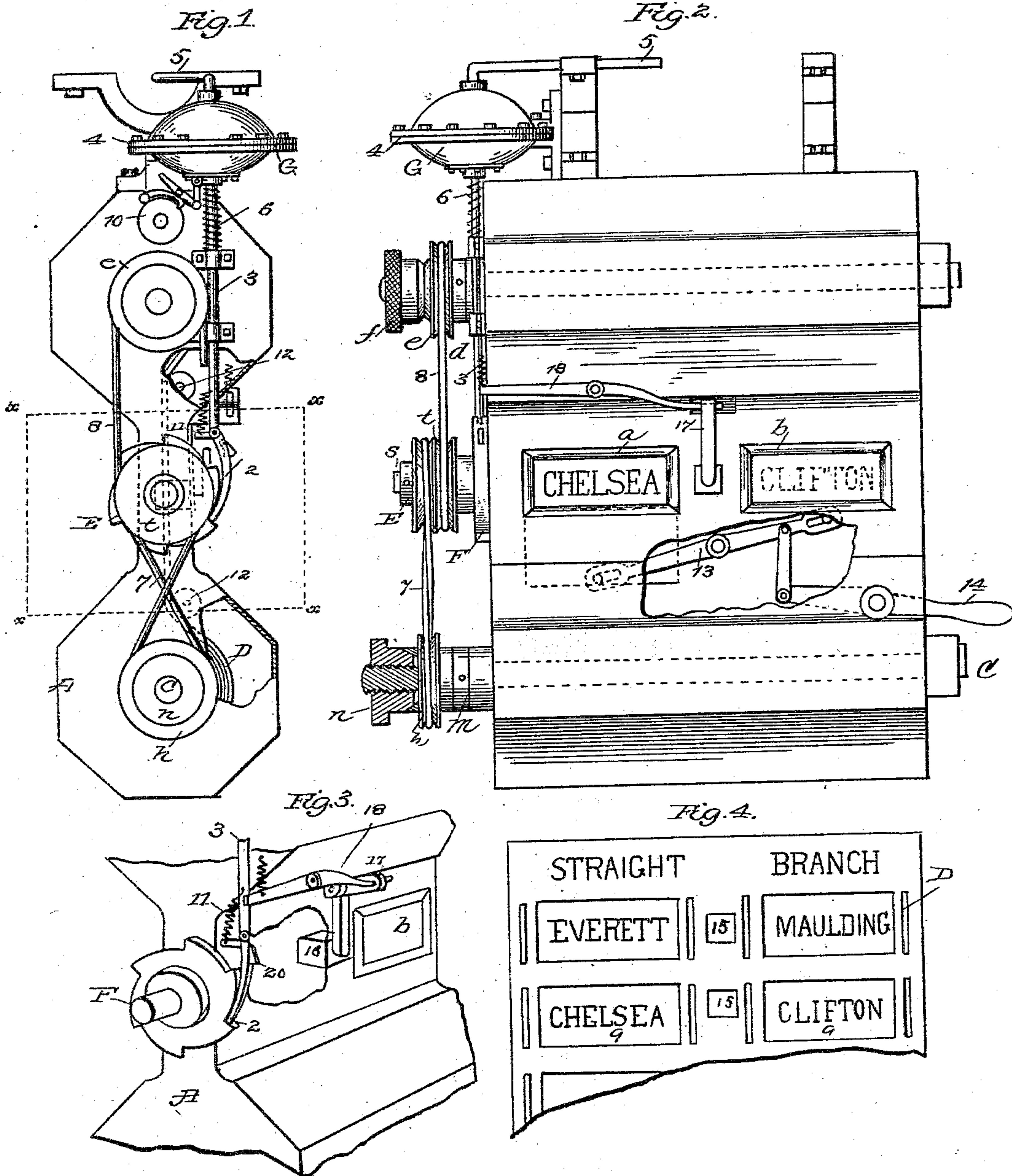


(No Model.)

