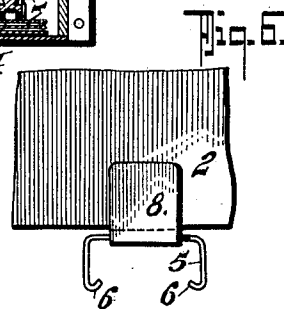
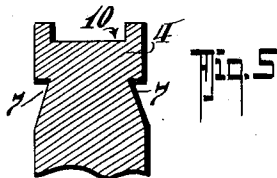
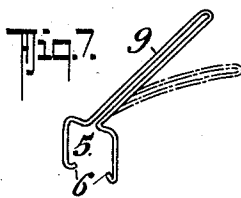
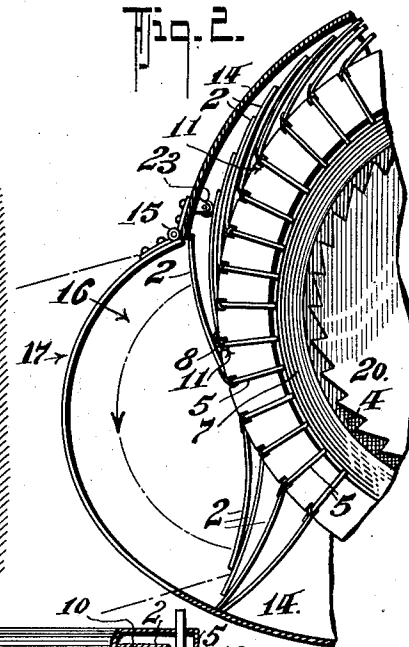
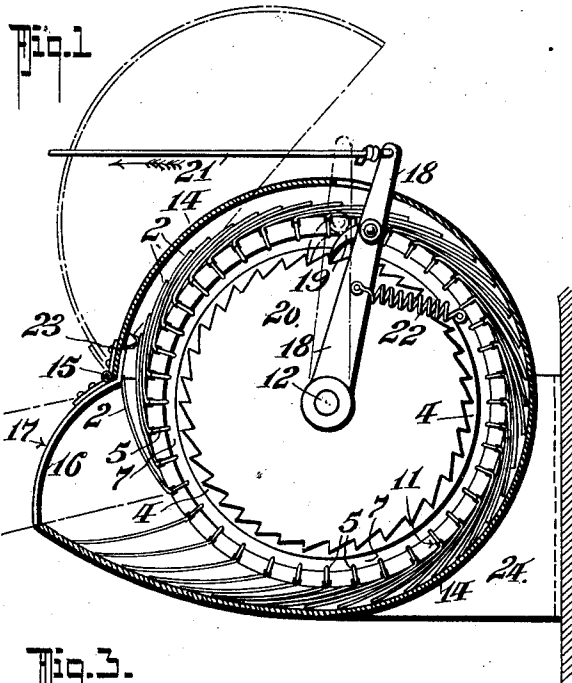


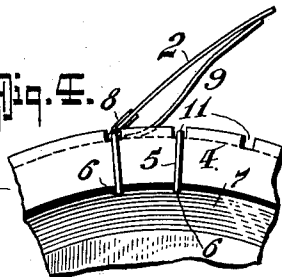
D. H. WARD.
STREET CAR INDICATOR.
APPLICATION FILED DEC. 27, 1912.

1,063,753.

Patented June 3, 1913.



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DAVID H. WARD, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

STREET-CAR INDICATOR.

1,063,753.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed December 27, 1912. Serial No. 738,782.

To all whom it may concern:

Be it known that I, DAVID H. WARD, citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Street-Car Indicator, of which the following is a specification.

This invention relates to a display mechanism, which, although particularly designed for use as a street car indicator, is applicable with possibly slight modification to other uses, such as an advertising display.

