

No. 708,632.

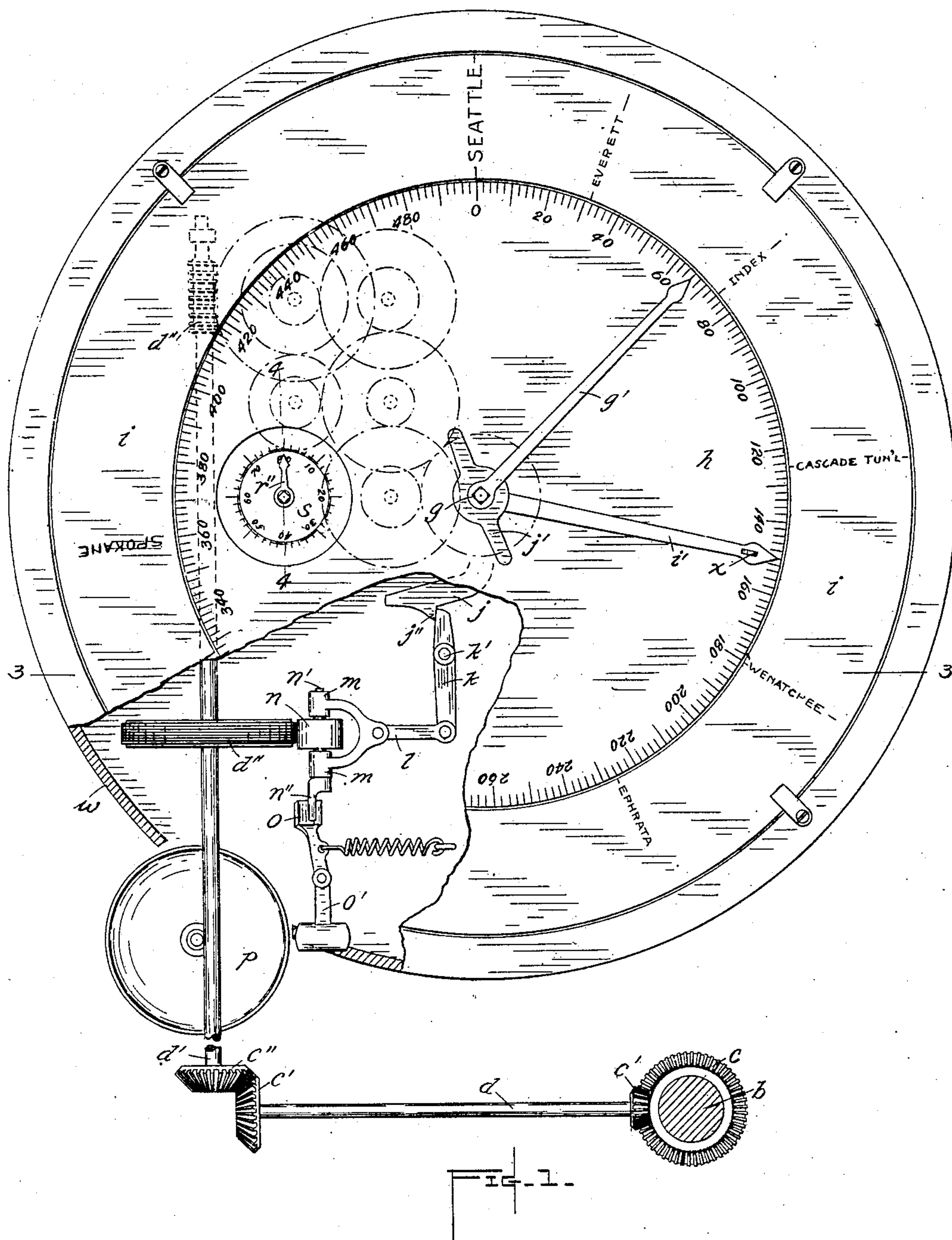
Patented Sept. 9, 1902.

