

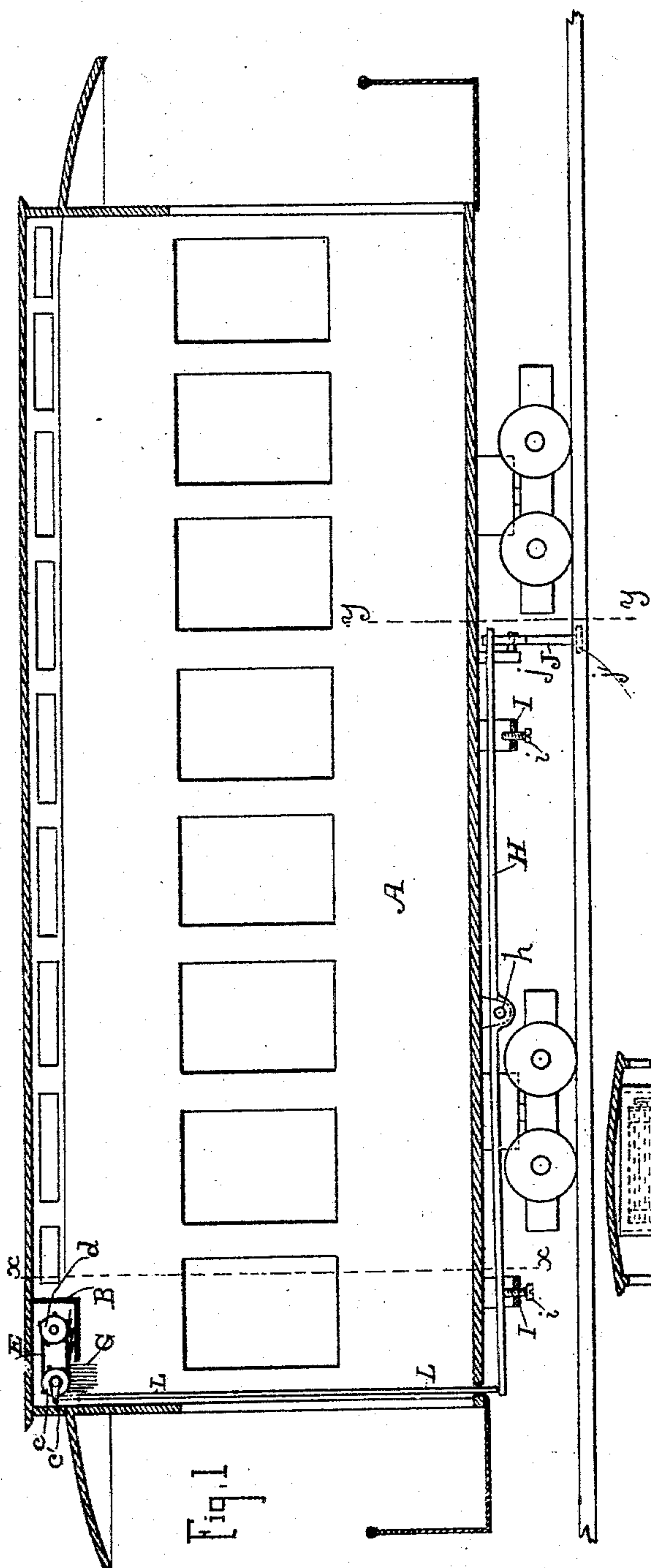
(No Model.)

2 Sheets—Sheet 1.

C. E. LARRABEE.
STATION INDICATOR.

No. 551,502.

Patented Dec. 17, 1895.



