

(No Model.)

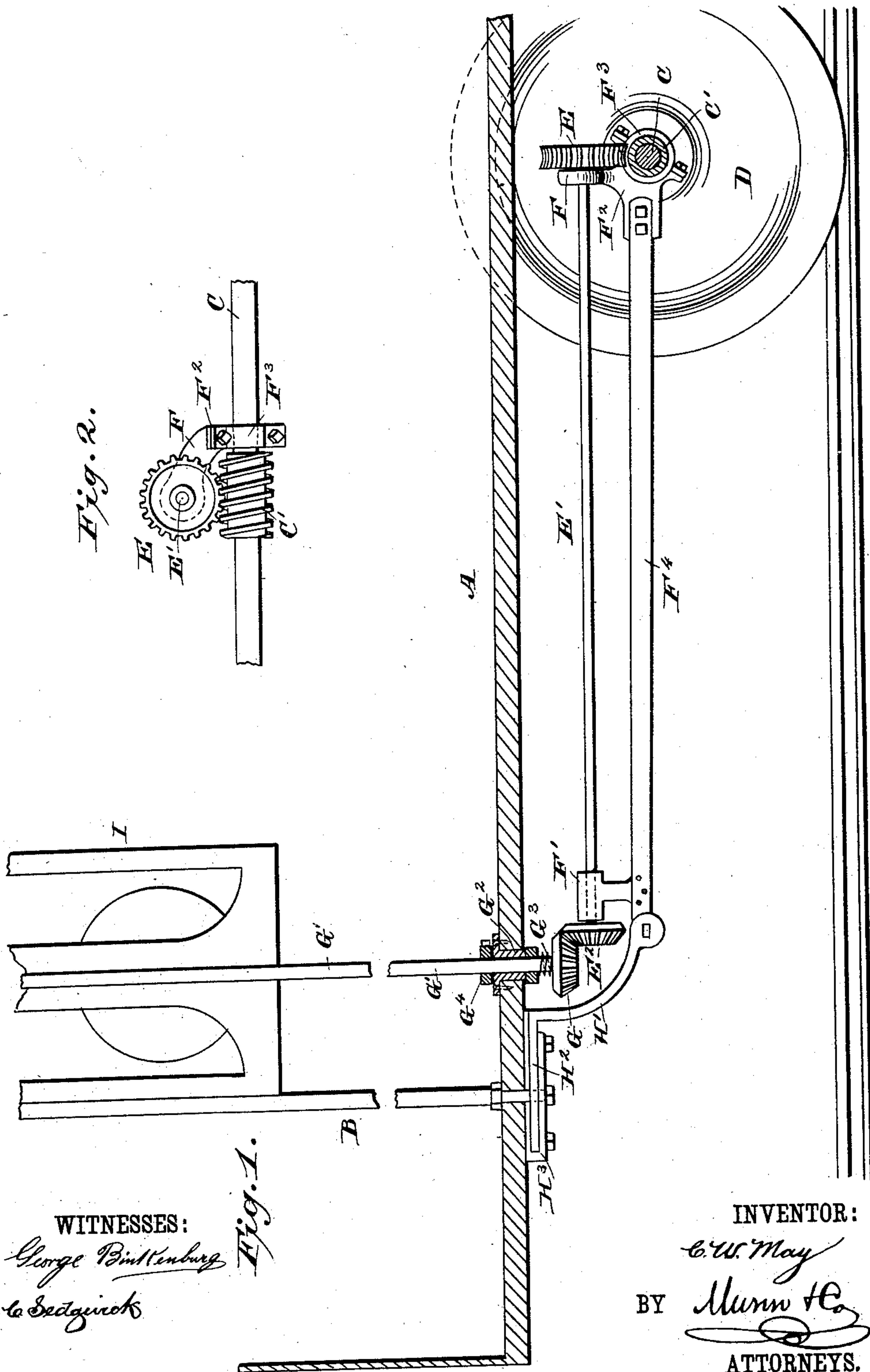
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C. W. MAY.

AUTOMATIC STATION INDICATOR.

No. 374,484.

Patented Dec. 6, 1887.



WITNESSES:
George Brinton
to Sedgwick

Fig. 1.

INVENTOR:

C. W. May

BY

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ATTORNEYS.

(No Model.)