L. E. FUGATE.
REGISTER AND ALARM.

(Application filed Jan. 28, 1902.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSED:

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INVENTOR

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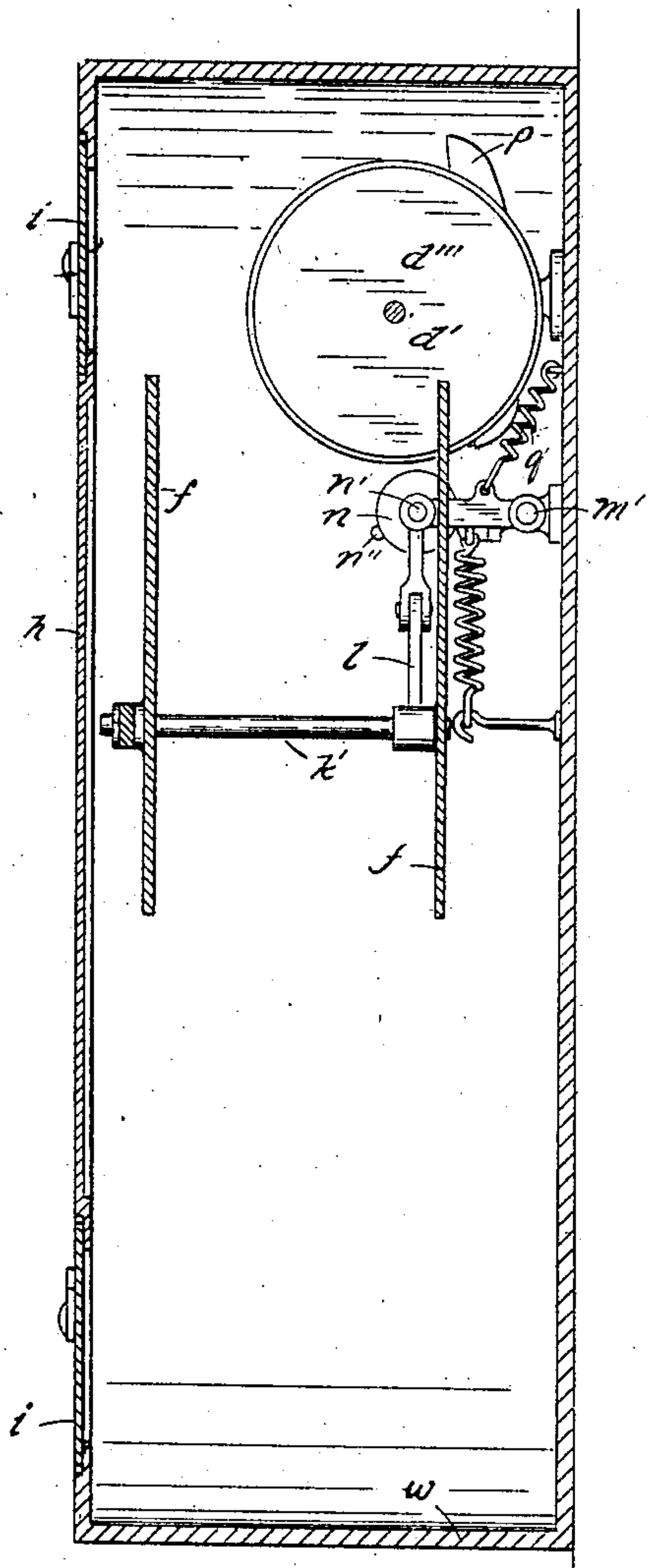


FIG. 3.

