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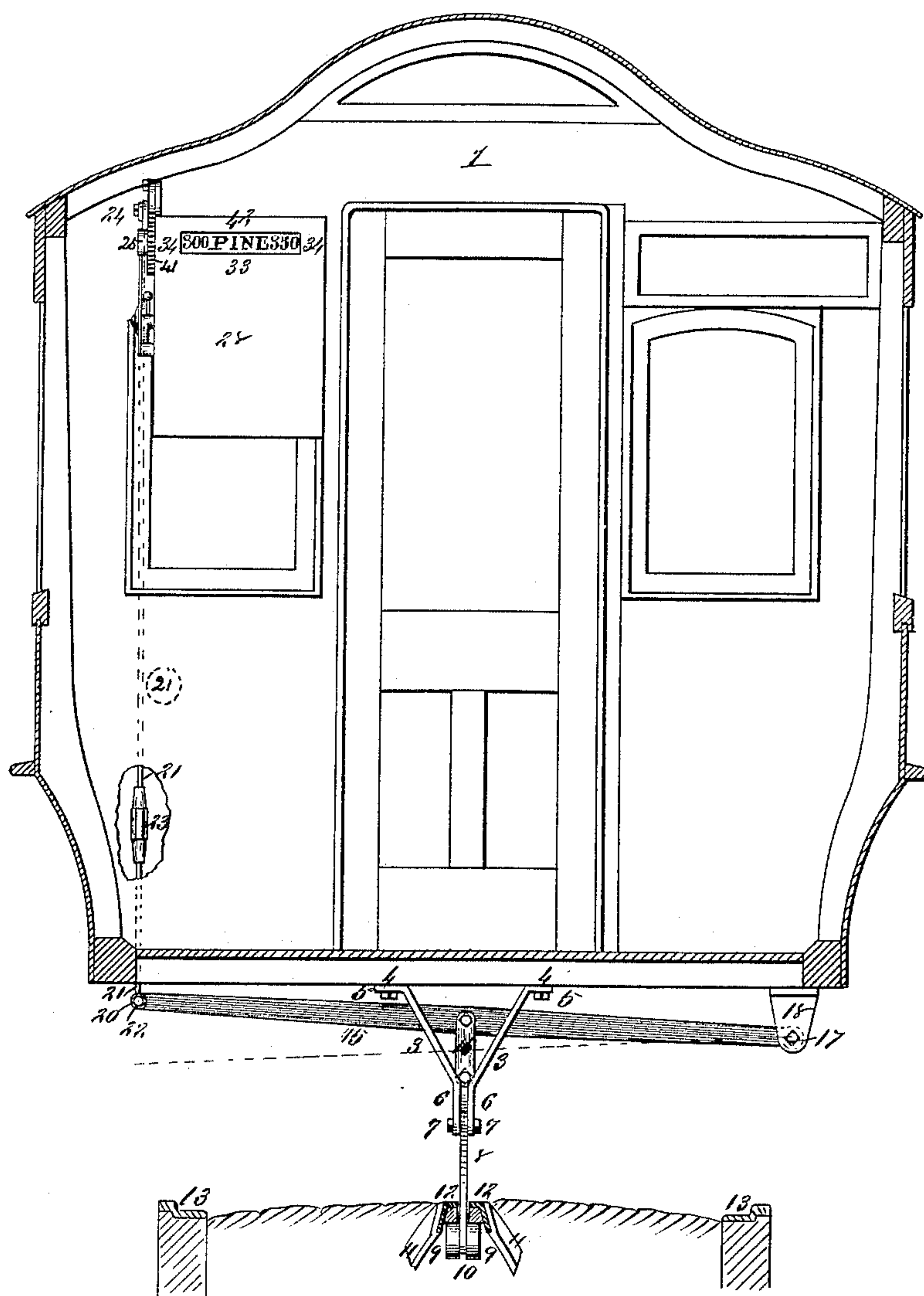
R. W. BOISSELIER.

STREET AND STATION INDICATOR.

No. 394,052.

Patented Dec. 4, 1888.

Fig. 1.



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(No Model.)