W. C. COLLYER.  
STATION INDICATOR.

No. 288,162.

Patented Nov. 6, 1883.



Attest:

*Halter Donaldson*  
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Atty



# UNITED STATES PATENT OFFICE.

WILLIAM C. COLLYER, OF LYNN, MASSACHUSETTS, ASSIGNOR OF ONE-FOURTH TO CHARLES A. CHASE, OF SAME PLACE.

## STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 288,162, dated November 6, 1883.

Application filed February 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. COLLYER, of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Station-Indicators, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to station-indicators, and has for its object to provide an efficient and positive apparatus to indicate to the persons traveling in a street or railway car the stations or places at which the car is intended to stop.

The invention consists in certain novel combinations of mechanism as well as in certain details of construction, all of which are hereinafter fully described and specifically claimed.

In the accompanying drawings, Figure 1 is an end view of an indicator embodying my invention. Fig. 2 is a view showing the front of the indicator. Fig. 3 shows a portion only of the indicator, (designated in Fig. 1 by dotted lines *x x*), and is enlarged, to better illustrate the operating mechanism. Fig. 4 illustrates the construction of the ribbon for holding and operating the station-tablets.

A represents an ordinary casing, which is provided with openings *a b*, through which the names of the various stations are exhibited. In one end of the said casing is the horizontal shaft B, and in the opposite end thereof is likewise arranged the horizontal shaft C. Each of said shafts is provided with a drum, around which the ribbon D is wound, as referred to hereinafter. Said shaft B is provided with a sheave, *e*, which is arranged on the shaft between the collar *d* and the check-nut *f*, and may be allowed to turn loosely on the shaft, or may be tightened thereon by means of the said nut *f* in an obvious manner. On the shaft C is a sheave, *h*, arranged thereon and adapted to operate in a similar manner between the collar *m* and the check-nut *n*. The sleeve E is arranged to turn on a stud, S, attached to the side of the casing A, as represented. Said sleeve is provided with a double sheave, *t*, and ratchet-wheel F. Engaging with said ratchet-wheel is a pawl, 2, which connects with one end of the rod 3, the opposite end of which rod 3 connects with a flexible diaphragm,

G, that forms one-half the globe 4. Connecting with said globe is an air-pipe, 5, through which air may be injected into the globe, so as to reciprocate the diaphragm and the rod 3 in an obvious manner. The spiral spring 6 serves to eject the air from the globe, and thereby secure the backward throw of the rod 3. Said motion of the rod 3 operates through the pawl 2 to turn the ratchet-wheel F and sleeve E, and thereby to revolve the sheave *t*, which motion of the sheave *t* is transmitted through the belts 7 and 8 to the respective shafts B and C; but the said shafts B and C will be caused to revolve only, while the sheaves *e* and *h* are made tight on the shaft by means of the check-nuts *f* and *n*, as before stated.

One end of the ribbon D (see Fig. 4) is attached to the drum on shaft B, while its opposite end is attached to the drum on shaft C, from which it will be evident that if the sheave *e* be tightened on its shaft, while the sheave *h* is allowed to turn loosely, the ribbon will be wound in one direction, while by simply tightening the sheave *h* and loosening the sheave *e* the ribbon will be wound in the opposite direction. In this manner the tablets 9 9 9, &c., bearing the names of the respective stations at which the car is destined to stop, will be successively presented at the openings *a* and *b*. It is only necessary to have the ribbon wind one way while the car moves in one direction and the opposite way if the train or car goes in the other direction. All this may be easily effected by means of the check-nuts *e* and *h*, as above stated. The names may be painted directly on the ribbon; but I prefer to print them on small cards or tablets and fix these on the ribbon, as shown in Fig. 4.

