

No. 696,464.

Patented Apr. 1, 1902.

J. A. MEAD.  
STATION INDICATOR.

(Application filed July 27, 1901.)

(No Model.)

3 Sheets—Sheet 1.

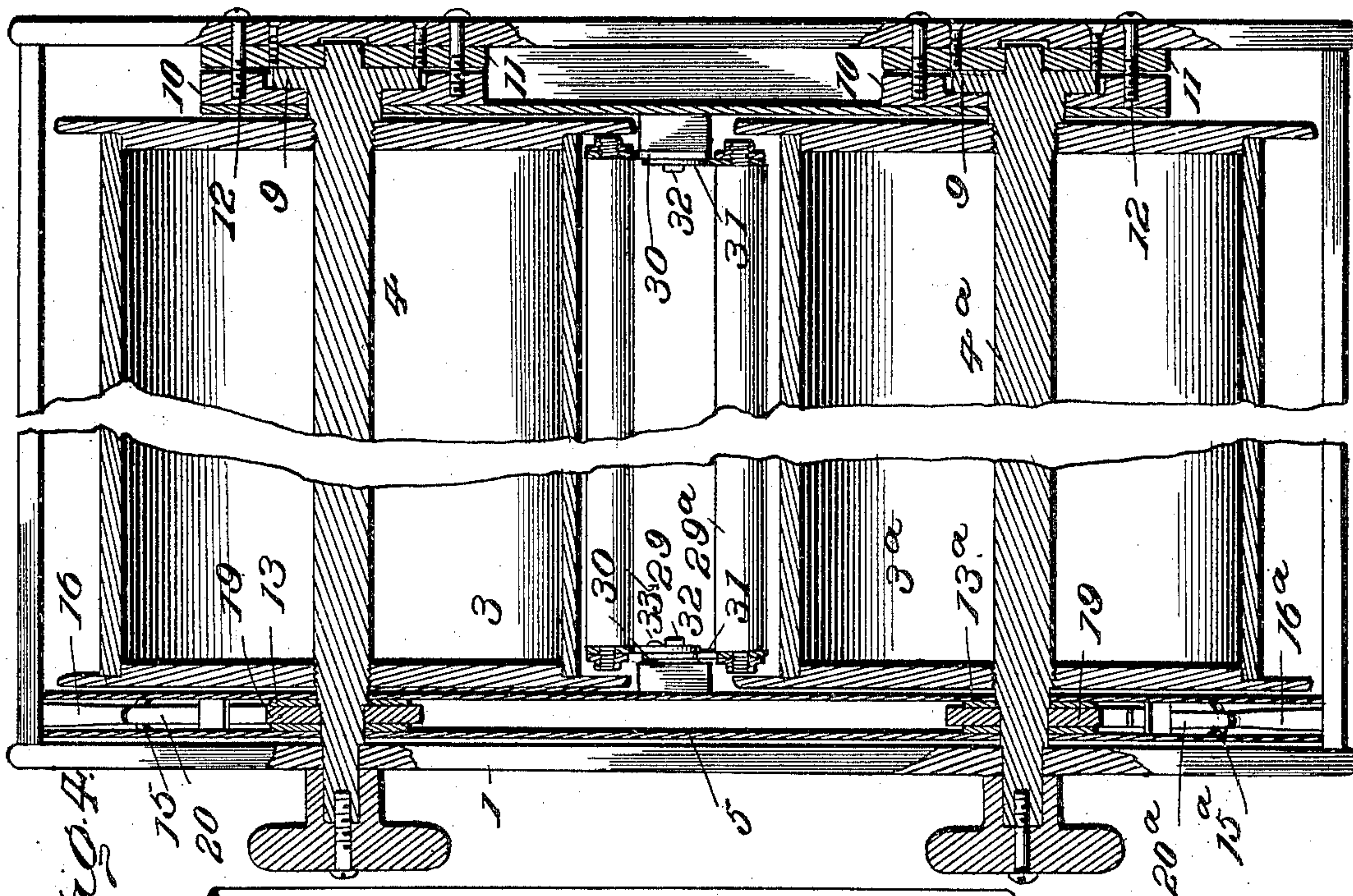
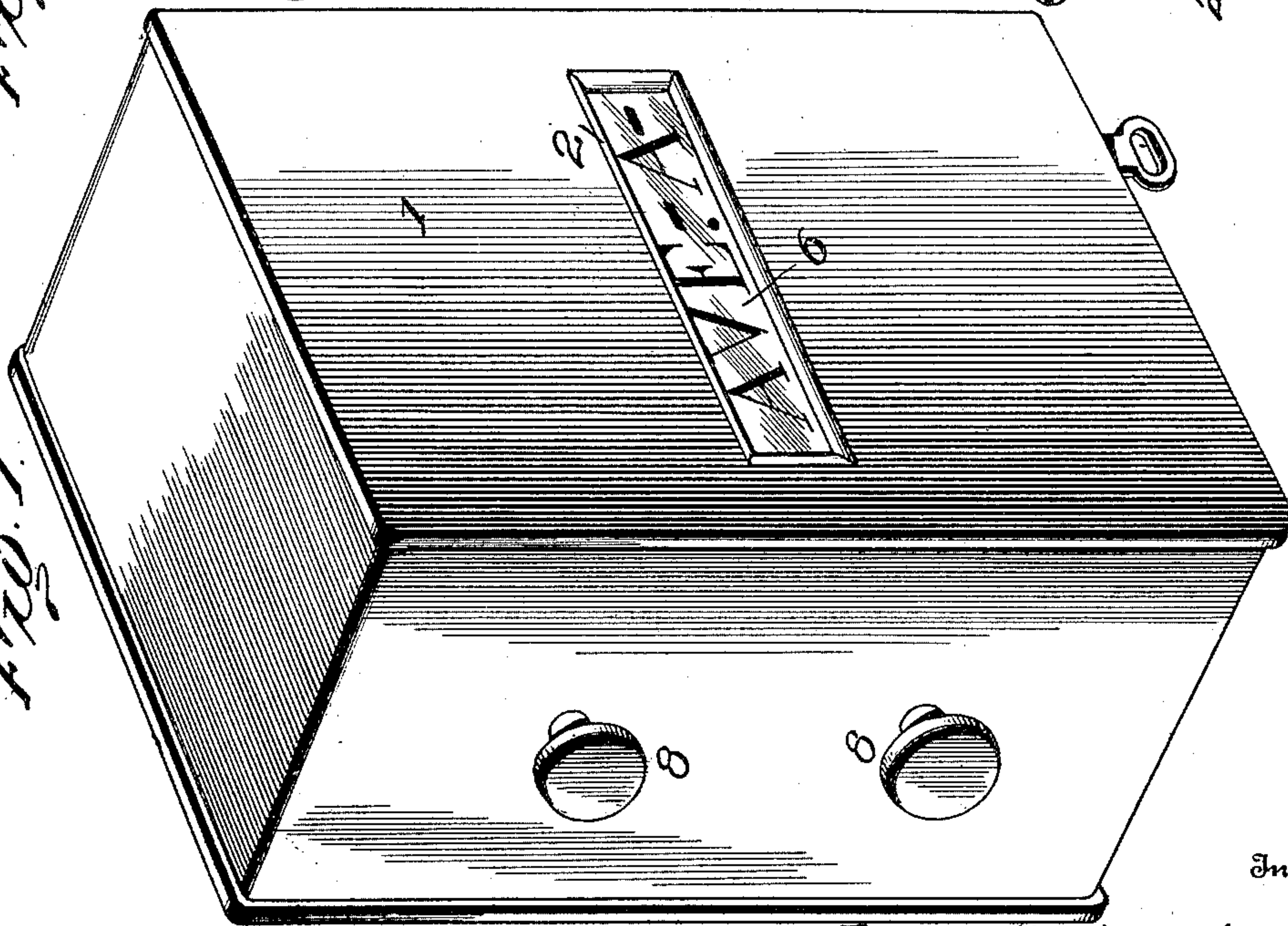