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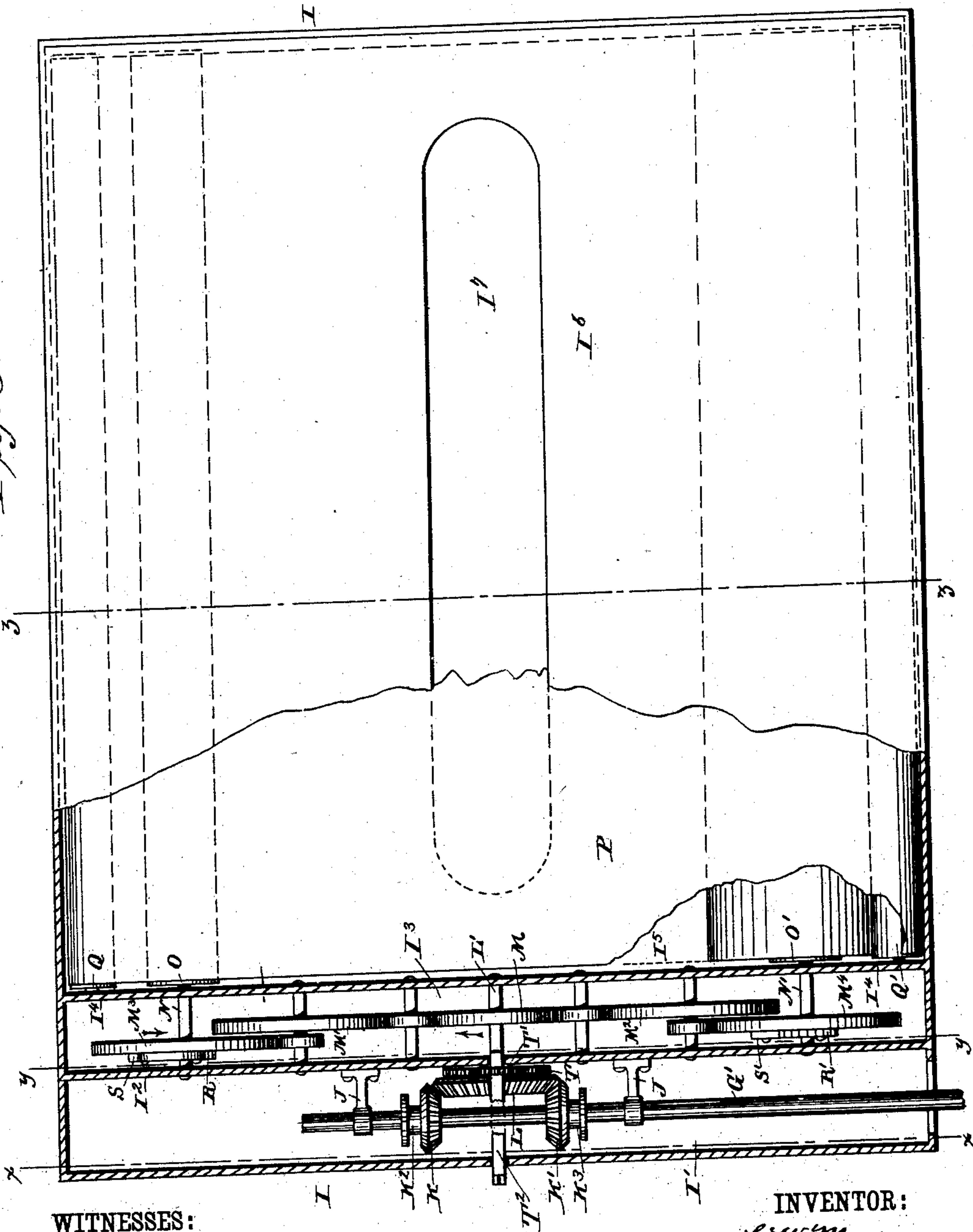
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Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES W. MAY, OF OMAHA, NEBRASKA, ASSIGNOR OF ONE-HALF TO
JOHN H. WHITE, OF SAME PLACE.

AUTOMATIC STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 374,484, dated December 6, 1887.

Application filed May 2, 1887. Serial No. 236,860. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. MAY, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Automatic Station-Indicator, of which the following is a full, clear, and exact description.

My invention relates to the construction and arrangement of a simple and effective device, to be actuated directly by the motion of a car, for automatically indicating the streets, stations, and other prominent points on the route as they are reached by the car.

The invention consists in the construction and combination of parts, as hereinafter fully described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation showing part of the indicator-actuating mechanism connected with the car-axle. Fig. 2 is a rear end view of the same. Fig. 3 is a face view of the indicator proper, parts being broken out to disclose the internal arrangement. Fig. 4 is a vertical section taken on the line xx , Fig. 3. Fig. 5 is a vertical section taken on the line yy , Fig. 3. Fig. 6 is a vertical section taken on the line zz , Fig. 3.

Referring to Figs. 1 and 2, A designates the bottom of the car-body, B the end wall of the same, C one of the car-axes, and D a wheel thereon.

The axle C is provided with a worm, C', which is in gear with a worm-wheel, E, fixed on the rear end of a shaft, E', mounted lengthwise of the car in bearings F and F'.

On the forward end of the shaft E' is fixed a bevel-gear, E², which engages with a bevel-gear, G, on the lower end of a vertical shaft, G', journaled at its lower end in a bearing, G², held in the car-bottom A.

The rear bearing, F, of the shaft E' is formed on a casting, F², loosely embracing the car-axle C and held thereon by a strap, F³, bolted to the casting. To the casting F² is secured the rear end of the bar F⁴, which extends forward below the shaft E', carries at its front end the bearing F' of the same, and is pivoted thereat to swing vertically on the downwardly-

curved arm H' of the bent piece H. The arm H² of the piece H is mounted to turn horizontally in a keeper, H³, attached to the under side of the car-bottom. The forward bearing, F', being thus connected by a universal joint to the car-body, is not affected by the lateral or vertical oscillation of the same, and the shaft E' is maintained in position.

