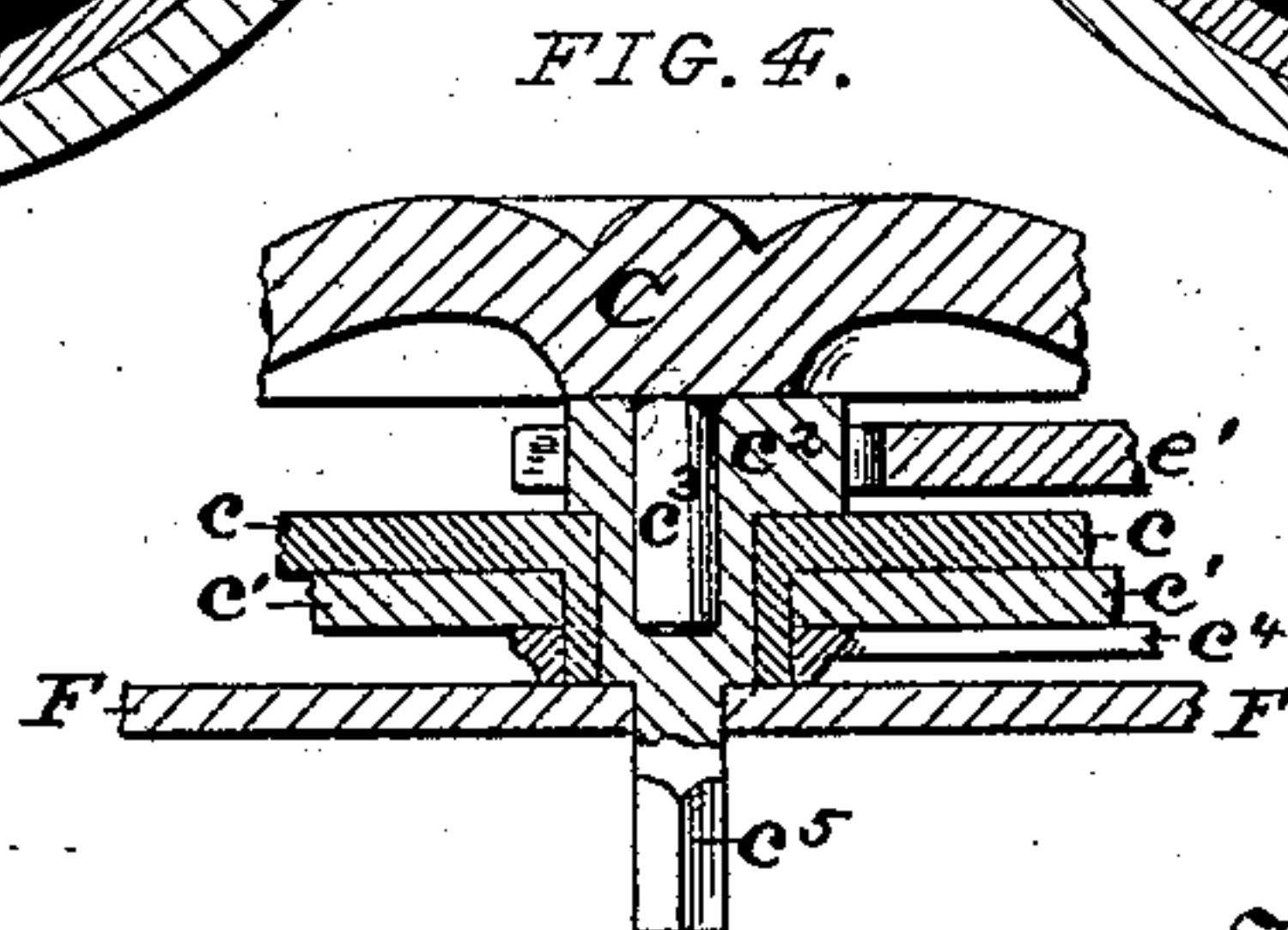
