(No Model.) 2 Sheets—Sheet 1.

E. POLHAMUS & W. S. MYERS.

STATION INDICATOR.

No. 588,835. Patented Aug. 24, 1897.

Fig. 1.

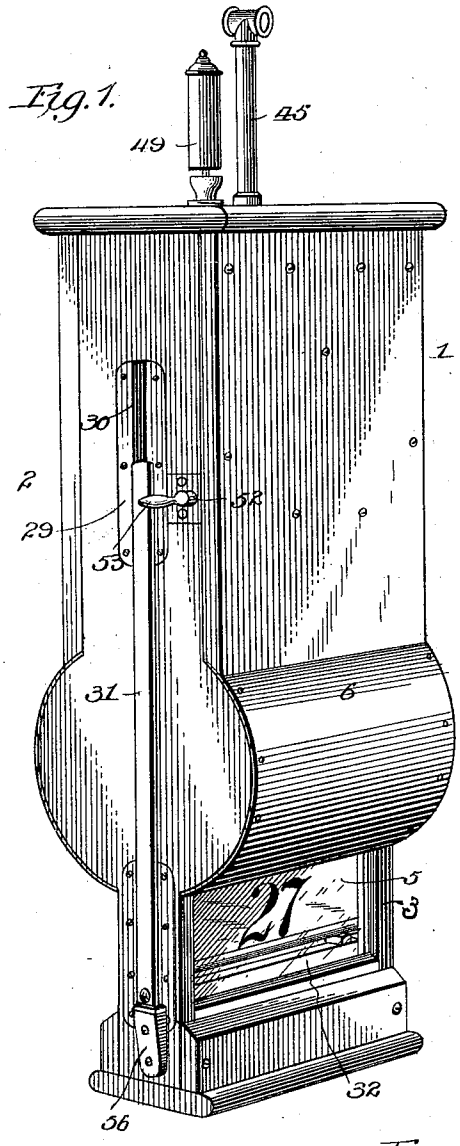


Fig. 2.

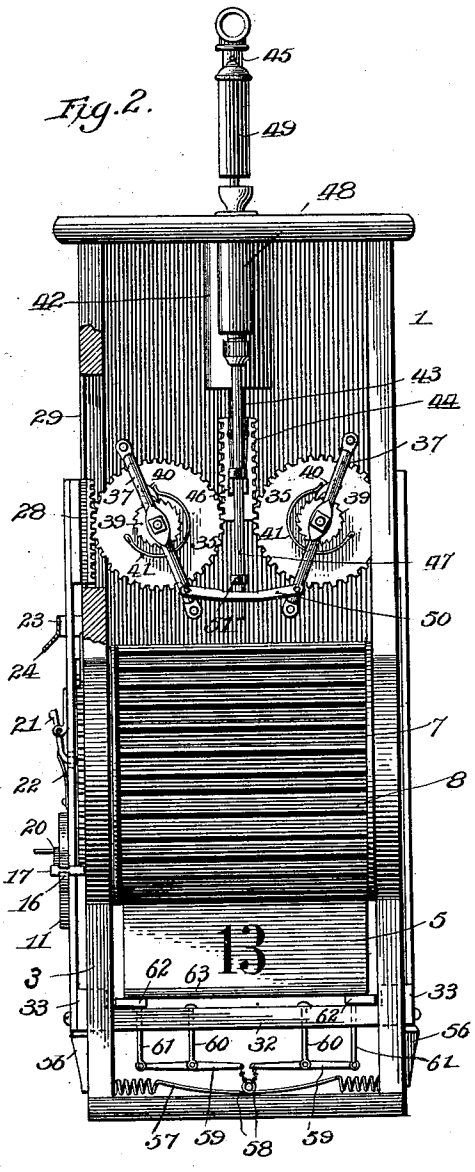
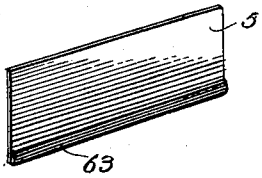


Fig. 3.



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Fig. 4.