Fig. 4.

Fig. 1.



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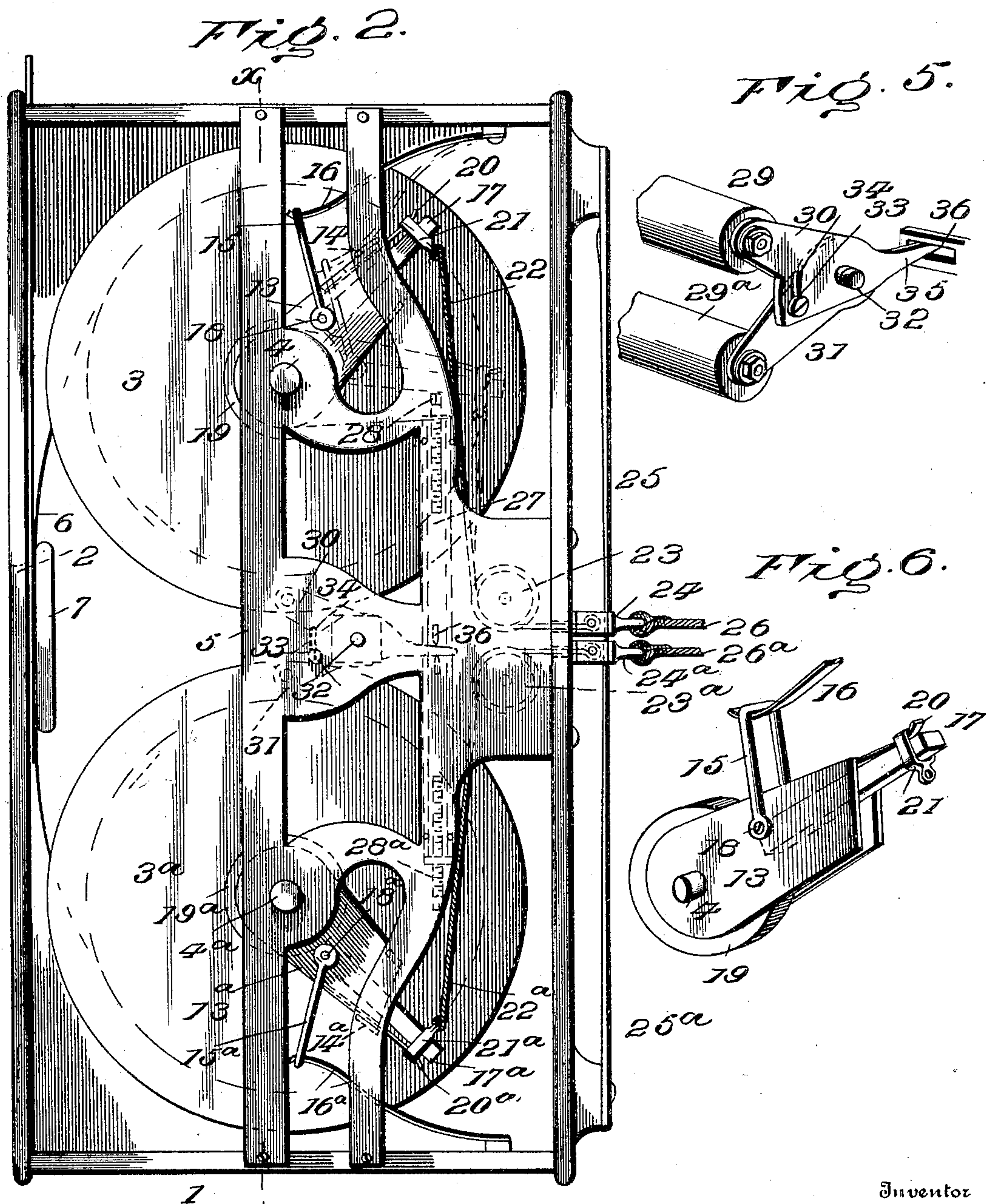
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**3 Sheets—Sheet 2.**



