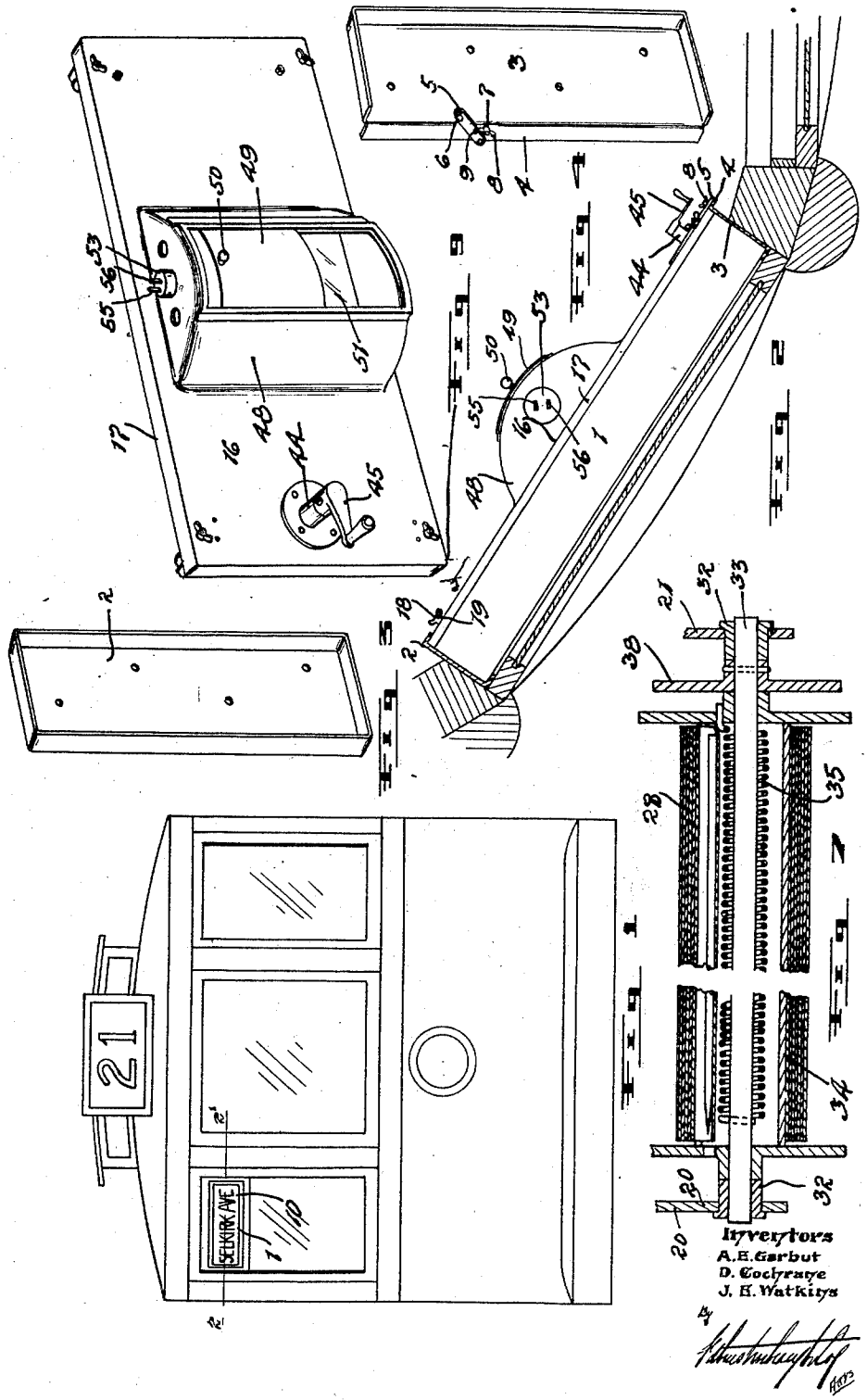
May 6, 1930. A. E. GARBUT ET AL 1,757,458