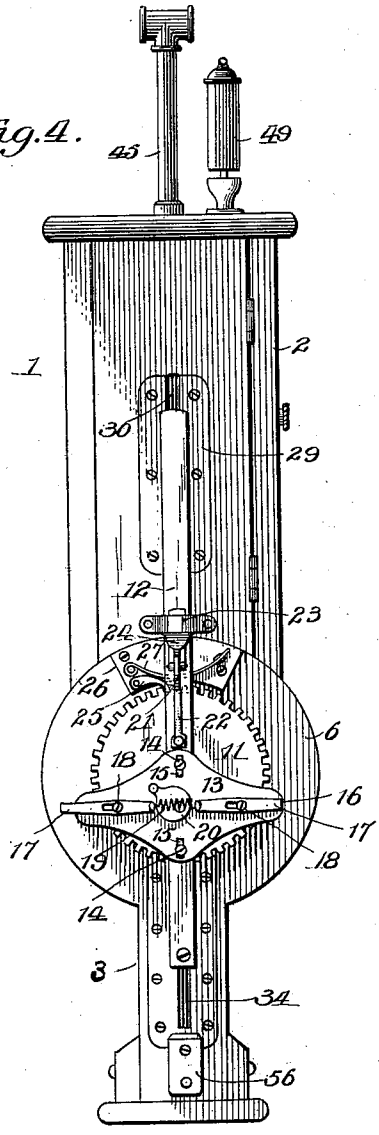
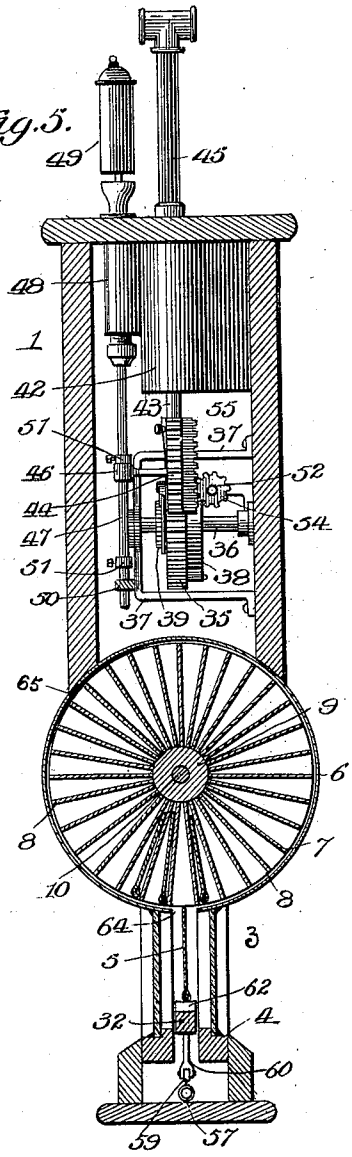


Fig. 5.



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UNITED STATES PATENT OFFICE.

EZRA POLHAMUS AND WILLIAM S. MYERS, OF ASHLAND, KENTUCKY.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 588,835, dated August 24, 1897.

Application filed April 8, 1897. Serial No. 631,286. (No model.)

To all whom it may concern:

Be it known that we, EZRA POLHAMUS and WILLIAM S. MYERS, citizens of the United States, residing at Ashland, in the county of Boyd and State of Kentucky, have invented certain new and useful Improvements in Station-Indicating Devices; and we 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.

This invention relates generally to station-indicating devices, and particularly to devices for indicating or announcing the stations or stopping-places of railroad-trains and street-cars to the passengers; and it has for its object to provide means for attracting the attention of the passengers just before the next stopping-place is reached and then disclosing the name of such stopping-place and thus obviate the necessity of the oral announcement of the stations by the trainmen; and it consists of the parts and combination of parts hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of our invention; Fig. 2, a front elevation of the same with the cover or door removed and a part of one of the end walls of the case broken away; Fig. 3, a perspective detail view of one of the cards; Fig. 4, an end elevation, and Fig. 5 a vertical section on the line x x, Fig. 2.

Similar figures refer to similar parts throughout all the views.

