D. INCHES.

CARD DISPLAYING DEVICE.

APPLICATION FILED MAR. 22, 1920.

1,369,245.

Patented Feb. 22, 1921.

2 SHEETS—SHEET 1.

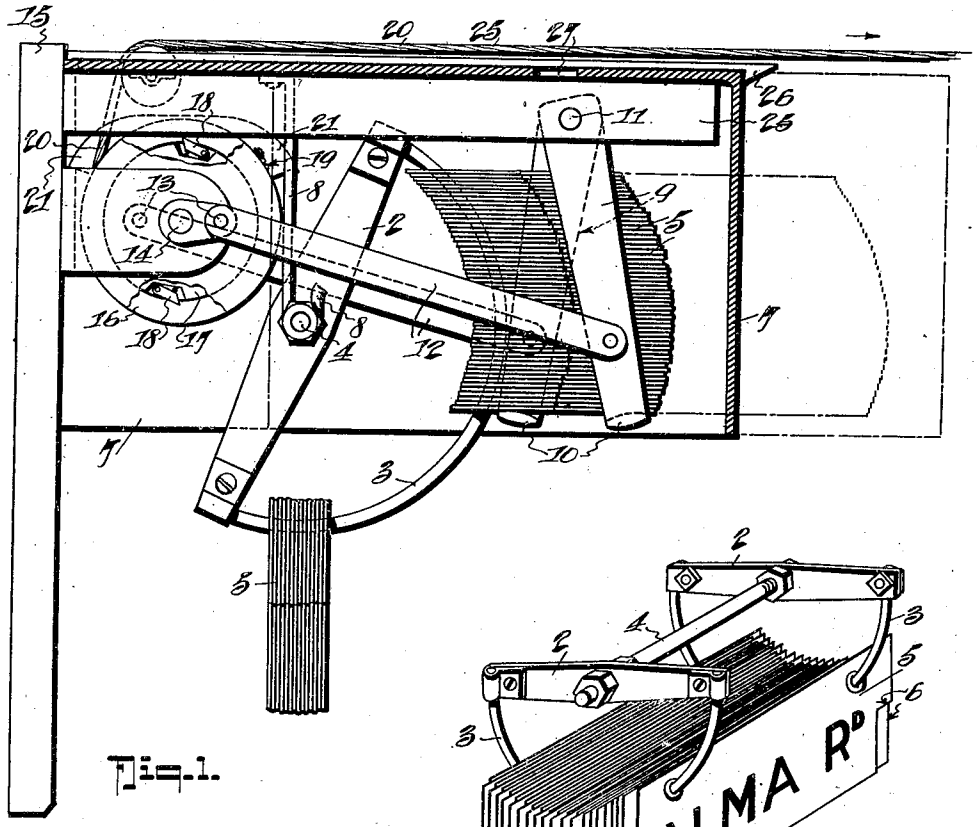


Fig. 1.

Fig. 2.

Fig. 3.

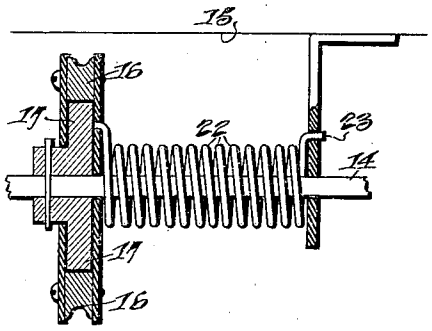
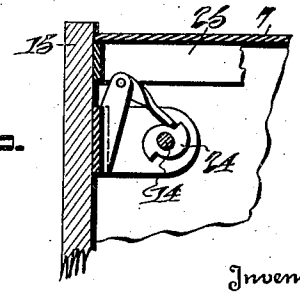


Fig. 4.



Inventor

David Inches

By Fred G. Dieterich & Co.

Attorneys

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2 SHEETS—SHEET 2.

