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INDICATOR FOR TRAFFIC CARS.  
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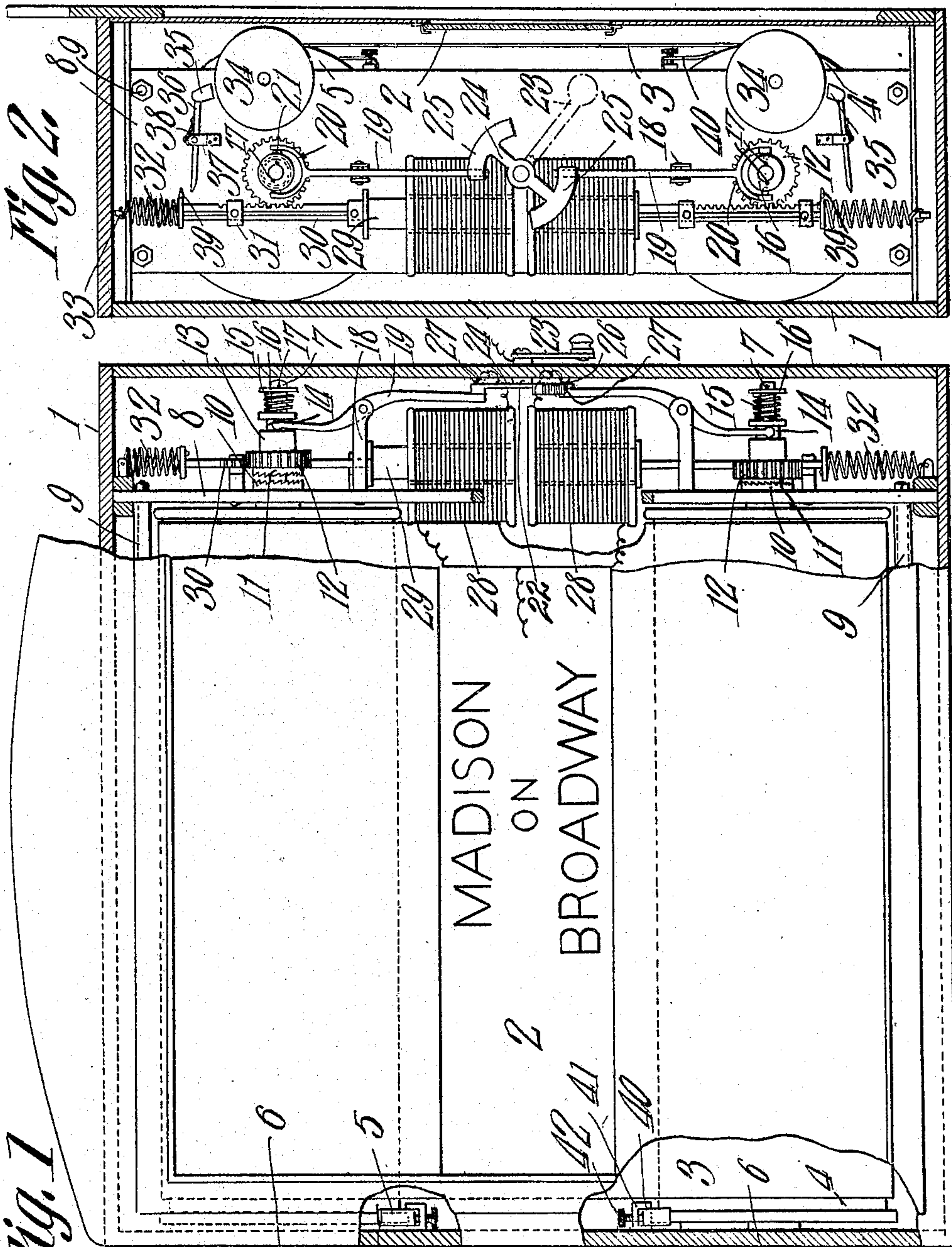
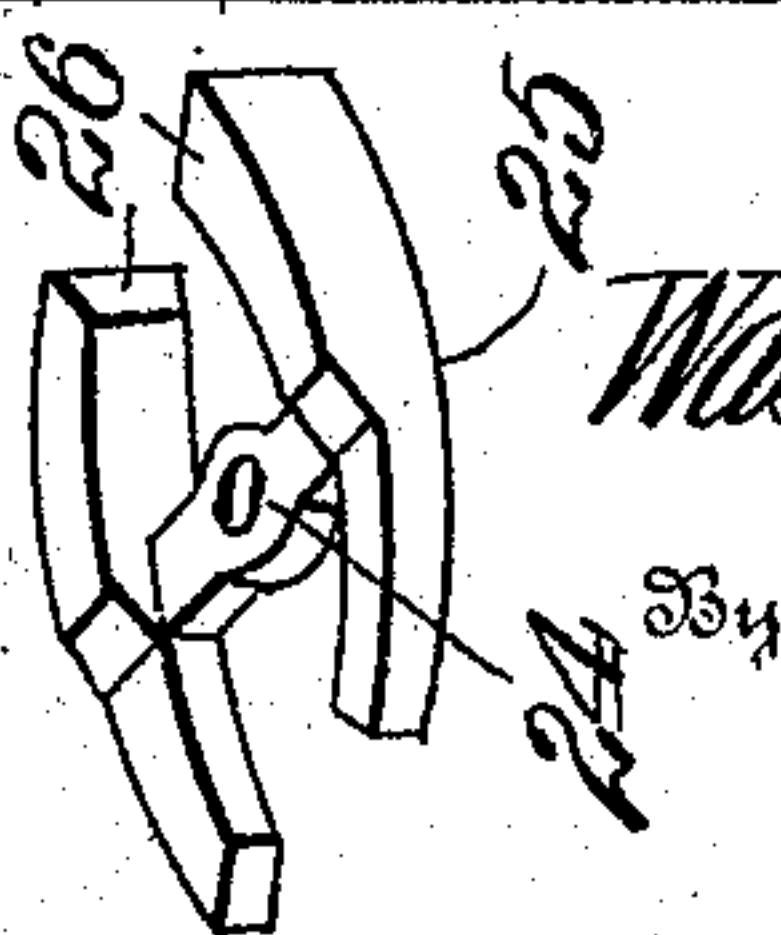


