

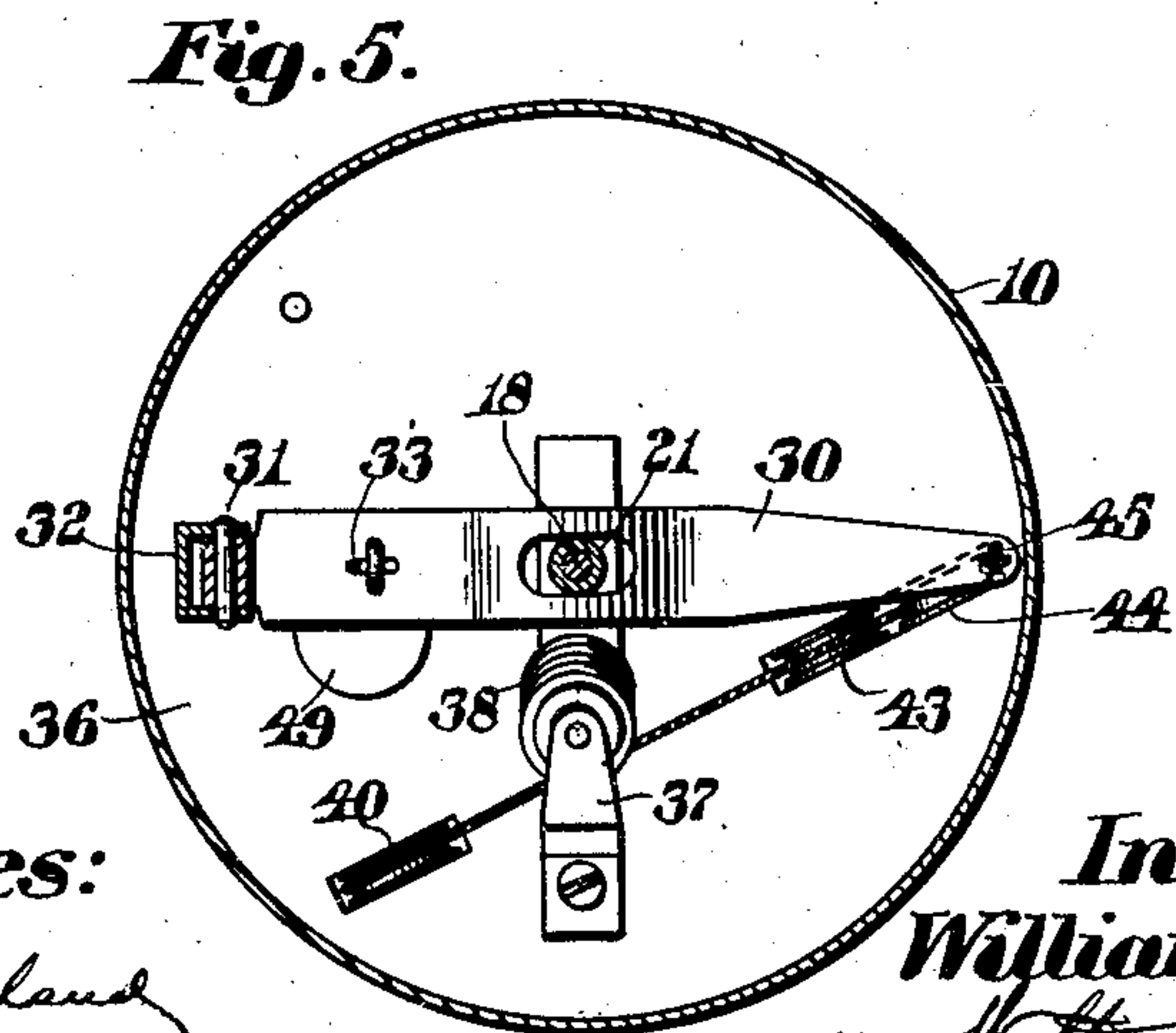
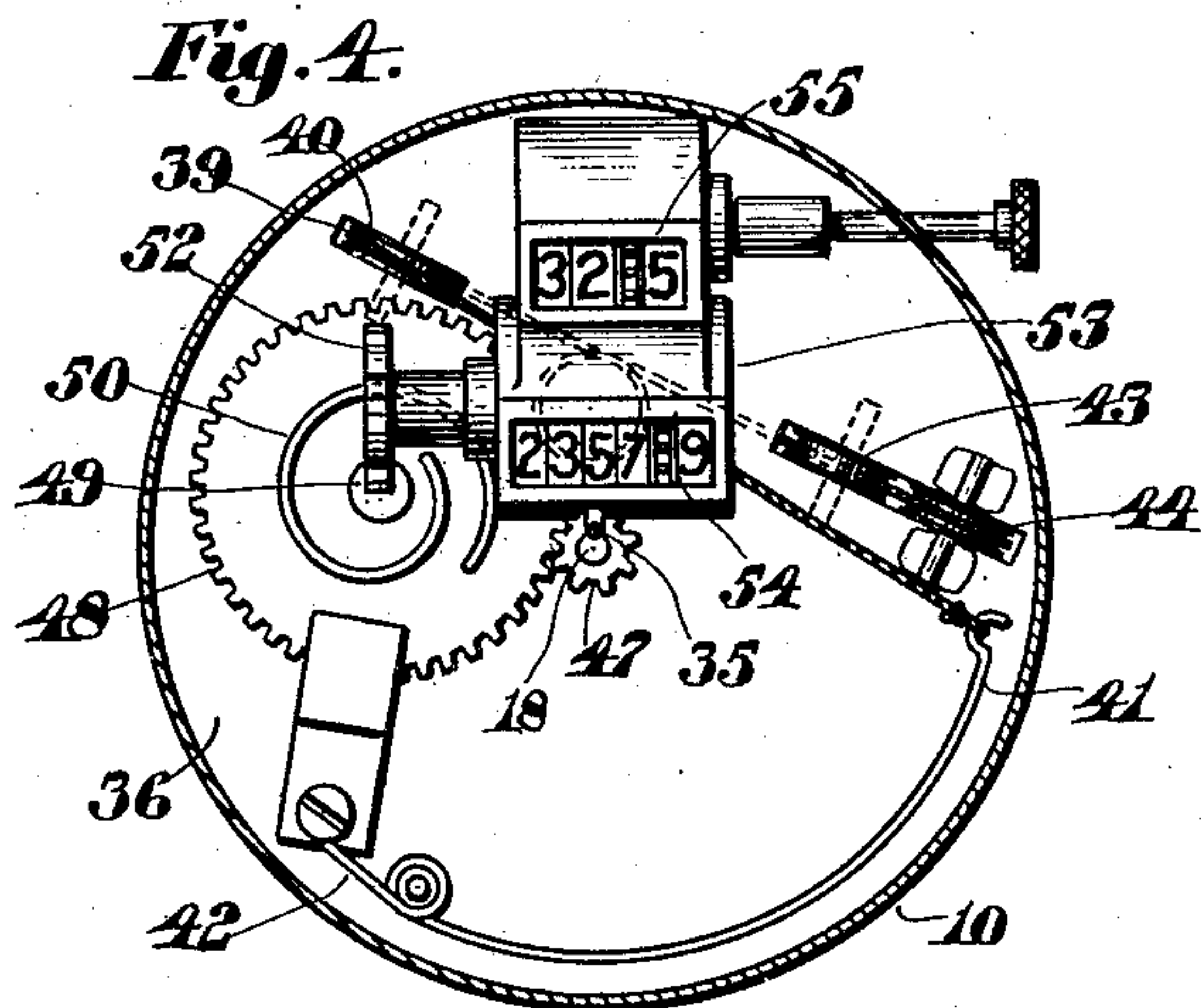
