

(No Model.)

2 Sheets—Sheet 1.

W. M. BAKER.
STATION INDICATOR.

No. 575,585.

Patented Jan. 19, 1897.

Fig. 1.

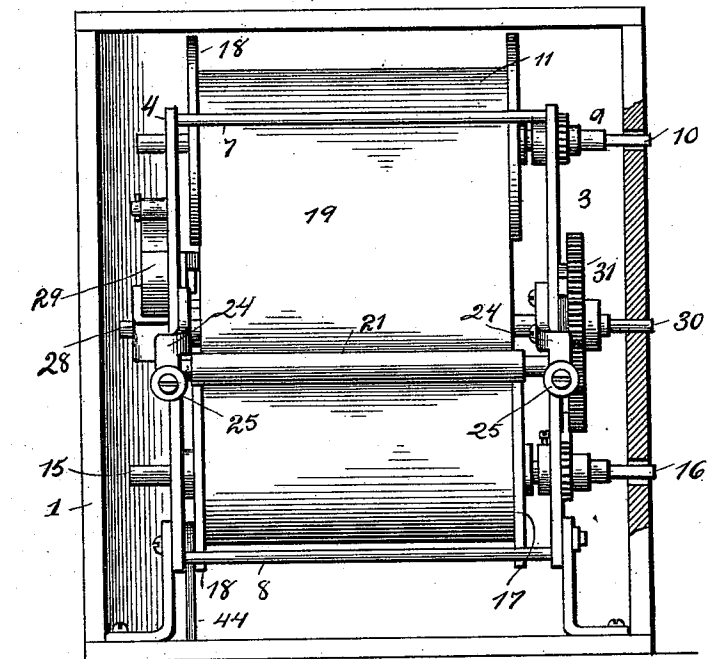
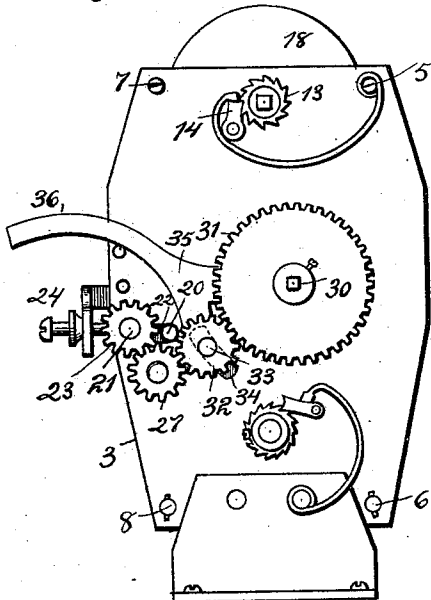
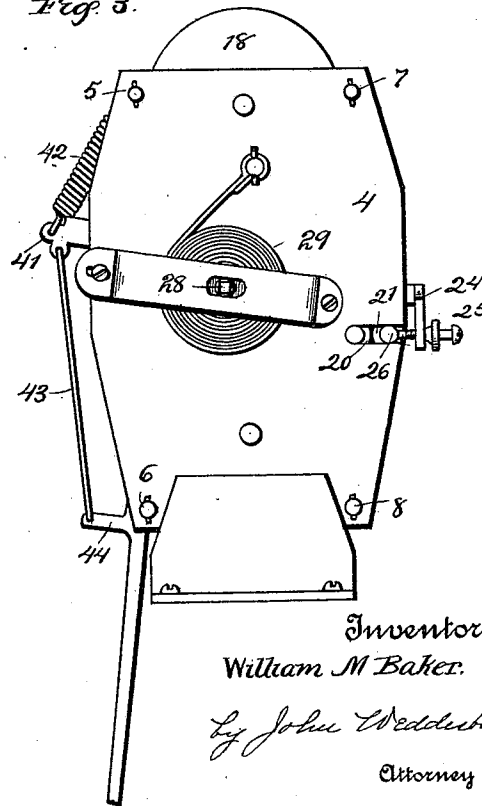


Fig. 2.



Witnesses
Victor J. Evans.
L. H. Evans.

Fig. 3.



