

No. 735,944.

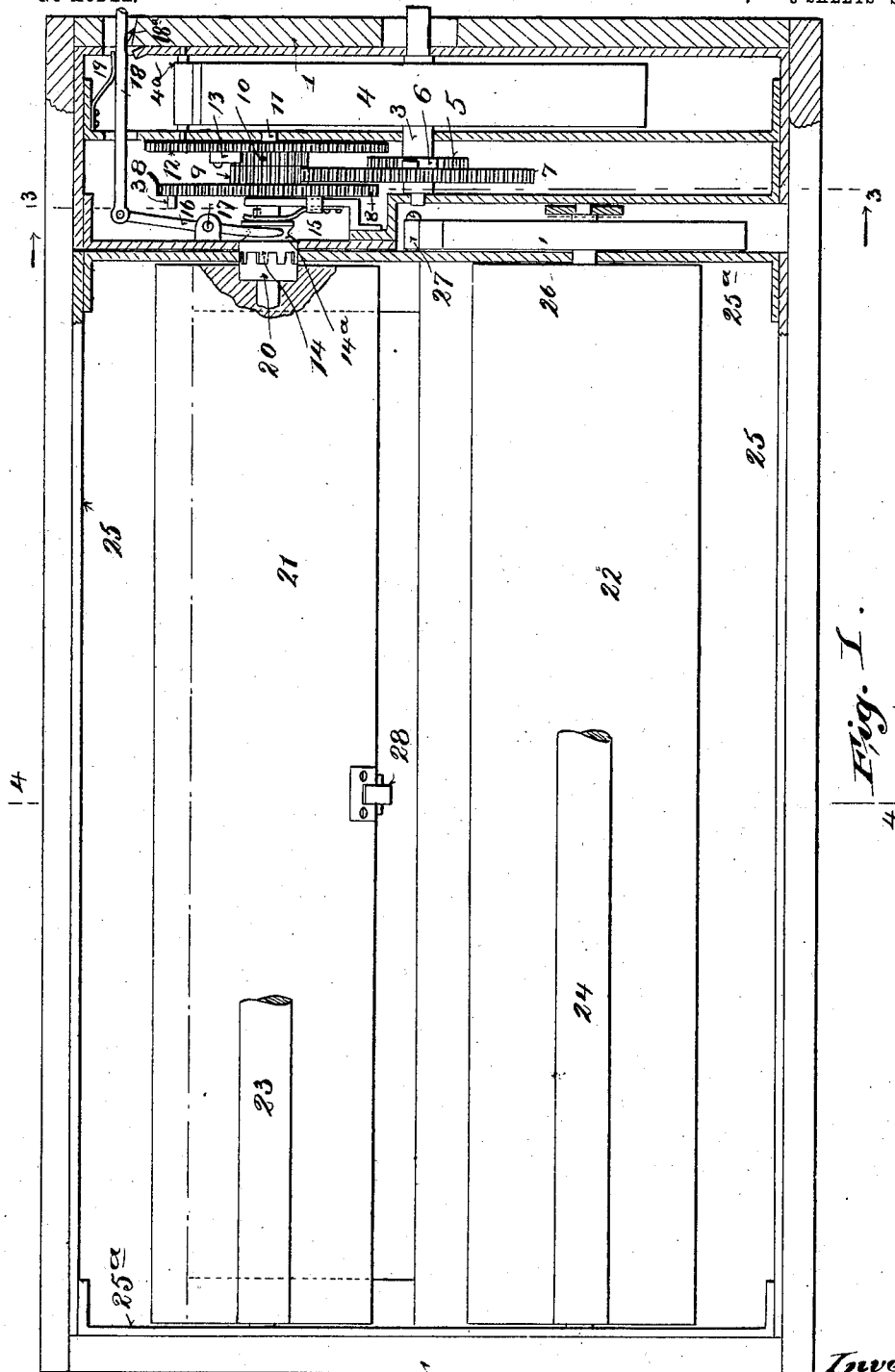
PATENTED AUG. 11, 1903.

