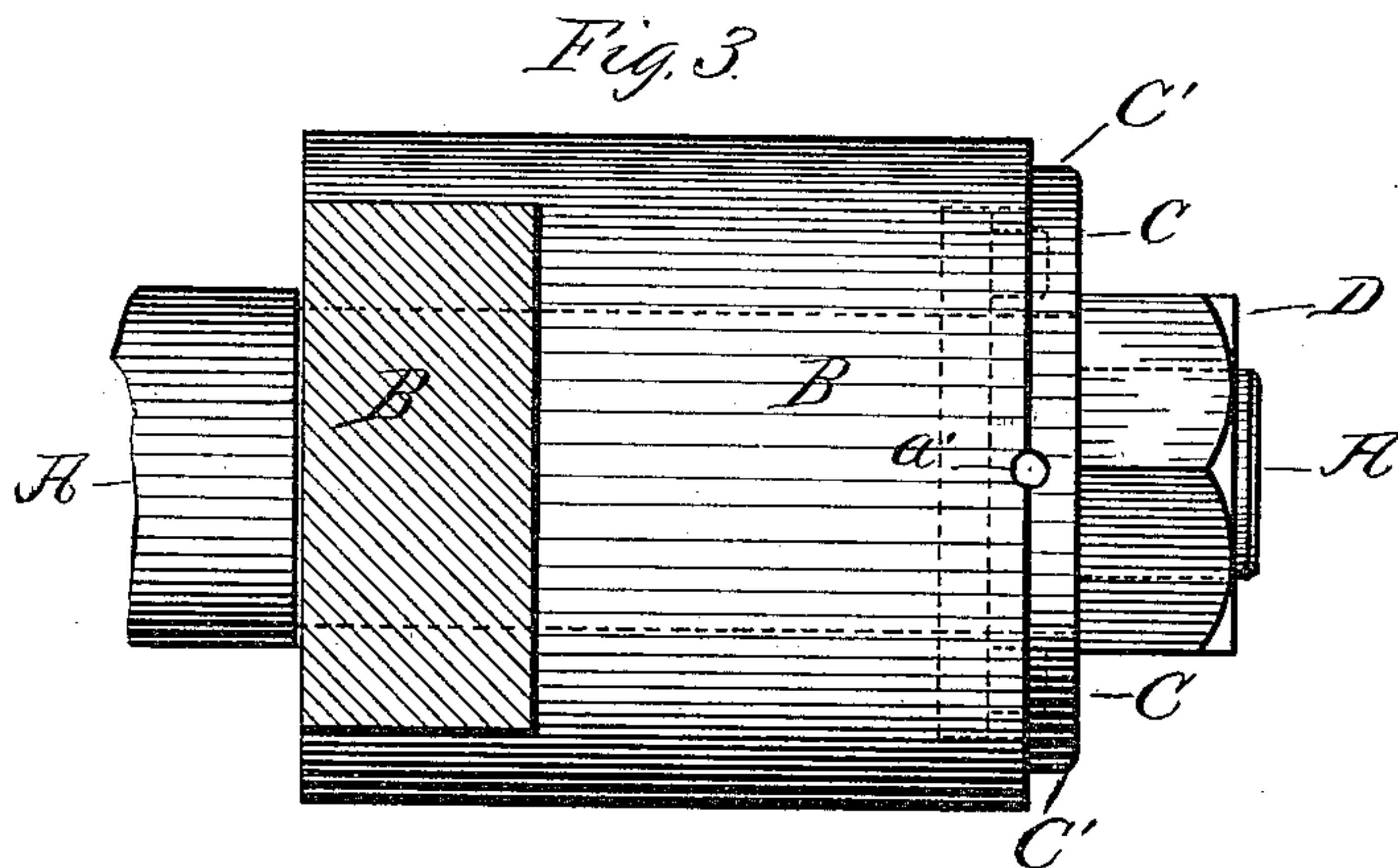