WITNESSES

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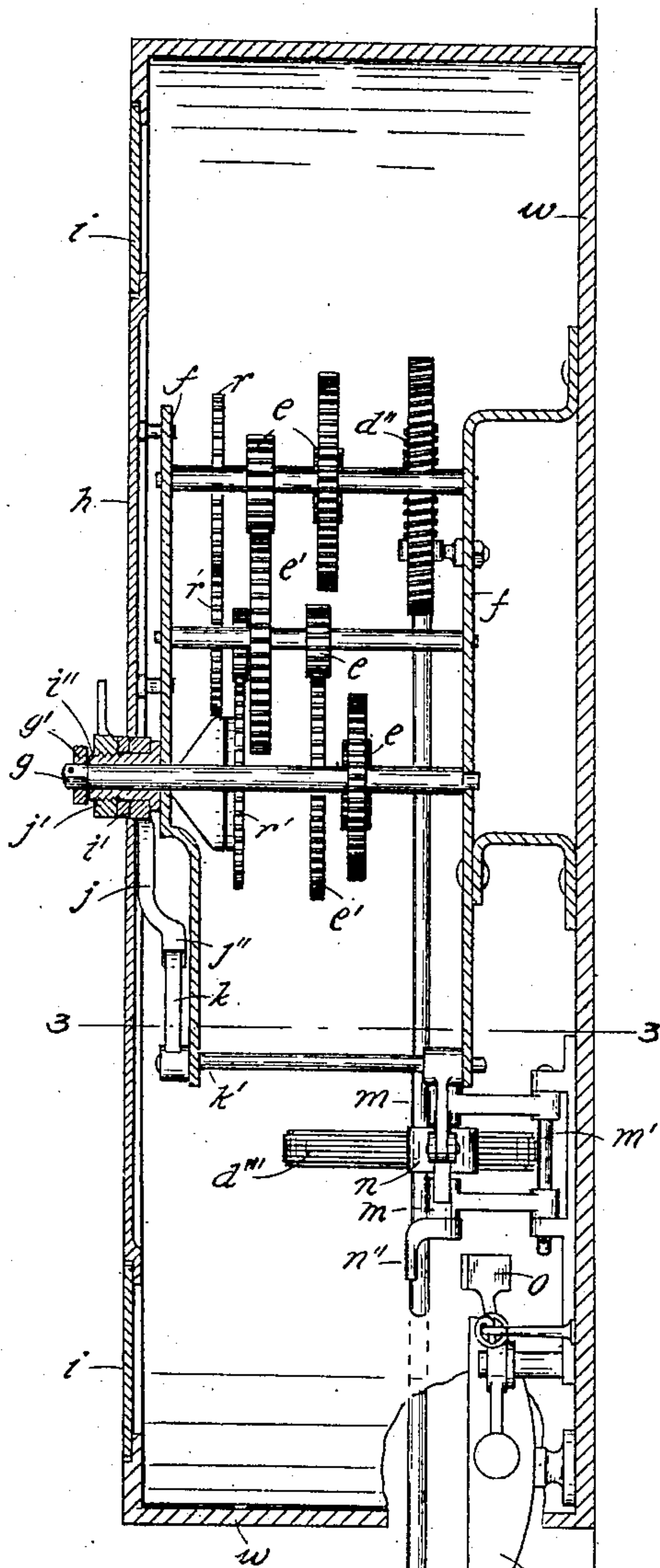


FIG. 2.