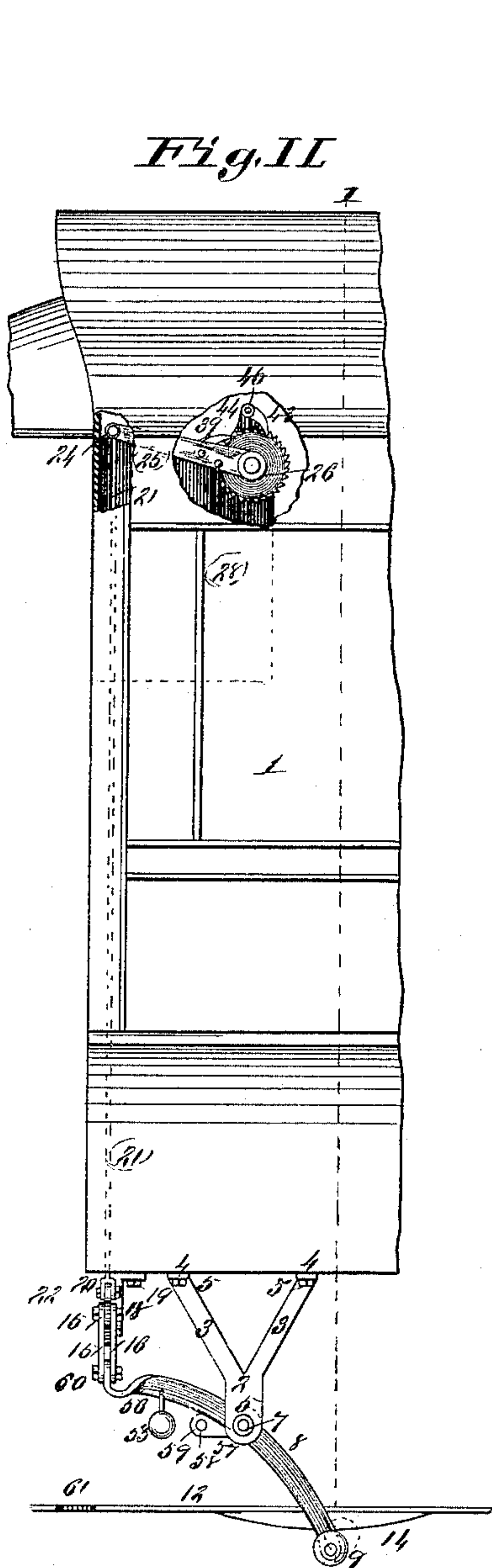
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