Inventor
William M Baker.
By John Wedderburn
Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

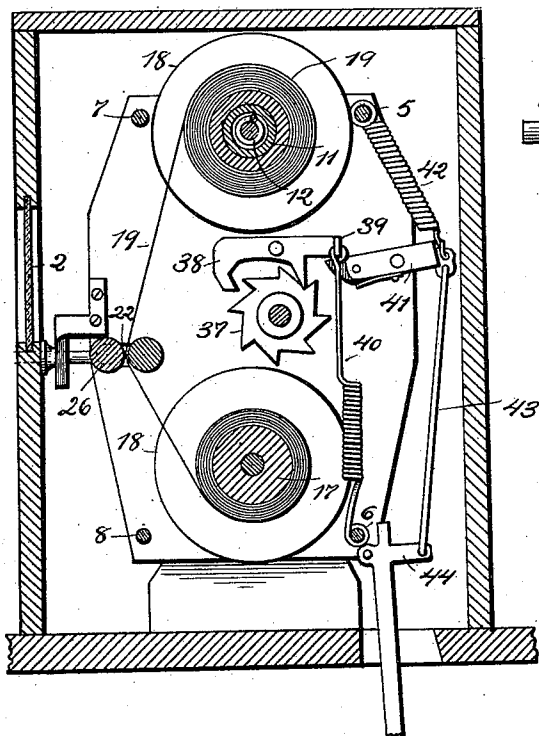


Fig. 5.

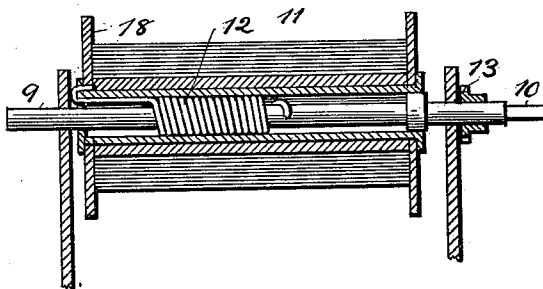


Fig. 7.

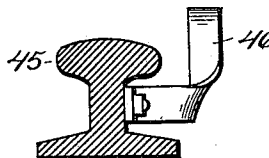


Fig. 8.

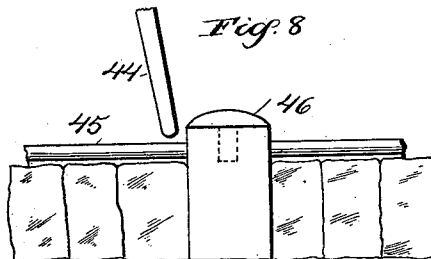


Fig. 9.

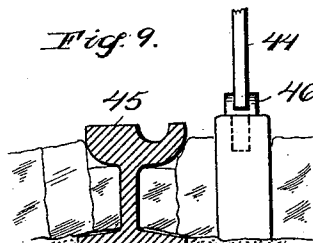
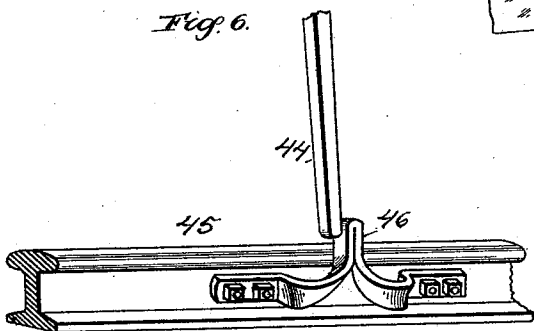


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM M. BAKER, OF CINCINNATI, OHIO.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 575,585, dated January 19, 1897.

Application filed July 8, 1896. Serial No. 598,435. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. BAKER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Station-Indicators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in station-indicators, the object of the same being to provide a device for indicating the next stop which the train will make, located at a convenient part of the passenger-coach and to be automatically tripped into action.

The invention consists of a framework mounted in a suitable casing with an opening therein, the said casing being located at a convenient part of a passenger-car, a pair of drums or rollers mounted in said framework, a roll of paper or other suitable material containing the names of the stations upon its outer surface printed in order thereon and wound upon said drums or rollers, springs for maintaining the tension of said roll, means for automatically shifting said roll for exposing a different station through the opening in the casing, and means for reversing the direction in which said roll is wound upon said drums or rollers.