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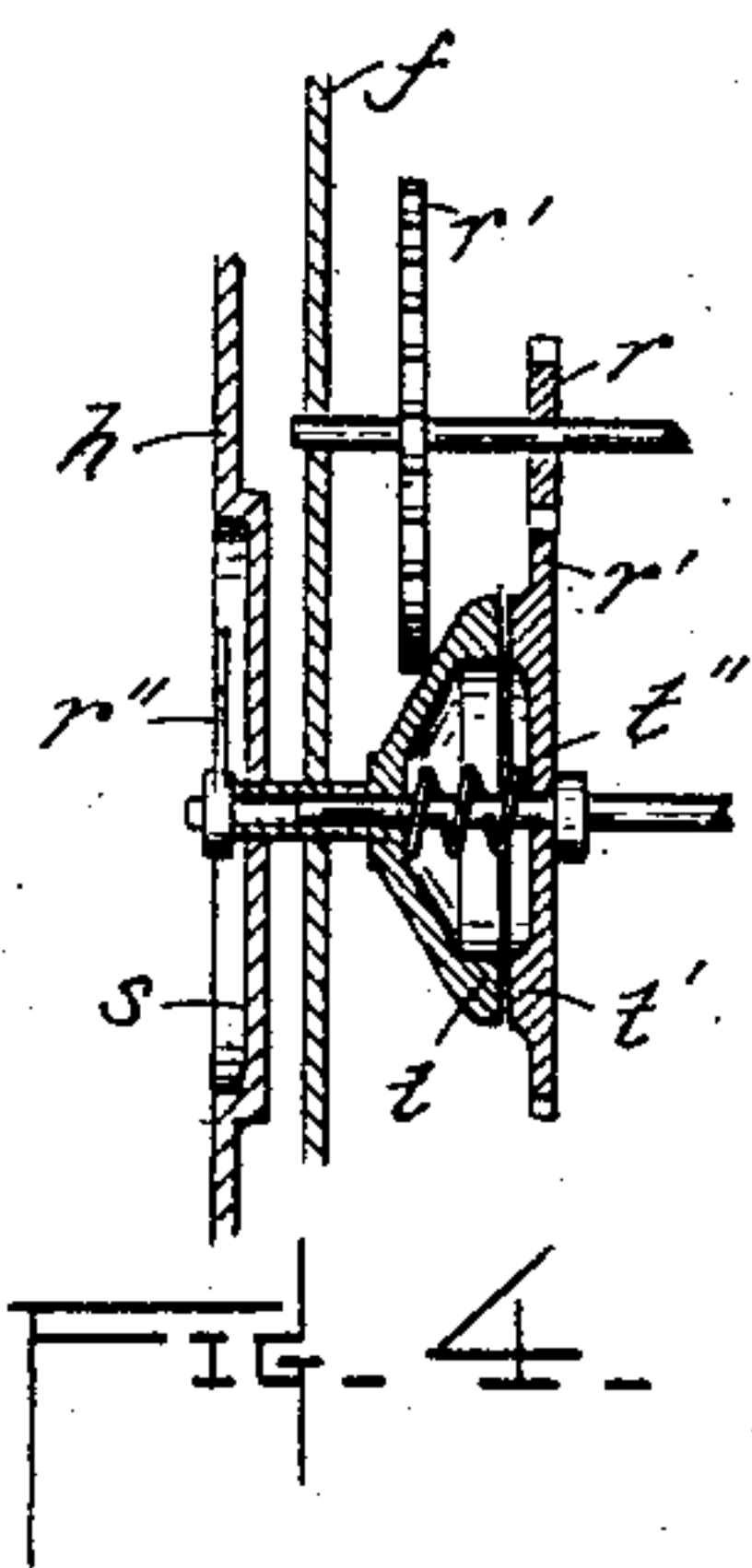


FIG. 4.

UNITED STATES PATENT OFFICE.

LAKE E. FUGATE, OF SEATTLE, WASHINGTON.

REGISTER AND ALARM.

SPECIFICATION forming part of Letters Patent No. 708,632, dated September 9, 1902.

Application filed January 28, 1902. Serial No. 91,560. (No model.)

To all whom it may concern:

Be it known that I, LAKE E. FUGATE, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Railway Speed Counters, Registers, and Alarms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to railway-locomotives, its object being to furnish a reliable speed-meter and distance-counter and also to provide warning-signal, which is automatically actuated at a predetermined location, whereby there will be no mistake in running by a switch or siding, thus preventing many collisions upon railways due to the engineer misconstruing or forgetting orders.

The invention consists in the novel arrangement and combination of parts hereinafter described, illustrated in the drawings, and finally pointed out in the claims.

In the said drawings, where similar letters of reference indicate corresponding parts in all of the views, Figure 1 represents a vertical front view of a device embodying my invention, the train of gears being shown somewhat diagrammatic. Fig. 2 represents a central vertical cross-section. Fig. 3 represents a horizontal section through line 3 3 of Figs. 1 and 2, and Fig. 4 is a detail sectional view taken on line 4 4 of Fig. 1.