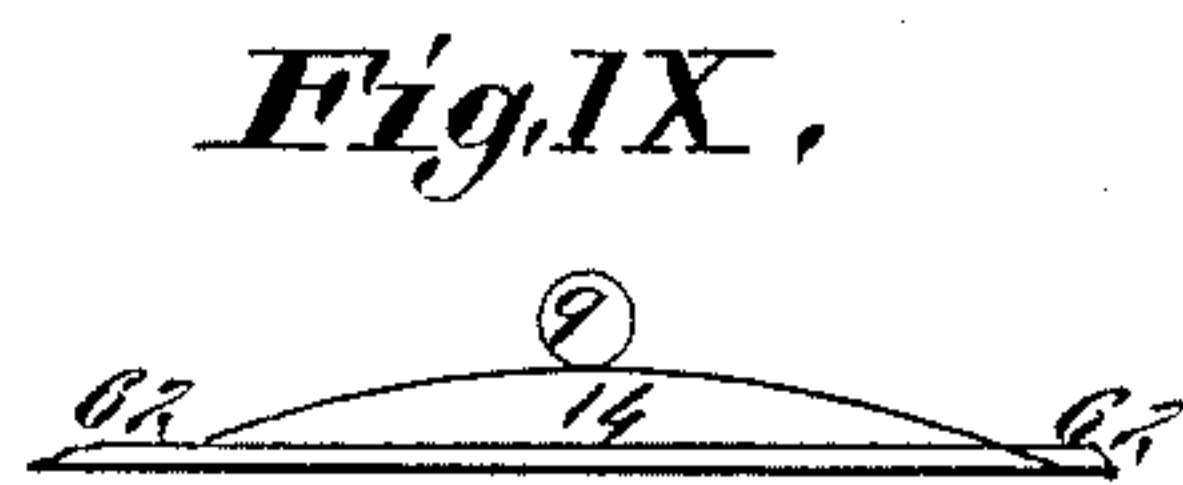
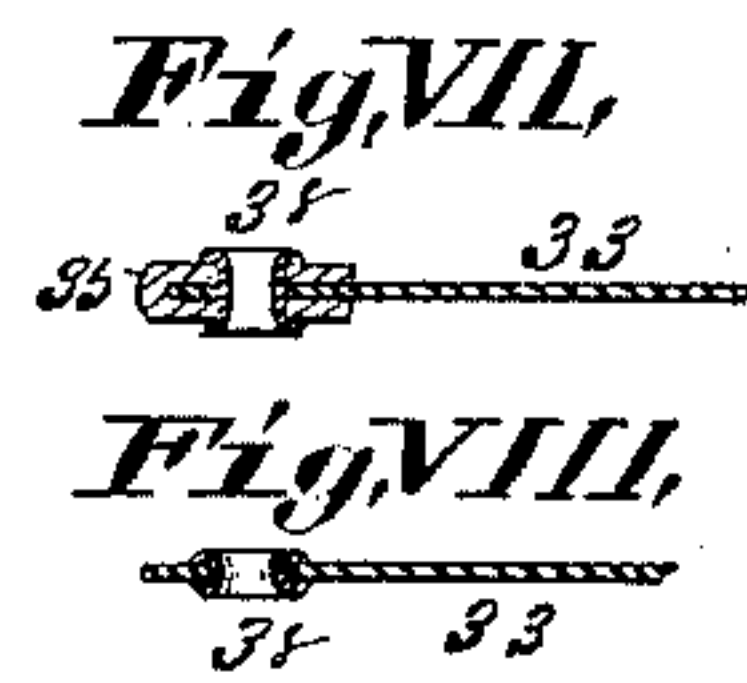