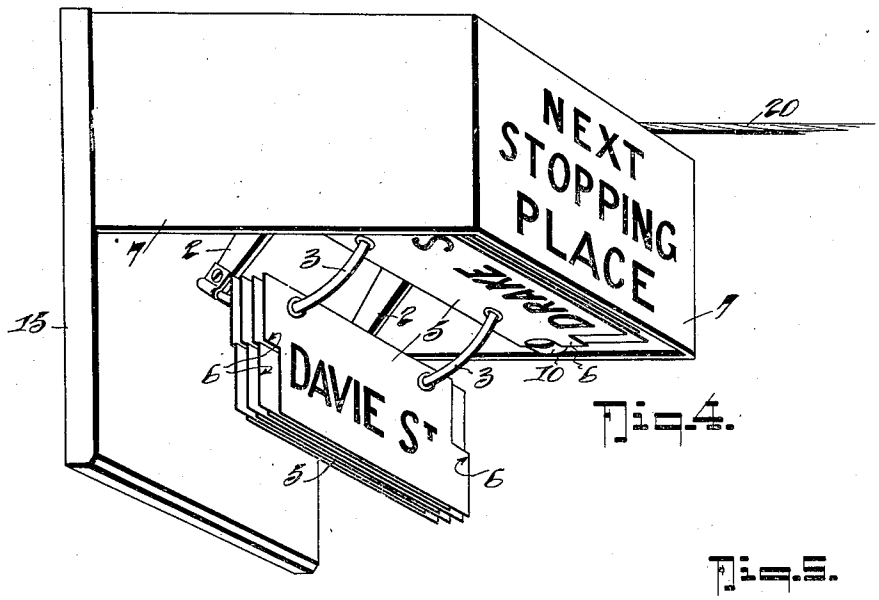


Fig. 4.

Fig. 5.

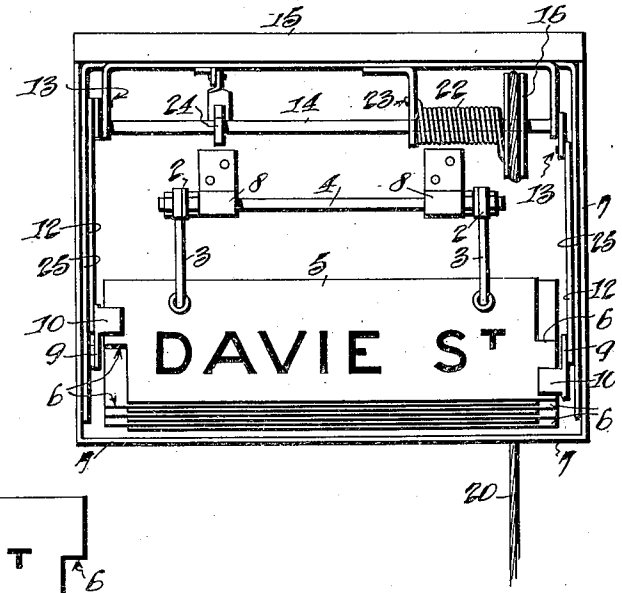


Fig. 6.

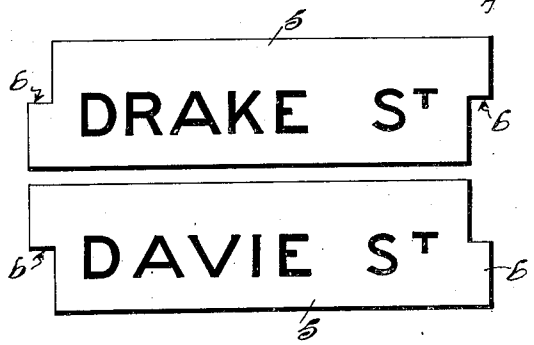


Fig. 7.

Inventor

David Inches.

By Fred G. Dieterich & Co

Attorneys

UNITED STATES PATENT OFFICE.

DAVID INCHES, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

CARD-DISPLAYING DEVICE.

1,369,245. Specification of Letters Patent. Patented Feb. 22, 1921.

Application filed March 22, 1920. Serial No. 367,770.

To all whom it may concern:

Be it known that I, DAVID INCHES, citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Card-Displaying Devices, of which the following is a specification.

This invention relates to a street indicator for railway street cars or the like, and is designed to indicate to the passengers in the car the next approaching street crossing or place at which the car may stop, when required. It is of that class manually operated by the conductor or party in charge of the car, immediately the car passes the last stopping place.