19

Witnesses,
J. A. Bayless

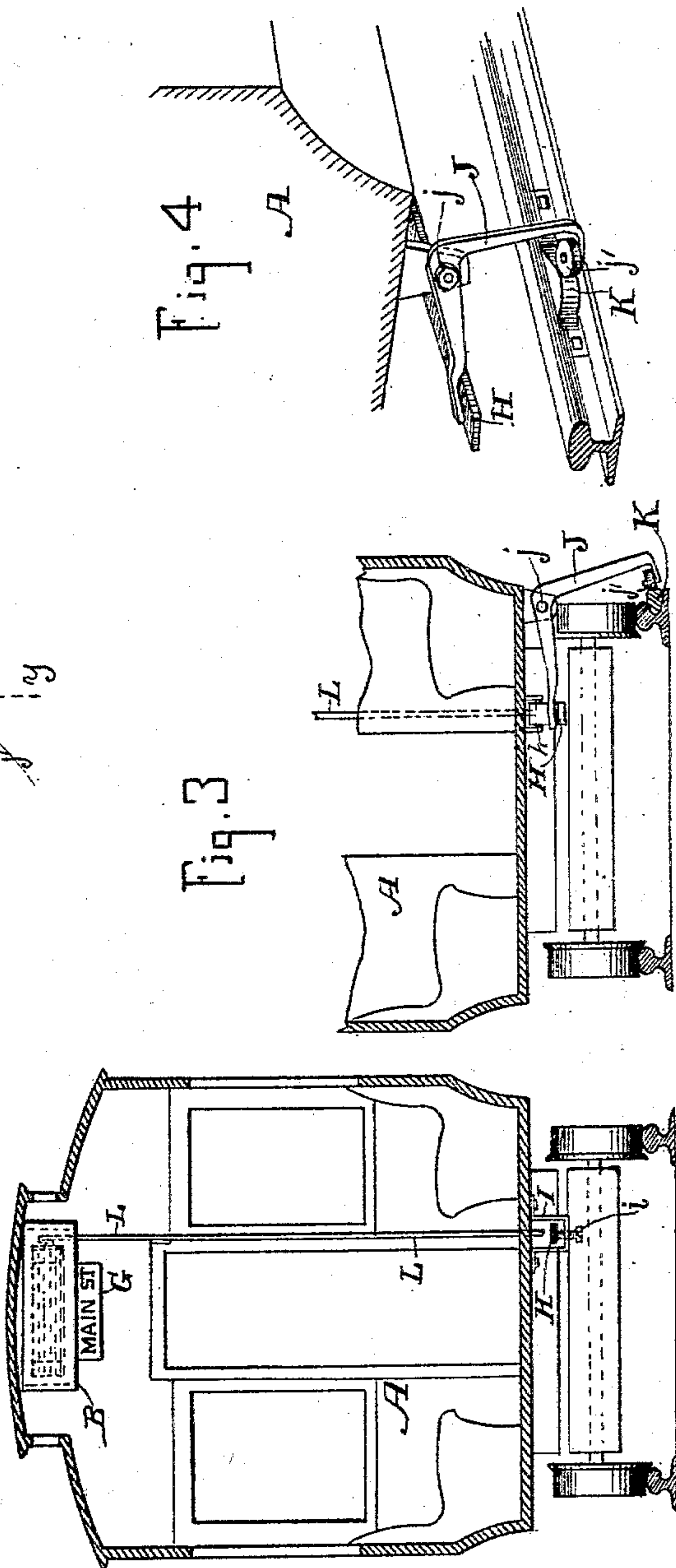


Fig. 4

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