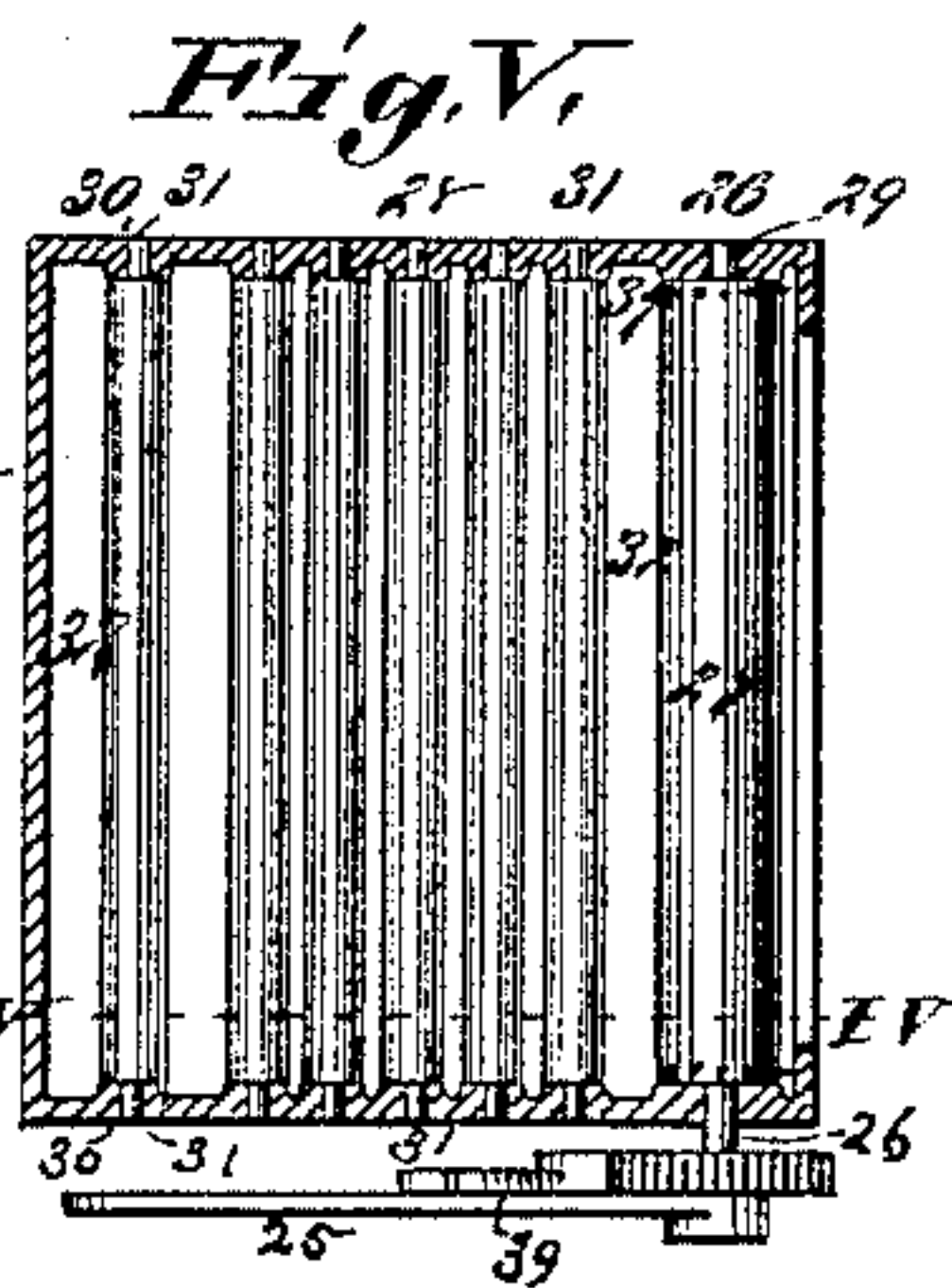
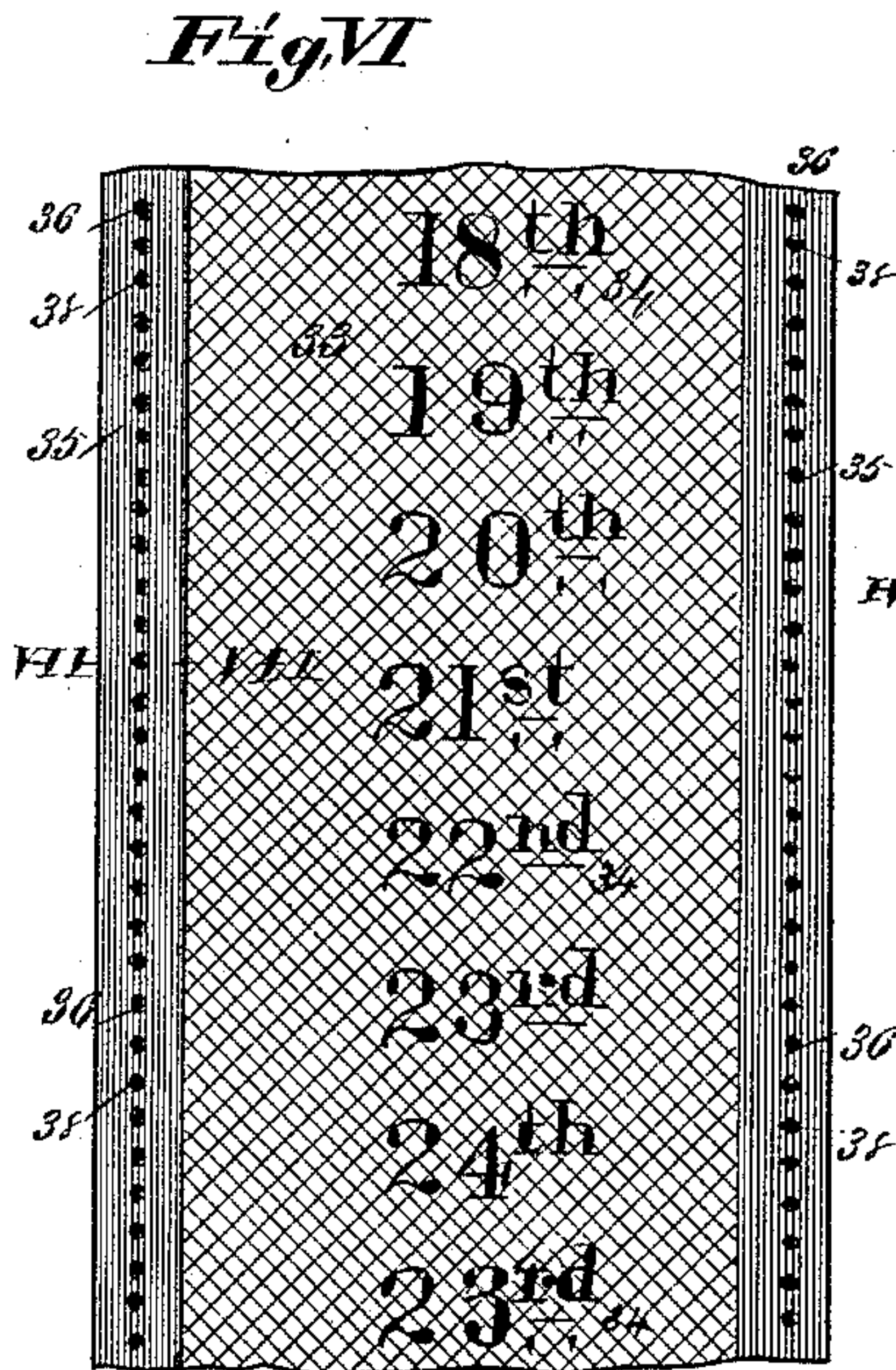