Many attempts have been made to effect the object attained in this invention, but difficulty has been experienced in the disposal within compact limits of the large number of names required on an ordinary street car route. In the invention, which is the subject of this application, this objection has been overcome by the use of flexible name cards, and in the use of a reel so constructed that by a special provision these flexible cards are removably connected to the reel in a manner that enables a large number of cards to lie closely, one in contact with the other, within the casing which incloses the reel until under rotation of the reel the display aperture is reached, when the resilience of each card, or that of a light spring or springs behind it, projects the card from the face of the reel to turn over and display the next card behind it, and if desired the reverse side of the first exposed card.

The invention is particularly described in the following specification, reference being made to the drawings by which it is accompanied, in which:

Figure 1 is an end view of the device, the end of the casing removed to show the arrangement of the display cards on the reel and the mechanism by which it is operated. Fig. 2 is an enlarged detail of a modification of the same adjacent to the display aperture. Fig. 3 is a face view of the casing and display aperture and part section of the reel and its operating mechanism. Figs. 4 and 5 are enlarged details in side elevation and section of the reel flanges to which the display cards are connected, and Fig. 6, a similar detail of the spring wire loop by which connection is effected. Fig. 7 is a perspective view of an alternative method of forming

the spring loop so that it may act as a spring for projecting the name cards forward.

In these drawings 2 represents the display cards, which are preferably of thin flexible material, such as a stiff bristol board or paper, or of some variety of celluloid or gelatin or even of thin sheet metal. On the face of these display cards the street names are printed and the cards are connected to the flanges 4 of the reel by fine spring wire loops 5 which are bent to the form shown in Fig. 6 that the inturned ends 6 may be sprung over the thickness of the flange and into the retaining grooves 7. The spring wires 5 are connected to the cards 2 by folded tapes 8. The edge of each reel flange 4, of which there are preferably three in the reel, have retaining grooves 7 into which the ends 6 of the connecting wires 5 are sprung and the shoulder of the groove is abrupt toward the outer edge and at a distance from the edge of the flange greater than the corresponding distance of the wire loop. In the circumference of each flange 4 a recess 10 is turned of a width to correspond with that of the tapes 8 and radial saw cuts or slits 11 are provided at intervals around the sides of the recess 10 to receive the wire of the loops 5 and retain them in position. This circumferential recess 10 permits the cards to lie as close as practicable to the circumference of the reel flanges and thereby enables the cards to be placed close together and a greater number is accommodated.

The shaft 12 on which the flanges 4 of the reel are secured is rotatably mounted in the ends 13 of the casing 14, which is at 24 attached to its support. This casing 14 is concentric with the reel for approximately three-quarters of its circumference, around the upper side and back, and as much larger as will allow the cards to lie closely within it during rotation. The upper half of the casing is hinged at 15 along the front to enable the reels to be changed, when required. Below the hinges 15 toward the front, the casing 14 is provided with a display aperture 16, the ends 17 of which aperture are curved to a radius which is approximately that of the cards as they fall over on their wire connections to the reel flange as the upper edge of each is released from the

confinement of the concentric portion of the casing. The display aperture 16 may be of a depth equal to the width of the cards, as shown in Fig 1, or may be double that width, as in Fig. 2, so that the opposite sides of the adjacent cards, which are opposite to the aperture, are displayed. Below the aperture the casing closes in to the concentric portion of the casing. This double exposure of the faces of the cards will enable the street name to be displayed from one face and from the other face direction or advertising in immediate relation thereto. The reel is operated to move it through the angular distance necessary to insure the exposure of the next card by a pawl lever 18 mounted loose on the shaft 12 or other convenient pivot. On this lever 18 is pivotally mounted a pawl 19 to engage the teeth of a pawl wheel 20 which is secured on the reel shaft 12.

