No. 835,369. PATENTED NOV. 6, 1906.

E. M. SKINNER.

INDICATOR OR SIGN.

APPLICATION FILED JULY 10, 1905.

3 SHEETS—SHEET 1.

Fig 2.

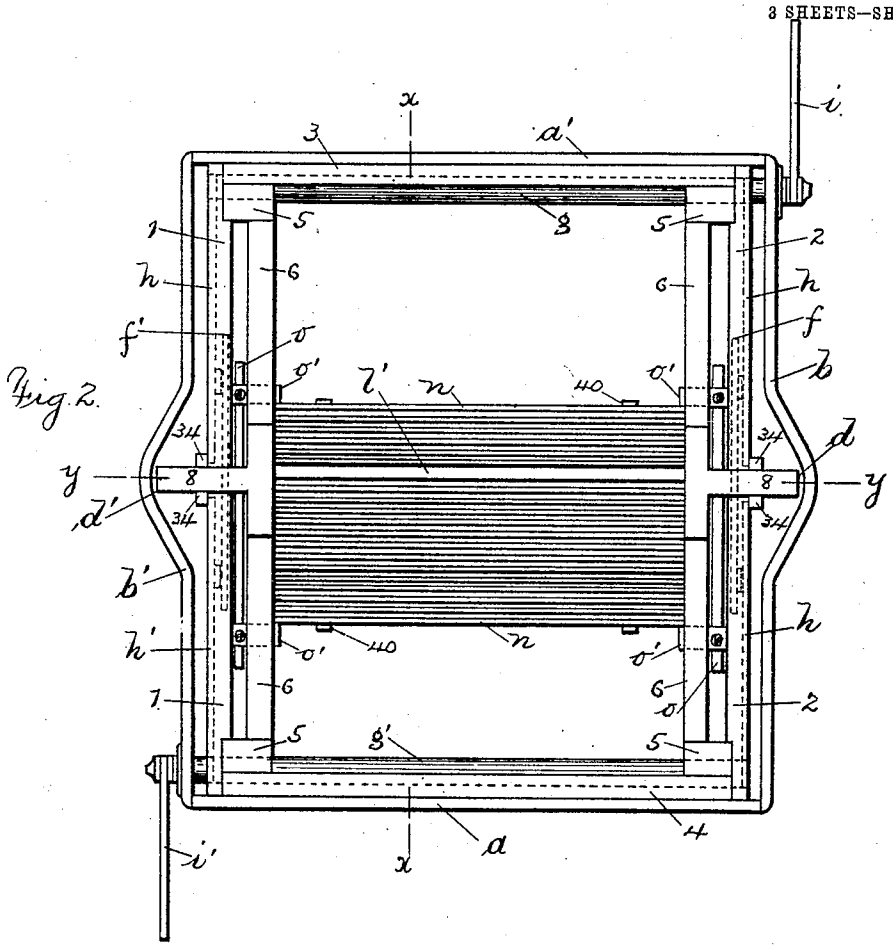
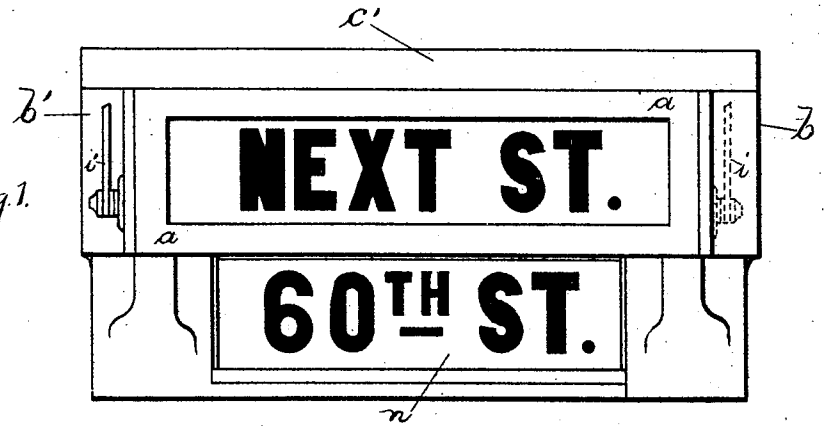


Fig 1.