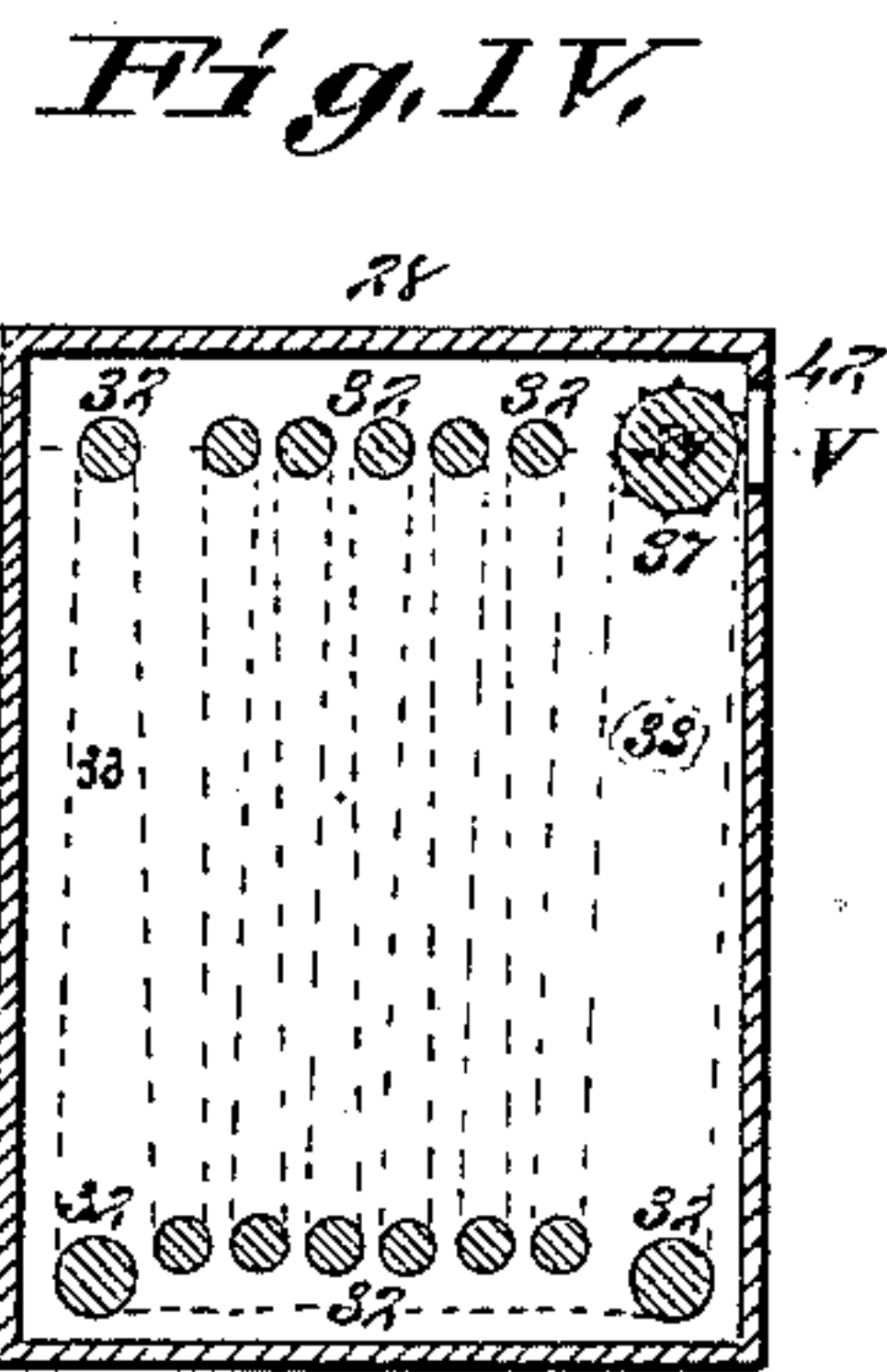
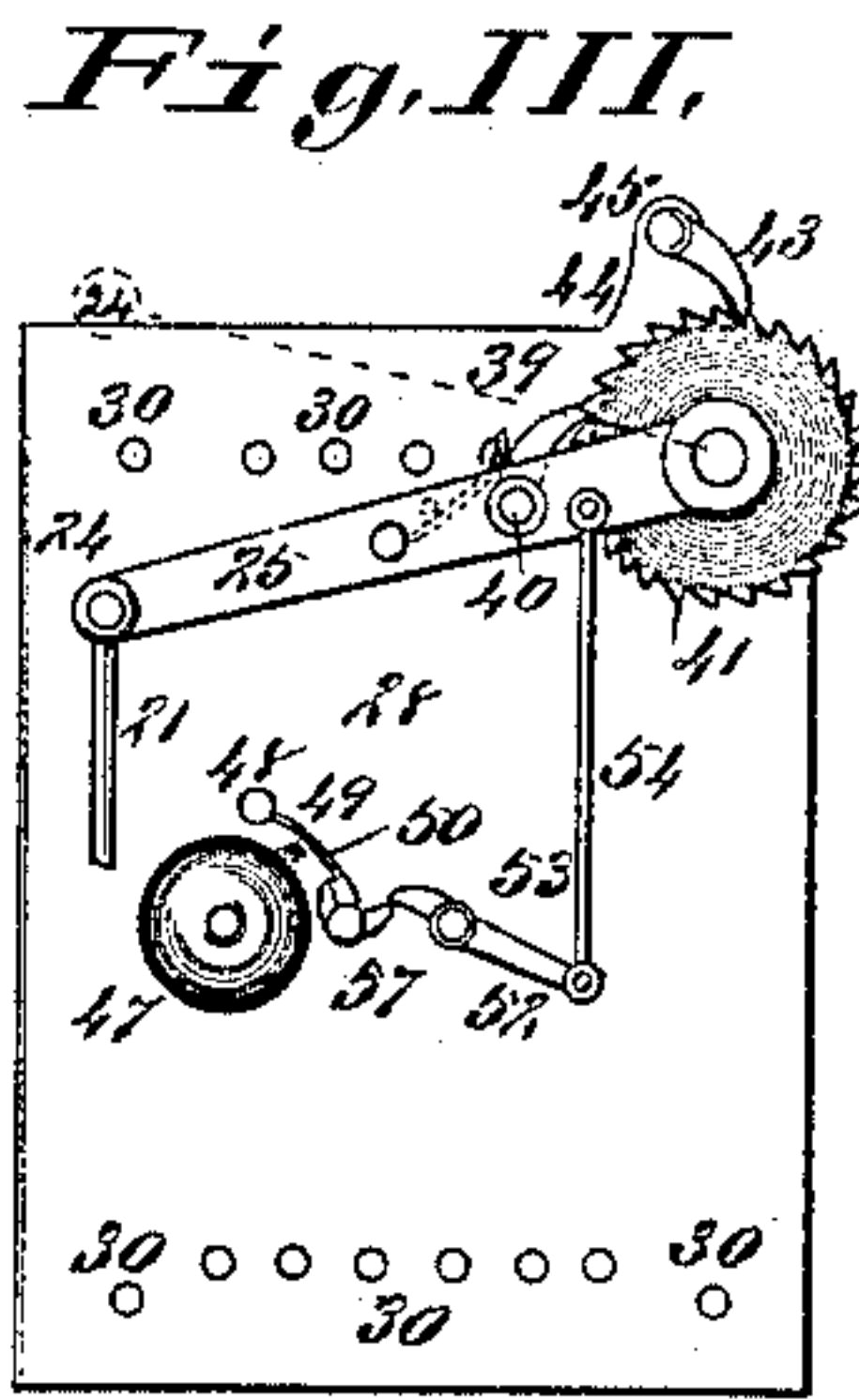
STREET AND STATION INDICATOR.

