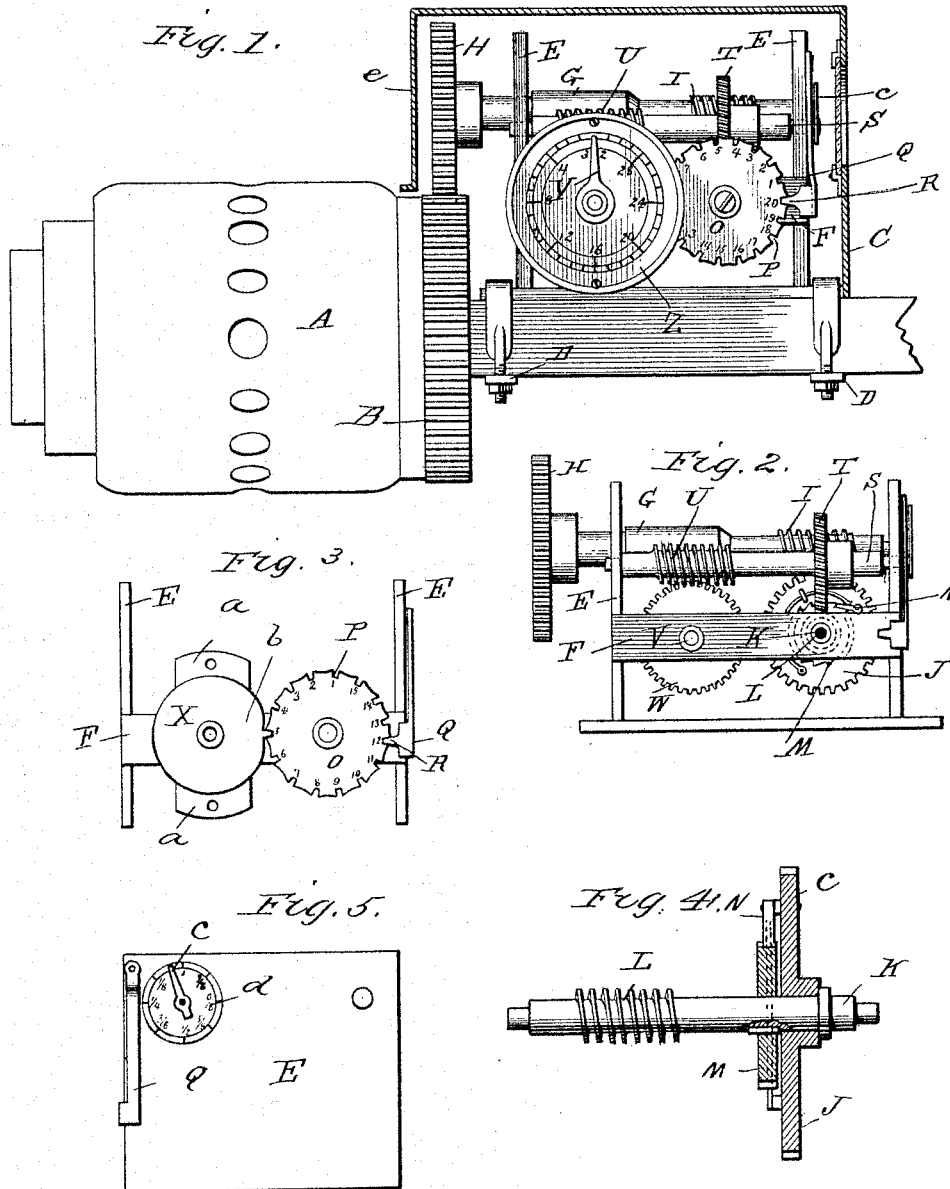


(No Model.)

E. J. MERRY.
CYCLOMETER.

No. 491,739.

Patented Feb. 14, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

ELWIN JAMES MERRY, OF MAGOG, CANADA.

CYCLOMETER.

SPECIFICATION forming part of Letters Patent No. 491,739, dated February 14, 1893.

Application filed July 16, 1892. Serial No. 440,252. (No model.)

To all whom it may concern:

Be it known that I, ELWIN JAMES MERRY, a subject of the Queen of Great Britain, residing at Magog, in the county of Stansted and Province of Quebec, Canada, have invented certain new and useful Improvements in Odometers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to odometers and consists in certain novel features which will be hereinafter described and claimed.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is an elevation showing the hub of a wheel and a part 15 of the axle with my improved odometer secured thereon; Fig. 2 is a detail view with the front dials removed to show the arrangement of the internal gearing of the device; Fig. 3 is a detail elevation showing one of the front 20 dials and the cam for actuating the same and Figs. 4 and 5 are detail views of different parts of the device.

In carrying out my invention, I construct 25 on the inner ends of the hub A, a gear wheel B, and this gear wheel may be formed integral with the hub or may be made separate therefrom and then rigidly secured thereto.