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

Figure 1 is a side elevation of the device with the near side of the casing removed to reveal the operative parts.

Fig. 2 is a detached view of the name plate holding frame.

Fig. 3, an enlarged detail of the check pawl of the operating shaft.

Fig. 4 is a perspective view of the device complete.

Fig. 5 is an inverted plan.

Figs. 6 and 7 are detached views of adjacent street name plates.

Fig. 8 is an enlarged detail of the actuating sheave.

The device comprises a name plate holding frame composed of end members 2 medially connected together by a distance maintaining and supporting rod 4. On each end of each member 2 substantially semicircular arcs 3 of bent wire are secured to project from the same side. On these arcs 3 street name plates 5 are threaded to move freely.

From diagonally opposite corners of these plates 5 portions are removed leaving equal portions 6 projecting. The position of the removed corners is opposite on adjacent plates, as shown in Figs. 6 and 7, the reason for which will be seen later.

The frame 2, 3, 4 is pivotally supported within an open bottomed casing 7, on hooks 8 secured to and depending from the upper side of the casing 7 at such height that the name plates as they hang free on the arcs 3 will show below the lower edge of the casing and in view of the passengers in the car, in the front end of which the device is secured by the wall plate 15.

When the frame 2, 3, 4 with the name plates 5 is hung in the hook bearings 8, the name plates are initially retained in a horizontal position within the casing 7 by the inwardly turned ends 10 of levers 9 mounted at 11 on each side in the upper part of the casing, the inwardly turned end 10 engaging the diagonally opposite projecting ends 6 of the bottom card.

The levers 9 are connected by links 12 to crank pins 13 set diametrically opposite one another on the ends of a shaft 14 rotatably mounted within the casing adjacent the wall plate 15. These opposed crank pins, if the shaft be rotated through a half revolution, will oppositely move the levers 9 that their inwardly turned ends 10 will be brought to the opposite diagonal corners of the bottom name plate, from which portions have been removed. The card 5 being thus deprived of its end supports, is free to fall along the arcs 3 to hang vertically therefrom below the casing 7, as shown in Fig. 4; but as the projections 6 are on diagonally opposite corners on the adjacent cards, the next card will be supported on the inwardly turned ends 10 of the levers until those levers are again reversed in position.

The successive release of the bottom cards 5 from within the casing 7, and the exposure of their outer faces to the passengers in the car is thus effected by the periodic movement of the levers 9.

The shaft 14 is rotated through the half rotation necessary to alternately project and withdraw the levers 9 by a sheave ring 16 rotatably mounted on a small disk 17 secured on the shaft 14, with a pawl and ratchet engagement 18 between the sheave ring and the disk.

The sheave ring 16 is circumferentially grooved to receive an operating cord 20 to be pulled by the operator, the end of which is secured at 19 to the sheave and the sheave ring is provided with stops 21 limiting movement of the ring in either direction to the one hundred and eighty (180°) degrees necessary to reverse the position of the crank pins 13. A spring 22 is coiled on the shaft 14, one end of which coil is connected at 23 to a bearing bracket of the shaft and the other to the ring 16. This spring normally holds the sheave ring 16 with one of

its stops 21 against the bracket in which the shaft 14 is mounted, and when the operator pulls the cord 20 the other stop 21 of the sheave ring is brought against the other side of the bracket, by virtue of the ratchet hold between the ring and the disk, and rotates the shaft 14 to change the position of the levers 9, and on release of the cord, the shaft 14 is held against backward movement by a check pawl 24 while the sheave ring 16 is returned by the spring 22.

The casing 7, which carries the name plate holding frame 2, 3, 4, is slidably mounted on members 25 secured to and projecting from the wall plate 15 within each side of the casing, which members 25 carry the supporting and releasing levers 9. The casing is retained in its normal position against the wall plate 15 by a latch member 26 secured to the wall plate and projecting forward from it to engage the forward edge of the casing 7.