No. 394,052.

Patented Dec. 4, 1888.



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Charles Pickles,
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UNITED STATES PATENT OFFICE.

RICHARD W. BOISSELIER, OF ST. LOUIS, MISSOURI.

STREET AND STATION INDICATOR.

SPECIFICATION forming part of Letters Patent No. 394,052, dated December 4, 1888.

Application filed January 30, 1888. Serial No. 262,389. (No model.)

To all whom it may concern:

Be it known that I, RICHARD W. BOISSELIER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Street and Station Indicators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a transverse section of a car with my invention attached, showing its application to a cable-way and the pendent operating-lever connected by a link to the middle of the trip-lever beneath the car, and showing also the friction roller or rollers that the rod carries *en route* under the incline that trips the lever. It also shows in dotted lines the vertical rod that connects the trip-lever with the actuating device of the indicator-rolls and the indicator with record of its next crossing or station, and part broken away to show the sleeve-joint by which the length of said vertical rod is adjusted. Fig. II is a detail side view of the car, showing the trip-lever, with the incline that trips it when actuated by the traversing friction roller or rollers, with part broken away to show the trip-action of the indicator. Fig. III is an enlarged front view of the ratchet-pawl actuating devices of the indicator-rolls and alarm-bell. Fig. IV is an enlarged vertical section taken on line IV IV, Fig. V, showing the indicator-rolls, the scroll they carry, and actuating-roller and sprocket-teeth by which they are operated. Fig. V is an enlarged horizontal section taken on line V V, Fig. IV, showing the indicator-rolls in elevation. Fig. VI is an enlarged detail view of the indicator scroll or belt, with a detail record of the numbers of streets. It also shows the re-enforcing edging and the eyelets that the pins in the sprocket-roller enter to effect the movement of the scroll. Fig. VII is an enlarged transverse detail section taken on line VII VII, Fig. VI, showing the re-enforcing edging that strengthens the scroll and the eyelets that clamp the edging to the scroll and provide apertures in which the sprocket-pins enter to effect the movement of the scroll. Fig. VIII is a modification, in which a detail transverse section of the scroll is shown without re-enforcing edging, but having eyelets for re-en-

forcing the sprocket-pin holes; and Fig. IX is a modification, in which the trip-actuating inclines surmount, instead of underlay, the track.

My invention relates to an improved apparatus for the automatic record of streets or stations on railways; and the invention consists in features of novelty, hereinafter fully described, and pointed out in the claims.

Referring to the drawings, in which similar figures of reference indicate like parts in all the views, 1 represents the body of a car to which my street and station indicator, with its trip-actuating devices, is attached.

2 are the pendent hanger-brackets, whose angle-arms 3 are secured at their flanged ends 4 by screw-bolts 5 to the bottom of the car. The angle-arms of the hangers terminate in parallel flanged ends 6, which are perforated near their ends to seat the pivot-pin 7.

8 represents the actuating trip-lever, which is pivoted by the pin 7 between the flanged ends 6 of the hanger. The said lever carries the friction rollers or roller 9, that when the invention is applied to cable-ways move in the conduit 10, whose unconnected arch 11 supports the slot-rails 12. When the friction rollers or roller moving in said conduit, which is located midway between the track-rails 13, come in contact with an incline, 14, that is secured to the under side of the slotted track-rails at the street-crossings or stations along the line where the indicator-record is to be changed, as the said rollers run down the incline to the point of greatest depression, the actuating trip-lever, fulcruming on its pivot-pin, elevates the upper end of the long transverse lever 15 by its connecting pivoted links 16. The last-mentioned lever is pivoted at its fast end by the bolt 17, which engages in the pendent lug or lugs 18, that are secured to the bottom of the car by the screw-bolts 19. The loose end of said lever is pivotally connected to and between the bifurcated end 20 of the long vertical rod 21 by the pivot-bolt 22. A sleeve-joint, 23, in the vertical rod adjusts its length so as to rightly regulate its action on the indicator.

When, as described above, the roller or rollers of the trip-lever 8 run down the incline and so trip said lever, and in consequence elevate the active end of the long transverse

lever 15, and with it the long vertical rod 21, the said rod is pivoted by the bolt 24 to the operating-lever 25, whose farther end has pivotal bearing on the shaft 26, that carries the tight sprocket-roller 27.

28 represents the indicator-chamber, in the casing of which the shaft 26 of the sprocket-roller has its bearings at 29. The said casing provides bearings 30 for the shafts 31 of the rollers 32, which are arranged, respectively, in the top and bottom of the said chamber and carry the endless scroll or belt 33, that records the names or numbers 34 of the streets or stations at which the train next arrives or stops, said belt passing alternately over the upper and lower rollers.

The scroll, which may be made of linen, paper, or any other suitable material, is preferably re-enforced by strong linen, leather, or other suitable edging, 35, and perforations 36, made through both the edging and body of the scroll at corresponding distances apart for the sprocket-pins 37 to engage therein as the roller rotates. The perforations are re-enforced by metal eyelets 38.