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3 SHEETS—SHEET 2.

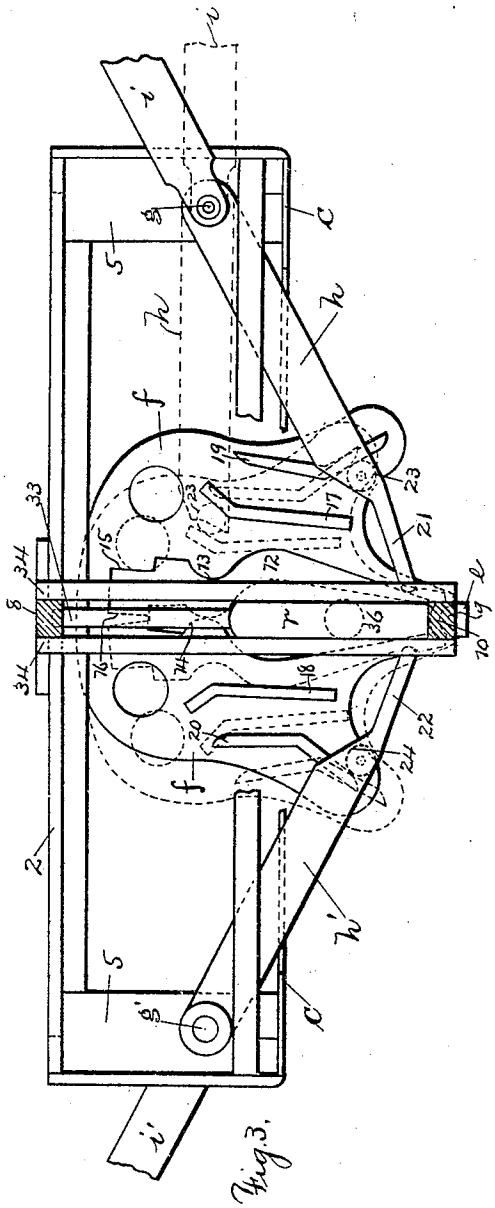


Fig. 3.

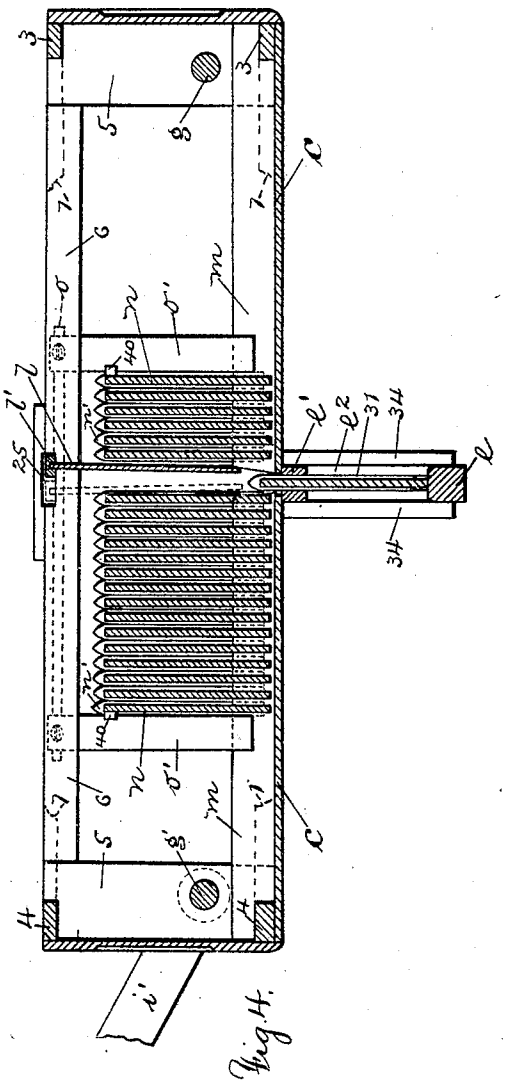


Fig. 4.