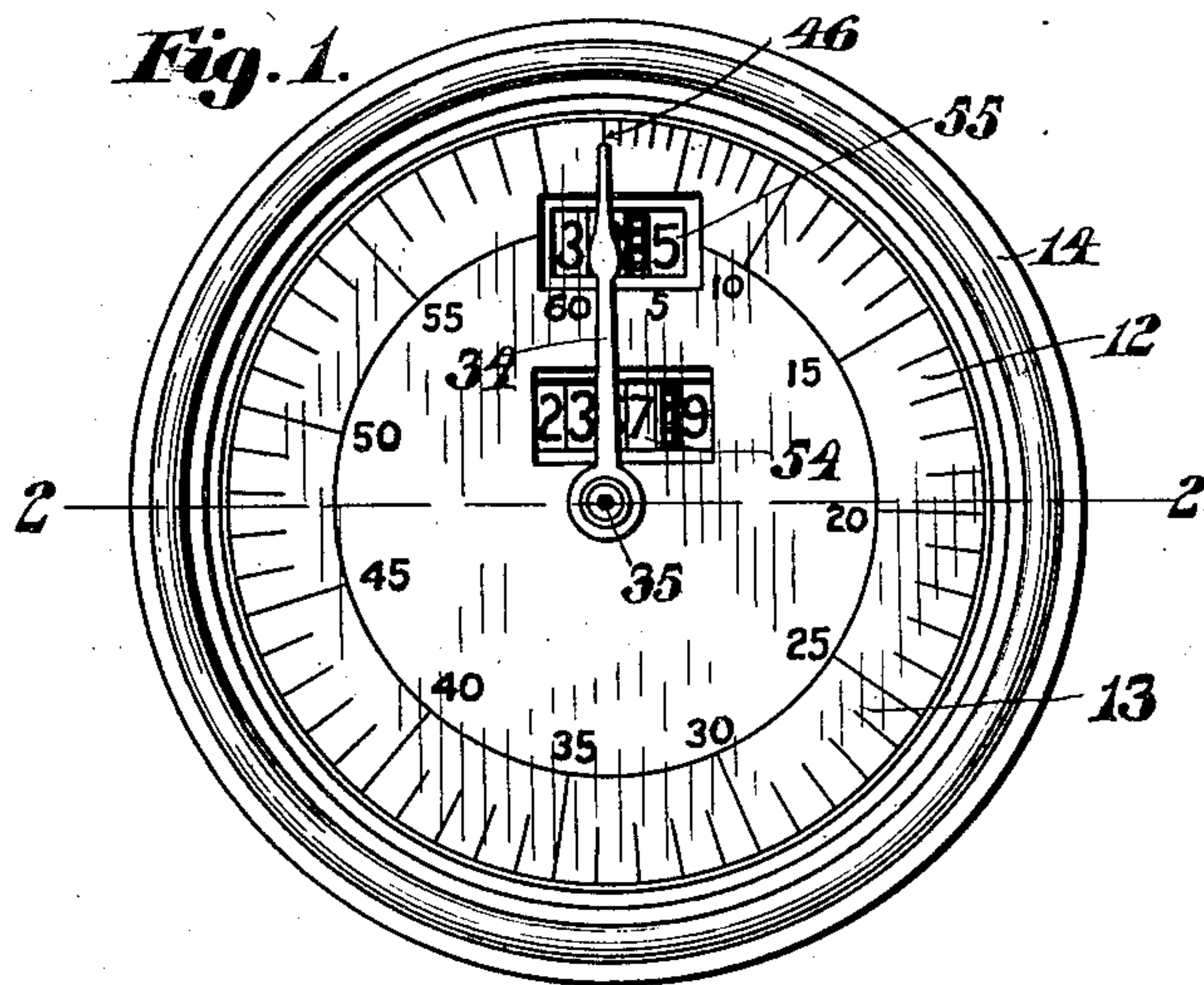
No. 834,909.