It will be seen that when under the influence of the incline on the roller or rollers of the trip-lever the connecting-links, transverse lever, and long vertical rod, the operating-lever 25 is alternately elevated and depressed within its limit of movement, (shown in dotted lines in Fig. III,) a pawl, 39, secured to said lever by the pivot-pin 40, engages in the ratchet-wheel 41, and as said wheel is rigidly secured to the shaft 26 of the sprocket-roller both ratchet wheel and roller are rotated, and the sprocket-pins 37 on the roller, engaging in the perforations 36 in the endless indicator belt or scroll, it is moved forward on its series of rollers 32 sufficiently to bring the record of the next street or station against the window or open space 42 in plain view of the passengers on the car.

A dog-pawl, 43, secured to the projecting lug 44 by the pivot-pin 45, follows up, riding over and engaging in the teeth as the ratchet-wheel rotates and dogs it from returning, so that the street or station record, when automatically set, as above described, retains its position until by the operation of the next incline operating on the series of above-described devices the record is changed to that of the next street or station, let it be known by either numerals or other name, as the case may be. A spring, 46, that presses against the pawl 39, re-enforces its engagement with the teeth of the ratchet-wheel.

47 represents an alarm-bell secured to the casing of the indicator-chamber, and said bell is struck by the reiterated blows of the hammer 48, whose spring-stem 49 is governed by a reactionary spiral spring, 50, after it has been tripped by the rocker-dog 51 under the operation of the trigger-lever 52, which is pivoted to the side of the casing by the pin 53 and is pivotally connected by the rod 54 with the operating-lever 25, so that whenever said

lever is elevated the spring-hammer of the bell is sprung and gives a reiterated warning of the changing record of the street or station.

55 represents a counter-weight that is suspended by a hook, 56, to near the upper end of the trip-lever 8. This counter-weight enforces the return of said lever to its normal position after it has been tripped by its roller or rollers engaging with the incline.

57 represents a lug that projects laterally from the hanger 2 and in a perforation, 58, in which is provided a seat for a stay-bolt, 59, which limits the depression of the upper arm of the trip-lever.

When it is desired to run the car in off the cable-track into the car-house, the bolt 60, that secures the upper end of the trip-lever to the links 16, is withdrawn, and also the stay-bolt 59, and the counter-weight 55 then weighs down the upper end of the pivoted trip-lever, which, in consequence, raises the reverse end of the lever, with its roller or rollers, through the trapway 61 in the track, so that, being disconnected from the slotted cable-way, the car can be readily run into the car-house.

The sleeve-joint 23 is provided with a right and left hand screw, so as to unite the sections of the vertical rod 21, and provides a compensating device to adjust the length of said rod and regulate to a nicety the action of the operating-lever on the ratchet-wheel, and through that and the multiple rollers on the indicating-scroll or belt they carry, so as to adjust the right presentation of the record to the exhibiting-window for the inspection of the passengers.

In Fig. IX is shown a modification for use on other than cable-ways, both on street-car tracks and steam-railways. The tripping-incline 14 is then placed on top of a surface-track, 62, and the action of the trip-lever is consequently reversed, the friction-rollers running over instead of under the incline, and it then has reverse action on its actuating connections with the operating-lever 25 and with the lever itself; but it is evident that by reversing the attachment of the ratchet-wheel, drive-pawl, and re-enforcing spring, the apparatus will still work in substantially the same manner as heretofore described.

As shown in Fig. I, the indicator both records the lowest and highest house-number of the block of the street that the car or train is running on, as well as the next ensuing cross-street or station.

In Fig. VIII is shown a detail modification of the scroll in which no re-enforcing edging is used; but the eyelets around the perforations clamp down on the body of the scroll itself. Where re-enforcing edging is used the eyelets, besides protecting around the perforations, firmly hold the edging to the body of the scroll.

It will be seen, as shown in Fig. VI, that the numbers on the scroll range upward until they reach the highest number at one end of

the car-route, and then, (as the endless scroll always moves in the one direction,) on the return-trip of the cars the numbers begin to tally downward, so that, supposing 24 to be the highest number at the end of the line, as shown in said figure, 23, which had been the last previous crossing, would on the return trip be the first crossing reached, and so on down to the lowest number of the street at the other end of the line, when it reacts again on the first-mentioned tally, the endless scroll always moving when tripped in one direction. It will thus be understood that the scroll carries two tallies of figures or two lists of names, as the case may be, according as the record is either in figures, as "20th," "21st," &c., or names, as "Olive," "Pine," &c., or stations, as "St. Louis," "Washington," &c; also, as shown in Fig. I, the name of the next succeeding cross-street or station is shown (whether it be in numerals or otherwise) in the middle of the scroll and the lowest house-number of the block of the street on which the cars are running is shown on one side of the name of the street or station ahead and the highest number on the other; but when it is not desired to show the highest as well as lowest of the house-numbers of the block along the route, or to omit the record of the house-numbers altogether, either the latter or both of said numbers may then be omitted, but in all cases the name or number of the street or station next ahead is always recorded.

