2 Sheets—Sheet 1.

J. W. GRAYDON.

STATION-INDICATOR.

No. 192,985. Patented July 10, 1877.

Fig. 1.

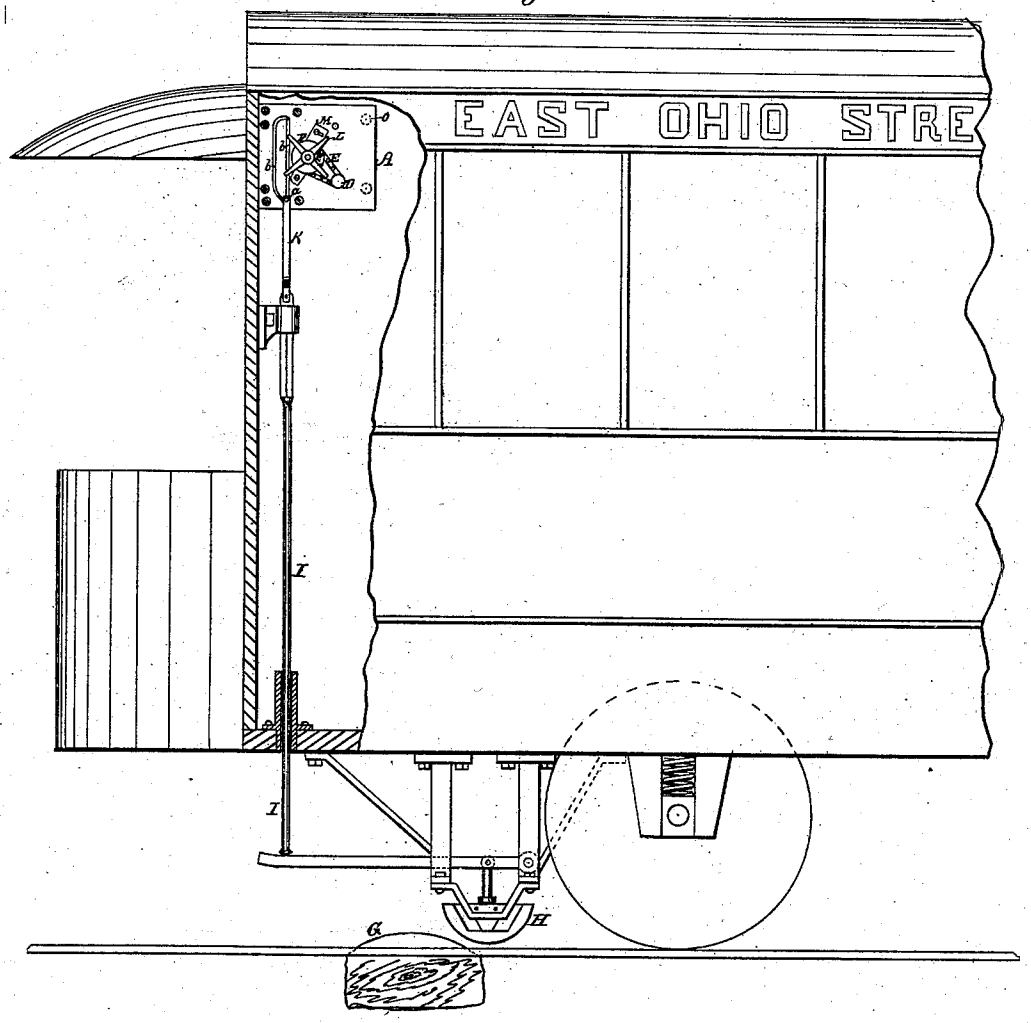
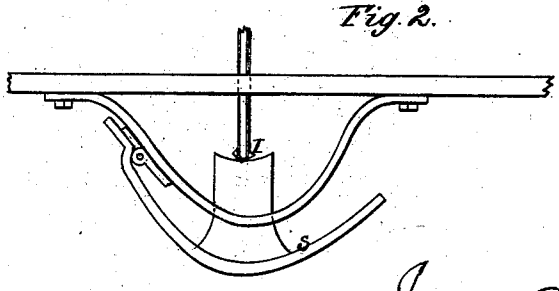


Fig. 2.



WITNESSES:

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Solon C. Kemon

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2 Sheets—Sheet 2.

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Fig. 3.