The invention also consists in other details of construction and combinations of parts which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a front elevation of my device with the casing partly broken away to show the interior construction. Fig. 2 is a side elevation with the casing removed. Fig. 3 is a similar view of the opposite side. Fig. 4 is a vertical section through the same, taken parallel to the sides of the framework. Fig. 5 is a longitudinal section through one of the drums or rollers and the shaft upon which it is mounted. Fig. 6 is a perspective view of the rail, showing means connected thereto for automatically tripping the device into opera-

tion. Fig. 7 is a cross-section through the rail, showing the trip lug or projection thereon. Fig. 8 is a view showing a modified form of the invention. Fig. 9 is a similar view of the same, looking at right angles thereto.

Like reference-numerals indicate like parts in the different views.

The casing 1 of my device is located at any convenient part of a passenger-car and has an opening 2 therein, through which the names of the different stations may be viewed one at a time. On the inside of the casing 1 is mounted a framework made up of two side plates 3 and 4, which are suitably braced and supported by means of connecting-rods 5 and 6 at the rear thereof and similar connecting-rods 7 and 8 at the front. Extending through the upper ends of the plates 3 and 4 is a shaft 9, having a rectangular extension 10 upon one end and a drum or roller 11 loosely mounted thereon, which is connected to said shaft by means of a coil-spring 12, whereby the tension on said drum is maintained. Upon the outer end of the shaft 9 is a ratchet-wheel 13, which is engaged by a spring-actuated pawl 14 for preventing the turning of said shaft to unwind the spring. The spring is wound up by inserting a key upon the rectangular extension 10 and turning said shaft. At a point near the lower end of the framework and mounted in the side plates 3 and 4 is a similar shaft 15, having a similar rectangular extension 16, and a similar drum 17, mounted thereon and connected to said shaft in a similar manner.

Both of the drums or rollers 11 and 17 have guide plates or flanges 18 upon their outer ends, and around said drums is wound a strip or roll 19 of paper or other suitable material, having the names of the different stations along the route of the railway printed in order upon the outer face thereof and adapted to be visible one at a time through the opening 2 in the casing 1. The said roll of paper 19 passes over the connecting-rod 7 adjacent to the drum or roller 11 and thence between two guide-rollers 20 21, mounted in the front side of the framework in the side plates 3 4 thereof. The guide-roller 20 is an idle-roller, but the

guide-roller 21 is mounted in slots 22 22 in the side pieces 3 4 and has a pinion 23 upon one end thereof outside of the plate 3. Brackets 24 24 are secured to the front edge of the side plates 3 and 4, respectively, and through these brackets project tightening-screws 25 25, whose inner ends are adapted to engage the pintles 26 upon the outer ends of the guide-roller 21. By this means the guide-roller 21 may be forced into close engagement with the roll 20 and acts as a gripping-roll therefor. The pinion 23 upon the outer end of the roller 21 meshes with an idle-pinion 27, loosely mounted upon the side 3 of the framework, as clearly shown. Connecting the two side plates 3 and 4 of the framework at a point between the drums or rollers 11 and 17 is a shaft 28, to which is secured a spiral spring 29 upon the outer face of the plate 4, the said shaft being also provided with a rectangular extension 30 upon the end which projects through the side plate 3. To this shaft is also keyed or otherwise secured a cog-wheel 31, which meshes with a pinion 32, mounted upon a shaft 33, which projects through and is slidingly mounted in a segmental slot 34 in the side plate 3. Fulcrumed to the shaft 28 at a point between the side plate 3 and the cog-wheel 31 thereon is a lever 35, having a laterally-extending arm 36, which is connected to the shaft 33, upon which the pinion 32 is mounted. By this construction it will be seen that by moving the outer end of the lever 35 up or down the sliding pinion 32 may be thrown into mesh with either the pinion 23 upon the outer end of the roller 21 or with the idle-pinion 27. The rotation of the shaft 28, therefore, in one direction would cause a rotation of the roller 21 in one direction or the other, according to whether the sliding pinion 32 is in engagement with the idle-pinion 27 or the pinion 23. Secured to the shaft 28 at a point adjacent to the inner surface of the side plate 4 is a ratchet-wheel 37, with which an escapement pawl or lever 38, pivoted to the side plate 4, is adapted to engage. The outer end of the escapement pawl or lever 38 has a flanged arm 39 thereon, which is connected through the spring 40 with the connecting-rod 6, as clearly shown. Pivoted to the side plate 4 is a trip-lever 41, which is adapted to engage the under side of the flanged arm 39 on said escapement-lever. The outer end of said trip-lever 41 is connected through the spring 42 with the upper connecting-rod 5, thereby holding the inner end of said trip-lever out of engagement with said flanged arm. The outer end of said trip-lever 41 is further connected through a pitman 43 with a bell-crank lever 44, fulcrumed to the under side of the car and having one arm extending down along the side of the rail 45, as clearly shown in Fig. 6. This arm is adapted to engage a lug or projection 46 upon the side of the rail for the purpose of automatically operating to shift the roll or strip 19 the distance of the space