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3 SHEETS—SHEET 3.

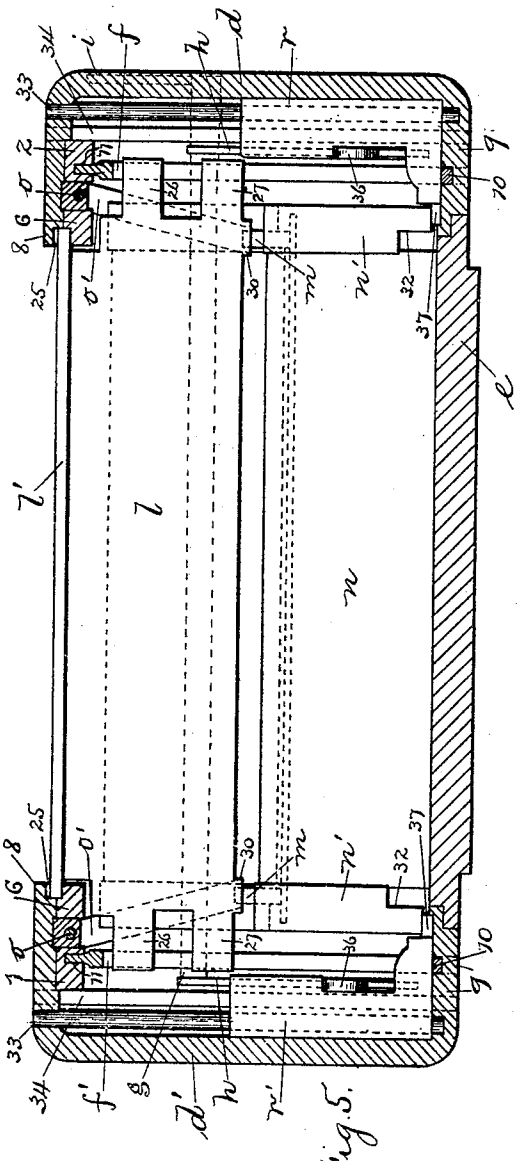


Fig. 5.

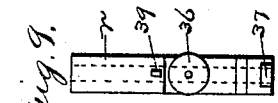


Fig. 9.

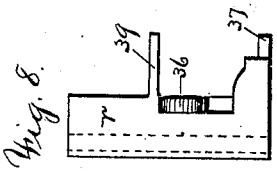


Fig. 8.

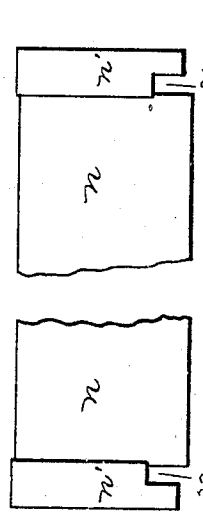


Fig. 6.

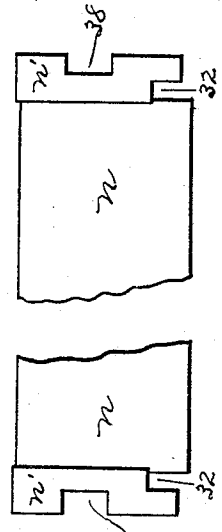


Fig. 7.

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INDICATOR OR SIGN.

No. 835,369. Specification of Letters Patent. Patented Nov. 6, 1906.

Application filed July 10, 1905. Serial No. 268,947.

To all whom it may concern:

Be it known that I, EDWIN M. SKINNER, a citizen of the United States, residing at the borough of Richmond, city and State of New York, have invented an Improvement in Indicators or Signs, of which the following is a specification.

My present invention relates to an indicator or sign for railway or street car service to indicate the names of stations at which the train or car is to make successive stops, and particularly to an indicator or sign adapted to be placed in the middle of the car, so as to be readily readable from both ends thereof.