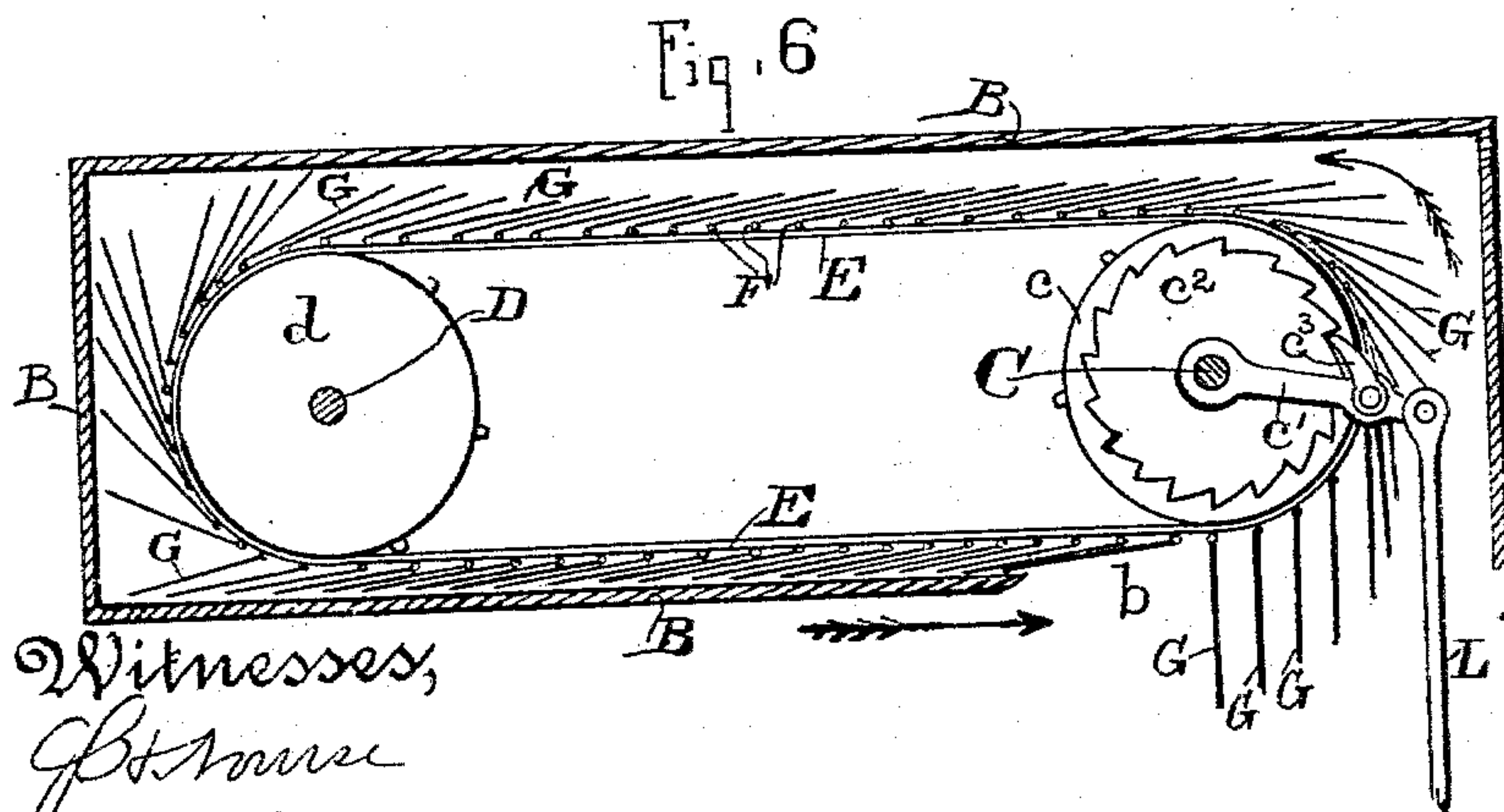
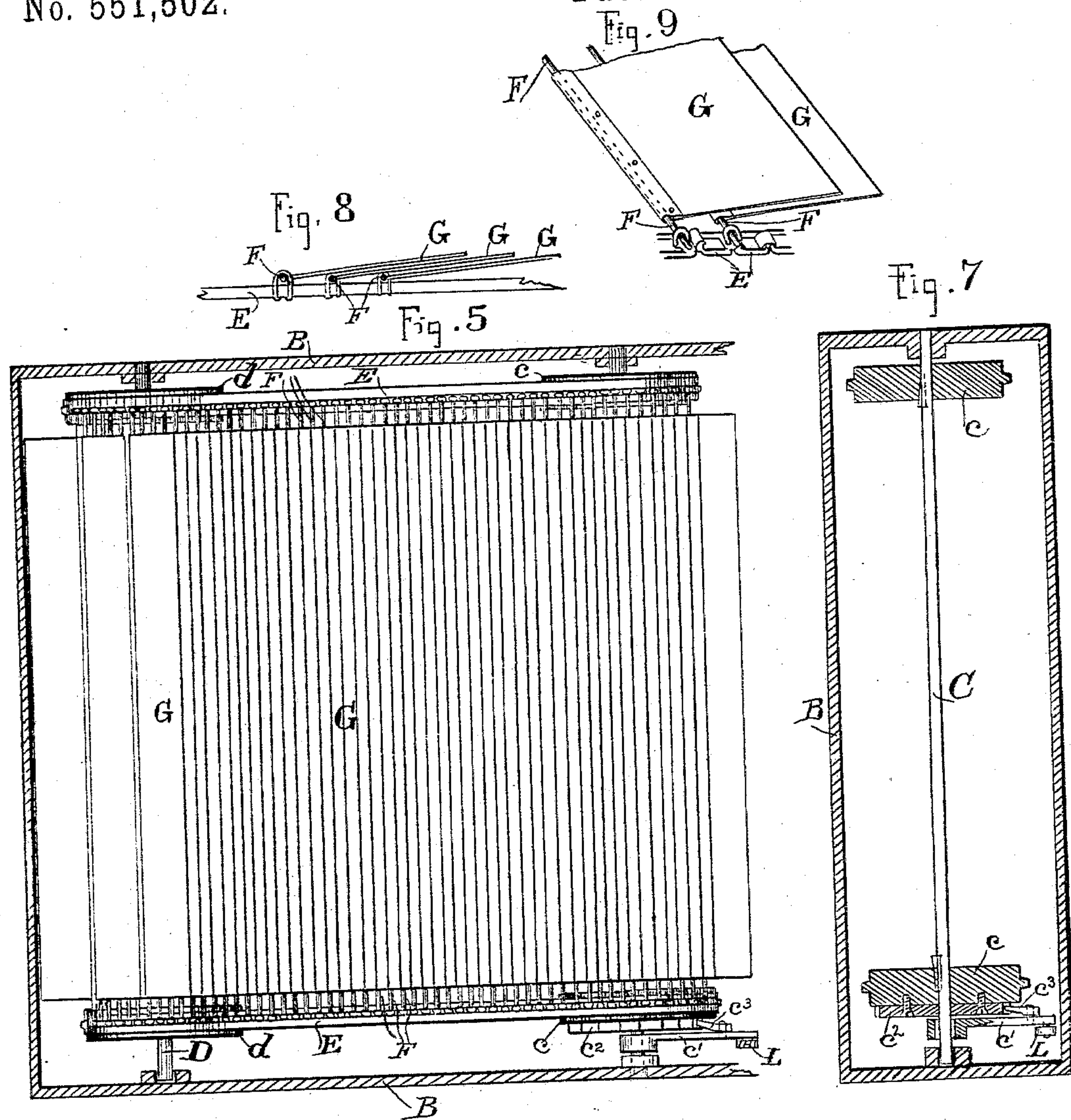
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J. A. Bayless