PATENTED NOV. 6, 1906.

W. H. JONES.
SPEED INDICATOR.

APPLICATION FILED JAN. 15, 1906.

2 SHEETS—SHEET 1.



Witnesses:

Edna C Cleveland
Edwin P Luce

Inventor:

William H. Jones,
by Walter C. Lombard,
Atty.

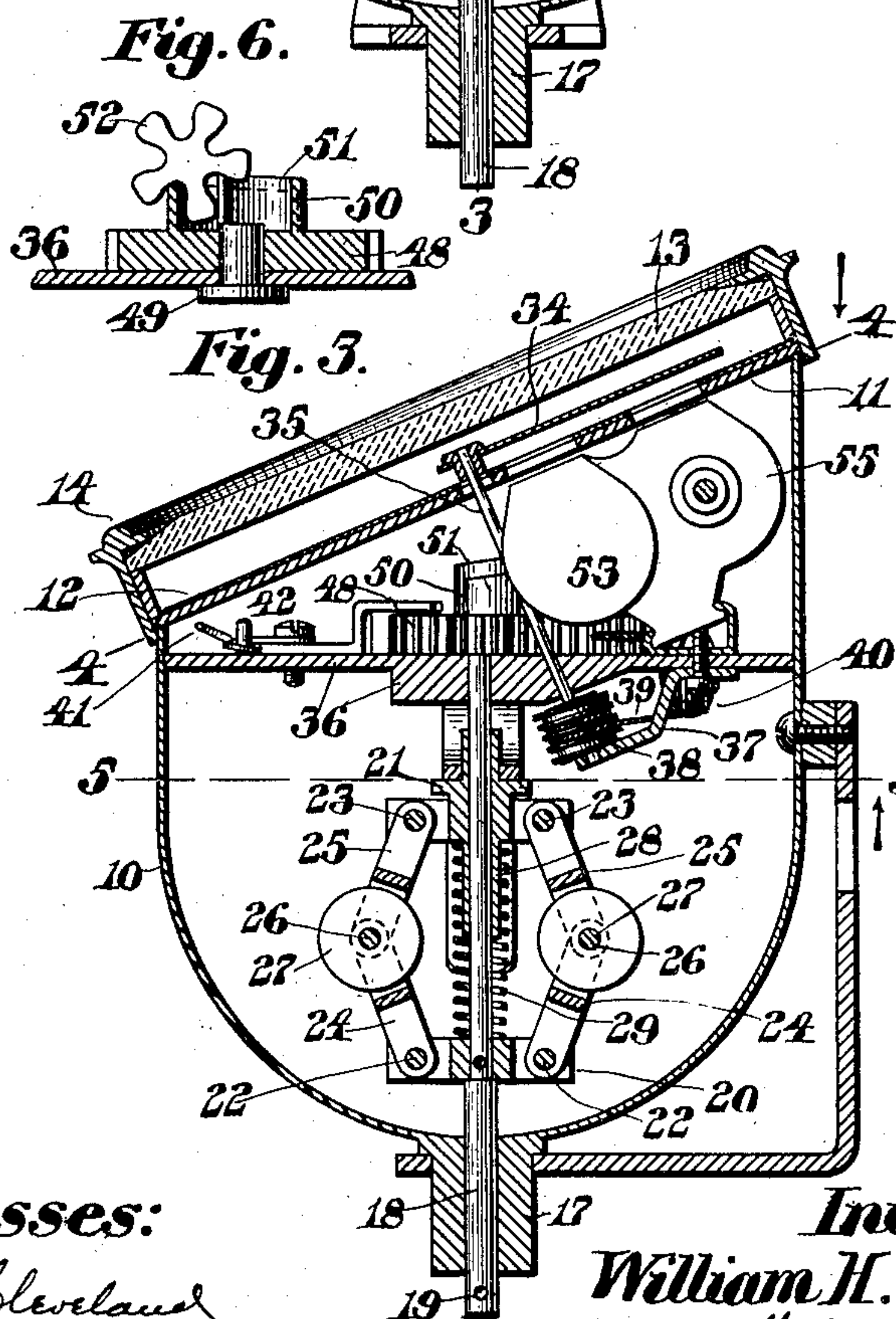
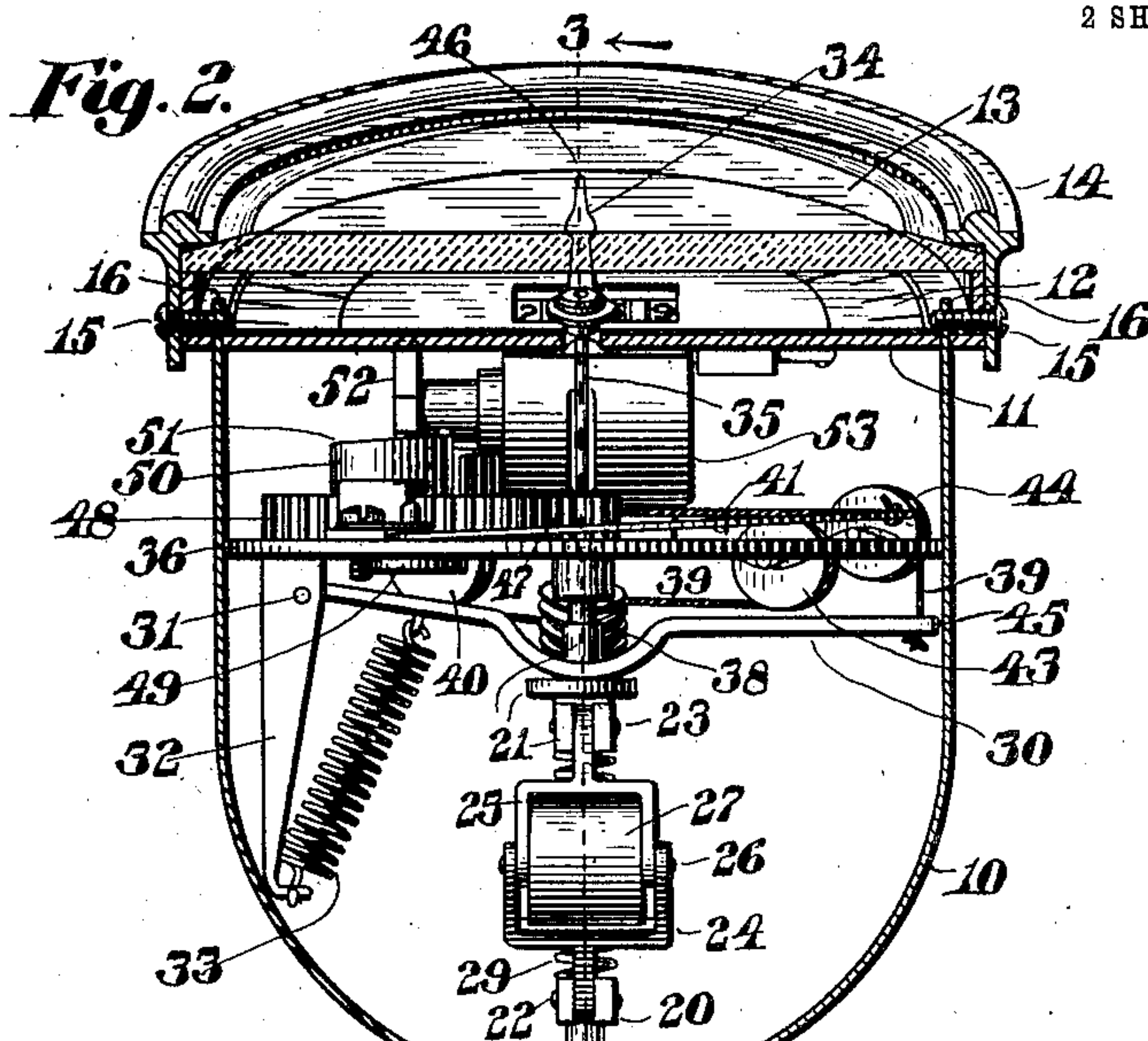
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UNITED STATES PATENT OFFICE.