Fig. 1

Witnesses

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Fig. 3.



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# UNITED STATES PATENT OFFICE.

ALBERT C. KILLIUS AND WASHINGTON McCORMICK, OF HILLYARD, WASHINGTON.

## INDICATOR FOR TRAFFIC-CARS.

No. 908,105.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed October 8, 1907. Serial No. 396,473.

*To all whom it may concern:*

Be it known that we, ALBERT C. KILLIUS and WASHINGTON McCORMICK, citizens of the United States, residing at Hillyard, in the county of Spokane, State of Washington, have invented a new and useful Indicator for Traffic-Cars, of which the following is a specification.

This invention has reference to improvements in indicators for electric traffic cars, and it is intended more particularly for the display at proper predetermined times of street names, so that passengers upon the car are apprised of the name of the cross street toward which the car is moving. The same device, however, may be used for advertising purposes, or for both the display of street names and advertising matter.

The invention comprises a web containing the matter to be displayed, whether the names of streets or advertising matter, and electrically propelled means made active at certain predetermined points are employed to move the web a sufficient distance to display the proper name or other matter.

In accordance with the present invention means are provided for reversing the action of the electric propelling means so that when the car makes a return trip the street names may be displayed in the reverse order, so as to coincide with the proper cross streets.

The indicator may be operated by any suitable means whereby the electric circuit is closed at predetermined intervals in order that the web may be actuated, but as such means forms no part of the present invention it is unnecessary to either show or describe them.

The invention will be fully understood from the following detailed description, taken in connection with the accompanying drawings forming part of this specification, in which,—

Figure 1 is a face view, with parts broken away and in section and other parts in elevation, of the improved indicator; Fig. 2 is an end view of the indicator, with the right-hand end of the casing, as viewed in Fig. 1, removed, the casing being shown in section; Fig. 3 is a perspective view of a detail of the construction.

Referring to the drawings, there is shown a casing 1 in the front of which there is a panel 2 of glass or other transparent material, by which there is fed a web 3 containing the names of streets, or advertising matter, or

both. For convenience of description it will be assumed that street names only are to be displayed. This web is carried by two drums 4—5, suitably journaled in the framework of the machine, the journals extending through one end of the casing and being there provided with hand wheels 6 by means of which the drums may be manually operated. The other ends of the journals, shown at 7, stop short of the other end of the casing and have bearings in a plate 8 secured in the casing by stay rods 9. The front of the casing is so made that it is opaque except where broken by the glass panel 2, and, consequently, the drums 4—5 and that portion of the web 3 wound thereon are hidden from view, and only the portion of the web opposite the glass panel is in sight. The casing and the parts contained thereby are mounted on the interior of the car in sight of the passengers. On each journal 7 beyond the supporting plate 8 there is secured a clutch member 10, and mounted loosely on the journal is another clutch member 11 arranged to engage the clutch member 10, and these clutch members are of the one-way type so that they will cause rotation of the drums in one direction only. It is to be noted that the clutch 10—11 on one journal 7 is arranged to turn said journal in a direction opposite to the direction of rotation imparted to the other journal by its clutch. Each clutch member 11 carries a gear wheel 12 and beyond this gear wheel the clutch member is provided with a hub 13 in which is formed an annular groove 14, and surrounding the journal 7 beyond the hub 13 is a helical spring 15 confined between the end of the hub and a plate 16 secured to the journal by a pin 17, or any other equivalent means which may be used for holding the spring in place.

