No. 613,967. Patented Nov. 8, 1898.

J. E. CARTER.

STATION INDICATOR.

(Application filed Oct. 2, 1897.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1.

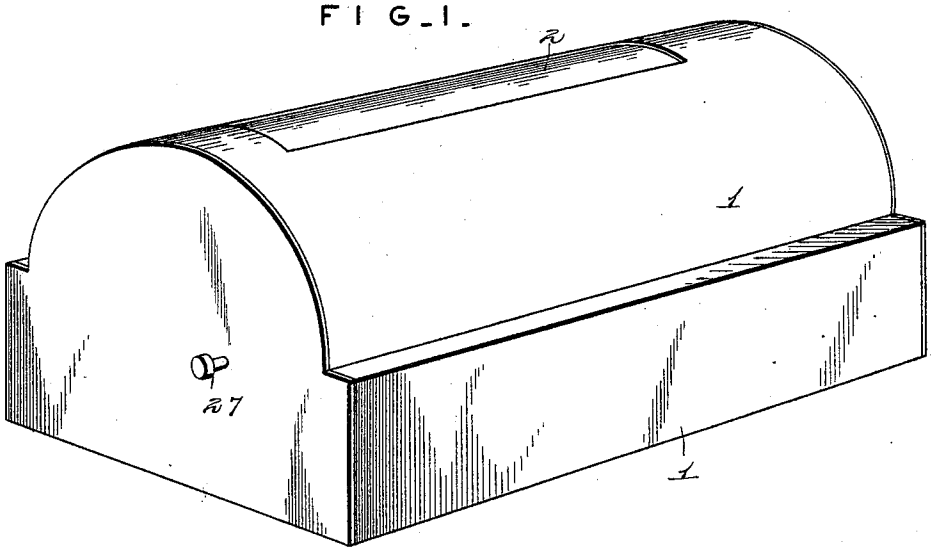


FIG. 2.

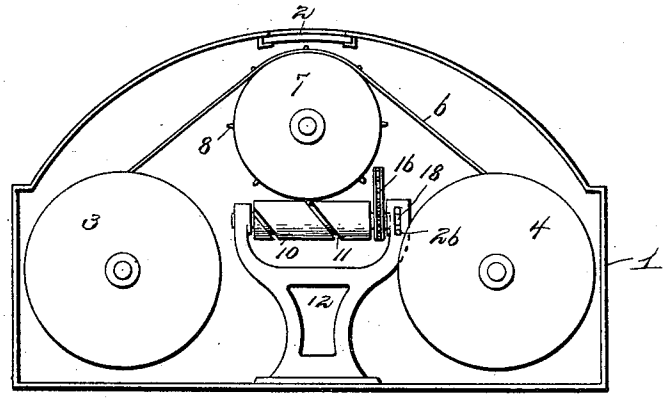
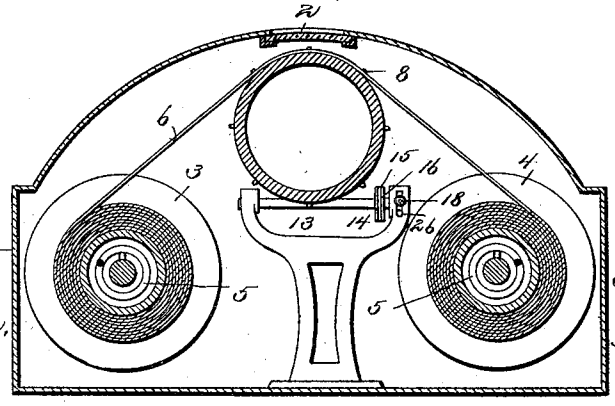


FIG. 3.



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FIG. 4.