WILLIAM HERBERT JONES, OF NEWTON, MASSACHUSETTS.

SPEED-INDICATOR.

No. 834,909.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed January 15, 1906. Serial No. 296,007.

To all whom it may concern:

Be it known that I, WILLIAM HERBERT JONES, a citizen of the United States of America, and a resident of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Speed-Indicators, of which the following is a specification.

This invention relates to speed-indicators and to such devices that are particularly designed for use on motor-carriages and other vehicles.

The object of the device is to afford a chauffeur or other driver a ready means of ascertaining the exact speed of the vehicle which he is operating, so that, if he desires, he may at all times keep within the limit of speed provided by the law in the community in which he is traveling.

A further object is to bring to the view of the operator at all times figures indicating the total number of miles traveled and other figures indicating the total number of miles traveled on each particular trip.

To accomplish these objects, certain combinations and arrangements of parts have been effected, which will be readily understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings, Figure 1 represents a plan of an indicator embodying the features of this invention. Fig. 2 represents a vertical section of the same, the cutting plane being on line 2 2 on Fig. 1. Fig. 3 represents a transverse vertical section, the cutting plane being on line 3 3 on Fig. 2. Fig. 4 represents a sectional plan of the same, the cutting plane being on line 4 4 on Fig. 3. Fig. 5 represents an inverted sectional plan, the cutting plane being on line 5 5 on Fig. 3; and Fig. 6 represents a detailed view of the device for operating the odometer.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 represents a casing the upper end of which is closed by the plate 11, to the upper surface of which is secured a dial 12. The dial 12 is protected by means of the glass member 13, held in position by the annular ring 14, secured by suitable screws 15 to ears 16, forming a part of the casing 10. The opposite end of the casing 10 is provided with a hub 17, in which is mount-

ed a revoluble member 18. The member 18 is provided with a hole 19, by which a flexible shaft or other member may be secured thereto to cause the revolution of said member 18, the opposite end of said flexible shaft or other member being operated by the wheel of a carriage or other device the speed of which it is desired to ascertain. As these connecting members are common to all speed-indicators and form no part of the present invention, they are not shown in the drawings.