In carrying out my invention I employ, together with a suitable casing, a plurality of name-plates similarly printed on both sides, a track within said casing horizontally disposed and upon which said name-plates are adapted to slide, means for maintaining said name-plates in the desired relationship at all times, a centrally-depending name-plate frame, and means for shifting the name-plates in either direction and raising one name-plate from its position in the name-plate frame to its position in the bank of name-plates and dropping the next successive name-plate from its position in the series of name-plates to the position in the name-plate frame with the movement of the parts in either direction, all of which will be hereinafter more particularly described.

In the drawings, Figure 1 is an end elevation of my improved indicator. Fig. 2 is a plan of the same with the cover removed. Fig. 3 is a side elevation and partial section with the side of the casing removed. Fig. 4 is a sectional elevation on line $x\,x$ of Fig. 2. Fig. 5 is a sectional elevation on line $y\,y$ of Fig. 2 with the casing on both sides removed. Fig. 6 is an elevation of the name-plate. Fig. 7 is a similar view of a modified form of name-plate, both Figs. 6 and 7 showing the name-plate broken to economize space. Figs. 8 and 9 are respectively a side and front elevation of a modified form of the lift employed in my improved indicator. In the drawings Figs. 3 to 9, inclusive, are on a larger scale than Figs. 1 and 2.

In the construction of my improved indicator I prefer to employ a skeleton frame built up of the longitudinal bars 1 2, cross-bars 3 4, and the intervening uprights 5, placed at the corners and the junction of the said longitudinal and cross bars. I also prefer to employ auxiliary bars 6 6, running parallel with and slightly spaced apart from the upper longitudinal bars 1 2. This skeleton frame is preferably provided with front and rear plates $a\ a'$, side plates $b\ b'$, a bottom c, and top plate c'. $d\ d'$ represent uprights, which are placed centrally at opposite sides of the apparatus and secured to the frame by means of the arms 8 9, which may be integral with the uprights, as shown, or connected to the same in any desired manner.

Depending centrally from the frame aforesaid and extending transversely across the apparatus, I employ a name-plate frame comprising the cross-bar e, secured in any desired manner to the arms 9 of the uprights $d\ d'$, and a slotted bar e', together with the grooved side uprights e^2, the function of which parts will be hereinafter described. $f\,f'$ designate rocker-plates, each of which at its lower extremity is mounted in a bearing 10 in the arm 9 and at its upper extremity passes into a recess 11, provided therefor in the under side of an auxiliary bar 6. Each of these rocker-plates is provided with a peculiarly-shaped opening 12, extending centrally and longitudinally from a point adjacent to the bearing thereof to a point adjacent to the upper extremity thereof. The opposite edges of the openings in the rocker-plates are provided in similar positions with rounded projections 13 14 and with the straight edge portions 15 16, adjacent to the upper end of the opening. Each rocker-plate is also provided in similar positions on its outer face with the shifter-rails 17 18 and transfer and return rails 19 and 20. These rocker-plates $f\,f'$ may also be provided in correspondingly opposite positions with suitable circular or other openings to lessen the material employed, and so reduce their weight.

$g\ g'$ designate shafts journaled in the uprights 5 and to which are secured, respectively, the sets of levers $h\ h'$. The respective ends of the levers $h\ h'$ are reduced, as indicated at 21 and 22, and adjacent to the inner portions of the said reduced ends of the levers $h\ h'$ the same are provided, respectively, with the rollers 23 24, mounted on suitable bearings fixed in the inner faces of the said levers, and these levers are also pro-

vided, respectively, with operating-handles *i i'*, by which the mechanism may be actuated.

l designates a shifter-plate, the upper edge of which is secured to the cross-rod *l'*, mounted in recesses 25 in the inner ends of the arms 8 and the sides of the auxiliary-bars 6, as shown particularly in Figs. 4 and 5. At the opposite sides thereof the shifter-plate *l* is provided with projections 26 and 27, which projections extend into the openings in the rocker-plates *f f'* and, respectively, are adapted to be engaged by the edges 15 16 and the projections 13 14 of the openings in the said rocker-plates. The shifter-plate *l* is also preferably provided in similar positions along its bottom edge with the projections 30, the function of which will be hereinafter set forth.