STREET INDICATOR FOR STREET CARS

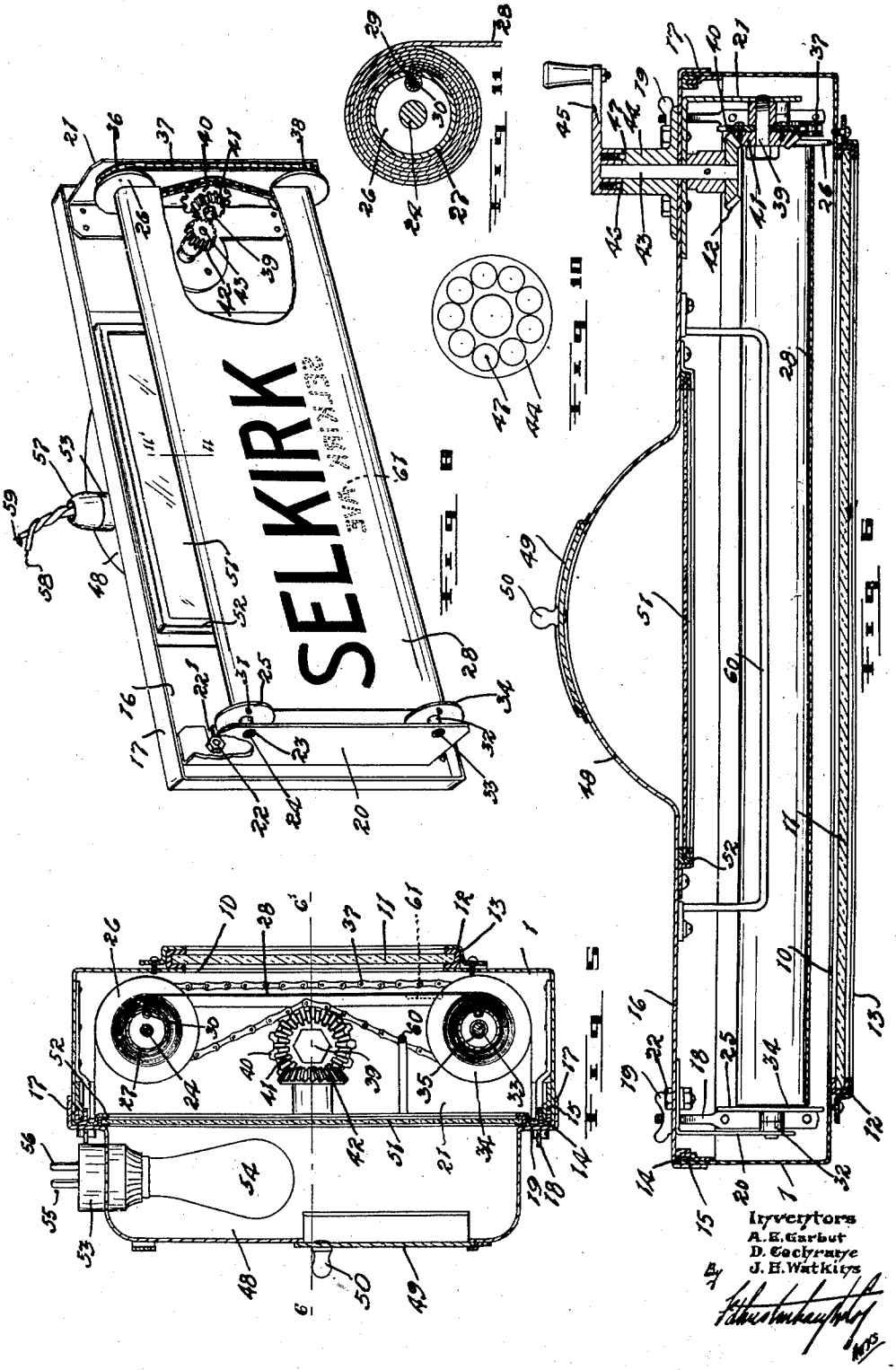
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STREET INDICATOR FOR STREET CARS

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UNITED STATES PATENT OFFICE

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STREET INDICATOR FOR STREET CARS

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The invention relates to improvements in street indicators for street cars and an object of the invention is to provide an indicator which can be readily mounted in one of the car windows and preferably a vestibule window and without having to alter the existing window structure.