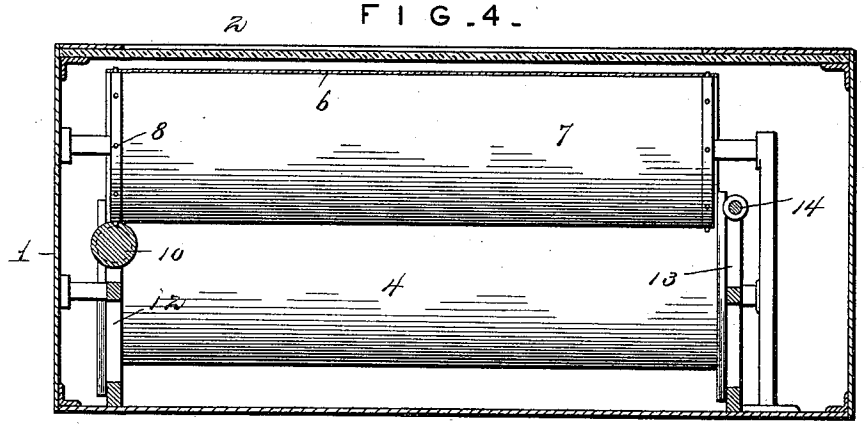


FIG. 5.

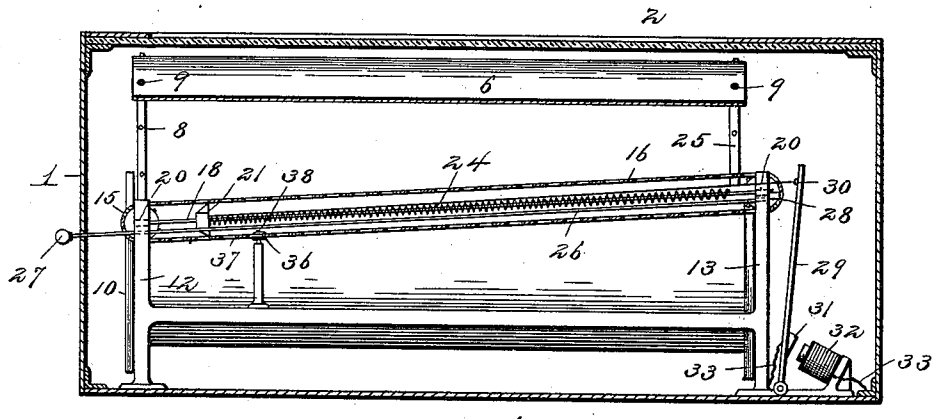
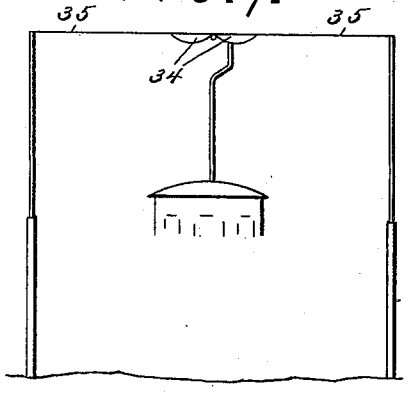


FIG. 6.



FIG. 7.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 8.

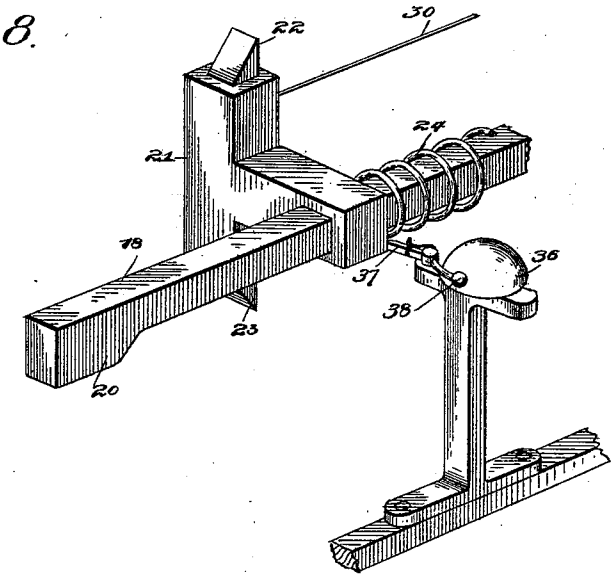
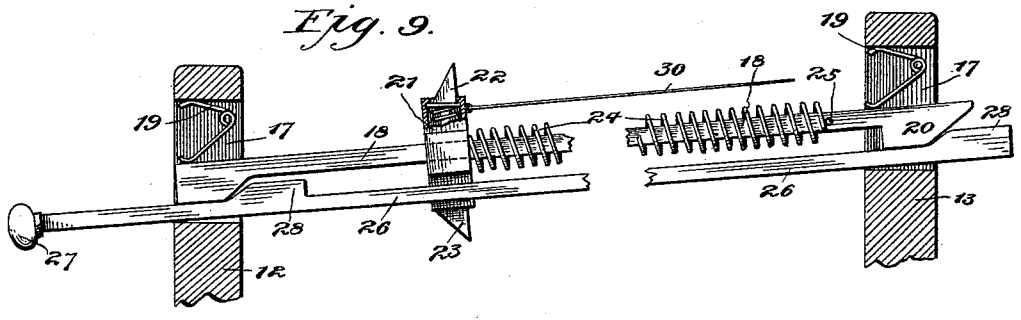


Fig. 9.