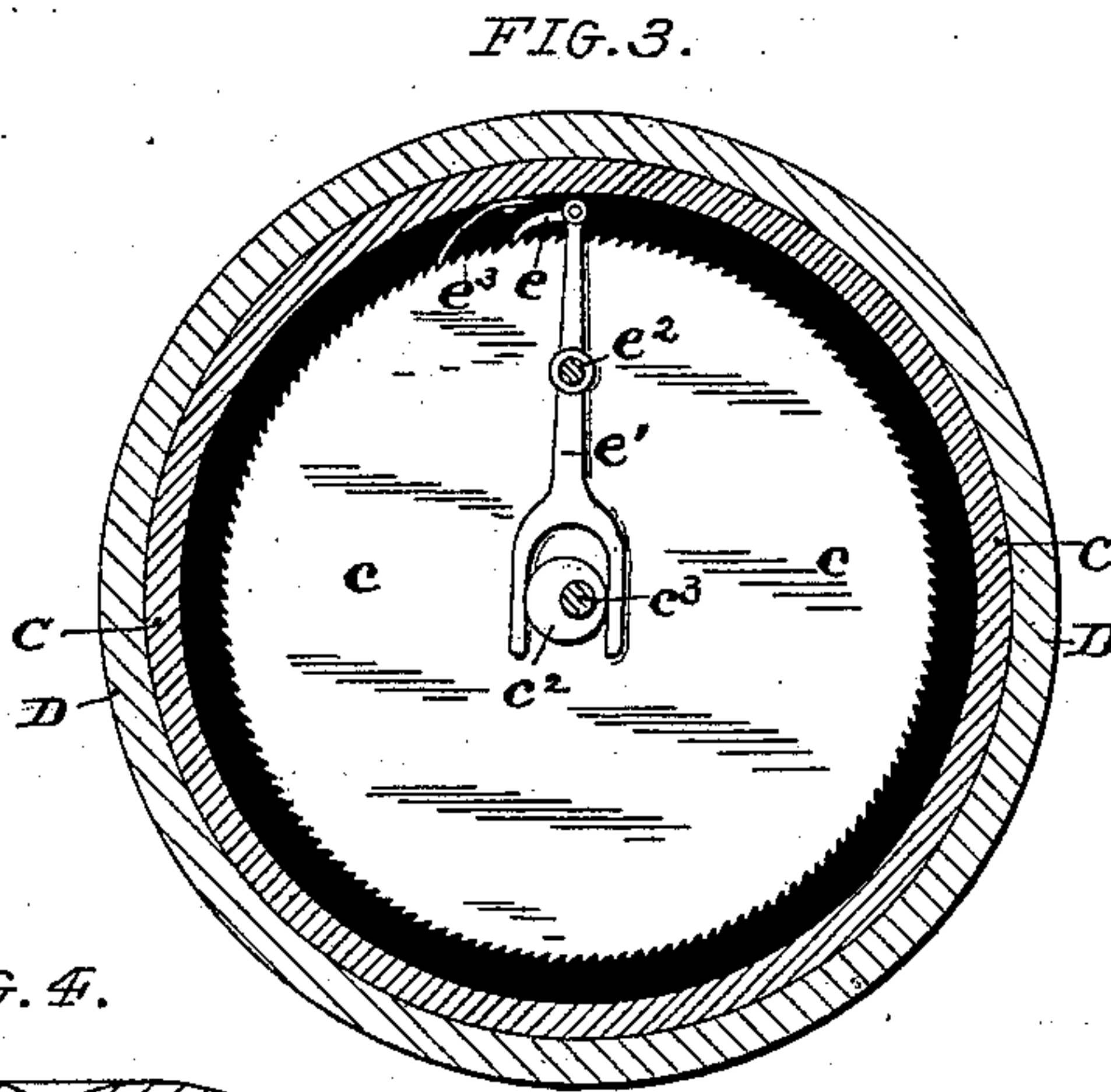
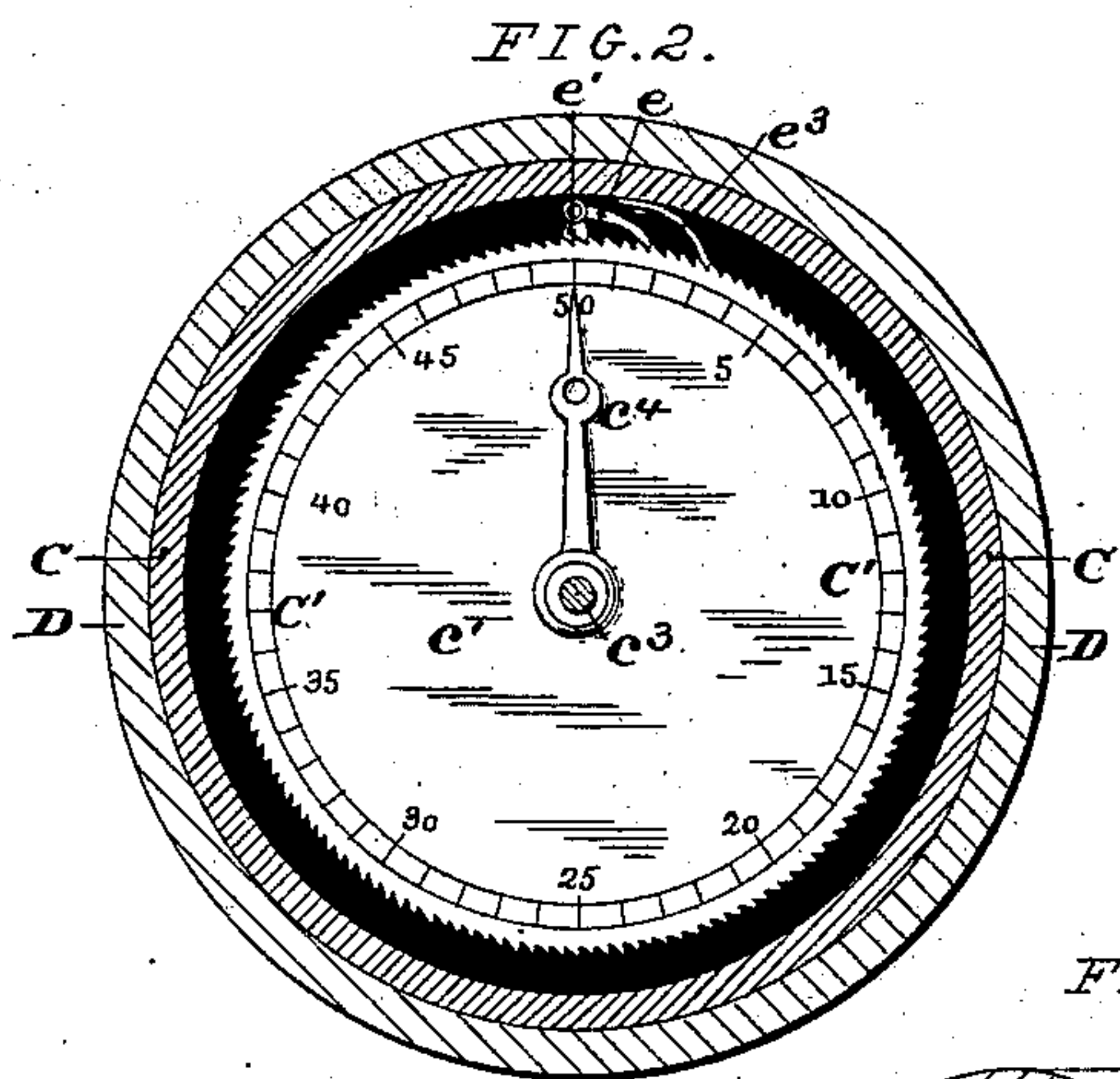