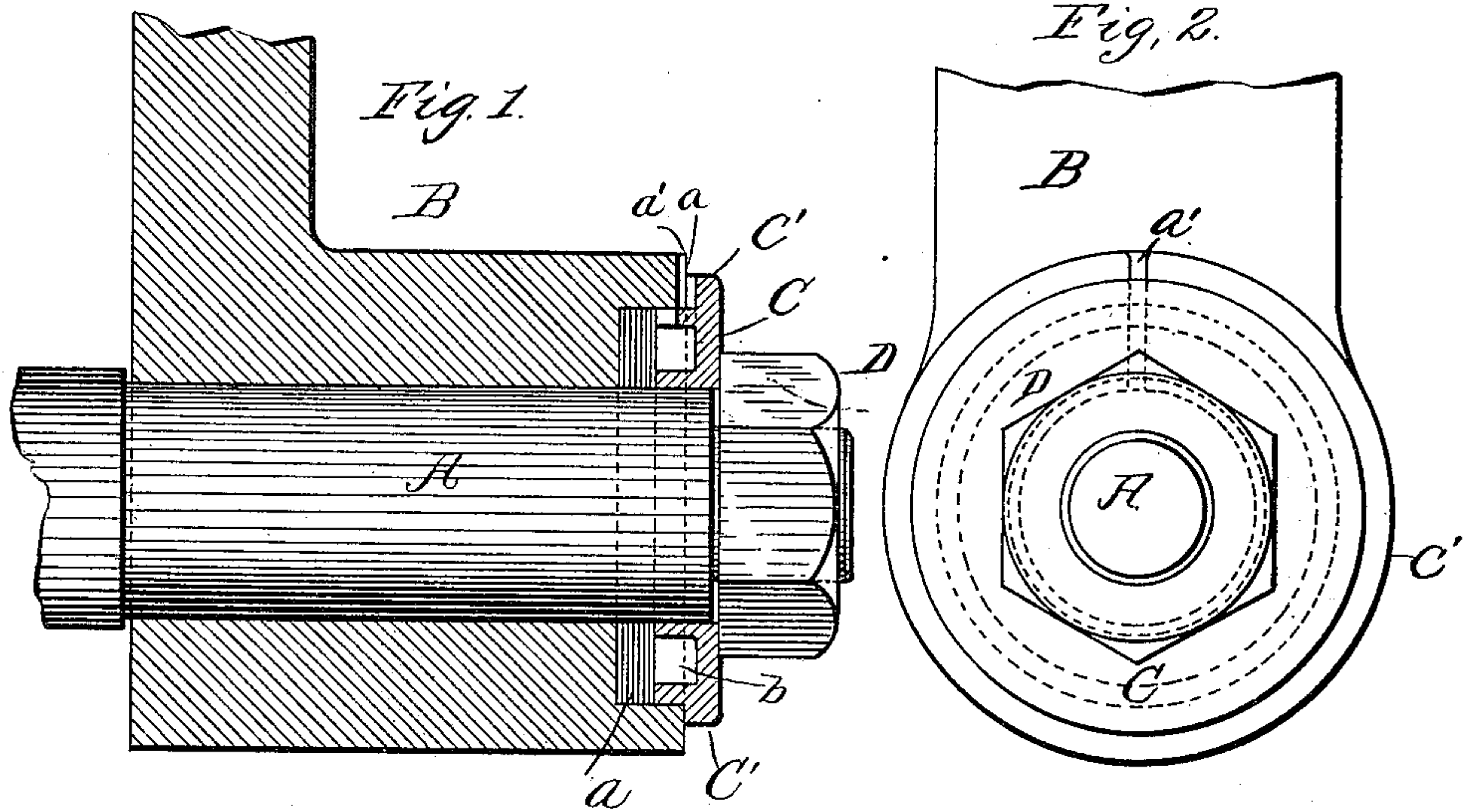