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UNITED STATES PATENT OFFICE.

JAMES E. CARTER, OF BRIDGEPORT, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JOE A. BROWN, OF SAME PLACE.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 613,967, dated November 8, 1898.

Application filed October 2, 1897. Serial No. 653,894. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. CARTER, a citizen of the United States, residing at Bridgeport, in the county of Mono and State of California, 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.

This invention relates to station-indicators of that class in which are employed a casing, a dispensing and a storage roll, a guide-roller, and a strip of suitable material having the names of the different stations printed in regular order thereon, said strip passing over the guide-roller and wound from the dispensing-roll upon the storage-roll.

The invention in the present instance consists in the particular means for operating the guide-roller from a distance, giving a step-by-step movement, and moving said strip in one direction or the other, according to the direction in which the train or car is moving.

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

In the drawings forming part of this specification, Figure 1 represents a perspective view of my device in operative position. Fig. 2 is an elevation with the end of the casing removed. Fig. 3 is a vertical central cross-section through the same. Fig. 4 is a vertical central longitudinal section. Fig. 5 is a longitudinal sectional view through the supporting-uprights and the parts connected thereto. Fig. 6 is a detail side elevation of the spirally-grooved operating-roller. Fig. 7 is a view illustrating the means for operating the device automatically at each street-crossing. Fig. 8 is a detail perspective view of the clutch and alarm mechanism. Fig. 9 is a longitudinal sectional view extending through the supporting-uprights at the opposite ends of the casing and illustrating in detail the mechanism for raising and lowering the clutch.

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

The casing 1 is formed with an elongated slot 2 in the front face thereof and has mounted for rotation on the inside thereof the dispensing and storage rolls 3 and 4, respectively, the said rolls each being hollow and having coiled springs 5 located on the inside thereof. The said springs are so connected to the rolls 3 and 4 and to the shafts upon which they turn that when one of the springs is wound up the other will be unwound. Attached at each end to the rolls 3 and 4 is a band or strip 6 of suitable fabric, the same having printed upon its outer surface the names of the different stations at regular intervals apart. The said strip is adapted to be moved from the roll 3 to the roll 4, or vice versa, the same passing over a guide-roller 7, located directly beneath the elongated slot 2. The said guide-roller is formed at each end with radially-extending pins or projections 8 8, which fit within corresponding openings 9 9, arranged at regular intervals along the side edges of the strip or band 6. By this construction close contact between the guide-roller 7 and the strip 6 is arranged for and the movement of said guide-roller will be positive in its action of shifting the strip 6 from one of the rolls 3 or 4 to the other.

Located directly beneath the guide-roller 7 and extending transversely thereof is a roller 10, provided with a spirally-arranged groove 11, extending from one end thereof to the other. The said roller 10 is mounted at each end in uprights or standards 12, similar uprights 13 being located at the opposite end of the casing, in which is also mounted a corresponding roller 14. The pins or projections 8 on the guide-roller 7 fit within the spirally-arranged groove 11, and by turning the roller 10 said guide-roller 7 is rotated in its bearings. Upon one end of the rollers 10 and 14 is a toothed wheel or disk 15, the same being connected by a chain 16, through which the rollers 10 and 14 are operated in unison. The links of the chain 16 are preferably rectangular in shape for a purpose which will hereinafter appear. The uprights or standards 13 being slightly longer than the uprights 12, the chain 16 extends from the roll-