In carrying out my invention I secure to one of the car-wheels or its axle *b* a bevel-pinion *c*, which communicates rotary motion through bevel-gears *c' c''*, shafts *d d'*, and a worm *d''* to a train of gears consisting of pinions *e* and wheels *e'*, mounted on arbors journaled in a suitable frame, as *f*. The said train of pinions and gear-wheels are so proportioned one to the other and to the aforesaid geared connection with the car-wheel axle that the arbor *g*, carrying an index-finger *g'*, will revolve the latter to indicate upon a stationary graduated circular plate or dial *h* the number of miles which the actuating car-wheel rolls, a removable annular card *i* having the names of the several stations, switches, or turnouts situated upon the railway-line marked thereon at angular distances corresponding to their true distances apart, according to the scale of the graduate-marks upon

the adjacent edge of the said fixed dial-plate *h*. Mounted upon the arbor *g* is a screw-threaded sleeve *i''*, which forms an arbor for a pointer-finger *i'* and a bell-crank *j* and are clamped thereto by a nut *j'*. A lever *k*, fulcrumed at *k'*, engages by one of its arms with a stop *j''*, while its other arm connects by rod *l* with swinging journal-boxes *m*, hinged at *m'* to the frame. *n* is a friction-wheel with its arbor *n'* extending through said boxes *m* and provided upon its lower extremity with a crank-arm *n''*, adapted to intermittently engage and release a wiper-plate arm *o* of a hammer *o'* when it is rotated by a paper or rubber friction-wheel *d'''* upon the shaft *d'*.

p is a gong.

w is the containing-case.

A supplemental train of gears *r r'* actuate from one of the arbors of the aforesaid train of gears a speed-meter finger *r''*, which revolves about a recessed circular dial *s*, preferably positioned upon the main dial-plate *h*. The finger *r''* is arranged to be engaged with its arbor by thumb-pressure thereon, which clutches the same by friction device comprising two disks *t t'*, kept apart by a spring *t''*, so that the engineer may instantly throw the finger *r''* into or out of gear by simply pressing thereupon or releasing it. The graduate-marks and index-figures of the dial *s* are so disposed that its finger will pass the several miles and fractional parts thereof as marked upon the dial at the same rate proportionally to the interval of time—say fifteen seconds—that the train itself will travel in a given period, as an hour.

The operation of the device is as follows: The index-finger *g'* and the place of departure marked upon the station-card *i* are moved about their center until they register with the zero-mark upon the dial *h*. The pointer *i'* is next moved around from left to right, or in a reverse direction to which the hands of a clock travel, until it reaches the point at which it is desired an alarm should be rung—as, for instance, where the train is to be sidetracked—and in thus moving the finger the toe upon the bell-crank *j* engages with the lever *k* and draws the friction-wheel *n* from its mate *d'''*. Then when the train begins to move the wheels will rotate, pointing off the miles step by step, so to speak, until the in-

dex-finger g' comes in contact with a lug x upon the pointer i' , which, interfering therewith, is moved thereby, as well as the crank and its toe, when through the action of a spring q provided the wheel n is drawn into frictional contact with the rotating wheel d''' , which rings the alarm.

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

1. A combined speed counter, register, and alarm, consisting respectively of a stationary graduated dial, an index-finger, means to revolve said finger from the rotating of one of the wheels of the car; another dial having graduate-marks thereon, an index-finger, means to engage or disengage said finger from its connecting mechanism; and an alarm-bell and means to ring the same from a pointer set at any desired location upon the first-mentioned dial, and adapted to being engaged by the first-named index-finger, and operative connection between the said bell and the said pointer, substantially as and for the purposes set forth.

2. The combination with a car-wheel axle, of a stationary dial having graduate-marks thereon, a train of gears, connection between the said axle and the train of wheels for op-

erating the latter, an index-finger actuated by said train of wheels, a set hand or pointer loosely mounted on a sleeve upon the arbor of the aforesaid index-finger, a bell-crank provided with a stop hung upon said sleeve, means to clamp the said pointer and bell-crank to said sleeve, an alarm-bell, a friction-pulley mounted upon an arbor journaled in swinging boxes, connection between said swinging boxes and the said bell-crank lever such connection being a lever and a reach-rod, a bell-hammer, a crank upon said friction-wheel arbor for vibrating said hammer, a friction-wheel mounted upon the connection between said axle and the said train, a movable annular card having the railway-stations marked thereon; and a speed-meter comprising a graduated dial, an index-finger, geared connection between one of the arbors of the aforementioned train and the last-named index-finger, and means to engage or disconnect said finger from its gear-train, substantially as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LAKE E. FUGATE.

Witnesses:

PIERRE BARNES,
JOHN N. PERKINS.