A. T. CHESTER.  
STREET OR STATION INDICATOR.

APPLICATION FILED JULY 9, 1902.

NO MODEL.

3 SHEETS--SHEET 1.



Witnesses,  
C. W. Benjamin  
H. V. Osborn

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by P. P. Bourne  
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3 SHEETS—SHEET 2.

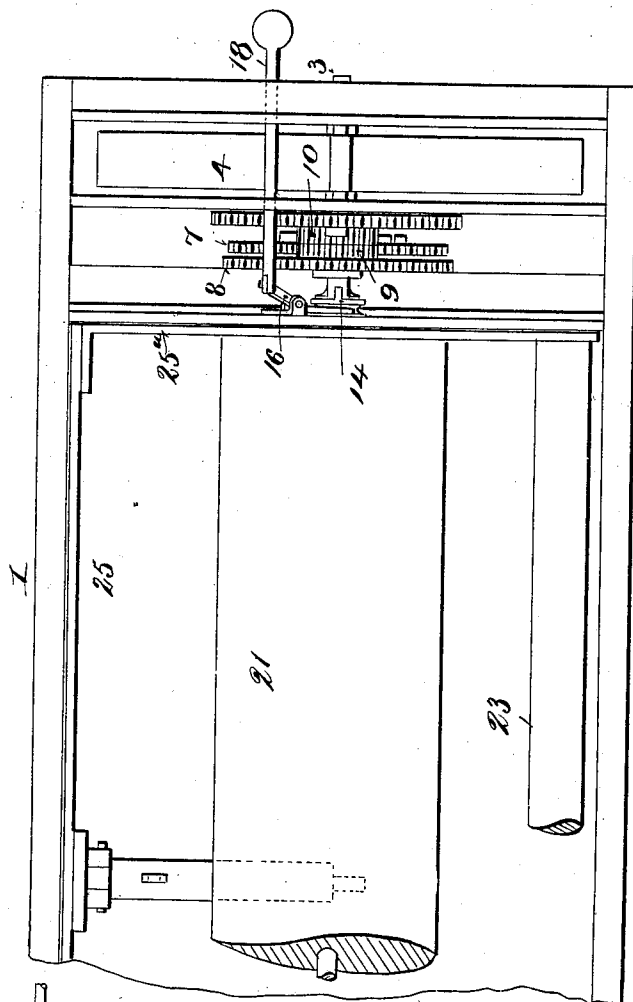


Fig. 2.

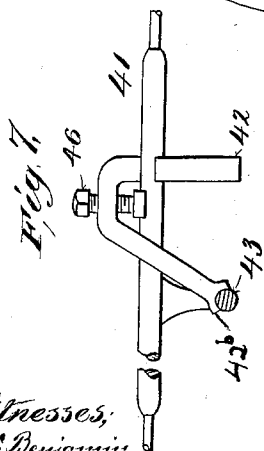


Fig. 7.

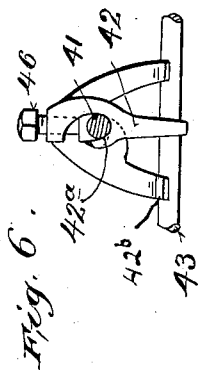


Fig. 6.

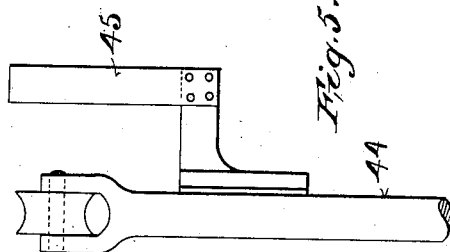


Fig. 5.

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3 SHEETS—SHEET 3.

Fig. 4.