The main operative parts or mechanism of our device is inclosed within a casing 1, having a hinged door 2 in the upper rectangular part thereof, whereby access thereto may be readily had. The lower portion 3 of the casing is open at each side and is reduced in thickness, and a sash 4, having glass therein, is arranged at each side in order to disclose the numbers or names of the stations, which are marked on both sides of cards 5, as they are successively dropped, during the operation of the device, between the sash to the view of the passengers in the car. The casing is formed at each side with the enlarged circular portion 6, within which is journaled a cylindrical card-holder 7, consisting of the radiating partitions 8, secured to a central hub 9, having trunnions at each end, or a shaft 10, extending therethrough and forming pockets or recesses for the cards 5. One of the trunnions or the end of the shaft 10 projects through one end of the casing, and a ratchet-wheel 11 is secured thereon for rotating the card-holder. At each end of the casing a rod is movably or reciprocatingly attached thereto, the rod 12 at one end extending across the ratchet-wheel 11 and carrying a plate 13, which is adjustably attached thereto by screws 14, passing through slots 15 in the plate. The plate 13 extends beyond the edge of the ratchet-wheel at each side and is slotted, as at 16, to receive the bent end of the dogs 17 therein. The dogs 17 are slotted and slide or move on headed screws or bolts 18, which are secured to the plate, the inner or adjacent ends of said dogs being connected by a coiled spring 19, under which and between the ends of the dogs is pivoted an eccentric lever 20, having a short handle, the object of said lever being to operate the dogs so as to throw one out of and the other into engagement with the teeth of the ratchet, for a purpose which will be hereinafter described. The rod 12 also carries a short catch or trip lever 21, the bent lower end of which projects through an opening in the rod and which is normally held in said opening by a flat spring 22, secured at one end to the rod 12 and having its free end resting on the lever 21.

To the casing, above the circular portion thereof, is secured a bridge or strut shaped casting 23, having an inclined projection 24. The rod 12 passes under the strut or bridge 23, and in its upward movement carries the trigger end of the lever 21 against the projection 24 and under the strut 23, thus tilting the other end of the lever and disengaging it from pawl 25, which is pivotally secured to a plate 26, secured to the casing. The pawl 25 engages the teeth of the ratchet-wheel 11 and is normally held in engagement therewith by a spring 27, secured to the plate 26.

At its upper end the rod 12 carries a rack 28, in which grooves are formed to engage the track or guides 29, secured at each side of a slot 30, formed in the end walls of the

casing. A rod 31, carrying a rack at its upper end, is arranged at the opposite end of the casing and works in a slot therein, the two rods 12 and 31 being connected at their lower ends to the ends of a horizontal bar 32, extending across the machine, by blocks 33, which work in slots 34, formed in the end walls of the casing. The racks 28 engage the pinions 35, loosely mounted on shafts 36, journaled to the rear wall of the casing and in brackets 37. To each of the shafts 36 one end of a coiled spring 38 is secured, the other ends of said springs being attached to the walls of the casing.

On the shafts 36 small ratchet-wheels 39 are secured, which are engaged by the pawls 40, carried by the pinions 35, and being held in engagement therewith by springs 41, so that when the pinions are moved in one direction the springs 38 are wound on the shaft through the pawls and ratchets. In the upper part or top of the casing a cylinder 42 is secured, in which a piston carrying a rod 43 works, the lower end of said rod being connected to what may be called a "toothed" cross-head 44. The cross-head is formed with teeth at each side and extends down between the pinions 35, the teeth of which it engages.

The upper end of the cylinder is in communication with a pipe 45, which may be connected to a steam or air pipe leading from the locomotive, so that the engineer may turn the steam or air into said cylinder at will and thereby depress or force the piston down in the cylinder.

To the front face of the cross-head is secured a fork 46, which embraces a valve-rod 47, which operates a valve in the valve-chest 48 to permit of the escape of the air or steam from the cylinder after the piston has made its downward stroke, said steam or air escaping through a pipe and blowing a whistle 49, secured thereover. The valve-rod 47 extends through a guiding-bar 50, supported from the brackets 37, and carries two adjustable collars 51, which are engaged by the fork to actuate the valve-rod.

A rod 52, having a crank-handle 53, extends across the casing and is journaled or supported therein and carries a pinion 54, which engages a rack 55 on the back of the cross-head, so that the cross-head may be raised or lowered thereby when desired.

A cushion 56, of rubber, is arranged or secured to the lower end of the frame at each side, against which the rods 12 and 31 strike at the extremity of their stroke. The cushions serve to prevent jarring of the mechanism and also to deaden the sound of the blow given by the rods.

