

A. S. COX.
Railroad Station Indicator.

No. 51,927.

Patented Jan'y 9, 1866.

Fig. 1.

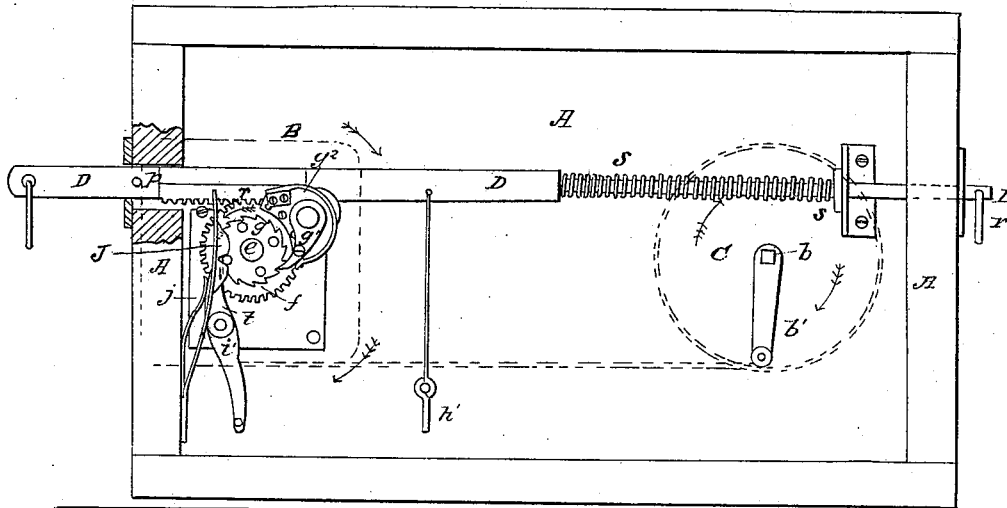


Fig. 2.

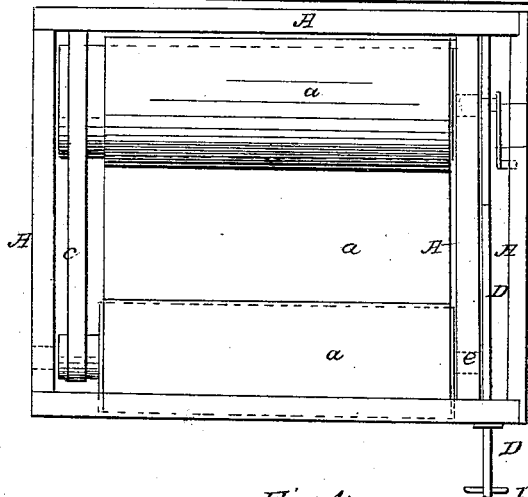


Fig. 3.

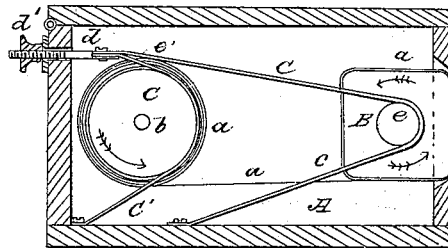
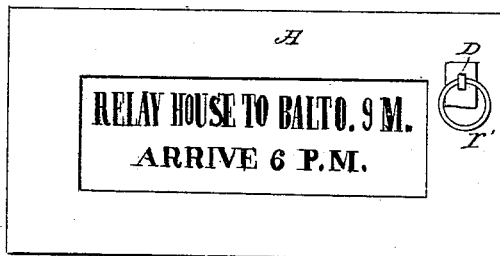


Fig. 4.



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IMPROVEMENT IN RAILROAD STATION-INDICATORS.

Specification forming part of Letters Patent No. 51,927, dated January 9, 1866.

To all whom it may concern:

Be it known that I, ALEXANDER S. COX, of the city of Washington, District of Columbia, have invented a new and Improved Railroad Station-Indicator; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of the machine with one side removed, exposing to view the mechanism for operating the cylinders of the indicator. Fig. 2 is a top view, showing the manner of arranging the cylinders. Fig. 3 is a sectional end view, exposing the ends of the cylinders and the friction-brakes which are applied thereto. Fig. 4 is a front view of the indicator.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to place under the control of the engineer, or the conductor of a train of cars, or any person employed upon the train or a car, certain mechanism which will, by the movement of a rod or cord, indicate in a condensed form to the passengers the point of destination, the name of the station which they may be approaching, the time of arrival at any given point or points, the number of miles between two or more stations, and such other information as may be desirable and usually sought after by travelers, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In a conspicuous place in each car I propose to locate a box, A, having an opening in front, as represented in Fig. 4, for exposing to view such information as it may be desired to communicate. Instead of the box A an opening may be made in the frame-work of the car, and the mechanism which I am about to describe arranged therein. Said box A is divided by a partition, A', into two apartments, into the largest one of which two drums or cylinders are placed, and within the smallest apartment the mechanism for operating said drums or cylinders is arranged. Access can be had to the interior of these apartments through the sides of the box, which may be hinged for this purpose.

Directly in rear of the opening through the front of the box A is a rectangular roller, B, which has its bearings in the sides of the box, and upon which a band, *a*, is wound, having printed upon it the information which it is desired to communicate. This band may be made of any desired length, and it is first wound upon a cylinder, C, which is arranged in rear of the roller B, as shown in Figs. 2 and 3. The cylinder C has its bearings in the sides of the box A, and one end of its shaft *b* projects into the smallest apartment of the box A, and receives upon it a crank, *b'*, which is used for winding the belt *a* upon the cylinder, and consequently unwinding it from the roller B.