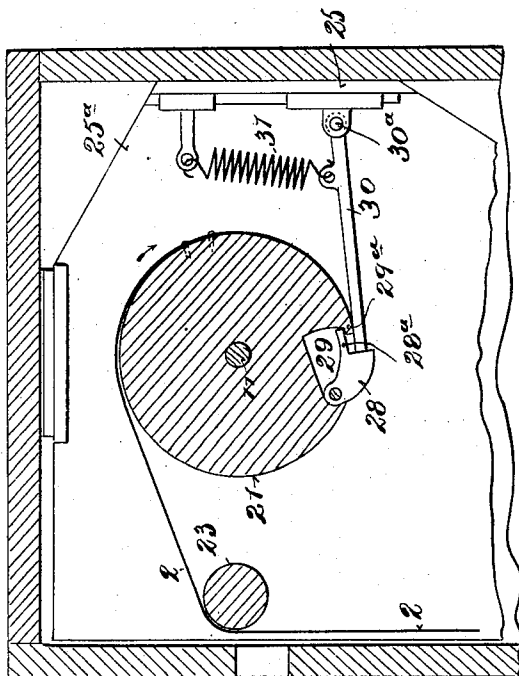
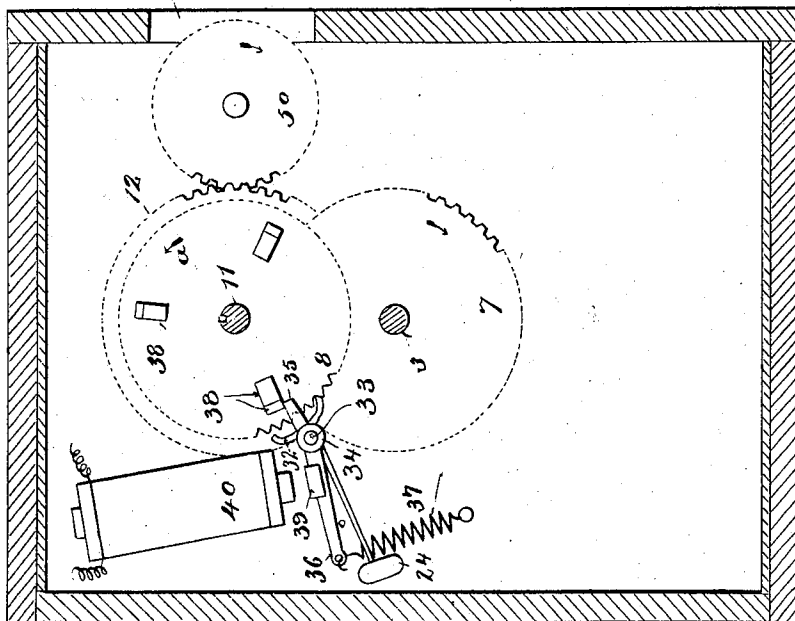


Fig. 3.



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# UNITED STATES PATENT OFFICE.

ARTHUR TREMAINE CHESTER, OF WASHINGTON, DISTRICT OF COLUMBIA.

## STREET OR STATION INDICATOR.

SPECIFICATION forming part of Letters Patent No. 735,944, dated August 11, 1903.

Application filed July 9, 1902. Serial No. 114,874. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR TREMAINE CHESTER, a citizen of the United States, residing in Washington, District of Columbia, have invented certain new and useful Improvements in Street or Station Indicators, of which the following is a specification.

The object of my invention is to provide a mechanism to be used in railway-cars and the like for indicating streets and stations to be passed by the cars; and to this end my invention contemplates the novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a front elevation, partly in section, of an indicator embodying my invention, the front being removed. Fig. 2 is a plan view of part thereof, the top being removed. Fig. 3 is a cross-section on the line 3 3 in Fig. 1. Fig. 4 is a cross-section on the plane of the line 4 4 in Fig. 1. Fig. 5 is a detail of a trolley-pole provided with a contact, and Figs. 6 and 7 are details of contacts on a trolley-wire.

Similar numerals of reference indicate corresponding parts in the several views.

In the drawings the numeral 1 indicates a suitable box or casing provided at one side with an opening 1<sup>a</sup>, through which may be seen the names of streets or stations to be passed that are printed or otherwise carried upon a band or strip 2. Within the casing 1 is journaled a shaft 3, to which one end of a clock-spring 4 is connected, the opposite end of which spring is suitably secured, as at 4<sup>a</sup>. To the shaft 3 is secured a ratchet-wheel 5, that is engaged by a pawl 6, carried by a gear 7 loose on shaft 3 in manner similar to a clock-train.

