

(No Model.)

2 Sheets—Sheet 1.

W. W. HASTINGS.
CYCLOMETER.

No. 537,824.

Patented Apr. 23, 1895.

Fig. 1.

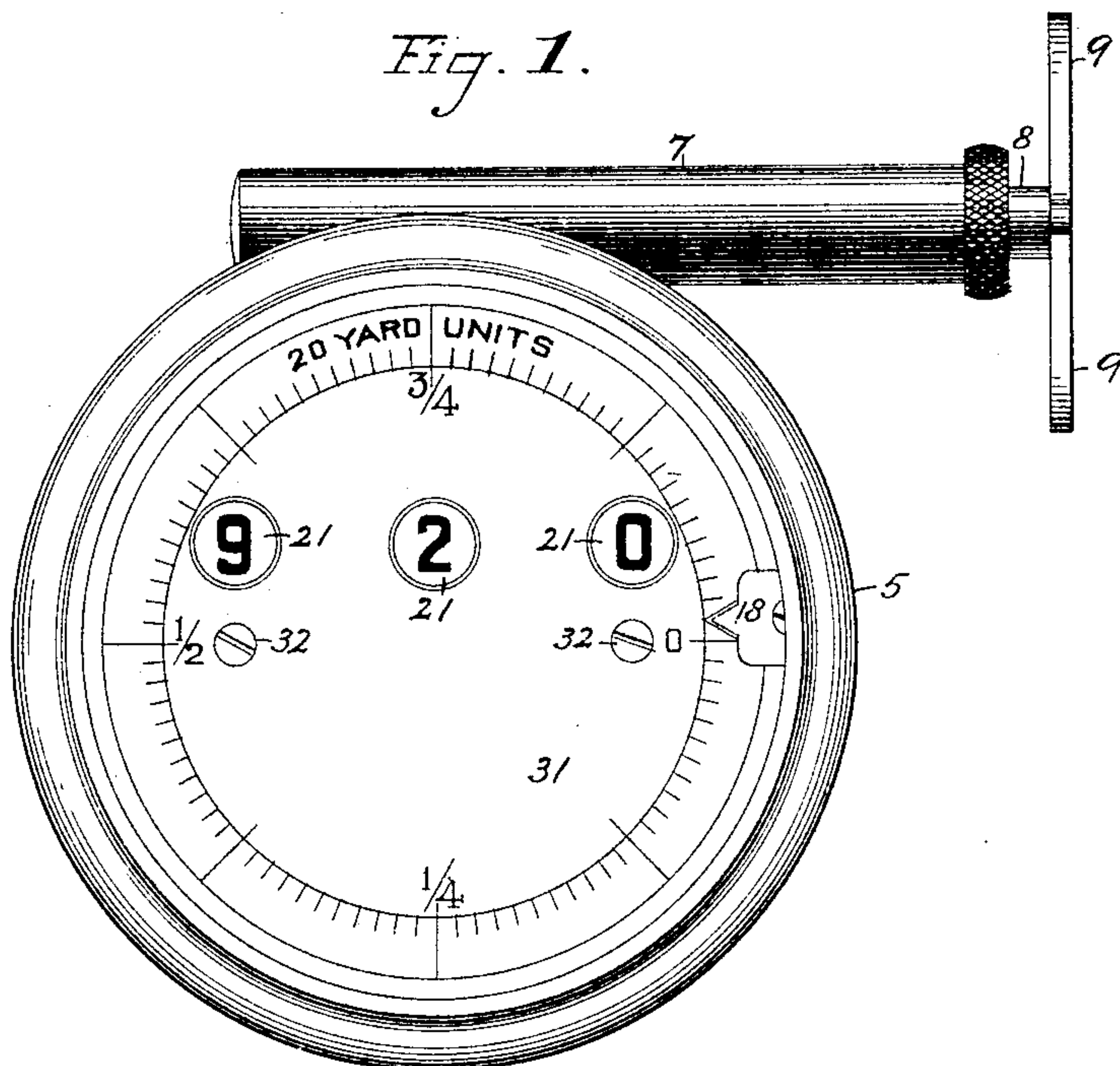
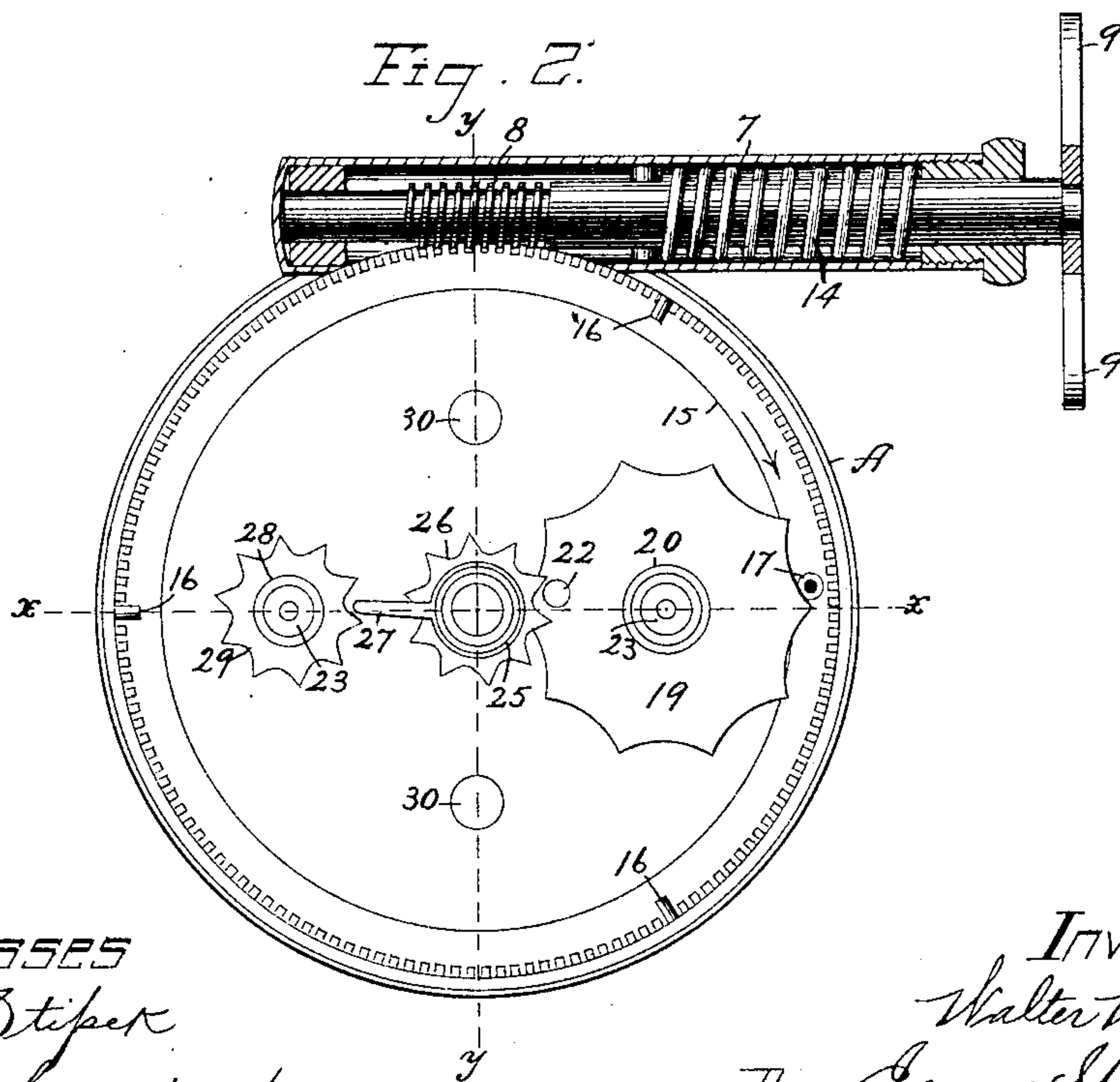