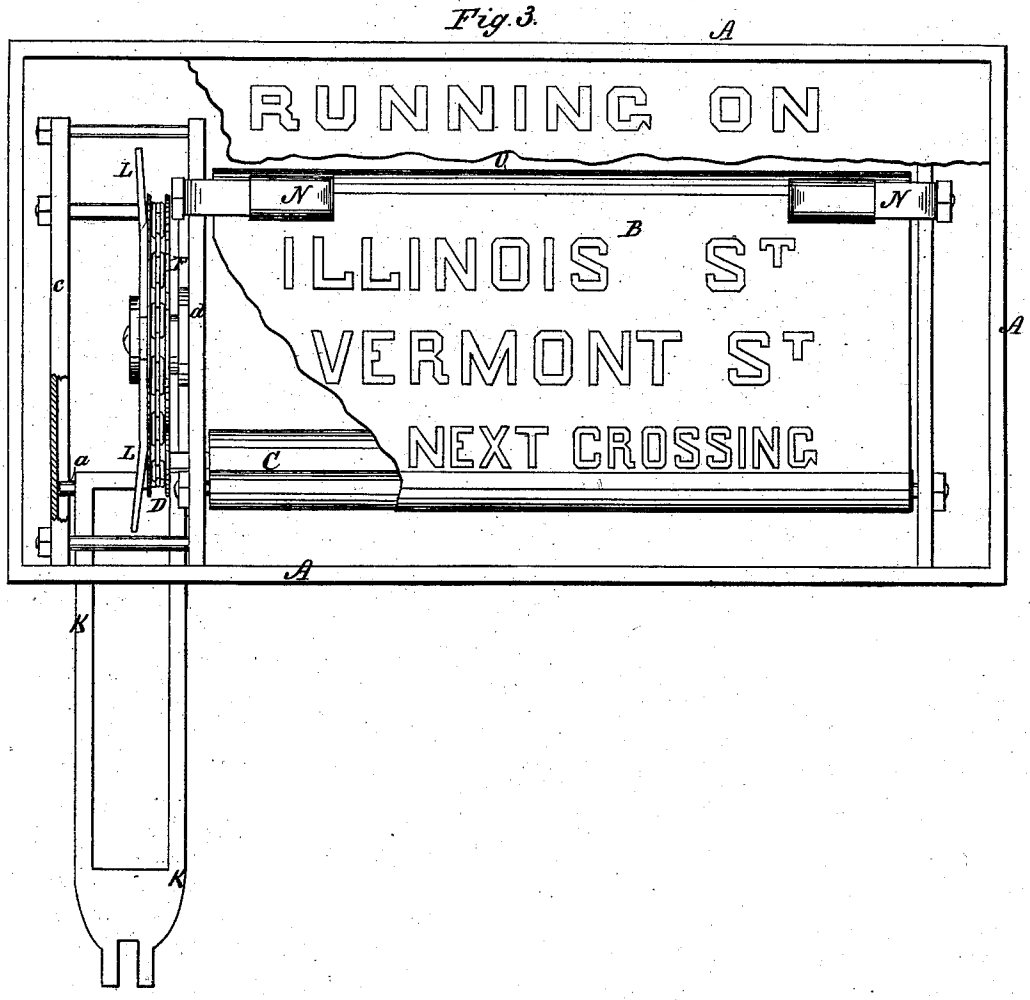
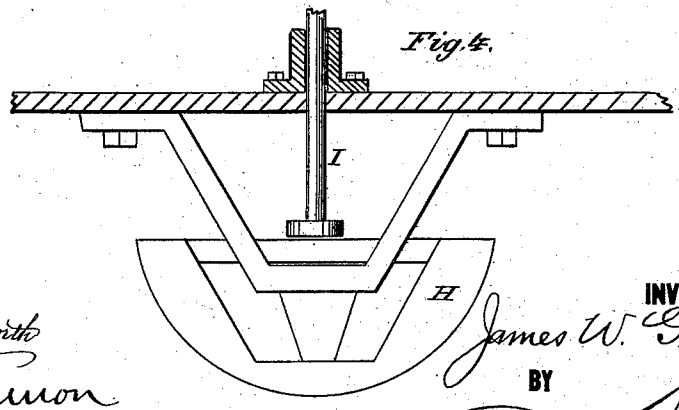


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES W. GRAYDON, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO MARY ELIZABETH GRAYDON, OF SAME PLACE.

IMPROVEMENT IN STATION-INDICATORS.

Specification forming part of Letters Patent No. **192,985**, dated July 10, 1877; application filed June 23, 1877.