A further object is to construct the indicator so that it can be easily and quickly removed from the window when occasion demands and so that the electrical connections for illuminating purposes can be readily disjoined when the indicator is to be removed.

A further object of the invention is to provide a box like indicator for mounting in the car window and which has the back of the box detachably connected to the box body and the various internal working parts of the indicator carried by the back as well as the illuminating light, such permitting of the ready repair or inspection of the working parts without necessitating the removal of the box body from position in the car window frame.

A further object of the invention is to construct the indicator so that the working parts are all maintained dust and weather proof and while permitting the motorman to look into the interior of the indicator in order to properly set the curtain there within.

A further object is to provide a means permitting the motorman by observation to accurately set the desired street name so that it will be properly centered in relation to the front sight opening of the indicator and such that he can do this without leaving the vestibule.

A further object of the invention is to provide an indicator having the street names appearing on a blind carried by winding rollers and wherein provision is made for compensating the varying diameter of the blind winding on the rollers.

A further object is to provide means whereby the motorman from the vestibule can readily manipulate the device to accurately set the desired street name in respect to the front sight opening of the indicator and also to provide means for releasably locking the blind once it is set.

A further object of the invention is to provide an arrangement whereby the blind or curtain can be easily and quickly removed from the rollers and so that the various other parts of the device can be readily dismounted for inspection or repair purposes.

A further object is to construct the entire device in a simple, durable and inexpensive manner.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawings, in which:—

Fig. 1 is an exterior view of a street car showing our device installed thereon.

Fig. 2 is a horizontal sectional view at 2—2′ Figure 1 with the indicator shown in plan.

Figs. 3 and 4 are perspective views of the box supporting plates utilized.

Fig. 5 is an enlarged detailed vertical sectional view through the indicator and looking in a direction towards the pinions.

Fig. 6 is a horizontal sectional view through the box, the section being taken in the plane indicated by the line 6—6′ Figure 5.

Fig. 7 is an enlarged detailed horizontal sectional view through the bottom roller and associated parts, the central portion thereof being broken away.

Fig. 8 is a perspective view of the back of the box and showing the parts carried thereby.

Fig. 9 is a further perspective view of the back of the box and showing the gate which is open.

Fig. 10 is an enlarged detailed face view of the sleeve which engages with the crank.

Fig. 11 is an enlarged vertical sectional view at 11—11′ Figure 8.

In the drawings like characters of reference indicate corresponding parts in the several figures.

This indicator is particularly designed for indicating street names where the name designates the route taken by the car and in this connection we might point out that while it is common practice in some cities to indicate

the car route by a displayed number, such as say that 52, it is none the less desirable to also have a street name displayed on the car, as it gives one not fully familiar with the route of the car as indicated by the number 52 a better idea of the direction of travel of the car.

The device is preferably placed in one of the windows of the car vestibule and towards the top of the window, and is arranged so that a selected street name is visible through the window from the outside, and so that the motorman can readily operate the whole appliance from the vestibule without requiring to go out of the car.

The indicator embodies a substantially rectangular box 1 preferably formed of sheet metal and having the length so that it will pass readily between the side frames of the existing window. In order to hold the box in place we secure as by screws to one side of the window frame a socket like supporting plate 2, which receives and supports the rectangular end of the box. To the other side of the window frame we secure as by screws a further socket like supporting plate 3, also adapted to receive and support the other end of the box but this latter plate is not provided at the inner side with a holding flange, but rather has a flange 4 turned in a direction away from the box so that the end of the box can be slid in to the open sided socket and be supported thereby. To prevent the inserted box end from withdrawing from the latter plate, we have fastened pivotally to the flange 4 a latch 5 provided with a finger piece 6, and the latch when swung down is adapted to pass behind the box and prevent withdrawal.