Fig. 2.



WITNESSES

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Fig. 3.

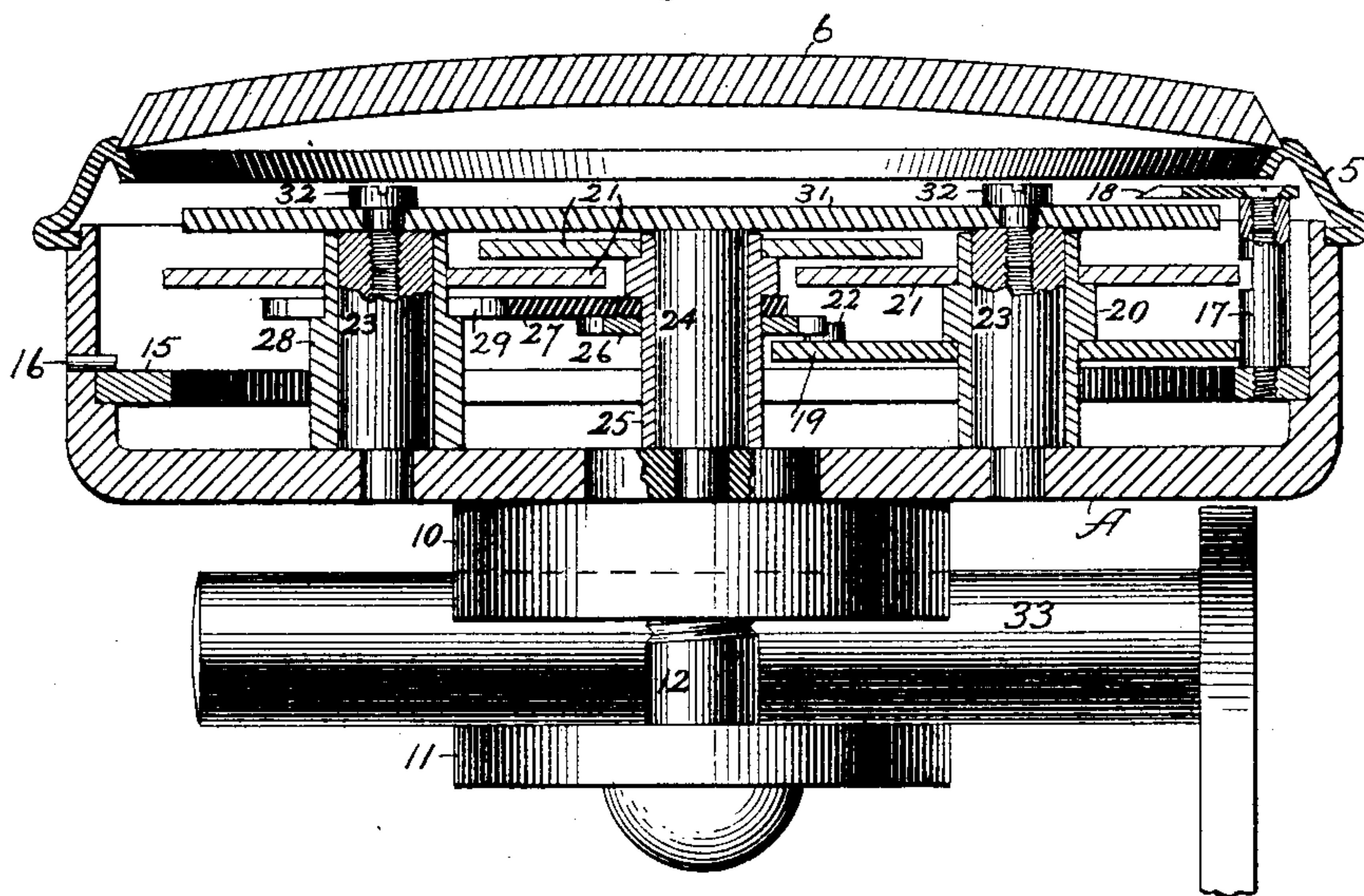
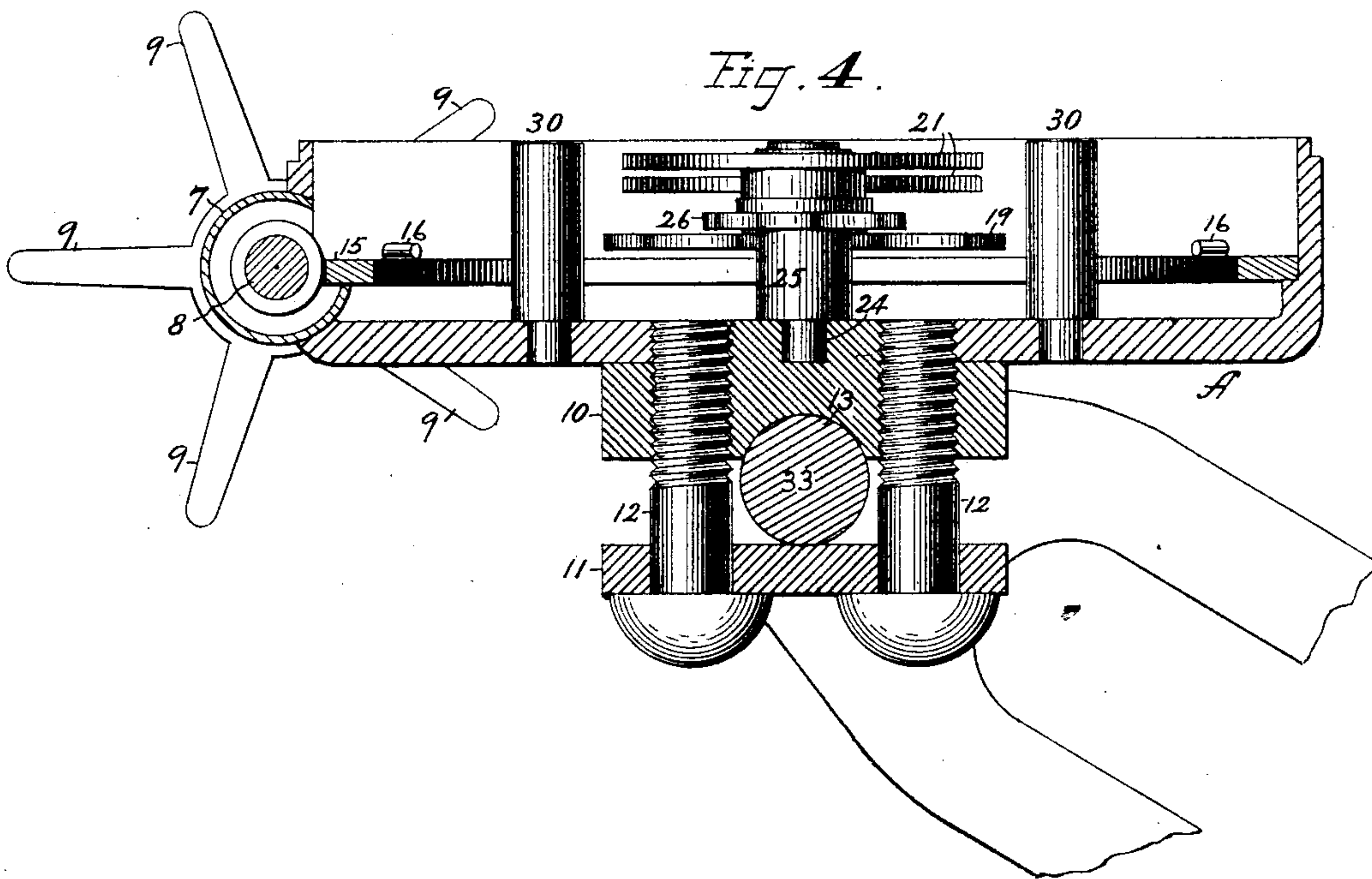