8 9 10 indicate three toothed wheels secured together and loosely mounted upon a shaft 11, journaled within the casing 1, in the example illustrated, the wheel 8 being an escapement-wheel, 9 being a pinion in mesh with gear 7, and 10 being a ratchet-wheel. Secured to shaft 11 is a gear-wheel 12, having a pawl 13 to engage ratchet 10. In the arrangement shown the spring 4 and gear 7 will rotate wheels 8, 9, 10, and 12 in the direction of the arrow *a* in Fig. 3. Upon shaft

11 is a clutch member 14, which is keyed to said shaft, so as to slide thereon, a spring 15 normally pressing said member to the left in Fig. 1. The member 14 has an annular groove to receive a shifting-fork 16, shown pivoted at 17, and provided with an operating handle or rod 18, that passes through an opening in casing 1 for shifting the clutch member 14. The rod 18 is shown provided with a tooth 18<sup>a</sup> to engage a part of the casing, a spring 19 holding the parts in such position whereby the clutch member 14 is held retractive. The clutch member 14 is adapted to engage a corresponding member 20, secured to a drum or roller 21 at the upper part of casing 1, beneath which is a corresponding drum or roller 22, and in front of the drums 21 and 22, respectively, are located guide rods or rollers 23 24. The strip or band 2, Fig. 4, passes in front of the guides 23 24 and is to be wound back and forth upon the drums 21 22, said strip or band being secured to said drums in any suitable manner. The drums 21 22 and the guides 23 24 are by preference removably carried within casing 1 by a suitable frame 25, the drums being journaled on the end plates 25<sup>a</sup> of said frame, the guides 23 24 being also secured to said plates. To the drum 22 or to its shaft is secured a coil-spring 26, the outer end of which is shown secured to an end plate 25<sup>a</sup>, as at 27, said spring being arranged to be wound as the strip or band 2 is drawn therefrom and wound on drum 21 by the gear-train above described and so as to rewind said strip upon drum 22 from drum 21 at the end of a route or run of a car by releasing the member 14 by means of arm 18.

To prevent strip 2 from becoming disconnected from drum 21 as the strip is unwound therefrom, I provide a dog or the like 28, pivotally connected with drum 21 and adapted to pass within a recess 29 within said drum as strip 2 is wound thereon. (See Fig. 4.) The dog 28 has a lug 28<sup>a</sup> adapted to engage a lip 29<sup>a</sup> at the edge of recess 29 to limit the outward movement of said dog.

30 indicates a stop or arm pivotally carried by frame 35, as at 30<sup>a</sup>, and maintained by a spring 31 against the drum 21 or strip 2, and the stop 30 is in such position as to be engaged by dog 28 when the strip 2 uncovers

the same and allows it to swing out of the recess 29 in drum 21. (See Fig. 4.)

The strip 2 is intended to be moved step by step for each station or street to be indicated at opening 1<sup>a</sup> in frame 1, and I have provided an escapement and electric controlling devices for this purpose, as shown in Fig. 3. To this end an escapement 32 is carried by a weighted arm 24, mounted upon a shaft 33, carried by frame 1, the escapement 32 being adapted to coact with wheel 8. Upon shaft 33 is mounted a collar 34, having arms 35 36, the latter being drawn down against a stop by a spring 37. The arm 35 is adapted to be engaged by lugs 38 on wheel 8. I have shown three of such lugs in Fig. 3 arranged equidistantly apart to divide wheel 8 into three equal parts, and as said wheel rotates said lugs 38 are adapted successively to engage arm 35 to stop the rotation of the gear-train and the drums to hold strip 2 in such position that the name of a street or station will appear through opening 1<sup>a</sup> in frame 1. During the rotation of wheel 8 the escapement 32 acts to retard the rotation of the wheel to keep it from running too fast. Arm 36 carries the armature 39 of a magnet 40, whereby when said magnet is energized it will attract its armature, thereby moving arm 35 out of the path of a lug 38 to permit wheel 8 to rotate; but before said wheel makes a one-third rotation magnet 40 will be deenergized and spring 37 will draw arm 35 back into the path of the next lug 38, and so on, the strip 2 being wound on drum 21 step by step. Current may be provided for magnet 40 by an electric battery carried by the vehicle, or current may be taken from the usual trolley-wire or conductor 43. As shown in Figs. 5, 6, and 7, a lug or projection 42 is attached to the conductor 43 where the transverse supporting-wire 41 is attached to the conductor 43, and upon the pole 44 is a contact 45, insulated from said pole and connected in circuit with the magnet 40. In Figs. 6 and 7 the member 42 has a socket 42<sup>a</sup> to receive wire 41, and prongs 42<sup>b</sup>, that bear upon 43, a screw 46 securing the parts together. The lug or contact 42 is located at or near the intersection of streets or near a station, whereby as the contact 45 engages each contact 42 magnet 40 will be energized for a short period to cause arm 35 to be operated to permit wheel 8 to move one space, and as circuit is broken at said contacts arm 35 will return to stop the next lug 38, and so on, for each street or station being passed.