Extending longitudinally from the opposite ends of the apparatus to a point approximately at the center thereof and resting upon the bottom plate thereof or otherwise suitably secured I employ tracks *m*, the adjacent ends of which at the center of the apparatus are preferably tapered, as indicated in Fig. 4, and the aforesaid projections 30 on the lower edge of the shifter-plate *l* are so placed and of such a length as to contact with the tapered ends of the rails *m*.

n designates a name-plate, of which I employ a plurality, the number in a given instance agreeing with the number of stops which are to be made by the train in a given run. Each of the name-plates *n*, which may be made of aluminium, sheet-steel, or other suitable material, is similarly printed on both sides and is provided with ends *n'*, the lower portion of which adjacent to the side of the name-plate is notched at 32, which notch is of such dimensions as to receive one of the tracks *m*, by which construction the name-plates are secured in position on the tracks.

In my present invention the name-plates are preferably maintained in a vertical position at all times, and to accomplish this result I prefer to employ a name-plate retainer comprising rods *o*, which pass through suitable bearings contained between the longitudinal bars 1 2 and the auxiliary bars 6 and the bars *o'* adjustably secured to the ends of the rods *o* and extending between the same and the tracks *m*, the lower ends of the bars *o' o'* being adapted to fit over and rest upon the said tracks. By this structure it will be readily apparent that the series of name-plates, together with their retainer-frame, may be shifted at will and the name-plates will always be maintained in a vertical position.

r r' designate lifts which are preferably mounted on slide-rods 33, extending between the cross-arms 8 and 9, and the lifts *r r'* are actuated upon the slide-rods 33 and between the guide-bars 34. The inner face of each of the lifts is recessed and within its recess each lift is provided with a roller 36, which is adapted to be engaged by the reduced end portions 21 22 of the levers *h h'*, and each of the lifts is also provided at its base with an inwardly-extending projection 37, upon which the lower edges of the ends of the name-plates rest and by which consequently the said name-plates are raised from their positions in the name-plate frame to the series of name-plates. I have found that if the name-plates are made of a light material it may be necessary to provide some means for insuring the descent of the same from their respective positions in the series of plates to the name-plate frame, and to this end I may provide each of the name-plates with notches provided in the outer edges of the ends thereof, as indicated at 38 in Fig. 7, and when this provision is made necessary each of the lifts *r r'* is provided with a projection 39, extending centrally from a point just above the rollers 36. The end name-plates are provided adjacent to their upper edges with lugs 40, in order to prevent a further transfer of the plates in a given direction after the last name-plate in the series has reached its position in the name-plate frame.

In the operation of the apparatus it will be assumed for the purposes of explanation that the name-plates are being shifted from the right-hand side of the shifter-plate *l* to the left-hand side thereof, which shifting is effected by the operation of the levers *h*. With each complete upward movement of the levers *h* the reduced ends 21 thereof contact with the rollers 36 of the lifts *r r'*, raise the said lifts and consequently the name-plate contained in the name-plate frame from its position in said frame to its position in the series of name-plates. After the levers *h* have been given sufficient movement to raise the lifts to that position where the name-plate will be on a level with those contained in the series of name-plates the rollers 23 on the levers *h* engage the edges of the shifter-rails 17, forcing the rocker-plates *f f'* from the position shown in full lines, Fig. 3, to that shown in dotted lines. In this operation and after the name-plate has been raised to a level with the other name-plates the projections 13 engage the projections 27 of the shifter-plate, forcing the lower portion of the same from right to left, thereby shifting the name-plates sufficiently to cause the plate raised to rest upon the tracks.