When it is desired to stop the working of the indicator-scroll, it is effected by simply pushing aside, and thus unshipping, the re-enforcing spring from engagement with the drive-pawl 39 and throwing back the drive-pawl into disengagement with the teeth of the ratchet-wheel.

I claim as my invention—

1. In a street and station indicator for railway-cars, the combination, with a series of rollers arranged parallel with each other in a horizontal plane and a series of rollers arranged beneath the same, of an endless belt having consecutively arranged thereon the numbers or names of streets or stations, a sprocket-roll mounted in the frame of an indicator for moving the said belt, a ratchet-wheel rigidly secured to said roller, a pawl to actuate the same, and a series of levers for rotating the said pawl, substantially as described.

2. In a street and station indicator for railways, to be carried on the car, the combination of the endless indicator-scroll with the house-numbers of the streets on which the car is traveling and the names of the cross streets and stations along the route, the eye-lets that inclose perforations along the edges of said scroll, the upper and lower series of rolls for carrying the same, the sprocket-roller whose pins engage in said perforations and run the scroll, the ratchet-wheel 41, secured to said sprocket-roll and the pawl that engages therewith and propels it, and the op-

erating-lever 25, rod 21, connected to the same and extending to the bottom of the car, transverse lever 15, located beneath the car, having one end connected to said rod, and trip-lever 8, with its friction-roller 9 and incline 14, secured to the track on which said roller runs and by which it is tripped to actuate the movement of the indicator-scroll, substantially as and for the purpose set forth.

3. In a street and station indicator for railways, to be carried on the car, the combination of the endless indicating-scroll with the house-numbers of the streets on which the car runs and the names of the cross streets and stations along the route, the re-enforcing edging 35 to said scroll, the multiple rollers that carry the scroll, and the sprocket-roller by which said scroll is run, the ratchet-wheel tight on the shaft of said sprocket-roller, the pawl and operating-lever 25, for rotating said ratchet, actuated by the vertical rod 21, and a system of compound levers located beneath the car, the friction-roller 9, and incline 14, located on the track, arranged, when the roller runs on the incline, to trip the actuating devices of the indicating-roll to conform with the house-numbers and names of the streets or stations to be indicated, substantially as and for the purpose set forth.

4. In a street and station indicator for railways, to be located on the car, the combination, with the incline 14, secured to surface-rails at points where the record of the indicator is to be changed, of the pivoted trip-lever 8, and friction-roller 9, carried on the same, the transverse lever connected to said trip-lever, both of said levers being located on the bottom of the car, the vertical rod secured to said transverse lever and extending upward to the top of the car, where it is connected with the drive-pawl 39, and connections by which the said drive-pawl 39 and ratchet-wheel 41 are made to drive the sprocket-roller 27 and multiple rollers 32, with the scroll they carry, and the adjustable sleeve 23 to the vertical connecting-rod, substantially as and for the purpose set forth.

5. In a street and station indicator, to be located on railway-cars, the combination of the endless indicator-scroll located in the upper part of the car that carries the house-numbers of the streets on which it runs and the names of the streets or stations that it crosses, the multiple rollers that carry the scroll, and the sprocket-roller 27, that moves it, the shaft 26, that carries said sprocket-roller, and the ratchet-wheel on said shaft, the dog-pawl 43, engaging said ratchet-wheel, and the operating-lever 25, mounted on said shaft 26, with its spring-projected drive-pawl 39, secured to lever 25, a connecting-rod pivoted to lever 25 and extending to the bottom of the car, and the trip-lever carrying friction-roller, said trip-lever being located beneath the car and engaging with said rod and inclines, the latter placed on the track at points where the record of the scroll is to be changed, with means, as

described, for disengaging the trip-lever and its friction-roller from the slotted cable-track, substantially as and for the purpose set forth.

6. In a street and station indicator, to be located on railway-cars, the combination of the endless indicating-scroll located in the upper part of the car, the multiple rollers that carry it, the sprocket-roller that engages in perforations in the scroll and moves it, the drive-pawl ratchet device that engages with and runs said sprocket-roller, the operating-lever pivoted on the shaft of the sprocket-roller, the adjustable connecting-rod connected to said operating-lever and extending downward, the transverse lever located beneath the car and connected with the said rod, the trip-lever carrying friction-roller and engaging with said transverse lever, the incline located on the track that trips and drives said scroll, the counter-weight 55, that, after the tripping of the lever, brings back said lever to its normal

position, and the stay-bolt 59, that limits the down movement of said lever, substantially as and for the purpose set forth.

7. The combination, with an indicator for railway-cars, of the operating-lever 25, with means for actuating it, the rod 54, engaging with said lever, the trigger-lever 52, engaging with said rod, rocker-dog 51, engaging with said trip-lever, the hammer 48, tripped by said dog, the spring-stem 49 of hammer, reactionary spring 50, and alarm-bell 47, secured to the casing of the indicator-chamber that said hammer strikes to give the alarm, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand this 26th day of January, 1888.

RICHARD W. BOISSELIER.

In presence of—

BENJN. A. KNIGHT,
SAML. KNIGHT.