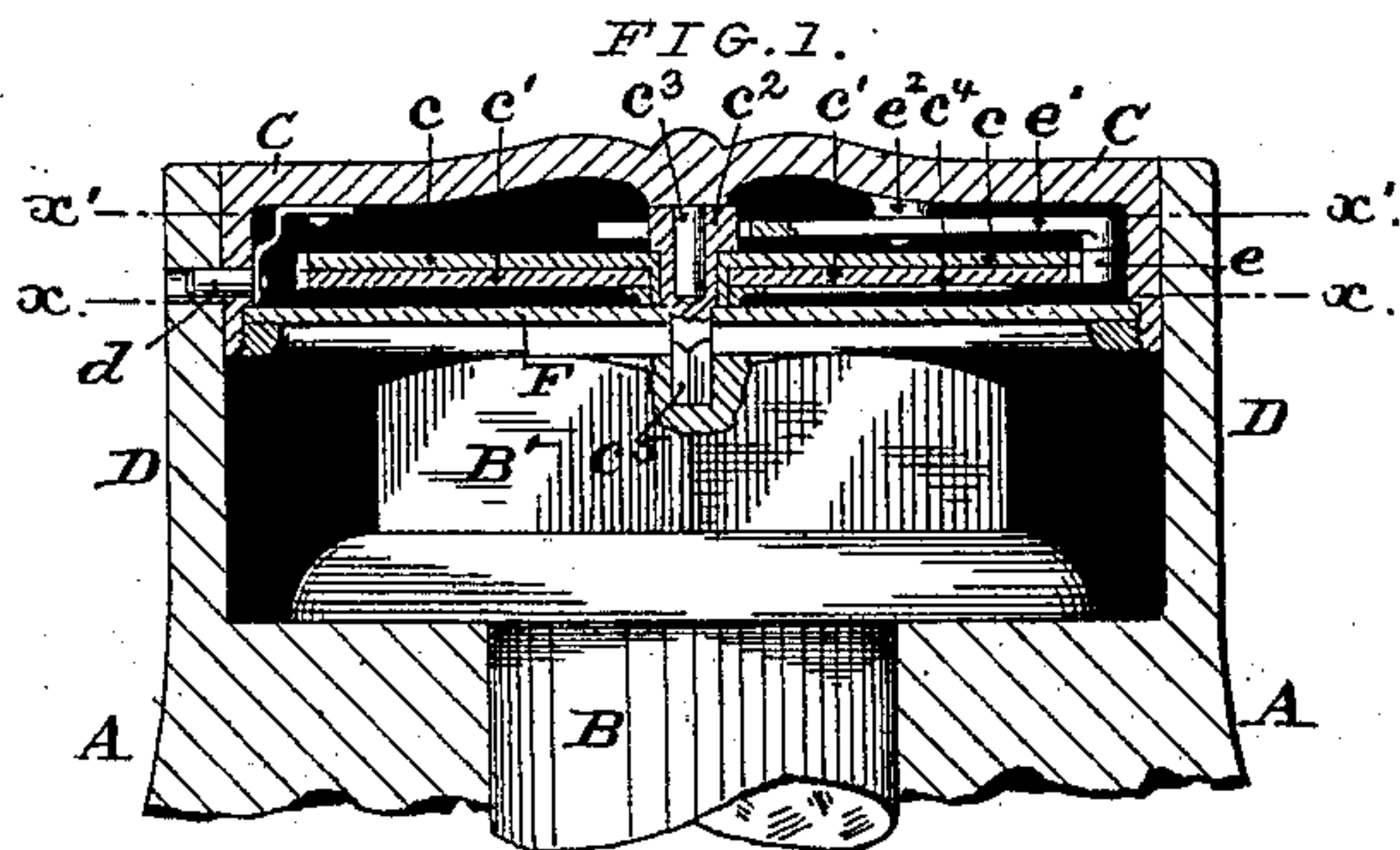