Extending from the plate 8 near each clutch is a bracket 18 having its end bifurcated and there receiving a lever 19. One end of this lever is forked, as shown at 20, and is provided with inwardly projecting pins 21 engaging in the respective groove 14. The other ends of the levers 19 approach each other but terminate at points somewhat distant one from the other. At an intermediate point there extends through the corresponding end wall of the casing 1 a stud shaft 22 carrying exterior to the casing a crank handle 23, and interior to the casing this stud shaft carries a rock arm 24 projecting on op-



posite sides of the stud shaft and terminating at each end in a segmental head 25. These heads are formed on one face with cam enlargements 26, the said cam enlargements being on corresponding ends of the segmental heads 25. Now, when the arm 24 is rocked by means of the shaft 22 one cam 26 will be moved into engagement with the corresponding lever 19, while the other cam enlargement will be moved out of the path of the other lever 19. The result is that one lever when engaged by a head 25 will be moved away from the corresponding end wall of the casing, while the other lever will be moved toward the corresponding end wall of the casing since it is always under the stress of the corresponding spring 15 and when out of engagement with the corresponding cam 26 it is free to move under the stress of that spring. The construction is such that when a lever 19 is relieved from the action of its cam 26 the two members 10—11 of the corresponding clutch are brought into operative relation one to the other by the action of the spring 15, and when a lever 19 is moved by a cam head 25 the spring 15 is compressed and the two members of the clutch are uncoupled. Furthermore, the arm 24 may be utilized as a switch arm by coupling up the shaft 22 to one side of an electric circuit and placing contact terminals 27 on the inner face of the corresponding end of the casing in the path of the arm 24. These terminals may be so arranged as to be brought into contact with the arm 24 one at a time only, and then only when the members of one clutch are in operative relation and the members of the other clutch are out of operative relation. When the arm 24 is in an intermediate position the cams 26 are both in engagement with the levers 19, and, therefore, both clutches are out of operative relation.

Fast on the plate 8 are two solenoids 28, one in alinement with the other and each having an armature 29 fast to which is a rack-bar 30 suitably guided in a stud 31 on the plate 8, through which stud the rack-bar passes, and the other end of the rack-bar is connected to one end of a helical spring 32 the other end of which is secured to a fixed stud 33 on a stationary part of the structure. The rack-bars are in mesh with the pinions 12 and these pinions are of sufficient width to permit the movement of the clutch members carrying them to the extent necessary to be moved into and out of engagement with the other clutch members fast on the journals 7.

Secured to the plate 8 are two gongs 34, each in the path of a hammerhead 35 on the end of a lever 36 pivoted in a bracket 37 on the plate 8 and engaged by a spring 38. The ends of the levers 36 remote from the heads 35 are in the path of pins 39 fast on the ends of the rackbars, so that when the rack-bars are moved by the energization of the solen-

oids the pins 39 will engage the levers 36 and move them against the action of the springs 38. When a pin 39 ultimately rides under the end of a lever 36 the latter is released to the action of its spring 38 and strikes the gong a blow, thus calling attention to the indicator.

When a solenoid 28 is energized and its armature or core 29 is moved into the solenoid the rack-bar causes the pinion 12 to rotate. If, now, the corresponding clutch members 10 and 11 are in operative relation the corresponding drum 4 or 5 will be rotated to a like extent and the web 3 will be wound thereon, at the same time unwinding from the other drum. The extent of movement of the drums 4 and 5 is so regulated that a name displayed upon the web and visible through the panel 2 is moved out of sight and the next succeeding name is moved into sight.

In order to prevent accidental movement of the drums 4 and 5 the heads of each at one end are engaged by a spring 40 carried by a bracket 41 fast on the corresponding end of the casing, and the tension of this spring is adjustable by a thumb-screw 42.

We claim:—

1. A street car indicator comprising a web for containing appropriate legends, and means for actuating said web at predetermined intervals comprising a drum for the web, a clutch member in fixed relation to the drum, another clutch member, means for moving the clutch members into and out of operative relation, a pinion fast on the movable clutch member, a spring-controlled rack-bar meshing with said pinion, a solenoid connected to the rack-bar, and means for energizing said solenoid at predetermined intervals.

2. A street car indicator comprising a web for containing appropriate legends, two drums upon which said web is wound, a one-way clutch connected to one drum, another one-way clutch connected to the other drum and operating in the opposite sense to the first-named drum, an electric actuating means for each drum, levers for moving the clutches out of action, and means for moving the levers simultaneously or individually to carry the clutches to the inoperative position.

3. A street car indicator comprising a web for containing appropriate legends, two drums upon which said web is wound, a one-way clutch connected to one drum, another one-way clutch connected to the other drum and operating in the opposite sense to the first-named drum, an electric actuating means for each drum, levers for moving the clutches out of action, and a rock-arm terminating in cam heads, one for each lever, said cam heads being so disposed as to engage both levers when the rock-arm is in an intermediate position and to engage only one or



the other of the levers when the rock-arm is in either limit of its travel.

4. A street car indicator comprising a web for the display of appropriate legends, drums  
5 upon which said web is wound, clutch members in operative relation to said drums, pinions carried by said clutches, rack-bars in operative relation to the pinions, springs for actuating the rack-bars in one direction, so-  
10 lenoids for actuating the rack-bars in the other direction, means for moving one or the

other of the clutches into operative position, and bells and strikers therefor in the path of the rack-bars.

In testimony that we claim the foregoing 15 as our own, we have hereto affixed our signatures in the presence of two witnesses.

ALBERT C. KILLIUS.

WASHINGTON McCORMICK.

Witnesses:

H. C. HOWE,

CLAY T. SMITH.