By having the drums 21 22 and the guide rods or rollers carried by a frame that is detachable from the casing 1 the strips 2 for different routes can be readily placed in the casing while in position on the drums.

As a convenient means for permitting the intermeshing of the clutch members 14 and 20 when a frame 25 is being adjusted within casing 1 I have shown in Fig. 3 a gear-wheel 50 in mesh with gear 12 and in line with an

opening 1<sup>b</sup> in casing 1, whereby if the members 14 and 20 do not at first properly mesh a person can operate wheel 50 and by turning it in the direction of the arrow in Fig. 3 can cause wheel 12 to rotate free of the train of gearing to turn member 14 sufficiently to cause it to mesh with member 20.

An indicator constructed according to my invention is simple to construct and operate and efficient in use. The names of streets or stations can be printed upon strip 2 in the order of a single run of the car, so that strip 2 will be unwound from 21 at the end of each run, or each name can be arranged in direct followed by inverse order where it is desired to have the car run forth and back for a single setting of the strip 2.

I do not limit my invention to the details of construction shown and described, as they may be varied without departing from the spirit thereof.

Having now described my invention, what I claim is—

1. The combination of a frame or casing, gearing, a spring therefor, a pair of drums, a strip or band to be wound thereon, an escapement-wheel connected with said gearing, said escapement-wheel being provided with lugs, an arm to coact with said lugs, an armature connected with said arm, a magnet for said armature, an escapement to coact with said escapement-wheel and operative independent of said arm, and a clutch arranged to connect the gearing with one of said drums, substantially as described.

2. The combination of a frame or casing, a spring, a gear to be operated thereby, a pinion in mesh with said gear, an escapement-wheel and ratchet connected with said pinion, a shaft on which said pinion, wheel and ratchet are loosely mounted, a wheel secured to said shaft and provided with a pawl engaging said ratchet, a clutch member movably connected with said shaft, a pair of drums, one drum having a corresponding clutch member to coact with the first-named clutch member, a band connected with said drums, said escapement-wheel being provided with lugs, an arm to coact with said lugs, an armature connected with said arm, and a magnet for said armature, substantially as described.

3. The combination of a frame or casing, gearing, a spring therefor, a pair of drums one of which is connected with said gearing to be rotated thereby, a strip or band connected with said drums, a spring connected with the other of said drums to wind the strip or band thereon after it has been wound by the gearing on the drum connected therewith, means connected with the first-named drum to limit the unwinding of the strip or band therefrom and means to cause the gearing to rotate the last-named drum intermittently or step by step, substantially as described.

4. The combination of a casing, a pair of drums, and means for operating them, with a

strip or band connected with said drums to be wound thereon, a dog connected with one of said drums to be covered by said strip, said drum having a recess to receive said dog, means  
5 to limit the outward movement of said dog, and an arm pivotally carried by the casing and extending over the drum to bear thereon and adapted to be engaged by said dog when the latter is uncovered by the strip or band, substantially as described.

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