(No Model.)

R. BURNS.
CYCLOMETER.

No. 299,733.

Patented June 3, 1884.



Attest:

Robert Burns.....

A. Campbell,.....

Inventor:

Robert Burns

per

Smalley & Burns.....
Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT BURNS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
JOHN S. WILLIAMS, OF SAME PLACE.

CYCLOMETER.

SPECIFICATION forming part of Letters Patent No. 299,733, dated June 3, 1884.

Application filed October 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT BURNS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Cyclometers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in that class of registering mechanism known as "odometers" or "cyclometers," and which is specially adapted for use in the axial cavity of vehicle-wheels to indicate and register the distance traveled; and my improvement has for its objects, first, to provide a simple and compact device capable of easy adaptation to the axial cavity in the outer end of the wheel-hub; second, to afford means for locking the device securely in place in the hub-cavity, and yet permit of the ready removal of the same for inspection by an authorized person; and, third, to supply an improved construction whereby one of the registry-wheels will act as a dial, while the other will carry the hand or pointer. I attain such objects by the arrangement of mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an axial section illustrating my improvement adapted to the axial cavity of a vehicle-wheel hub; Fig. 2, a section of same at line $x x$; Fig. 3, a similar view at line $x' x'$, and Fig. 4 is an enlarged detail axial section.