A coiled spring, G³, is interposed between the bevel-gear G on the vertical shaft G' and the bearing G², to keep the gear G in engagement with the gear E² during the vertical oscillation of the car, and a collar, G⁴, provided with a set-screw, is adjusted on the shaft G', above its fixed bearing G², to properly limit its downward movement.

The shaft G' extends upward into the end compartment, I', of the casing I of the indicator proper, (shown in Figs. 3, 4, 5, and 6,) which is suitably supported in a conspicuous position near the top of the car.

The upper part of the shaft G' is mounted to turn freely in bearings J, secured to the inner skeleton wall, I², of the compartment I', and between the two bearings J reverse bevel-gears K K' are mounted to slide freely on, but compelled to turn with, the shaft G', as by means of the usual feather and groove.

The gears K K' are provided with annularly-grooved bosses K² K³, which are engaged by the forked levers K⁴ K⁵, Fig. 4, pivoted to the wall I², and having handles projecting through the casing I, by which either gear K or K' may be thrown into engagement with a large bevel-gear, L, or both disengaged therefrom.

Suitable stops may be provided for holding the handle-levers in either adjustment.

The large bevel-gear L is fixed on a shaft, L', projecting through the wall I² into the adjacent compartment I³ of the casing, and journaled in the wall I² and the inner skeleton wall, I⁴, of the compartment I³.

On the shaft L', within the compartment I³, is fixed a gear-wheel, M, which simultaneously drives in a like direction, through intermediate trains of multiplying gearing M' and M², the gear-wheels M³ M⁴, arranged, respectively, in the top and bottom of the compartment I³.

The gear-wheels M³ and M⁴ are mounted on the shafts N N', which extend through the wall

I⁴ and form the inner journals of the parallel carrier-rollers O O', arranged in the main compartment I⁵ of the indicator-casing, and having their outer journals mounted in the end wall of the compartment I⁵.

On the rollers O O' is wound the paper or fabric strip P, on which are printed or produced in succession the names of the stations, streets, &c., in the order in which they are reached by the car. The strip P is guided by the rollers Q Q' at the top and bottom of the compartment I⁵, close to the front wall, I⁶, of the casing, so that the various names will appear in succession at the narrow glazed opening I⁷ in the front wall, I⁶. On the inner roller journals or shafts, N N', are fixed reverse ratchets R R', which are engaged, respectively, by spring-actuated pawls S S', pivoted to the gear-wheels M³ and M⁴, which are mounted loosely on the shafts N N'.

The ratchets R R' on the two shafts being reverse, either carrier-roller O or O' can be turned for adjusting the tension of the strip P without affecting the other carrier-roller. With this arrangement, the names on the strip P, being spaced in accordance with the distances between the places which they respectively designate, said names will appear at the front opening, I⁷, when the car arrives at such places, as the strip travels exactly in accordance with the car.

At the end of the trip, if the car is reversed, the motion of the carrier-rollers can be reversed by the handle-levers K⁴ K⁵, so that on the return trip the names will appear in the required reverse order. In case the car is not reversed, but merely drawn backward, as it were, no reversal of the strip-actuating mechanism will be necessary, as the rotation of the driving-axle is reversed.

A spur-wheel, T, is fixed on the shaft L', just back of the large bevel-gear L, and is engaged by a smaller spur-wheel, T', the shaft T² of

which has a squared end projecting through the wall I of the casing to receive a key or crank. Thus, when the strip P becomes misplaced, as by the slipping of the car-wheels, it may readily be readjusted by throwing both bevel-gears K K' out of action and setting the gearing by means of said key or crank and gears T T².

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

1. The combination, with a car-body, A, a car-axle, C, having a gear, C', and a shaft, E', at right angles to the axle, having a gear, E, engaging the gear C', and a gear, E², engaging a gear, G, on the car-body, of a bar, F⁴, carrying bearings, in which the shaft E' is journaled, and pivoted at one end to swing vertically on and to the axle C, and a piece, H, to which the bar F⁴ is pivoted to swing vertically at its other end, and mounted to swing laterally on the car-body, substantially as described.

2. The combination of a car-body, a shaft, E', jointed to swing vertically with respect thereto, a gear, E², on the shaft E', a gear, G, engaging the gear E², its vertical shaft G' having a bearing in the car-body, and a spring for holding the gears E² and G in engagement as the car-body oscillates, substantially as described.

3. In an automatic indicator for cars, the combination of an indicating-strip, winding-rollers O and O', a rotary gear, M, gears M³ and M⁴, driven positively and simultaneously from the gear M, and reverse ratchets and their pawls connecting the winding-rollers, respectively, with the gears M³ and M⁴, substantially as described.

CHARLES W. MAY.

Witnesses:

JOHN N. WHITE,
S. S. VAN BEUREN.