The cylindrical casing is formed with a slot or opening 64 in its bottom for the escape of the cards and with an opening or slot 65, whereby they may be arranged or placed in the pockets of the holders.

At the bottom of the casing a spring 57 is secured, to which the ends of short chains 58 are attached, the other ends of said chains being connected to the ends of levers 59, which are fulcrumed on rods or bolts 60 from the cross-bar 32, and to the ends of levers 59 rods 61 are loosely connected, which extend through said bar 32 and are formed with enlarged heads 62, on which the edge or bottom ends of the cards 5 rest when in their proper position to expose the name or number thereon. The cards are provided with metal binding-strips 63 at their bottom edges, so as to protect the same and to add weight thereto in order to assure their dropping quickly out of the holder when the latter is in position to permit it.

In operation the air or steam is admitted to the pipe 45 by the engineer as the train approaches a station or stopping-place, and the piston thereby depressed or forced downwardly through its rod 43 forcing the cross-head between the pinions 35, which are rotated, and through their engagement with the racks of rods 12 and 31 the latter are moved vertically, carrying the plate 13 upwardly, which, through that one of the dogs 17 in engagement with wheel 11, partly rotates the latter, and thus imparts a part revolution to the holder, so as to bring the pocket 7 containing the card bearing the name of the next station or street over the opening 64 in the cylindrical casing 6, through which the card drops until arrested by the heads 62 of the rods 61, on which it comes to rest. The card does not wholly pass out of the opening 64, but extends partly therein when at rest on the heads of the rods. At the instant the dog 17 is about to engage the ratchet-wheel in the upward stroke of the rod 12 the trip-lever 21 lifts the pawl 25 out of engagement with said wheel, and holds it out of engagement therewith until the end of the lever passes under the bridge 23, when it releases the pawl and the latter drops down and again engages the wheel. Thus it will be observed that the dog and trip-lever operate almost simultaneously, the dog acting to move the wheel almost on the instant the lever releases it. The upward movement of the rods 12 and 31 carries the card 5 into the pocket in which it belongs before the dog 17 engages the wheel 11, the end view, Fig. 4, showing the rod 12 in the position it occupies just as the card is pocketed and the front elevation, Fig. 2, showing the rods in their lowermost position. To insure the pocketing of the cards and that there may be no part of them projecting through the slot 64 to catch against the walls of the slot the rods 61 and levers 60, connected to spring 57, are provided.

As before stated, the cards rest on the headed rods 61, and as the bar 32 is raised the card is carried thereby up and into the slot 64, and the upward movement of the bar 32 carries with it the levers 60, and as it rises the chains 58 are extended against the strain of spring 57, thereby depressing the inner

ends of the levers and causing the outer ends to rise and thus push the cards wholly within the slot 64 and into the pockets, the heads of the rods 62 being of size to enter the slot, but not the pockets, as they will strike against the ends of the holder when fully raised.

The downward stroke of the cross-head causes the fork 46 to engage the lower collar 51 on the valve-rod and thus moves the latter to shift the valve and let the air or steam escape from the cylinder, and the revolution of the pinions 35 winds the springs 38, so that, after the rods 12 and 31 have completed their upward stroke, the springs may act to rotate the pinions in a reverse direction, return the cross-head to its starting position, lower the rods 12 and 31, and thus permit another or the next card to be exposed. In its upward movement the cross-head carries with it the valve-rod and shifts the valve to close the escape-port of the cylinder.

The object of the two dogs 17 is to permit of the reverse motion of the card-holder on the return trip of the train or car without having to rearrange the cards, it being only necessary to throw the eccentric lever 20 over to throw one of the dogs out so that it cannot engage the wheel 11.

While we have shown and described the invention as particularly adapted for use on steam-railways, it is obvious that it may be readily used on street-cars and operated by power other than steam or air by the conductor or motorman simply holding a rope or a lever connected to the handle 53 of the rod or shaft 52. It is also obvious that a bell may be used instead of a whistle to attract the attention of the passengers.

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

1. In a station-indicating device, the combination of the toothed cross-head, the pinions, the rack-bars engaging said pinions, a rotary card-holder, and mechanism connecting said rack-bars and card-holder, whereby the latter may be partly revolved once during each upward movement of the rods, substantially as described.