Similar letters of reference indicate like parts in the several views.

In the drawings, A represents a portion of the vehicle-wheel hub, B the axle, and B' the axle-nut. Within the axial cavity for the axle-nut is arranged my improved cyclometer, which consists of a circular inclosing-casing, C, the outer diameter of which is equal to the inner diameter of such cavity, and is locked within the same by means of one or more radial spring-pins, d , that engage in one or more radial holes through the rim D of the wheel-hub.

The registering-gearing consists of two disks, $e e'$, arranged in line with the axis of the vehicle-wheel, upon a cylindrical portion of the

axially-arranged operating eccentric e^2 , which has bearing upon a pin or stud, e^3 , upon the casing C, as shown in Fig. 1. The face of the inner ratchet-wheel, e' , is spaced off to form a dial, C' , and its hub is arranged to ride or turn on the hollow hub of the outer wheel, e , to enable such outer wheel-hub to receive the hand or pointer e^4 , which moves in front of the dial C' , to indicate the distance traveled. The number of teeth in one ratchet-disk will be one more than in the other, so that in the gradual movement of such disks the one having the least number of teeth will gain the distance of one tooth, so that it will require a number of revolutions of such disks equal to the number of ratchet-teeth therein to return the hand or pointer e^4 to its original position at starting. A step-by-step motion is imparted to the ratchet-disk at each revolution of the vehicle-wheel by means of a dog or pawl, e , the face of which is of the width of both ratchet-disks, so as to engage and operate both. This dog or pawl is pivoted to the outer end of a lever, e' , fulcrumed at e^2 to the casing C. The inner end of the lever is forked, so as to embrace the operating-eccentric e^2 , and receive motion therefrom as it is carried around with the revolution of the wheel. The operating-eccentric e^2 is held stationary by its square extension-pin e^5 , engaging in a square hole in the axle or axle-nut, as shown in Fig. 1 of the drawings.

F is a protecting cover or face for the dial C' and the operating parts, which is preferably of glass; yet it may in some case be of metal, and made removable for the purpose of reading the indicating-dial.

e^3 is a spring-pawl, which engages the ratchet-disk to prevent their retrograde movement.

By my improved arrangement of parts the dial or indicating-face can be arranged to face inwardly with the back of the casing, which can be made of ample strength to face outwardly. By this means all liability to accidental breakage or marring of the parts is prevented with great certainty, and access of dust or other foreign matter entirely prevented.

The operation of my improvement is as follows: The eccentric e^2 being held stationary by engagement with the axle or axle-nut, as above described, on each revolution the pawl-lever e' will be rocked, so as to move the ratchet-

disks c c' the distance of one tooth, which movement continues at each revolution of the vehicle-wheel, the pointer or hand c' moving around the dial in accordance with the difference in the number of teeth in the two ratchet-disks, as hereinbefore described.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. A cyclometer adapted for insertion in the axle-nut cavity of vehicle-wheels, consisting, essentially, of two ratchet-disks having different number of ratchet-teeth, a lever and pawl common to both ratchet-wheels, and a fixed
15 operating-cam axially arranged and connected to the axle or axle-nut, all essentially as herein shown and described.

2. In a cyclometer, as hereinbefore described, the combination of the ratchet-wheel c' , formed with a dial-face, C' , the ratchet-wheel c , provided with a hand or pointer, and cam-lever and pawl-operating mechanism, all essentially as herein described and shown.

3. In a cyclometer, a pair of registering ratchet-disks whose centers are in the same line as the center of the axle of the vehicle-wheel, and so arranged that the dial and pointer will face inward, for the purpose set forth.

In testimony whereof witness my hand this 18th day of October, 1883.

ROBERT BURNS.

In presence of—

H. D. SMALLEY,
A. CAMPBELL.