I have also represented, in the drawings, a ribbon with two rows of tablets. This arrangement is found useful in case the same car is run on different roads or two branches of the same road, as in such case the stations of the particular road on which the train may, for the time, be moving are exhibited at the opening *a*, while the opening *b* may be closed, thereby concealing the stations on the other road from being seen through the opening *b*. This arrangement obviates the necessity of changing the tablets. The appearance of the tablet at the opening is announced by a bell,



which is operated by the diaphragm G and connecting-levers, as shown in Fig. 1. The pawl 2 is held in engagement with its ratchet-wheel F by means of spiral spring 11, and the ribbon D is made to pass over idlers 12 12, as shown in Fig. 1, thereby causing the tablets to press close up to their respective openings *a* and *b*. Said openings *a* and *b* are provided with shutters attached to the lever 13, which may be operated by the hand-lever 14 in an obvious manner, to open or close the said shutters before the openings.

It will be readily understood that the diameter of the winding-drums is being gradually increased by the ribbon D as it is wound thereon, so that each turn of the drum (caused by the operation of shaft 3) tends to increase or decrease the length of the movement of the ribbon; and this variation, if not in some way prevented, might become sufficient to disarrange and prevent the tablets 9 9 from registering at the openings *a* or *b*. To obviate this I provide a ribbon, D, with a series of holes, 15 15, situated equally distant from each other, and extending the entire length of the ribbon, and adapted to receive the end of a suitable pin, 16. Said pin 16 is connected with one end of the crank-lever 17, which is fulcrumed to the casing A, as shown, and connects its opposite ends with the horizontal lever 18, so that a vertical reciprocation of the lever 18 effects a horizontal movement of the pin 16. Connected with the rod 3 is a tongue, 20, which is pivoted at one end in a suitable slot in the rod or pawl 2, and may be pressed into said slot sufficiently far to be quite even with the surface of the pawl, although when said pressure is removed a spring arranged in the slot under the tongue tends to force one end of the tongue outward, as represented in Fig. 3. It will now be understood that as the rod 3 moves upward (see Fig. 3) the tongue 20, coming against the lever 18, closes into its slot, and remains there till it passes up by the lever, whereupon it is pushed outward by the spring, as represented in Fig. 3; and when the rod returns downward the end of the tongue

strikes upon and bears downward the lever 18, and thereby removing the pin 16, holds it out till the lever 18 reaches the position represented by dotted lines in Fig. 2, at which point the lever 18 escapes the tongue and returns to its normal position. The pin 16 will then pass into the next hole in the ribbon, and so arrest the movement thereof. The holes being equally distant from each other insure an equal length of movement of the ribbon. The ribbon, to prevent tearing, should be sufficiently strong to overcome the friction of the belt 7 or 8 when the pin 16 enters the hole in the ribbon.

What I claim, and desire by Letters Patent to secure, is—

1. The combination of the winding-drums, the sleeve E, and the ratchet-wheel, and the rod 3, carrying the pawl, (the said drums and sleeve being connected by belts,) of the pin 16, the indicating-ribbon, provided with holes at regular intervals, and a system of levers connected to such pin and operating by the movement of the pawl, whereby the pin is caused to enter successively the holes in the ribbon, substantially for the purpose set forth.

2. The combination of the case A and the shafts B C, carrying winding-drums, the sheaves *e h* on such shafts, the sleeve E, having a double sheave, *t*, and the check-nuts *f n*, mounted, respectively, on the said shaft B C, and adapted to tighten the sheaves *e h* independently, whereby the movement of the indicating-ribbon is reversed.

3. The combination, with the winding-drums and the indicating-ribbon of a station-indicator, of a ratchet mechanism connected thereto, and a flexible diaphragm connected to the air-supply for causing the intermittent movement of said winding-drums and ribbon, substantially as described.

Witness my hand this 13th day of February, 1883.

WILLIAM C. COLLYER.

In presence of—

JOSEPH A. McDERMOT,  
C. B. TUTTLE.