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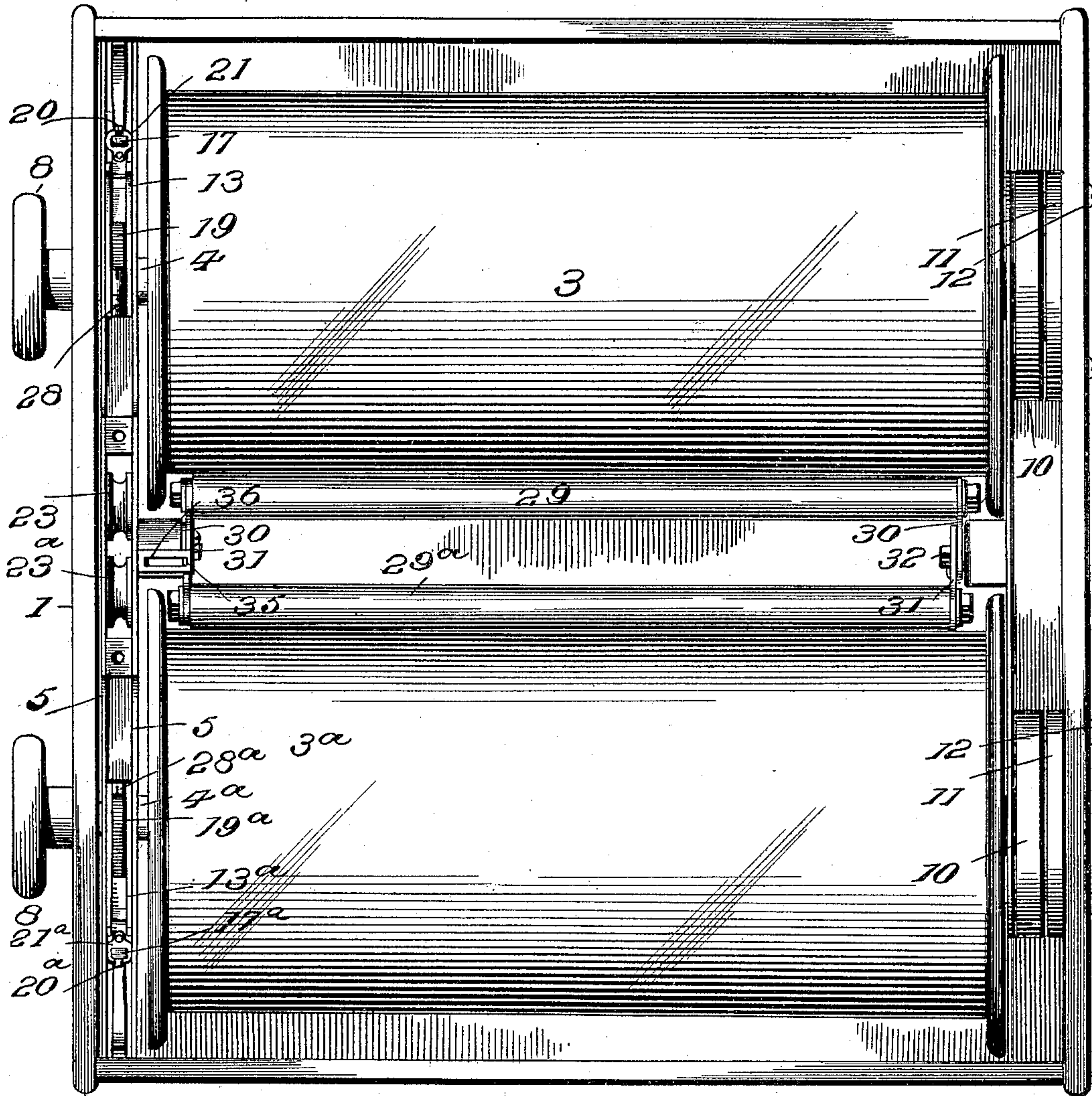


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOSEPH A. MEAD, OF CLEVELAND, OHIO.

## STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 696,464, dated April 1, 1902.

Application filed July 27, 1901. Serial No. 69,983. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH A. MEAD, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Station-Indicators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention aims to provide a novel machine for public conveyances—such as cars, omnibuses, water-craft, and the like—for exposing to view in a conspicuous place or places the name of the next street, station, point of interest, or the next stopping-place, thereby adding to the interest of a trip and apprising passengers of the near approach of their destination in time to prevent the annoyance and loss of time occasioned by passing beyond the street or station.