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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CYCLOMETER.

SPECIFICATION forming part of Letters Patent No. 537,824, dated April 23, 1895.

Application filed November 20, 1894. Serial No. 529,355. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. HASTINGS, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Cyclometers, of which the following is a specification.

My invention relates to improvements in cyclometers and the chief objects of my improvements are economy in construction and general efficiency of the machine.

In the accompanying drawings, Figure 1 is a front elevation of my cyclometer. Fig. 2 is a front view of the same with the cap and dial removed and the case for the screw shown in longitudinal section. Fig. 3 is an enlarged sectional view on the line $x x$ of Fig. 2, some of the parts being shown in elevation, together with a part of a bracket arm; and Fig. 4 is a sectional view on the line $y y$ of Fig. 2, the other parts being in elevation and the dial and cap omitted.

A designates the main case having a cap consisting of the sash or bezel 5 and glass 6. At one edge of the case is the screw case 7 containing the worm or screw 8 one end of which projects from the screw case 7 and is provided with the driving arms 9. Within the screw case 7 is a friction spring 14 Fig. 2, for the purpose of retaining the screw against accidental movement.

The back side of the case A is provided with two clamp plates 10 and 11 and the screws 12. The plate 10 is fixedly secured to the case and may be provided with a socket as at 13 while the plate 11 is movable as in similar clamps.