A short screw threaded stud 7 is fastened permanently to the flange and carries a thumb nut 8, and this stud is adapted to enter a slot 9 provided in the latch, the arrangement being such that when the stud is in the inner end of the slot, the latch is stopped in a horizontal position and so that when the thumb nut is then tightened up it will jam the latch and hold it locked.

The front of the box is provided with a rectangular sight opening 10 through which the street name is seen, and the sight opening is closed by a transparent plate 11 of glass, the plate having the edges thereof set in channel shaped rubber strips 12 which are in turn held in place by an outer open centered rectangular frame 13 screwed to the front of the box. The rubber strips effectively prevent breakage of the glass through vibration and also insure of a dust and weather tight joint as the rubber strips are clamped between the front of the box and the frame 13.

The rear side of the box body is also fitted with channel shaped rubber strips 14, such being frictionally held in place by pressing one of the flanges of each rubber strip tightly into a receiving channel 15 provided at the rear of the box body.

The back 16 of the box is removable and when in closed position engages tightly against the rubber strips 14, such preventing rattling and also insures of a dust and weather proof joint.

The box back is supplied with a marginal flange 17 receiving the body of the box and the said back is removably held in place by providing the body of the box with four screw threaded corner bolts 18 permanently fastened to the body of the box and extending rearwardly through suitable corner holes provided in the back 16. Thumb nuts 19 applied on the bolts effectively hold the back in place and also insure upon the nuts being tightened up of a tight joint being made with the rubber strips 14. According to the above it will be obvious that the back of the box can be removed without having to remove the box body from between the car windows.

The back 16 of the box carries the working mechanism of the indicator now described.

To the ends of the box back we permanently secure an opposing pair of vertically disposed angle plates 20 and 21 which support the rollers shortly described. One of the angle plates is permanently riveted to the back of the box and the other is adjustably fastened thereto by bolts 22 carried by the back and operating in slots 22′ formed in the plates, this construction permitting the adjustable plate to be readily shifted, in order to dismount either of the rollers.

The upper ends of the bearing plates carry horizontally opposing bearing sleeves 23, and these sleeves receive rotatably an upper cross shaft 24. To the cross shaft we fasten as by pins the hubs of a pair of opposing discs 25 and 26, the discs being connected by a tube 27 having a diameter considerably larger than the cross shaft. The tube and the discs actually form a long roller or spool utilized for carrying one end of the blind 28 used. The upper end of the blind is provided with a hem and the hem is passed through a lengthwise extending slot 29 provided in the tube and is held in place by a rod 30 passed through the hem and having a diameter greater than the width of the slot. The rod is entered into the space between the shaft and the tube through an end hole 31 made in one of the discs. The lower ends of the plates are also provided with horizontally aligned bearing sleeves 32 which receive rotatably a lower cross shaft 33 and on the lower cross shaft is mounted, rotatably, a lower roller 34 formed also from end discs and a connecting tube in the same manner as the upper roller.

The lower roller is, however, connected to the shaft by a coil spring 35 spiralling around the shaft and having one end permanently fastened to the shaft and the other end per-

manently fastened to one of the discs. The lower end of the blind is fastened to the lower roller in the same manner as it is fastened to the upper roller, so it is unnecessary for us to repeat such description.

To one end of the upper shaft we permanently fasten a chain wheel 36, and this chain wheel is connected by a chain 37 to a further chain wheel 38 pinned to the lower cross shaft. Centrally the angle plate 21 carries a stub shaft 39 on which a chain wheel 40 is rotatably mounted, the chain wheel engaging continuously with one of the sides of the chain as best shown in Figure 5.

A bevel pinion 41 is mounted on the stub shaft and fastened to the chain wheel and the said bevel pinion is meshed continuously with a bevel gear 42 secured to a driving shaft 43 passing through the back of the box and rotatably mounted in a bearing sleeve 44 secured to the rear side of the box back and providing ample bearing area for such shaft.