The indicator comprises a name-strip, two drums, one for the strip to wind upon, the other for the strip to unwind from, actuating means for the drums to impart an intermittent rotation thereto to bring the names of the streets, stations, and the like successively into position for observation through a sight-opening, and means for regulating the throw of the actuating means proportionate to the variation in the diameters of the two drums incident to the unwinding of the name-strip from one and the winding thereof on the other.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a station-indicator embodying the invention. Fig. 2 is an elevation with the near side of the case removed. Fig. 3 is a rear view, the back of the casing being omitted. Fig. 4 is a section about on the line X X of Fig. 2 looking toward the front. Fig. 5 is a detail view of the set of mountings for the regulating-rollers.

Fig. 6 is a detail view of a clutch-wheel, clutch-lever, and parts coöperating therewith.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The operating parts are inclosed in a casing or cabinet 1, having an observation-opening 2 in its front for exposing to view the names of the streets, stations, towns, and other points of interest along the prescribed route of a car or other public conveyance. The indicator is located in a conspicuous place, so as to be readily seen by the passengers, and in the event of the conveyance being of such construction so that the indicator cannot be seen by all the passengers two or more may be provided and properly arranged, so as to insure proper notification of the stations. Drums 3 and 3<sup>a</sup> are located within the casing and are arranged in parallel relation and are secured to axles 4 and 4<sup>a</sup>, journaled in bearings provided in a frame 5, located within the said casing. A name-strip 6, of suitable length, has its ends attached to the respective drums and is normally wound upon one of the said drums, so as to be unwound therefrom and wound upon the other drum as the car or conveyance moves from one terminus of a prescribed route to the other terminus. This strip 6 may be oiled linen or other prepared textile, and the names of the streets, stations, or other points are printed or otherwise provided thereon in successive order. This name-strip passes across the observation-opening 2 and in front of a support 7, thereby bringing the name into view, so as to apprise the passengers of the next street, station, or other point.

Each of the axles 4 and 4<sup>a</sup> is provided at its outer end with a hand-wheel 8 for rotation of the drums and is provided at its opposite end with a flange 9, constituting an element of a brake mechanism. Plates 10 and 11 constitute the other element of the brake mechanism and receive the flange 9 between them. The plates 11 are secured to a side of the casing and form bearings for the inner ends of the respective axles. The plates 10 are adjustable by means of clamp-screws 12, let into a side of the casing and passing through the plates 11. By properly adjusting the clamp-screws 12 the plates 10 can be moved to grip



the flanges 9 with a greater or less force, thereby permitting the drums to move with a greater or less degree of resistance. It is necessary to apply a brake to each of the drums  
 5 in order to prevent their turning too freely when suddenly actuated by means of the pull rope or cord. The construction of brake shown provides a bearing as well as a retarding means for the axle of the drums and the  
 10 braking force can be readily adjusted. Frames 13 and 13<sup>a</sup> are loosely mounted upon an end portion of the respective axles, so as to oscillate thereon. These oscillatory frames are limited in their outward movement by stops  
 15 14 and 14<sup>a</sup>, applied to a part of the internal frame 5. Clevises 15 and 15<sup>a</sup> are connected to the respective frames 13 and 13<sup>a</sup> at their inner ends and have connection at their outer ends with springs 16 and 16<sup>a</sup>, which normally  
 20 serve to hold the said frames in contact with the stops. Clutch-levers 17 and 17<sup>a</sup> are pivoted at their inner ends to the respective oscillatory frames 13 and 13<sup>a</sup> at 18 and 18<sup>a</sup>, the said pivots also serving to connect the clevises 15 and 15<sup>a</sup> with the respective frames.  
 25 The pivots of the clutch-levers 17 and 17<sup>a</sup> are arranged near one corner, leaving the opposite corner free to grip the clutch-wheels 19 and 19<sup>a</sup> when the clutch-levers are actuated.  
 30 The clutch-wheels 19 and 19<sup>a</sup> are secured to the axles near their outer ends. Springs 20 and 20<sup>a</sup> normally hold the clutch-levers out of engagement with the clutch-wheels, thereby permitting the drums to turn freely. These  
 35 springs 20 and 20<sup>a</sup> are secured to their respective oscillatory frames 13 and 13<sup>a</sup> at their inner ends, and their outer ends pass through clips 21 and 21<sup>a</sup>, secured to the outer or free ends of the respective clutch-levers. The sole  
 40 purpose of these springs 20 and 20<sup>a</sup> is to hold the clutch-levers out of contact with the respective clutch-wheels, and the springs 16 and 16<sup>a</sup> return the frames 13 and 13<sup>a</sup>, carrying the clutch-levers, to a normal position and hold  
 45 them against the respective stops 14 and 14<sup>a</sup>. Cords or straps 22 and 22<sup>a</sup> are attached at their inner ends to the clips 21 and 21<sup>a</sup> and pass around pulleys 23 and 23<sup>a</sup>, and are provided at their outer ends with clips 24 and  
 50 24<sup>a</sup>, the inner ends of said clips being provided with rubber or other packing to obviate noise and shock. Retracting-springs 25 and 25<sup>a</sup> are secured at their outer ends to the casing and have their inner ends in engagement  
 55 with the clips 24 and 24<sup>a</sup>, so as to hold them in a normal position, thereby relieving the springs 16 and 16<sup>a</sup> from any interference of the operating-cords which would be likely to retard their action. The operating-cords 26  
 60 and 26<sup>a</sup> are connected to the respective clips 24 and 24<sup>a</sup>. One of the cords, as 26, is designed to be operated upon the out trip of the car or conveyance and the other cord 26<sup>a</sup> is intended to operate the indicator upon the re-  
 65 turn trip of the car or conveyance. One clutch mechanism is used only at a time, the other remaining inert. Upon the out trip the