The pawl lever 18 is operated to turn the ratchet wheel by a cord 21, which, in the case of a street car, may be placed in a convenient position to be used by the conductor or by the motorman as may be preferred, but in the case of an advertising device may be connected to a crank operated by a small electric or water motor. The movement of the lever 18 to operate the reel through the required angular distance is limited by stops which may be the ends of the aperture in the casing cover through which the lever passes. The lever is drawn forward to rotate the ratchet wheel and the reel, against the resistance of a spring 22 connected between it and a projection or pin secured to the casing.

In use, the pawl lever 18 is operated to move the reel through an angular distance corresponding to the pitch of the cards on the reel and as the edge of each card 2 clears the upper edge of the aperture 16, the card is by its own resilience, or by the resilience of the spring behind it, projected outward and falls either to the approximate horizontal position, as in Fig. 1, or to the approximate vertical position, as shown in Fig. 2, and exposes the face of the card behind it in the first case, and in the latter case the back of the card itself in addition.

A small roller 23 is mounted above the upper edge of the aperture 16 and over each reel flange 4 that will hold in place the card next to the one exposed until the time comes for it to move opposite the display aperture. This holds the card behind and prevents it crowding out the one exposed.

Where the cards are not in themselves sufficiently resilient to spring outward when the upper edge of each in turn is free from the upper edge of the aperture 16, a spring 9 may be applied to the back of each card at the attachment thereto, on the reel flanges. This spring may be applied in any convenient manner or the spring loop may be bent to the form, as shown in Fig. 7.

A simple, compact and thoroughly effective indicator is thus provided whereby the approaching street or next stop of a train or car may be announced to the passengers, or if applied for the display of advertisements a large number of advertisements may be carried within a limited compass.

The spring loops 5 form a convenient attachment for the cards to the flanges of the reel providing with the circumferential groove 10, and the notches 11, a secure fastening and one that enables the cards to lie upon one another even when pitched close. The ends 6 of the loops 5 may also be drawn apart easily to remove or replace a card.

It will be noticed that the cards 2 are convexly curved to the approximate curvature of the reel flanges.

Having now particularly described my invention, I hereby declare that what I claim as new and desire to be protected in by Letters Patent, is:

1. A display mechanism, comprising in combination, a flanged reel each flange having a circumferential groove on its outer surface and a series of display cards, a tape secured to each card, wire pivots carried by said tapes and removably secured across the circumferential grooves of the flanges.

2. A display mechanism, comprising in combination, a casing, a shaft rotatably mounted within said casing said shaft having flanges at intervals, each flange having a circumferential groove on its outer surface with a groove on each side a short distance from its outer edge, a series of spring wire loops the inwardly turned ends of which are sprung into the lateral groove of the flange, a series of display cards, and tape loops connecting said cards to the spring wire loops of the flanges.

3. A display mechanism, comprising in combination, a casing, a flanged reel rotatably mounted within said casing, said casing having a display aperture across its front, a series of pivot loops made of thin resilient wire bent to engage the sides of the reel flange and extend across the thickness of the flange, said wire at the center of the flange thickness being bent outward to form a spring, means for connecting a card to the horizontal portion of the loop where it extends across the flange and means for rotating the reel.

4. A display mechanism, comprising in combination, a casing, card connecting loops having inwardly turned ends, a reel rotatably mounted within said casing said reel having flanges at intervals, each flange having a circumferential groove in its outer surface with cross grooves at intervals for the reception of said card connecting loops and a lateral groove on each side for the reception of the inwardly turned ends of such loops, a series of display cards, tape loops

connecting said cards to the said card connecting loops, and means for rotating the reel.

5 In a display mechanism, a rotatable reel having side disks each provided with a peripheral groove to form peripheral flanges, said disks having side grooves, display cards, connecting members joined to said display cards and including portions
10 for clipping over said disks with their ends projected into the side grooves of the disks,

said disks having provisions for preventing creeping of said connecting members to maintain said connecting members spaced apart, substantially as shown and described. 15

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

DAVID H. WARD.

Witnesses:

ROWLAND BRITAIN,
MAY WHYTE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."