The revoluble member 18 has secured thereto, so as to be revoluble therewith, the member 20 and the member 21, freely movable lengthwise of said revoluble member. Each of the members 20 21 is provided with a pair of radiating arms, to which are pivoted at 22 23 the links 24 25, which in turn are pivoted together at 26 and have mounted upon said pivots 26 weighted members 27. The slidable member 21 is provided with a tubular hub 28, encircling the revoluble member or shaft 18, and surrounding this tubular hub and interposed between the fixed member 20 and the slidable member 21 is a coiled spring 29, normally tending to separate said members 20 21. Resting upon the upper end of the slidable member 21 is a member 30, pivoted at 31 to a bracket 32, the end of said bracket having secured thereto a spring 33, the opposite end of which is secured to the member 30 to retain it in contact with the slidable member 21. It is obvious that when the revoluble shaft or member 18 is at rest the various elements are in the position shown in the drawings; but as soon as a rotary motion is imparted to said shaft 18 centrifugal action will cause the weighted members 27 to move outwardly, causing the space between the members 20 21 to be decreased and permitting the tension of the spring 33 to act upon the pivoted member 30 to move it downwardly about its pivot 31. The tension of the spring 33 is substantially the same as that of the spring 29, the excess of tension in the latter being only sufficient to normally retain the members 20 21 separated. This centrifugal mechanism operating upon the pivoted member 30 is utilized to operate the speed-hand 34, as will be hereinafter described.

The hand 34 is secured to and revoluble with a spindle 35, mounted in suitable bearings in the transverse plate 36 and the

bracket 37 and has mounted thereon, so as to be revoluble therewith, between said bearings, the grooved drum 38, said drum being provided with a peripheral spiral groove. A flexible member, such as a cord or wire 39, is placed in the groove in said drum, encircling the same, and one end thereof passes over the sheave 40 and is secured to the free end of the spring 41, secured to the plate 36 at 42, while the other end of said flexible member or cord passes under the sheave 43, over the sheave 44, and is connected to the outer end of the member 30 at 45. The purpose of the spring 41 is to care for the slack in the cord 39 as it passes from the sheave 40. The tension of the springs 29 33 is so regulated that they are practically balanced, with the tension of the spring 29 slightly the greater, so as normally to retain the hand 34 at the zero-point 46 on said dial 12 when the revoluble shaft 13 is at rest.

It is obvious that the tension of the spring 33 must be less than the tension of the spring 29, so that said spring 29 will be able to overcome any tendency on the part of the spring 33 to move the member 30 about its pivot 31 until the centrifugal action takes place to compress the spring 29 to cause the member 21 to move longitudinally of the revoluble shaft 18. The tension of the spring 33 will then be permitted to act upon said pivoted member 30 to cause it to move about its pivot 31, thereby moving the flexible member or cord 39 against the tension of the spring 41, this movement of the flexible member or cord 39 causing a movement of the spindle 35 to move the hand 34 off of the zero on the dial 12 about its axis to a point that will indicate by suitable markings upon said dial the exact speed of the vehicle to which said indicator is attached. It is obvious that as soon as the speed decreases the weighted members 27 will move toward the axis of the revoluble member 18, returning the various parts toward their normal position until the shaft 18 ceases to revolve, at which time the hand 34 will have returned to its zero position, as indicated at 46.

The upper end of the revoluble member or shaft 18 has secured thereto a pinion 47, which meshes into a gear 48, mounted upon a short revoluble stud 49, having a suitable bearing in the plate 36. The upper face of said gear 48 is provided with a spiral projecting lip or flange 50, the upper edge 51 of which has a gradually-increasing pitch. This flange or lip 50 engages with the star-wheel 52 upon the operating-shaft of an odometer 53 of any well-known construction, said odometer being provided with the total-trip register 54, operated by said star-wheel 52, and the trip-register 55, operated therefrom in the usual manner. The pitch of the edge 51 of said spiral lip 50 is so regulated that as one end of said spiral leaves a tooth of said

star-wheel 52 it has moved it into a position to insure the other end of said spiral accurately engaging the next tooth of said wheel.