At the extreme upward movement of the levers *h* the rollers 23, mounted thereon, engage the outturned end portions of the shifter-rails 17, giving a still further movement to the rocker-plates *f f'* and causing the edges 15 of the openings therein to en-

gage the projections 26 of the shifter-plate *l* and moving the same to the opposite sides of the recesses 25, thereby moving the plurality of name-plates contained in the retainer sufficiently to allow the next successive name-plate to be moved free of the tracks and to come into position above the slot in rail *e'* and to drop against the projections 37 on the lifts *r r'*. This being accomplished and the lever released, the lifts *r r'* descend to their normal positions by gravity, permitting the next successive name-plate to descend into the name-plate frame, the edges of the name-plates sliding in the grooves 31 in the uprights e^2.

In the return movement the lifts return the levers *h* to their original positions, and in so doing the rollers 23 contact with the return-rails 19, causing the rocker-plates *f f'* to return to the positions they assumed prior to actuating the lever, and the rocker-plates in turn carry back the shifter-plate *l* to the position it assumed before the levers were actuated. To effect a transfer or reversal of the direction in which the name-plates are shifted, it is only necessary to actuate the levers *h'*, and this may be done at any point in the operation of the apparatus. It will be seen that by actuating the levers *h'* the rollers 24, mounted thereon, will first engage the transfer portions of the return and transfer rails 20, thereby moving the rocker-plates from the position shown in full lines in Fig. 3 to those shown in dotted lines, after which a continued movement of the levers *h'* causes the rollers 24 to engage the shifter-rails 18, and from this point on the operation is the same as that hereinbefore described, except, of course, being in the opposite direction.

It will now be apparent that after the last name-plate in either direction has reached its position in the name-plate frame and an attempt is made to further shift the name-plates in the same direction that in lifting the last name-plate the lugs 40 situated on the upper edges thereof will contact with the lower edge of the shifter plate *l* and prevent the plate from being raised without a reversal of the mechanism. It will also be apparent that if the name-plates are constructed of such a material as to render their descent by gravity at all uncertain the provision of the slots 38 in the edges of the name-plates and the projections 39 on the lifts *r r'*, which in the descent of the lifts contact with the lower edges of the recesses 38, will insure the name-plates being carried down in each actuation of the apparatus.

I claim as my invention—

1. In an indicator, the combination with a casing and a depending name-plate frame, of a plurality of movable name-plates, means for maintaining the said name-plates in predetermined relations to each other, rocker-plates at the respective ends of the said name-plates and sides of the indicator and means for actuating the rocker-plates to move the said name-plates in one direction or the other to cause the same to appear successively in the said name-plate frame.

2. In an indicator, the combination with a casing and a depending name-plate frame, of a plurality of movable name-plates, means for maintaining the said name-plates in predetermined relations to each other, rocker-plates at the respective ends of the said name-plates and sides of the indicator, means for actuating the rocker-plates to move the plurality of name-plates and means for simultaneously raising a name-plate from the name-plate frame and permitting the next successive name-plate to drop into the said name-plate frame.

3. In an indicator, the combination with a casing and a depending name-plate frame, of a plurality of movable name-plates, means for maintaining the said name plates in predetermined relations to each other, rocker-plates, means for actuating the said rocker-plates to move the name-plates in one direction and means for shifting the said rocker-plates to reverse the direction of operation and actuating the same in the opposite direction.

4. In an indicator, the combination with a casing and a depending name-plate frame, of a plurality of movable name-plates, means for maintaining the said name-plates in predetermined relations to each other, rocker-plates, means for actuating the said rocker-plates to move the name-plates in one direction, means for shifting the said rocker-plates to reverse the direction of operation and actuating the same in the opposite direction, and means for simultaneously raising a name-plate from the name-plate frame and permitting the next successive name-plate to drop into the name-plate frame.

5. In an indicator, the combination with a casing having a depending name-plate frame, of a plurality of name-plates, tracks fixed in the casing and upon which said name-plates may be moved, a name-plate retainer that may be contracted or expanded in proportion to the number of name-plates to be contained therein and which maintains said name-plates in the desired positions, and means for shifting the name-plates to cause the successive name-plates to appear in the name-plate frame.