The casing C of the odometer is secured 30 upon the axle adjacent to the hub by means of the clips D as clearly shown. Within the casing I provide the standards or side plates E which are connected by end bars F and in the said side plates, or standards, and end 35 bars I form suitable bearings for the several shafts or arbors hereinafter particularly referred to.

The main shaft or driving arbor G is mounted in the side plates or standards and is extended 40 beyond the outer standard and provided on its extended end with the pinion H meshing with the gear wheel B whereby the motion of the wheel will be transmitted to the registering mechanism.

45 The driving arbor G is provided with a worm pinion I which meshes with a small gear wheel J arranged below the same as shown most clearly in Fig. 2. This gear wheel J is loosely mounted on a transverse shaft K which is 50 journaled in the end bars F and is provided with a worm L as clearly shown. A ratchet wheel M is secured on the said shaft K and is

engaged by a pawl N carried by the gear wheel J as shown in Figs. 2 and 4. This arrangement obviously permits forward movement of the several parts and prevents retrograde movement thereof so that the dials can not be turned backward. The front end of the said shaft K is extended beyond the end bar F and carries a disk or dial O which is 60 loosely mounted thereon and has its edge provided with a series of notches P opposite each one of which a numeral is placed on the face of the disk, as shown. In operation, these notches P are engaged by the tooth of a disk 65 hereinafter described so that the notched disk will be rotated, and in order to prevent backward movement of the said notched disk or dial I provide a pawl or latch Q which is secured on the side plate or standard and is provided 70 with a finger R adapted to engage the notches P, as clearly shown.

Above the shaft K a counter shaft S is mounted in the side plates and the said shaft is provided with a pinion T engaging the worm 75 L and with a worm U as clearly shown. A shaft V is mounted in the end bars, parallel with the shaft K, and is provided with a pinion W meshing with the worm U, as clearly shown in Fig. 2. The front end of the said 80 shaft is extended beyond the end bars and carries a disk X and a pointer Y, the said pointer moving over the face of a dial Z which is secured to the off-sets *a* of the end bar. The disk X and the pointer Y move in unison and 85 the said disk is provided with a tooth *b* which is adapted to engage the notches P of the disk O and thereby rotate this latter disk and bring a different notch thereon into engagement with the finger R. The end of the counter- 90 shaft S is extended beyond the side plate and carries a pointer *c* which plays over the face of a dial *d* marked on the said side plate. It will be understood that the casing is provided with glass-covered openings so that the several 95 dials may be readily noted. The sand band *e* is extended over the gear wheel B and the pinion H so as to inclose the same and prevent access of dirt thereto and it may be made to form the top of the casing if so desired. 100

From the foregoing description, it is thought the operation and advantages of my device will be readily understood. As the vehicle

wheel with its hub A revolves, the motion thereof will be communicated through the gear wheel B and the pinion H to the shaft G and thence to the gearing above described.

- 5 As the shaft S rotates the pointer *c* will be moved over the face of the dial *d* so as to indicate the fractions of miles traveled and the pointer Y will be moved over the face of the dial Z to indicate the number of miles traveled. 10 The said dial Z is graduated so as to register thirty-two miles and each time thirty-two miles have been traveled the disk X will have completed one revolution and the tooth *b* will engage a notch of the disk O and rotate 15 the same slightly so as to indicate by means of the number brought opposite the finger R how many multiples of thirty-two miles have been traveled.

- It will thus be seen that I have provided a 20 very efficient odometer which will accurately register the exact distance traveled by the vehicle. By employing the direct and positive gearing consisting of the gear wheel B and the pinion H, the several parts of the 25 odometer will be operated steadily and continuously so that all movement of the vehicle wheel will be accurately measured. Should the vehicle wheel be turned backward the pawl N will readily slip over the ratchet wheel 30 M and the positions of the several dials will remain unaffected.

Instead of the gear-wheel on the hub and

the pinion meshing therewith, suitable rubber or other friction wheels may be employed as is evident.

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

In an odometer, the combination of a casing, a mainshaft G journaled in the casing and 40 provided with means for rotating it and a worm I, the worm being within the casing, a shaft K journaled at right angles to shaft G and carrying a worm L and a loose gear J meshing with worm I, a ratchet wheel on shaft 45 K engaged by a pawl carried by the gear J, a loose notched disk O on one end of shaft K and a spring pawl for normally holding it against rotation, said disk being provided with indicating figures, a shaft S parallel to 50 shaft G and provided with a worm U and gear T, the latter meshing with worm I, another shaft V provided with a gear meshing with worm U, a disk X secured on shaft V and carrying a finger adapted to engage the notches 55 in disk O, an indicating hand Y on shaft V, and a dial Z, substantially as described.

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

ELWIN JAMES MERRY.

Witnesses:

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JAMES R. COOKE.