In order to keep the band *a* tight, and to prevent the cylinder and the roller from turning too loosely, I apply elastic brake-straps *c c'* to said cylinder and drum, as shown in Fig. 3, and connect the upper ends of these straps to a screw-rod, *d*, which passes loosely through the back of the box A, and receives a nut, *a'*, by turning which the tension of said straps may be regulated, as occasion requires.

The shaft *e* of the rectangular roller B projects through the partition A', and receives upon it a spur-wheel, *f*, and also a ratchet-wheel, *g*, which latter is keyed on the shaft *e*, so as to turn this shaft and the roller in the direction indicated by the arrow in Fig. 1. The spur-wheel *f* turns loosely on its shaft when allowed to rotate in the direction indicated by the red arrow marked upon it; but when this spur-wheel *f* is moved in the opposite direction it moves the roller B, in consequence of a pawl, *g'*, engaging with the teeth of the ratchet-wheel *g*. This pawl *g'* is pivoted to a plate, *g²*, which is affixed to the wheel *f*, and it is held in contact with the teeth of the ratchet-wheel *g* by means of a spring, *h*, which is secured to the plate *g²*, as shown in Fig. 1.

When it is desired to release the ratchet-wheel *g* from its pawl *g'* the latter is moved back and held in this position by inserting a pin, *h'*, into plate *g²* in front of this pawl. Another pawl, *i*, having a long arm, engages with the ratchet-wheel *g*, on the opposite side of it to the pawl *g'*, for the purpose of preventing this ratchet-wheel from turning backward when not required to do so. The spring *j*

keeps the pawl *i* in contact with its ratchet-wheel.

The outer surface of the ratchet-wheel *g* has four pins projecting from it, arranged at regular intervals apart, corresponding to the number of flat sides of their roller B. These pins are successively caught by a retaining pawl or dog, J, which is a spring having a notched projection formed on it, as shown in Fig. 1. This spring-pawl J will of itself release the pins when power is applied to turn the roller B, and still it will operate to retain, to a certain extent, the pins in such position as will always present one or the other flat sides of the roller B squarely to view.

D represents a horizontal rod, which passes through the smallest apartment of the box A, and projects from the front and rear sides of this box. This rod D passes over the spur-wheel *f*, and it is allowed to have an endwise movement, the extent of which should be suitably limited. It is acted upon by a helical spring, *s*, which forces it forward and holds it in the position indicated in Fig. 1, the stop-pin *p* pressing against a bearing-plate at the front of the box. This rod has a rack, *r*, formed on it, the teeth of which engage with those on the wheel *f*, and move this wheel when the rod D is drawn backward or allowed to be forced forward by the spring *s*.

In arranging my indicators in a train of cars, I propose to connect them all together by means of cords running from one car to another, and attached to the rings *r'* on the ends of the rods D, so that all of these rods can be moved simultaneously. The forward end of the cord or rope may be carried to the locomotive and arranged in a convenient position for the engineer, who can thus indicate to the passengers in the several cars the name of the station which they are approaching. Before the train leaves the main station care should be taken to have the band *a* wound upon the cylinder C, which can be readily done by releasing the pawls *g'* and *i* from the ratchet-wheel *g* and turning the cylinder C by means of the crank, as before described.

I propose to apply my improved indicators to street-cars, in which case the names of the streets through which the cars pass, together with those streets running at right angles to them or any given point, will be printed upon the band *a*, and presented to view at the proper time, either by the conductor or his driver.

The method of operating the indicator is as follows: The rod D is drawn back until it stops, which operation compresses the spring *s* and moves the wheel *f* one-quarter of a revolution, carrying with it the pawl *g'*, ratchet-wheel *g*, and the belt-roller B. This brings one of the flat sides of the roller B in a vertical plane in the front opening of the box A, and exposes the printed matter which is upon that portion of the belt *a* covering said side of the roller. Upon releasing the rod D the spring *s* will move it back to its former position, and the wheel *f* will turn loosely upon its shaft, so as not to move the roller B. Thus at every backward movement of the rod D the roller B will be turned one-quarter of a revolution, so that its flat sides will be brought successively in the opening in the front of the box A.

If, in the operation of the indicator, the roller B should be moved a little more than a quarter of a revolution, the notched pawl J will, by its pressure upon one of the pins of the ratchet-wheel *g*, return this roller to the proper position, and arrest it until the rod D is again drawn back. By this means the proper side or surface of the roller B will always be presented squarely to view.

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

1. The combination of a rectilinear reciprocating draw-rod D, which is provided with a rack, *r*, the spur-wheel *f*, pawls *g'* *i*, and ratchet-wheel *g*, with the band-roller B and cylinder C, the whole operating substantially as described.

2. Providing the station-indicator with a rectilinear draw-rod, D, which is acted upon by a spring, *s*, and adapted for actuating the mechanism that moves the band *a*, substantially as described.

3. The combination of the band-roller B and winding-up cylinder C with brake-straps *c c'* and a tension-adjuster, substantially as described.

4. The studded ratchet-wheel *g*, in combination with the stop-pawl J and the belt-roller B, substantially as described.

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Witnesses:

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