(No Model.)

J. L. YOST.  
AXLE LUBRICATOR.

No. 362,865.

Patented May 10, 1887.



Witnesses.  
Wm. Rheem  
E. Everett Ellis

Joseph L. Yost  
Inventor.  
By  
J. M. C. W. Intine  
Att'y.



# UNITED STATES PATENT OFFICE.

JOSEPH L. YOST, OF WALLINGFORD, CONNECTICUT, ASSIGNOR TO THE  
SPRINGFIELD BICYCLE MANUFACTURING COMPANY, OF BOSTON, MAS-  
SACHUSETTS.

## AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 362,865, dated May 10, 1887.

Application filed November 26, 1886. Serial No. 219,924. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH L. YOST, a citizen of the United States, residing at Wallingford, in the county of New Haven and State of Connecticut, have invented new and useful  
5 Improvements in Lubricating Devices for Bicycle and other Wheels, of which the following is a specification.

My invention relates to certain improvements in lubricating devices for wheels generally, and particularly to that class known as "bicycles;" and while it is shown as applied to that class of wheels which are designed to be fixed upon and rotate with the axle, it will be  
10 understood that it may be advantageously employed with wheels which are designed to rotate upon a fixed axle.

The object of my invention is to provide a cheap, simple, and easily-controlled means for  
20 lubrication, and one by which the flow of lubricant may be successfully graduated or controlled. With these objects in view my invention consists of the features of construction and combination of mechanical devices hereinafter fully described and specifically claimed.

In order that others skilled in the art to which my invention appertains may fully understand the same, I will proceed to describe its construction and operation, referring by  
30 letters to the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, showing a portion of the standard of an ordinary bicycle, with the axle of the wheel in position and my improved oiling device attached thereto. Fig. 2 is an end view taken at right angles to that shown at Fig. 1. Fig. 3 is a plan view with the standard partly in section, and Fig. 4 is an internal face view of the  
40 oil-receiving disk or cup.

Similar letters indicate like parts in the several figures.

A is the axle of an ordinary wheel, such as used in bicycles, and B is one portion of the bifurcated standard, which is extended laterally at its lower extremity to form a bearing or journal-box for the rotating axle A of the wheel. The outer end of this bearing B is formed with an annular recess, *a*, surrounding

the axle A, and is designed to receive a fibrous or porous collar or packing, as indicated by the parallel vertical straight lines seen at Fig. 1.

C is a ring adapted to pass on the axle A and to come into contact with the end of the journal-bearing B (or end of a wheel-hub, as the case may be) by reason of the flange C', the body of the ring being turned down to such diameter and being of sufficient length to enter the annular recess in the end of the bearing B and to press with greater or less force upon the fibrous or porous collar or packing *a*, in an obvious manner, by the retaining-nut D upon the threaded end of the axle. The body portion of the ring C is formed with an annular groove or oil-recess, *b*, which, when the ring is in proper position, as clearly shown at Figs. 1 and 3, has its only open side closed by contact with the fibrous packing *a* in the end of the standard or hub B.

The extreme end of the hub or standard B and the edge of the ring C are each formed with a suitable radial channel or opening, *a'*, (which should be on top,) for the purpose of introducing the lubricating material when it is of such consistency as to flow freely.

It will be readily understood that when the axle A has been located within the bearing or hub B, and the ring C placed within and against the end of said hub or bearing, the nut D is run up on the thread at the end of the axle, and as a consequence the lubricant-channel *b* is brought directly against the packing *a*, which readily absorbs the said lubricant and transmits it to the axle A in a uniform manner and without liability of flooding or wasting, the celerity or rapidity of supply being governed both by the degree of porosity of the packing *a* and the fluidity of the lubricant; and it will be readily understood that density and capillary action of the packing *a* can be nicely adjusted and controlled by compressing it to a greater or less degree by the ring C.

When a very rapid transfer of the lubricant is desired, or when the latter is composed of a semi-fluid or comparatively hard substance, the porous packing *a* may be dispensed with;



but in practice I have found it most desirable to employ a fluid lubricant and the porous packing. The loss of lubricant from the chamber *b* resulting from consumption is supplied 5 through the filling channel or groove *a'* as often as occasion may require. It will be seen that with my improved lubricating device a comparatively large supply of lubricant may be employed, and that it is so located as to be entirely out of sight and not liable to waste, and 10 absolutely protected from dirt and dust, if so desired, by the employment of any sort of suitable cap or plug to the filling channel *a'*.

It will be understood that when the wheel 15 revolves around the axle the same generic feature of invention may be employed by providing the end of the wheel-hub with a suitable recess for the reception of the porous packing and end of the body of the ring.

○ Having described the nature and advantages of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the journal or

axle A and the hub or bearing B, provided at its outer end with an annular recess adapted 25 to contain fibrous or porous packing *a*, the closing-ring C, having an oil or lubricant channel, *b*, the whole adapted to be brought in proper relation by the retaining-nut D, substantially as hereinbefore set forth. 30

2. The oil-ring C, formed with the annular flange C' and projecting body of smaller diameter, and having therein an annular oil channel or recess, *b*, substantially as and for the purpose set forth. 35

3. The bearing B and ring C, provided with the oil-inlet *a'*, whereby the supply may be replenished, substantially as hereinbefore set forth.

In testimony whereof I have hereunto set my 40 hand in the presence of two subscribing witnesses.

JOSEPH L. YOST.

Witnesses:

EDWARD A. STEVENS,  
CLIFFORD LEWIS.