clutch mechanism cooperating with the drum 3 is used only, since the name-strip is wound upon the drum 3 and unwound from the drum 3<sup>a</sup>. Upon the return trip of the car or conveyance the other clutch mechanism connected with the drum 3<sup>a</sup> is utilized to rewind the name-strip thereon, said strip unwinding freely from the drum 3. As the name-strip  
 75 unwinds from one drum and winds upon the other drum the diameters vary, and in order that the name-strip can be moved an equal distance for each station it has been found necessary to provide means for regulating the  
 80 throw of the oscillatory frames carrying the clutch-levers proportionate to the variation in the diameters of the respective drums incident to the changing of the name-strip from one to the other. For this purpose a bar or  
 85 frame 27 is slidably mounted and is provided with adjustable stops 28 and 28<sup>a</sup>, the same consisting of pins or rods threaded into the ends of the part 27 and arranged in the path of the respective clutch-levers 17 and 17<sup>a</sup>, so  
 90 as to limit their inward or forward movement when the operating cord or rope is pulled upon. Rollers 29 and 29<sup>a</sup> bear upon the drums 3 and 3<sup>a</sup> or the portion of the name-strip wound thereon, and the axes of these roll-  
 95 ers are in line with the axes of the drums 3 and 3<sup>a</sup>, this arrangement being found to give the best results. The rollers 29 and 29<sup>a</sup> extend approximately the full length of the drums and serve to keep the name-strip smooth as well as  
 100 to shift the bar or frame 27. The rollers 29 are mounted at their ends in plates or hangers 30 and 31, hung upon pivots 32, and these plates are adjustable to vary the distance between the rollers 29 and 29<sup>a</sup> and when adjusted are  
 105 secured by means of bolts or fastenings 33. The fastenings 33 are applied to one of the plates, as 31, and pass through a curved slot 34 in the plates 30. One of the plates, as 30, is extended, as shown at 35, and passes be-  
 110 tween knife-edged bars 36 of the frame 27. The distance from the axis of the rollers 29 and 29<sup>a</sup> to the center of the pivots 32 is equal to the distance from the center of said pivots to the point of contact between the extension  
 115 35 and the frame 27. This arrangement is necessary in order to preserve a proportionate movement between the drums, rollers, part 27, and clutch-levers. When winding the name-strip upon one of the drums, the  
 120 plates 30 and 31 are loosened, and after the winding has been completed and the outer end of the name-strip has been attached to the other drum the rollers 29 and 29<sup>a</sup> are moved apart until they bear against the re-  
 125 spective drums, after which the fastenings 33 are tightened to secure the parts 30 and 31 in the adjusted position. Suppose the name-strip is wound upon the drum 3<sup>a</sup>. Hence when starting upon the trip and prior to reaching  
 130 the first street, station, or other point to be called to attention the conductor or motor-man pulls the cord or rope 26, thereby actuating the clutch-lever 17 and causing the