2. In a station-indicating device, the combination of the toothed cross-head, the pinions, the rack-bars engaging said pinions, a rotary card-holder, a ratchet-wheel, means carried by one of said rack-bars for rotating said ratchet-wheel, and means for imparting a downward motion to said cross-head to move said rack-bars in one direction, and springs for returning said bars to their starting position, substantially as described.

3. In a station-indicating device, the combination with a rotary card-holder, of means for imparting a partial revolution to said holder, a vertically-movable cross-bar for supporting and pocketing the cards dropped from said holder, and means connected with said cross-bar for lifting the cards in advance thereof and forcing the cards wholly within the pockets of the holder at each upward movement of the cross-bar, substantially as described.

4. In a station-indicating device, the combination with a rotary card-holder, of a vertically-movable bar for supporting the cards, when dropped from said holder, rods attached to said bars, means for vertically moving said rods, and levers fulcrumed to said bar for moving or lifting the cards to wholly restore the cards in the holder after the same have been partly inserted therein, substantially as described.

5. In a station-indicating device, the combination, with a cross-head, and means for reciprocating the same, of a rotary card-holder having pockets therein, a ratchet-wheel mounted at one end of said holder, vertically-movable rods connected at one end, mechanism connecting said rods and the cross-bar for imparting a vertical movement to the rods, dogs carried by one of said rods for engaging the teeth of the ratchet-wheel, and means for locking said ratchet-wheel after each upward movement of the rods, substantially as described.

6. In a station-indicator, comprising a rotary card-holder having pockets for the cards, a casing inclosing said holder having a card-outlet and means for imparting a partial revolution to said holder to deliver a card therefrom, of a bar connected to the operating means for supporting the cards when dropped from the holder, and a device carried by said bar and connected to the frame of the indicator for lifting or raising the cards in advance of the bar, substantially as described.

7. The combination, in a station-indicating device, with a rotary card-holder formed with radiating pockets for the cards, and means for revolving said holder, of a vertically-movable bar for supporting the cards when dropped from the holder, a spring secured to the base of the indicator-frame, levers fulcrumed to said bar, and having one end connected to said spring, and headed rods loosely connected to one end of each of said levers, whereby the cards will be raised in advance of the bar, substantially as described.

8. The combination, in a station-indicating device, of a rotary card-holder formed with pockets for the cards, a ratchet-wheel for rotating said holder, a vertically-movable rod, a dog carried by said rod for engaging the teeth of said ratchet-wheel, a pawl for engaging said wheel to arrest its motion, a trip-lever carried by the rod for operating said pawl to release the wheel, and means for imparting vertical reciprocation to said rod, substantially as described.

9. The combination, in a station-indicator, of a rotary card-holder formed with pockets for the cards, a ratchet-wheel for rotating said holder, a vertically-movable rod for operating said wheel, adjustable dogs for engaging said wheel carried by said rod, whereby the wheel may be rotated in either direction, a pawl for

arresting the motion of the wheel, a trip-lever carried by said rod for disengaging said pawl from the wheel, and means for operating said lever to release the pawl, whereby it may again engage the wheel, substantially as described.

10. The combination, in a station-indicating device, with a rotary card-holder having pockets for the cards, and a ratchet-wheel, of a cylinder, a valve-chest, a valve-rod, a piston-rod for said cylinder, a toothed cross-head adapted to move said valve-rod to open the port of the cylinder, on its downward stroke, and to close said port on its return stroke, pinions engaged by said cross-head, springs for operating said pinions in one direction, and rack-bars for operating said ratchet-wheel, substantially as described.

11. The combination, in a station-indicating device, with a rotary card-holder having pockets for the cards, and a ratchet-wheel, of a cylinder, a valve-chest, a valve-rod, a piston-rod for said cylinder, a toothed cross-head adapted to move said valve-rod to open the port on its downward stroke, and to close it on its return stroke, a whistle adapted to be blown by the escape of steam or air from the valve-chest, pinions actuated by said cross-head, and rack-bars engaging said pinions and adapted to operate said ratchet-wheel, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EZRA POLHAMUS.
WILLIAM S. MYERS.

Witnesses:
WILLIAM SEREY,
F. G. MYERS.