By this mechanism a simple and very effective indicator is secured which accurately registers the speed of the vehicle to which it is attached, while under the same glass and inclosed in the same casing the total-mile register and the trip-register are exposed to the view of the operator.

It is believed that the advantages of such a construction, simplified as it is and so effective in its operation, are so obvious as to need no further description, and it is believed that from the foregoing description the operation of the invention will be thoroughly understood.

I claim—

1. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble shaft; centrifugal mechanism including a spring revoluble with said shaft; a spring-retracted member movable lengthwise of said shaft against the tension of said spring by the spring of said centrifugal mechanism; and means interposed between said member and hand for actuating the latter by the operation of the former.

2. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble shaft; centrifugal mechanism revoluble with said shaft including a spring surrounding said shaft; a spring-retracted member movable lengthwise of said shaft against the tension of said spring by the spring of said centrifugal mechanism; a revoluble member upon which said hand is mounted; a flexible member encircling said revoluble member and secured at one end to said spring-retracted member; and a spring secured to the opposite end of said flexible member and cooperating with the spring-retracted member to normally maintain the hand at zero on said dial.

3. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble shaft; centrifugal mechanism revoluble with said shaft; a pivoted member movable endwise of said shaft and moved in one direction by a spring; a second spring of slightly less tension to move said member in the opposite direction; centrifugal mechanism for overcoming the tension of the first spring and permitting the second spring to act; a revoluble member upon which said hand is mounted; a spring; and a flexible member interposed between the free end of said spring and the free end of said pivoted member and encircling said revoluble hand member.

4. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble shaft; spring-controlled centrifugal mechanism revoluble with said shaft; a pivoted member movable endwise of said shaft and moved in one direction by the spring of said centrifugal mechanism; a spring to retain said mem-

ber in contact with said centrifugal mechanism, said spring being of slightly less tension than the spring of said centrifugal mechanism; a revoluble member upon which said hand is mounted; a drum secured thereto and provided with a spiral groove; a spring; and a flexible member interposed between the free end of said spring and the free end of said pivoted member and encircling said revoluble hand member.

5. In a speed-indicator, the combination of a dial; a hand therefor; spring mechanism cooperating therewith to move it about said dial; and centrifugal mechanism normally extended by a spring to retain said hand at zero and adapted to operate against the tension of said spring to permit the said spring mechanism to move the hand from its normal position.

6. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble member upon which said hand is mounted; spring mechanism cooperating therewith for moving said hand about said dial; and centrifugal mechanism normally extended by a spring to retain said hand at zero and adapted to operate against the tension of said spring to permit the said spring mechanism to move the hand from its normal position.

7. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble member upon which said hand is mounted; spring mechanism cooperating therewith for moving said hand about said dial; a revoluble shaft; and means cooperating therewith for normally retaining said hand at zero and adapted to operate upon the revolution of said shaft to permit the said spring mechanism to move the hand from its normal position.

8. In a speed-indicator, the combination with a dial and its cooperating hand; of spring mechanism adapted to move said hand about said dial; a revoluble shaft; and

mechanism including a spring mounted upon said revoluble shaft and adapted to normally retain said hand at zero on said dial and to cooperate with said spring mechanism during the revolution of said shaft to permit it to move said hand out of its normal position.

9. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble member upon which said hand is mounted; a revoluble shaft; centrifugal mechanism including a member adapted to move longitudinally along said shaft; springs actuating said member in either direction, the tension of the one operating against said centrifugal mechanism slightly exceeding the tension of the other; and mechanism interposed between the hand-supporting revoluble member and said slidable member whereby the movement of said hand is controlled by the longitudinal movement of the latter.

10. In a speed-indicator, the combination of a dial; a hand therefor; a revoluble member upon which said hand is mounted; a revoluble shaft; centrifugal mechanism including a member slidable upon said revoluble shaft and revolving therewith; a spring surrounding said shaft tending to move said member longitudinally of said shaft in one direction; a pivoted member cooperating with said slidable member; a spring secured thereto tending to move said slidable member in the opposite direction; and mechanism interposed between the hand-supporting revoluble member and said slidable member whereby the movement of said hand is controlled by the longitudinal movement of the latter.

Signed by me at Boston, Massachusetts, this 12th day of January, 1906.

WILLIAM HERBERT JONES.

Witnesses:

EDNA C. CLEVELAND,
WALTER E. LOMBARD.