To the rear end of the driving shaft we attach a crank 45 which can be readily operated by the motorman and obviously upon the crank being turned in one direction the blind will be wound on, say the top roller, and upon the crank being turned in the opposite direction the blind will be wound on the bottom roller. In this latter connection it will be noted that when the lower shaft is driven by the chain it drives the roller through the spring and the spring acts at all times to hold the blind taut between the rollers.

In order to releasably hold the crank in any set position, we have provided the crank with a pair of diametrically opposing spring pressed pocketed balls 46, and these are adapted to ride the adjacent face of the bearing sleeve 44, which is provided with an odd number of concentrically arranged pockets 47 into one of which one or other of the balls will enter. When so entered the accidental rotation of the crank is prevented although it is very easy for one to forcibly turn the crank when desired.

The blind is provided throughout its length with a series of names the majority of which will be street names, although there may be other material thereon, such as the words, "Private car," "No passengers," "South barn," etc. The space which the several names are a part is such that the blind can be set by the motorman so that when properly set only one name will appear through the front sight opening of the box.

Centrally the back of the box is provided with a light receptacle 48 which is formed by pressing the material of the back of the box outwardly to form a bay. The receptacle has the rear wall thereof provided with a vertically slidable gate 49 fitted with a knob 50, which permits the gate to be readily opened and closed. The front of the receptacle is closed by a transparent glass plate 51 which has the edges thereof set in channel shaped rubber strips and the rubber strips fastened to the back of the box by an open centered metallic frame 52 screwed to the back of the box. This latter glass closes off the working parts of the indicator but permits the motorman at all times to see the blind upon raising the gate. In this way we do not interfere with the motorman's vision and still we prevent dust, dirt, etc., from getting into the fore part of the box containing the working mechanism when the gate is open.

The light receptacle has the interior wall thereof, preferably a white reflecting surface and the upper part of the receptacle is provided with a lamp socket 53 supporting an electric lamp 54 within the receptacle. The socket is provided exterior of the box with upstanding terminals 55 and 56 adapted to receive the customary contact plug 57 to which the feed wires 58 and 59 lead. This latter arrangement makes it easy to disconnect the electric circuit by simply pulling off the plug and when such is done one can remove the box back for inspection or other purposes.

In order to make it possible for the motorman to actually set the desired name in the front sight opening of the box, we have attached the ends of a horizontally disposed wire or rod 60 to the back of the box, the rod having the body part thereof overlying the lower roller in a location quite close to the rear side of the blind. On the blind we have duplicated each name in small letters as indicated at 61 and when the name as appearing in the small letters is lined up with the rod upon observation through the gate opening, then the large letters indicating the desired name are properly positioned in respect to the sight opening in the front of the box.

What we claim as our invention is:—

1. In a street indicator for street cars, a box like casing having a demountable back and a transparent sight opening in the front thereof and an exteriorly driven winding blind visible through the sight opening and contained within the box and totally carried by the back thereof and freely withdrawable from the box with the back.

2. In a street indicator for street cars, a box like casing having a transparent sight opening in the front thereof and the back thereof demountable, an exteriorly operated winding blind visible through the sight opening and totally carried by the back of the casing and freely withdrawable from the box with the back, a blind illuminating lamp carried by the back of the casing and a disjointable connection for supplying current to the lamp.

3. In a street indicator for street cars, a box like casing having a transparent front sight opening in the front thereof and a transparent rear sight opening in the back thereof

and the back demountable, an exteriorly driven winding belt totally carried by the back of the casing and freely withdrawable from the box with the back and having street names thereon selectively visible through the front and rear sight openings, a lamp containing receptacle carried by the back of the casing to the rear of the rear sight opening and a gate carried by the receptacle adapted when opened to permit of inspection of the blind through the rear sight opening.

4. In a street indicator for street cars, a box like casing having a transparent front sight opening in the front thereof and a transparent rear sight opening in the back thereof and the back demountable, an exteriorly driven winding belt totally carried by the back of the casing and freely withdrawable from the box with the back and having street names thereon selectively visible through the front and rear sight openings, a lamp receptacle carried by the back of the casing to the rear of the rear sight opening, an inspection gate carried by the lamp receptacle and adapted when opened to permit of inspection of the blind through the rear sight opening, a lamp socket carried by the receptacle and provided with the customary plug receiving terminals and an illuminating lamp carried by the socket and located within the receptacle.