Inventor,
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UNITED STATES PATENT OFFICE.

CHARLES E. LARRABEE, OF BERKELEY, CALIFORNIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 551,502, dated December 17, 1895.

Application filed July 5, 1895. Serial No. 555,046. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. LARRABEE, a citizen of the United States, residing at Berkeley, county of Alameda, State of California, have invented an Improvement in Street and Station Indicators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of indicators for railway and street cars, in which a suitable indicator within the car is operated by power-transmitting connections deriving their motion from contact with a fixed lug or projection in the roadway; and my invention consists in the novel construction of the power-transmitting connections and of the indicating device which I shall hereinafter fully describe and specifically claim.

The object of my invention is to provide a simple, effective and accurate indicator for street and railway cars.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical longitudinal section of a car, showing, in side elevation, the application of my indicator. Fig. 2 is a cross-section on line *xx* of Fig. 1. Fig. 3 is a cross-section on line *yy* of Fig. 1. Fig. 4 is a perspective view showing the engagement of the lever *J* with the inclined plane or lug *K* in the roadway. Fig. 5 is a horizontal section of the indicator-case, showing the interior parts. Fig. 6 is a vertical section of same. Fig. 7 is a plan of the upper or driving shaft. Fig. 8 is a detail edge elevation showing the connection of the name-cards. Fig. 9 is a perspective view of same.

A is a car in which is located, in a suitable and convenient position, the indicating device. This consists of a horizontally-disposed casing *B* having an aperture *b* in its bottom near one end, Fig. 6. Mounted within one end of the casing is a drive-shaft *C*, and in the other end is a shaft *D*. Upon the shaft *C* are mounted sprocket-wheels *c*, and upon the lower shaft are similar sprocket-wheels *d*. Between these sprocket-wheels pass endless belts or chains *E*, to which are pivoted, upon horizontal transverse axes *F*, the indicating-cards *G*. These cards have printed upon them the name of a station or street, and they are so pivoted that they overlap one

another sufficiently for each to conceal the printed matter upon the preceding one over which it lies. In operation these cards travel horizontally and in the direction indicated by the arrows in Fig. 6, lying upon one another and confined by the casing *B*, and as each reaches the aperture *b* in the casing it swings down by gravity and falls into view through said aperture *b*. (See Fig. 6.) It remains in sight until upon the next motion of the belts or chains the succeeding card falls down in front of it, thus concealing the printed matter upon it while exposing its own printed matter. This intermittent motion is given to the series of cards by the following mechanism.

Under the car is pivoted at *h* a lever *H*, which passes through suitable guide-brackets *I*, one on each side of its pivotal center, said brackets having in their lower portions set-screws *i* upon which the lever alternately rests. The lever ends have free play throughout the length of the brackets *I*, and the amount of this play, in either direction, is nicely regulated by setting the set-screws *i* up or down. This adjustment gives accuracy to the whole operation.