The top of the casing 7 has an aperture 27 into which the latch 26 will spring and retain the casing and the plate carrying frame 2, 3, 4, at such distance from the wall plate as will enable the plates to be lifted up from their pendant position to a horizontal position above the inwardly turned ends 10 of the levers 9, as shown by the dot and dash lines in Fig. 1, when the casing may be pushed back to its normal position and the device is ready for action.

In use, as soon as the car passes one stopping place the conductor or other authorized party pulls the cord 20 which rotates the shaft 14 to reverse the position of the levers 9, the inwardly turned ends 10 of which being brought opposite the removed portion of the bottom card will permit that card to fall along the arc wires 3 and it will hang exposed below the lower edge of the casing 7, with the name of the next stopping place exposed to the passengers.

If the car is running on a circular track, when it reaches the end of the circuit, and all the name holding plates have been released from the horizontal position within the casing and have assumed the vertical exposed position below it, the operator lifts the depending name plates along the arcs 3 and restores them to the horizontal position above the inwardly turned ends 10 of the levers 9.

Where the car is required to run backward on the same track the name plate holding frame with the plates 5 are turned end for end in the hook bearings 8 before they are lifted to the horizontal position within the casing.

I do not desire to be confined to the particular means herein shown and described for operating the reciprocating levers 9, as the same may be effected by any suitable mechanism.

Although specifically described and illustrated in its application as a street indicator, the same device may be used to display advertising cards, either in conjunction with the street car indicator or apart therefrom.

The essential feature of the invention resides in the manner of mounting the plates 5 and their supporting frame, and in the manner of effecting their release, one by one.

It will be observed that, by mounting the frame 2—3—4 pivotally, the cards 5 at the bottom in Fig. 1, will always hang with their center of gravity below the pivotal axis and thus will always be located in vertical planes.

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 device, comprising in combination a series of plates the faces of which it is required to successively expose, means for connecting these plates to a pivotally mounted frame, means for supporting the plates in a horizontal position, and means for successively releasing the bottom plate of the series from such support whereby it may assume a vertical position.

2. A display device, comprising in combination, a series of plates the faces of which it is required to successively expose, a pivotally mounted frame having curved wires on which the plates are threaded, means for supporting the plates in a horizontal position, and means for successively releasing the bottom plate of the series from its horizontal support whereby it may assume a vertical position on the curved wires.

3. A display device, comprising in combination, a series of plates the faces of which it is required to successively expose, said plates having projections from diagonally opposite corners, the projections of adjacent plates being from the ends of opposite diagonals, means for connecting these plates from a common center, means for supporting the plates in a substantially horizontal position by engagement of the projections of the bottom plate, means for reversing the position of such supports that the bottom plate is deprived of such support and is free to fall while the remainder of the plates are retained in the horizontal position by engagement of the supports with the diagonal projections of the next plate.

4. A display device, comprising in combination, a series of plates the faces of which it is required to successively expose, curved wires on which these plates are threaded, said wires being carried on a frame maintained the required distance apart by a distance rod at approximately the common center of the curved wires, means for pivotally supporting the frame

and its connected plates within a suitable casing, means for supporting the plates in a substantially horizontal position within the casing, means for releasing the bottom plate of the series from the supporting means whereby it may be allowed to fall on the curved wires and assume a vertical position below the casing.

5. A display device, comprising in combination, a plate suspending frame composed of two end wires bent to a substantially semi-circular form and supported at a suitable distance apart on a rod at approximately the center of the curved wires, plates separately threaded on these wires, said plates having projections from diagonally opposite ends the projections of adjacent plates being at the ends of opposite diagonals, a casing within which the plate holding wires are pivotally supported, said casing having an open bottom below the lower edge of which the plates are free to hang on the wires, levers pivotally mounted within the casing, said levers having inwardly turned ends adapted to engage the end projections of the bottom plate and sustain the plates in a horizontal position within the casing, and means for reversing the angular position of the supporting levers whereby the bottom plate of the series within the casing is released from such support and is permitted to fall on the curved wires and assume a vertical position suspended therefrom, and the remainder of the plates within the casing are supported by the end projections of the next plate on the inwardly turned ends of the levers.

In testimony whereof I affix my signature.

DAVID INCHES.