ers 10 to 14 in an inclined direction. In the upper ends of each of the uprights 12 and 13 is formed an elongated slot or opening 17, in which is mounted a guide rod or bar 18, the same being normally urged downwardly by a spring 19, each end of the rod or bar 18 being formed with a shoulder 20 for a purpose which will presently appear. On the guide rod or bar 18 is mounted to slide a clutch 21, having two oppositely-disposed outwardly-spring-pressed engaging members 22 23, the same being provided with pointed ends and beveled sides. The clutch 21 being located between the two parts of the endless chain 16, the engaging portions 22 23 thereof are adapted to engage one or the other side of said chain according to the position of the guide rod or bar 18. The said clutch 21 is normally held downwardly or at a point adjacent to the roller 10 by means of a coiled spring 24, which surrounds the guide-rod 18 and engages a stop 25 at one end thereof. The rod or bar 18 is moved bodily to its upper or lower position by means of a shifting-bar 26, which is located just beneath the bar 18, fits within the slot or recess 17, and is provided with a knob or handle 27 upon one end, which projects out through the side of the casing 1. The said shifting-bar is formed at points adjacent to each end thereof with lugs or projections 28, which have inclined side edges adapted to bear against the shoulder 20 on the rod 18, so that when the said shifting-bar is drawn outwardly the guide rod or bar 18 will be forced upwardly, bringing the engaging portion 22 of the clutch 21 into operative connection with the upper part of the chain 16. When the same is forced inwardly, the guide-rod 18 will be thrown downwardly by the spring 19, so that the engaging portion 23 of the clutch will be in operative connection with the lower portion of the chain 16.

By the construction just described it will be seen that upon the rearward movement of the clutch 21, through the actuation of the spring 24, the engaging member 22 or 23, as the case may be, will slide freely over the links of which the chain 16 is made up by reason of the fact that said engaging portions are formed with inclined or beveled side edges. Upon the opposite movement, however, of said clutch the engaging member 22 or 23 will contact with the adjacent link of the chain 16 and move said chain with it.

The mechanism by which the clutch 21 is moved upwardly or outwardly will now be described.

Pivoted at one end to the base of the upright 13 is a lever 29, which is connected at its free end to the clutch 21 through a wire, cord, or other analogous device 30. The said lever 29 also has connected to it an armature 31 of an electromagnet 32, which is located on the inside of the casing a short distance outside of the upright 13. The said electromagnet is energized by a suitable battery, through the circuit-wires 33, from a suitable point adjacent to the conductor or other train official whose duty it is to operate the indicating mechanism. It may also be energized automatically by locating loops of live wires 34 at each street-crossing, with which contact is made by circuit-wires 35 35, attached to the usual trolley-pole or other suitable support. It will be seen that when the magnet 32 is energized it will attract to it its armature 31, which, being connected to the lever 29, will draw outwardly the free upper end thereof. This action of the lever 29 will, through the cord or wire 30, draw the clutch 21 against the action of the spring 24 toward the roller 14, moving the chain 16 in one direction or the other, according to which one of the engaging portions 22 or 23 is in operative connection therewith. This will rotate the spirally-grooved roller 10 in a corresponding direction and will turn the guide-roller 7 so as to wind the strip 6 from the roll 4, or vice versa.

In connection with the foregoing parts I employ an alarm device which is actuated at each time the indicating mechanism is operated. This consists of an ordinary bell 36, having a trip-lever 37, carrying a hammer 38 upon one end thereof and normally lying within the path of movement of the clutch 21.

From the foregoing description it will be seen that I have devised an extremely simple and effective station-indicating device which may be operated from a distant point and in which the indicating-strip may be reversed according to the direction in which the train or car is moving by merely forcing inwardly or drawing outwardly a shifting-lever. Any number of indicating devices may be employed that may be desired. All may be connected to the same circuit, and all may be operated simultaneously by a single action upon the part of the proper officer.

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

1. In a station-indicator, the combination of a guide-roller having a series of pins or projections thereon, a strip or band containing the names of the different stations passing over said guide-roller and provided with openings in which said pins or projections are adapted to fit, a spirally-grooved roller in the grooves of which said pins are adapted to fit, and means for rotating said spirally-grooved roller, as and for the purpose set forth.

2. In a station-indicator, the combination with a casing having an elongated slot therein, dispensing and storage rolls mounted in said casing, a guide-roller, and a strip or band containing the names of the different stations attached to and wound upon said dispensing and storage rolls and passing over said guide-roller, of a laterally-disposed gear-wheel in operative connection with said guide-roller, an idle gear-wheel, a chain passing around said gear-wheels, a clutch in operative con-

hection with said chain, and means for moving said clutch, as and for the purpose described.