Within the main case at its edge is the annular toothed ring 15 which rests upon a shoulder formed on the inside of the case as shown in Figs. 3 and 4, with its teeth engaging the worm or thread of the screw 7 whereby a movement of said screw will move said ring. This ring may be held to its seat in any proper manner as by screws or pins in the side of the case as at 16. A stud or post 17 is mounted on said ring so as to move with it, the outer or front end of said post carrying an index or pointer 18. The body of this post or stud serves as a driving projection for engaging the teeth of the wheel 19. Said wheel is provided with ten teeth or projections for being engaged by the post or stud 17. It is

mounted on the tubular shaft or sleeve 20 which also carries a numeral disk 21 bearing on its front side the nine digits and a cipher. The wheel 19 also carries a driving stud or projection 22. The tubular sleeve 20 turns loosely on one of the fixed studs 23, the front ends of which studs are bored and threaded to receive dial screws. A similar stud 24 is in the middle of the case and on said stud is another tubular shaft or sleeve 25 carrying another ten toothed wheel 26, driving projection 27 and numeral disk 21, while one of the studs 23 supports the third sleeve 28 which carries a ten toothed wheel 29 and numeral disk 21. In a plane running diametrically through the case at right angles to the plane passing through the studs 23, there are two studs 30 which with the studs 23 form a suitable seat for the dial 31 which is secured by screws 32. The diameter of the dial is less than the inner diameter of the case so as to leave room for the body of the stud 17 which carries the index 18 to move around the outer edge of said dial.

The cyclometer may be secured by means of the clamp to any suitable support on any kind of a vehicle or machine where the number of revolutions of any wheel or shaft are to be counted, and in such a position as to have one of the screw arms 9, struck by a projection on said wheel or shaft to move the screw a fraction of a revolution for every revolution of said wheel or shaft. The support for the cyclometer may be any convenient part of the machine upon which it is used or it may be attached to a bracket arm 33, which arm is in turn attached to said machine.

The operation of the machine is substantially the same as in any other cyclometers. When used for measuring distances as traversed by a vehicle the screw and toothed ring may be so mathematically laid out with reference to a vehicle wheel of a certain size that one revolution of the ring will represent one mile. The screw drives the ring 15 which ring once in each revolution moves the wheel 19 one tenth of a revolution by the stud 17 engaging the teeth of said wheel while by means of the driving projection 22 on wheel 19 the wheel 26 is driven one tenth of a revolution for every revolution of the wheel 19 and the wheel 29 by means of the driving projection carried

with wheel 26 is driven one tenth of a revolution for every revolution of said wheel 26, the dial being provided with openings through which one of the characters on the several numeral disk is shown as in other counting machines.

In order to insure accuracy in operation I so arrange the parts that all the numeral disks are moved by a driver that describes a larger circle than the diameter of the wheel which is driven thereby. Thus the circle described by the stud 17 is greater than the diameter of the wheel 19 which it drives, the circle described by the driving projection of the wheel 19 is greater than the diameter of the wheel 25 which it drives, and the circle described by the driving projection 27 is greater than the diameter of the wheel 29 which it drives.

By my improvements the parts not only operate smoothly and accurately but the parts are of simple and comparatively inexpensive construction and they are in a very compact form.

I claim as my invention—

1. The combination of the case A having at its edge on the inside the ring seat bearing, the annular toothed ring mounted to rotate concentrically in said ring seat bearing and held by means of said case against moving transversely to its axis in any direction, numeral

bearing devices inside of said ring and actuated therefrom, an index finger carried by said ring, a stationary dial inside of the circle described by the outer part of said index finger, said dial having also the several numeral openings over the numeral bearing devices, and devices mounted on said case and in engagement with the teeth on the outer edge of said ring for imparting an intermittent movement to said ring and through said ring to the numeral bearing devices inclosed thereby, substantially as described and for the purpose specified.

2. The combination of the case A, the annular toothed ring seated in the case at its edge means for rotating said ring with an intermittent movement, the stud 17 and index 18 carried by said ring, the several numeral disks with their driving wheels and projections mounted on said case inside of said ring, the body of the stud 17 serving as the driving projection for the first of said wheels, and the dial inside of the circle described by said stud 17, substantially as described and for the purpose specified.

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Witnesses:

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