To all whom it may concern:

Be it known that I, JAMES W. GRAYDON, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and Improved Station-Indicator; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is designed for use on both street and railway cars, for the purpose of indicating to the passengers the names of cross-streets in the one case, and stations or towns in the other. The names of the cross-streets or stations are printed on a transparent apron which is moved intermittingly, to expose the names successively to view. The means for operating the apron are primarily a chain-wheel and pulley, the former being provided with radial arms with which an intermittingly-reciprocating pusher comes in contact at the required times for turning the chain-wheel one-quarter of a revolution. The said pusher works vertically in suitable guides, and is operated by contact of a shoe, upon which it rests, with an inclined plane attached to the sleepers between or alongside the track-rails.

For more complete description, reference is made to the accompanying drawing, in which—

Figure 1 shows the indicator applied to a street-car. Fig. 3 is a side elevation with part broken away of the indicator proper. Figs. 2 and 4 show modifications.

The indicating apparatus proper is inclosed in a box or case, A, through the slotted or transparent side of which the names of streets or stations on the apron B are made to appear as the apron moves by rotation of one of the rolls C to which it is attached. A small chain-pulley, D, is attached to the journal of the motion-roll C, and a chain, E, passes around said pulley, and the wheel or large pulley, F. Thus, when motion is communicated to wheel F it is transmitted to roller C, and thereby to the apron B. The means for communicating motion to wheel F consist of a double incline, G, attached to a sleeper, or otherwise secured between or alongside the track-rails; a shoe, H, attached to the under side of the car, and sliding vertically in suitable guides; a rod, I, also sliding in guides, and resting upon the shoe H, or upon a lever operated by it, and a slotted extension, K, of said rod, which comes in contact with tappet-arms L, (attached to the chain-wheel F,) whenever the shoe H passes over incline G. The shoe H is semicircular in form, its convex side being underneath to adapt it to ride over the incline G when the car to which the indicator is attached is moving in either direction. The upper portion of the rod I is square or polygonal in cross-section, and works in a tube or box of corresponding shape, so that it is prevented from turning around its axis. The slotted jointed extension K has ears or trunnions *a*, which work in opposite irregular continuous grooves *b* formed in fixed metal plates *c d*.

The side of the groove contiguous to the chain-wheel F is vertical, and the other side thereof curved.

The practical application of the indicator and its operation are as follows: The case or box A is suitably attached to a street or steam railway-car, where it may be conveniently seen by the passengers. The shoe H is arranged in such manner that it will strike and ride over the double incline G, whichever direction the car moves in. The shoe operates the rod I, whether the latter rests directly upon it, as shown in Fig. 5, or upon a lever, P, as shown in Fig. 1. The lever gives a greater throw or movement to the rod. The head of the pusher or rod extension K is thus caused to strike one of the arms L of chain-wheel F, and turn the latter one-quarter of a revolution. Corresponding movement is imparted through chain E, pulley D, and roller C to the apron B, so that the name of the next cross-street or station, as the case may be, is exposed to view through the side of the box A. The trunnions of the extension K follow the groove *b*, and thus cause the head of said extension to oscillate each time the apron B is moved. The object of providing the pusher with a slot is to prevent contact with the arms of wheel F when the head of the pusher returns to its place at the lower end of the continuous groove after each operation of the indicating apparatus.

In order to enable the chain E to be tightened or slackened, as required, to secure per-

fect operation of the indicator, the wheel F is mounted on a journal fixed in a pivoted bar, M, whose upper end is slotted so that it may be adjusted toward or from the pulley D, Fig. 1. As a means for assisting in holding the apron taut, or stretched across the front of the case A, I employ brakes or friction devices N, which consist of springs suitably padded to adapt them to press the apron against the idle-roll O.

The object of making the pusher detachable from the squared end of rod I is to enable the case A to be transferred from one side or end of a car to the other, as required, according to the direction in which the car is to move.

Fig. 2 shows a modification of the shoe, in which the rod I rests on a curved pivoted lever, S.

I have purposely omitted to describe the details of arrangement of the incline G with relation to the track-rails, and the location and attachment of the indicating apparatus proper on the car, since these are matters within the skill of the ordinary mechanic.

What I claim is—

1. In a street or station indicator, the sliding rod and the jointed pusher or extension, the grooves and tappet chain-wheel for operating the apron, substantially as specified.

2. In a street or station indicator, the pivoted slotted bar, the chain-wheel mounted on a journal attached thereto, a device for securing the slotted end of the bar, a chain and pulley, the rolls C and apron attached thereto, as specified.

JAMES W. GRAYDON.

Witnesses:

F. M. FINCH,

GUILFORD A. DEITCH.