Pivoted under the car, at the point *j*, is a bell-crank or angle-lever *J*. The upper arm of this lever lies directly over and is adapted to play down upon one end of the lever *H* and the other end of said lever *J* is provided with an antifriction-roller *j'*, which is adapted to come in contact with an inclined lug or plate *K* in the roadway. This lug or plate is preferably placed beside the rail on the outside thereof, and may take the place of one of the fish-plates.

The end of the drive-shaft *C*, in the indicating device, is provided with a loose crank *c'*, to which is secured the downwardly-extending rod *L*, the lower end of which lies directly over but is free of the end of the lever *H*. A ratchet-wheel *c''* on the sprocket *c* engages a pawl *c'''* on the crank *c'*, whereby motion is transmitted to shaft *C* in one direction only.

The operation of this power-transmitting mechanism is as follows: As the car proceeds the antifriction-roller *j'*, coming in contact with the lug *K*, is thereby forced outwardly, which has the effect of depressing the upper arm of the lever *J*, which arm, bearing down

upon one end of the lever H, lifts its other end so that the rod L is lifted. This turns crank c' , which through its pawl c^3 engages ratchet c^2 , thereby turning shaft C and causing the travel of the belts or chains and the consequent operation of the name-cards, as heretofore described. As soon as the lug K is passed the lever J returns by gravity and relieves the lever H. The latter thereupon vibrates in the other direction, its other end moving down from under rod L, the weight of which causes it to descend, the pawl slipping the ratchet in this direction and thereby allowing the indicator to remain in a state of rest. As there are no springs in this device, there is nothing to get out of order, and the contacts can be nicely regulated and the operation rendered accurate by properly adjusting the stops or screws i in the guide-brackets I, whereby the lever H is limited in its play.

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

1. In a street and station indicator, the combination, of an indicating device, a lever extending longitudinally beneath the vehicle and centrally fulcrumed, said lever having one of its ends to operate the indicating device, a second lever on the vehicle at right angles to the first named lever, said second lever being fulcrumed between its ends, having one end to engage a projection on one of the rails of the road-bed and its opposite end to engage the remaining free end of the first named lever, and adjustable stops near each end of the said first named lever for limiting and adjusting the movement thereof.

2. In a street and station indicator, and in combination with an indicating device, a means for operating said device, consisting of a freely pivoted lever upon the car, a lever adapted to be operated by contact with a lug in the roadway, said lever having a free contact connection with one end of the freely pivoted lever, a rod adapted to actuate the indicating device and having a free contact connection with the other end of said freely pivoted lever, and guide brackets with adjustable stops for limiting and adjusting the movement of said lever.

3. In a street and station indicator, a mechanism for operating the indicating device, consisting of a bell-crank lever arranged at right angles to the line of movement of the car, and

centrally fulcrumed, having one of its ends adapted to contact with a lug on one of the rails of the road-bed a second lever extending longitudinally beneath the car and freely fulcrumed near its center, said second lever having one of its ends passing freely below the end of the remaining arm of the bell-crank lever, and a vertically disposed rod connected with the indicating device, having its lower end freely supported upon the other end of the said second lever and means for guiding said second lever and limiting and adjusting its movements.

4. In a street and station indicator, a mechanism for operating the indicating device, consisting of a contact lug secured to one of the rails of the road-bed, a lever adapted to make contact therewith whereby it is operated, and devices operated by said lever for actuating the indicating device, consisting of a freely pivoted lever, with one end of which the lever operated by the contact lug is adapted to come in contact, a rod with which the other end of said freely pivoted lever comes in contact, actuating devices operated by the rod, and the guide brackets with adjustable stops for limiting and adjusting the freely pivoted lever.

5. In a street and station indicator, an indicating device consisting of a casing having an aperture in its bottom, endless belts adapted to travel within said casing, shafts and pulleys upon which said belts are mounted, and overlapping name cards hinged to said belts and adapted to successively drop through the bottom aperture so as to expose each its own face while concealing thereby the face of the preceding card, in combination with the means for intermittently operating said belt consisting of a freely pivoted lever upon the car, a lever adapted to be operated by contact with a lug on the roadway, said lever having a free contact connection with one end of the freely pivoted lever, and a rod having connections with the belt driving shaft and a free contact connection with the other end of said freely pivoted lever, and guide brackets with adjustable stops for limiting and adjusting the movement of said lever.

In witness whereof I have hereunto set my hand.

CHARLES E. LARRABEE.

Witnesses:

S. H. NOURSE,
WM. F. BOOTH.