between two of the stations printed on said roll.

The operation of my device is as follows: When my improved indicator is first placed in the car in which it is to be used, the roll 19 is secured to the ends of the drums or rollers 11 and 17 and the shafts 9 and 15 turned by a suitable key applied to the rectangular extensions 10 and 16 on said shafts to tighten the springs therein to give the proper tension to the roll or strip 19. The lever 35 is then thrown upwardly or downwardly, as the case may be, to throw the pinion 32 into engagement with the idle-pinion 27 or the pinion 23 upon the outer end of the roller 21. The spring 29 upon one end of the shaft 28 is then wound up by turning said shaft 28 by the application of a suitable key to the rectangular extension 29 on said shaft. When this has been done, the device is ready for operation. It should be stated, however, that the lugs 46 upon the rail 45 are located at each station at which the train is to be stopped. The roll 19 is so adjusted in the first instance that the next station at which the train stops is visible through the opening 2 in the casing 1. As the train proceeds this remains in view as a constant indicator to the passengers. When the station indicated thereby is reached, however, the lower arm of the bell-crank lever 44 is brought into engagement with the lug or projection 46 on the rail 45, and, through the pitman 43, the outer end of the trip-lever 41 depressed. This raises the inner end of said trip-lever, and, by engagement thereof with the flanged arm 39 on the escapement pawl or lever 38, raises said pawl and permits the shaft 28 to move the distance of one tooth of the ratchet-wheel 37, the said shaft 28 being driven by the spiral spring 29 upon one end thereof. The motion of the shaft 28 is transmitted through the cog-wheel 31 and sliding pinion 32 either directly or indirectly, according to whether said pinion is in engagement with the idle-pinion 27 or the pinion 23 upon the outer end of the roller 21. The turning of the roller 21, by reason of the frictional connection between it and the roller 20, shifts said band the distance of the space between two of the printed stations thereon and exposes the next station at which the train stops to view through the opening 2. This operation is repeated as each station is reached and passed. When the train reaches the end of its route, it is merely necessary, in order that the operation of the bell-crank lever 44 shall shift the roll 19 in the opposite direction, for the lever 35 to be moved so as to throw the sliding pinion 32 out of contact with the idle-pinion 27 into contact with the pinion 23, when the motion of the shaft 28 in the same direction will turn the roller 21 in the opposite direction.

In Figs. 6 and 7 I have illustrated the form of device which will be employed for operat-

ing the bell-crank lever 44 upon an ordinary steam-railway. When my device, however, is used upon electric railways where a U-rail instead of a T-rail is employed, the construction and operation will be slightly different. This is clearly illustrated in Figs. 8 and 9.

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

1. In a station-indicator for railway-cars, the combination with a casing having an opening therein, of a framework upon the inside of said casing, a pair of shafts mounted in said casing, drums or rollers loosely mounted upon said shafts, spring connections between said drums and the shafts to which they are respectively attached, a roll or strip wound upon said drums or rollers and having the names of the different stations printed thereon in consecutive order and visible one at a time through the openings in said casing and means for automatically imparting to said strip or roll a step-by-step movement, substantially as and for the purpose described.