5. In a street indicator for street cars, a box like casing having a transparent sight opening in the front thereof, opposing bearing plates secured to the back of the box adjoining the ends and extending inwardly therefrom, an upper roller rotatably carried by the bearing plates, a lower cross shaft rotatably carried by the bearing plates, a lower roller rotatably mounted on the cross shaft, a compensating driving spring connecting the lower roller to the shaft, a chain wheel secured to the shaft, a chain wheel for driving the upper roller, an endless chain connecting the chain wheels, manually operated means operable from the rear of the box for driving the chain in either direction and a blind wound on the rollers and having the ends thereof attached thereto, said blind having a series of street names appearing thereon.

6. In a street indicator for street cars, a box like casing having a transparent sight opening in the front thereof, opposing bearing plates secured to the back of the box adjoining the ends and extending inwardly therefrom, an upper roller rotatably carried by the bearing plates, a lower cross shaft rotatably carried by the bearing plates, a lower roller rotatably mounted on the cross shaft, a compensating driving spring connecting the lower roller to the shaft, a chain wheel secured to the shaft, a chain wheel for driving the upper roller, an endless chain connecting the chain wheels, a stub shaft secured to one of the bearing plates, a chain wheel rotatably mounted on the stub shaft and engaging the rear side of the chain, a bevel pinion secured to the latter chain wheel, a driving shaft extending rotatably through the back of the box, a bevel gear secured to the shaft and engaging the bevel pinion, a crank secured to the rear end of the driving shaft and a blind having the ends thereof wound on the rollers and fastened thereto, said blind having a series of street names appearing thereon and selectively visible through the sight opening in the front of the box.

7. In a street indicator for street cars, a substantially rectangular box having a winding street indicating blind mounted therein and visible through transparent sight openings formed in the front and the back of the box and a lamp containing receptacle formed centrally at the rear of the box to the rear of the sight opening, said lamp receptacle being provided with means which can be opened and closed as desired to permit of inspection of the blind through the rear sight opening.

8. In a street indicator for street cars, a metallic box like receptacle having the front thereof provided with a sight opening and the back thereof removable and provided with a sight opening, transparent plates for closing the sight openings, anti-rattling dust and weather proof strips bordering and receiving the edges of the plates, frames bordering and receiving the strips and fastening the plates to the front and back of the casing, anti-rattling dust and weather proof strips interposed between the back and the body of the casing and means for demountably clamping the back of the casing to the body thereof.

9. In a street indicator for street cars, a metallic box like receptacle having the front thereof provided with a sight opening and the back thereof removable and provided with a sight opening, transparent plates for closing the sight openings, anti-rattling dust and weather proof strips bordering and receiving the edges of the plates, frames bordering and receiving the strips and fastening the plates to the front and back of the casing, anti-rattling dust and weather proof strips interposed between the back and the body of the casing and means for demountably clamping the back of the casing to the body thereof, the back of the casing being provided with a lamp receptacle to the rear of the rear sight opening.

10. In a street indicator for street cars, the combination with the sides of the street car window frame, of opposing supporting plates permanently secured to the sides of the frame and a street indicating box insertible between the plates and supported thereby.

11. In a street indicator for street cars, the combination with the sides of the street car window frame, of a plate secured permanently to one side of the frame and provided with inturned marginal flanges, a plate secured to the opposite side of the frame and

opposing the former plate, said latter plate having the ends and one side provided with inturned marginal flanges and the side to the inner side of the car provided with an out turned flange, a box like street indicator insertible between the plates and supported by the flanges thereof and a latch carried by the out turned flange aforesaid and releasably locking the box against withdrawal.

Signed at Winnipeg, this 2nd day of November, 1928.

ALBERT E. GARBUT.
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