6. In an indicator, the combination with a casing having a depending name-plate frame, of a plurality of name-plates, means for maintaining said name-plates in the desired positions, means for shifting the said name-plates in opposite directions to cause successive name-plates to appear in the name-plate frame, and means for preventing the further

operation of the indicator in a given direction when the last name-plate in that direction is reached.

7. In an indicator, the combination with a casing having a depending name-plate frame, of a plurality of movable name-plates, means for maintaining said name-plates in the desired positions, means for shifting the name-plates in one direction to cause successive name-plates to appear in the name-plate frame, means for reversing the direction in which the name-plates are shifted, and consequently the order in which the name-plates appear, and means for preventing the further operation of the indicator in a given direction when the last name-plate in that direction is reached.

8. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, means for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, means for raising a name-plate from the name-plate frame to the said series of name-plates, means for actuating the shifter-plate to move the series of name-plates to allow the next successive name-plate to be dropped into position in the name-plate frame.

9. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, means for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, means for raising a name-plate from the name-plate frame to the said series of name-plates, means for actuating the shifter-plate in one direction to move the series of name-plates to allow the next successive name-plate to be dropped into position in the name-plate frame, and means for reversing the direction in which the shifter-plate is actuated, and consequently the order in which the name-plates appear in the name-plate frame.

10. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, means for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, means for raising a name-plate from the name-plate frame to the said series of name-plates, means for actuating the shifter-plate to move the series of name-plates to allow the next successive name-plate to be dropped into position in the name-plate frame, and means for preventing the further operation of the indicator in a given direction when the last name-plate in that direction is reached.

11. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, a movable adjustable name-plate retainer for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, means for raising a name-plate from the depending name-plate frame, and rocker-plates for actuating the said shifter-plate.

12. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, a movable adjustable name-plate retainer for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, means for raising a name-plate from its position in the name-plate frame, rocker-plates adapted to actuate the shifter-plate, shifter-rails secured to the outer faces of the said rocker-plates, transfer and return rails also secured to the outer faces of said rocker-plates, and means for engaging the said shifter, and return and transfer rails to actuate the said rocker-plates.

13. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, a movable adjustable name-plate retainer for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, lifts for raising a name-plate from its position in the name-plate frame, guides for said lifts, rocker-plates adapted to actuate the shifter-plate, shifter-rails secured to the outer faces of the said rocker-plates, transfer and return rails also secured to the outer faces of said rocker-plates, and means for engaging the said shifter, and return and transfer rails to actuate the said rocker-plates.

14. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, a movable adjustable name-plate retainer for maintaining said name-plates in the desired positions, a shifter-plate for moving said series of name-plates, lifts for raising a name-plate from its position in the depending name-plate frame, rollers mounted on said lifts, rocker-plates, shifter, and return and transfer rails secured to the outer faces of said rocker-plates, shafts mounted in said frame, levers mounted thereon adapted to engage said rollers mounted on the lifts, and means associated with said levers and adapted to engage the said shifter, and return and transfer rails to actuate the said rocker-plates and the parts hereinbefore enumerated and controlled thereby.

15. In an indicator, the combination with a casing having a depending name-plate frame, of a series of name-plates similarly printed on both sides, a movable adjustable name-plate retainer for maintaining said name-plates in the desired position, a shifter-

plate for moving said series of name-plates, lifts for raising a name-plate from its position in the depending name-plate frame, rollers mounted on said lifts, rocker-plates, shifter, and return and transfer rails secured to the outer faces of said rocker-plates, shafts mounted in said frame, levers mounted on said shafts and having reduced end portions adapted to engage the said rollers mounted on the lifts, and rollers mounted on the inner faces of the said levers and adapted to engage the said shifter, and return and transfer rails to actuate the said rocker-plates.

Signed by me this 30th day of June, 1905.

EDWIN M. SKINNER.

Witnesses:

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A. H. SERRELL.