3. In a station-indicator, the combination with a casing having an elongated slot therein, dispensing and storage rolls mounted in said casing, a guide-roller, and a strip or band containing the names of the different stations attached to and wound upon said dispensing and storage rolls and passing over said guide-roller, of a laterally-disposed gear-wheel in operative connection with said guide-roller, an idle gear-wheel, a chain passing around said gear-wheels, a slidingly-mounted clutch located between the two parts of said chain, means for operating said clutch, and means for throwing the same into engagement with one or the other part of said chain, as and for the purpose set forth.

4. In a station-indicator, the combination with a casing having an elongated slot therein, dispensing and storage rolls mounted in said casing, a guide-roller, and a strip or band containing the names of the different stations attached to and wound upon said dispensing and storage rolls and passing over said guide-roller, of a laterally-disposed gear-wheel in operative connection with said guide-roller, an idle gear-wheel, a chain passing around said gear-wheels, a slidingly-mounted clutch located between the two parts of said chain having oppositely-disposed engaging portions, means for operating said clutch, and means for throwing one or the other of said engaging portions into operative connection with said chain.

5. The combination with a pair of gear-wheels and a chain connecting the same, of a slidingly-mounted clutch located between the two parts of the chain, provided with outwardly-spring-pressed, oppositely-disposed engaging portions, and means for moving said clutch laterally for the purpose of throwing one or the other of said engaging portions into operative connection with said chain.

6. The combination with a pair of gear-wheels, and a chain connecting the same, of a guide rod or bar mounted in elongated slots in a pair of uprights or standards and having a shoulder thereon, a clutch slidingly mounted on said guide-rod having oppositely-disposed engaging portions adapted to be thrown into operative connection with said chain, a spring for normally urging said guide-rod to one of its positions, and a shifting rod or bar for forcing said guide-rod into its other position, the same being formed with lugs or projections adapted to engage the shoulders on said guide-rod, as and for the purpose set forth.

7. The combination with a pair of gear-wheels, and a chain connecting the same, of a guide rod or bar mounted in elongated slots in a pair of uprights or standards and having a shoulder thereon, a clutch slidingly mounted on said guide-rod having oppositely-disposed engaging portions adapted to be thrown into operative connection with said chain, a spring for holding said clutch in one position, a second spring for urging said guide-rod to one of its positions, and a shifting rod or bar for forcing said guide-rod to the other of its positions, the same being formed with lugs or projections adapted to engage the shoulder on said guide-rod, as and for the purpose set forth.

8. The combination with a pair of gear-wheels, and a chain connecting the same, of a slidingly-mounted clutch in operative connection with said chain, a spring for holding said clutch in one position, an operating-lever, a cord connecting said operating-lever and said clutch, an electromagnet, and an armature secured to said operating-lever whereby said clutch may be drawn outwardly against the action of said spring for moving said chain, as and for the purpose set forth.

9. The combination with a pair of gear-wheels, and a chain connecting the same, of a slidingly-mounted clutch in operative connection with said chain, a spring for holding said clutch in one position, an operating-lever, a cord connecting said operating-lever and said clutch whereby the latter may be drawn outwardly against the action of said spring for moving said chain, and alarm mechanism having an engaging portion or trigger lying within the path of movement of said clutch, as and for the purpose set forth.

10. In a station-indicator, the combination of a guide-roller having radially-extending pins or projections thereon, a strip containing the names of the different stations passing over said guide-roller and provided with slots or openings through which said pins or projections are adapted to pass, a spirally-grooved roller having a toothed wheel upon the end thereof, the grooves in said roller adapted to receive the pins on said guide-roller, an idle gear-wheel, a chain connecting said toothed wheel and said gear-wheel, a guide rod or bar located between the two parts of said chain, means for throwing said guide-rod upwardly or downwardly, a clutch having oppositely-disposed outwardly-spring-pressed engaging portions which are in operative connection with one or the other part of said chain according to the position of the guide-rod on which it is mounted, a lever, a cord connecting said lever and said clutch, and means for drawing said lever outwardly, as and for the purpose set forth.

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

JAMES E. CARTER.

Witnesses:
WM. O. PARKER,
P. R. PARKER.