drum 3 to turn a distance to bring the name of the street or station opposite the opening 2 in the casing for observation. This operation is repeated for each street, station, or point along the line of route. The clutch-lever 17<sup>a</sup> is out of contact with the clutch-wheel 19<sup>a</sup>. Hence the name-strip can unwind freely from the drum 3<sup>a</sup> when winding upon the drum 3. As the diameter of the drum 3 increases by reason of the name-strip winding thereon, the rollers 29 and 29<sup>a</sup> move therefrom and proportionately move the frame or bar 27 toward the clutch-lever 17, thereby shortening the throw of the latter and insuring an equal amount of name-strip being wound upon the drum 3 at each actuation of the clutch-lever 17. When the end of the route is reached and the car or conveyance begins a return trip, the clutch-lever 17<sup>a</sup> is actuated by means of the cord or rope 26<sup>a</sup>, thereby winding the name-strip upon the drum 3<sup>a</sup> and unwinding it from the drum 3. The clutch-levers may be operated in any desired manner, and it is not essential that either the conductor or motorman give attention thereto. In the event of the route being endless or of the belt type it is necessary when the end of the route is reached that the name-strip be unwound from the drum 3 and wound upon the drum 3<sup>a</sup> preliminary to beginning the next trip. This can be readily effected by means of the hand-wheels 8 or equivalent means applied to the projecting ends of the axles.

Having thus described the invention, what is claimed as new is—

1. In a station-indicator, a name-strip, a drum for winding up the name-strip, intermittent actuating mechanism for the said drum embodying a clutch-lever, a stop for limiting the forward movement of the clutch-lever, and means for adjusting the position of the said stop and controlled by variation or change in the diameter of the drum incident to the winding of the name-strip thereon, substantially as set forth.

2. In a station-indicator, a name-strip, a drum, intermittently-actuated mechanism for winding the name-strip upon the drum and including a clutch-lever, a stop for holding the clutch-lever in a normal position and limiting its return throw, an adjustable stop for limiting the forward throw of the said clutch-lever, and means controlled by the change in diameter of the aforesaid drum to vary the position of the adjustable stop to admit of a like amount of the name-strip being wound upon the drum at each actuation thereof, substantially as set forth.

3. In a station-indicator, companion drums, a name-strip adapted to wind upon one of the drums and unwind from the other drum, intermittently-actuated means for one of the drums including a clutch-lever, a stop for limiting the forward movement of the said clutch-lever, and means for changing the position

of the said stop proportionate to the variation in the diameters of the two drums, said means embodying cooperating elements in contact with the respective drums, substantially as set forth.

4. In a station-indicator, companion drums, a name-strip, intermittently-actuated means for winding the name-strip upon one of the drums and unwinding it from the other drum and including a clutch-lever, a stop for limiting the forward throw of the clutch-lever, adjustable plates operatively connected with the said stop to effect a change in position thereof, and elements supported by the said plates and in contact with the respective drums and controlled by the change in diameter thereof incident to the unwinding of the strip from one drum and the winding thereof upon the other drum to effect a shifting of the aforementioned stop, substantially as set forth.

5. In a station-indicator, cooperating drums, a name-strip, intermittently-actuated means for one of the drums including a clutch-lever, a slidably-mounted frame having a portion extended in the path of the clutch-lever to limit its forward movement, pivoted plates or hangers provided with elements in contact with the respective drums, means for securing the said plates in an adjusted position, and a connection between one of the said plates and the slidable frame, the elements supported by the said plates being in line with the axis of the said drums and the distance between the pivotal support for the said plates and the elements carried thereby at the point of contact with the slidable frame being substantially equal, as and for the purpose set forth.

6. In a station-indicator, cooperating drums, intermittently-actuated means for the said drums comprising clutch-levers, a slidable frame having portions extended in the path of the said clutch-levers to limit their forward movement, and means controlled by the change in diameter of the drums to vary the position of the slidable frame and the consequent forward throw of the clutch-levers, substantially as set forth.

7. In a station-indicator, cooperating drums, a name-strip, intermittently-actuated means for the drums to effect a winding of the name-strip thereon, flanges rotatable with the drums, plates having the flanges between them, and means for adjusting the said plates to grip the flanges more or less tightly to prevent the too free movement of the drums, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH A. MEAD. [L. S.]

Witnesses:

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