2. In a station-indicator, the combination with a suitable casing having an opening therein, of a framework on the inside of said casing, made up of a pair of side bars or plates suitably connected together, a pair of drums or rollers mounted to rotate in said framework, spring connections between said drums and the shafts to which they are respectively attached, a strip or roll wound upon said drums or rollers and having the names of stations printed in successive order upon the outer face thereof, a pair of gripping-rollers between which said strip or roll passes and means for automatically operating said gripping-roller to impart a step-by-step movement to said strip or roll, substantially as and for the purpose described.

3. In a station-indicator, the combination with a suitable casing having an opening therein, of a framework on the inside of said casing, made up of a pair of side bars or plates suitably connected together, a pair of drums or rollers mounted to rotate in said framework, a strip or roll wound upon said drums or rollers and having the names of stations printed in successive order upon the outer face thereof, a pair of gripping-rollers between which said strip or roll passes, a main drive-shaft connecting said side plates or bars located between said drums or rollers, a spring for operating said shaft, an escapement connected thereto and controlling the movements thereof, connections between said drive-shaft and one of said gripping-rollers and automatic means for tripping said escapement for turning said shaft and imparting a step-by-step movement to said strip or roll, substantially as and for the purpose described.

4. In a station-indicator, the combination with a suitable casing having an opening

therein, of a framework on the inside of said casing, made up of a pair of side bars or plates suitably connected together, a pair of drums or rollers mounted to rotate in said framework, a strip or roll wound upon said drums or rollers and having the names of stations printed in successive order upon the outer face thereof, a pair of gripping-rollers between which said strip or roll passes, a main drive-shaft connecting said side plates or bars located between said drums or rollers, a spring for operating said shaft, a ratchet-wheel upon said shaft, an escapement pawl or lever acting in engagement therewith, a cog-wheel upon the outer end of said drive-shaft meshing with a pinion upon the outer end of one of said gripping-rolls and means for automatically tripping said escapement for imparting a step-by-step movement to said strip or roll.

5. In a station-indicator, the combination with a suitable casing having an opening therein, of a framework on the inside of said casing, made up of a pair of side bars or plates suitably connected together, a pair of drums or rollers mounted to rotate in said framework, a strip or roll wound upon said drums or rollers and having the names of stations printed in successive order upon the outer face thereof, a pair of gripping-rollers between which said strip or roll passes, a main drive-shaft connecting said side plates or bars located between said drums or rollers, a spring for operating said shaft, a ratchet-wheel upon said shaft, an escapement pawl or lever acting in engagement therewith, a cog-wheel upon the outer end of one of said gripping-rolls, a trip-lever adapted to engage one end of said escapement pawl or lever, release mechanism on the under side of the car in which said indicator is mounted and connections between said trip-lever and said releasing mechanism, the said releasing mechanism being adapted to operate from the track-rail, substantially as and for the purpose described.

6. In a station-indicator, the combination with a suitable casing having an opening therein, of a framework on the inside of said casing, made up of a pair of side bars or plates suitably connected together, a pair of drums or rollers mounted to rotate in said framework, a strip or roll wound upon said drums or rollers and having the names of stations printed in successive order upon the outer face thereof, a pair of gripping-rollers between which said strip or roll passes, a main drive-shaft connecting said side plates or bars located between said drums or rollers, a spring for operating said shaft, a ratchet-wheel upon said shaft, an escapement pawl or lever acting in engagement therewith, a cog-wheel upon the outer end of one of said gripping-rolls, a trip-lever adapted to engage one end of said escapement pawl or lever, a bell-crank lever fulcrumed on the under side

of the car in which said indicating mechanism is mounted, a pitman connecting the outer end of said trip-lever with one arm of said bell-crank lever and a lug or projection
5 on the track-rail with which the other arm of said bell-crank lever is adapted to engage, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WM. M. BAKER.

Witnesses:

HARRY L. RUDD,
JOHN GREEN.