No. 689,839. Patented Dec. 24, 1901.

J. DAVIES & T. P. RYAN.

STREET OR STATION INDICATOR.

(Application filed Mar. 12, 1901.)

(No Model.)

Fig. 1.

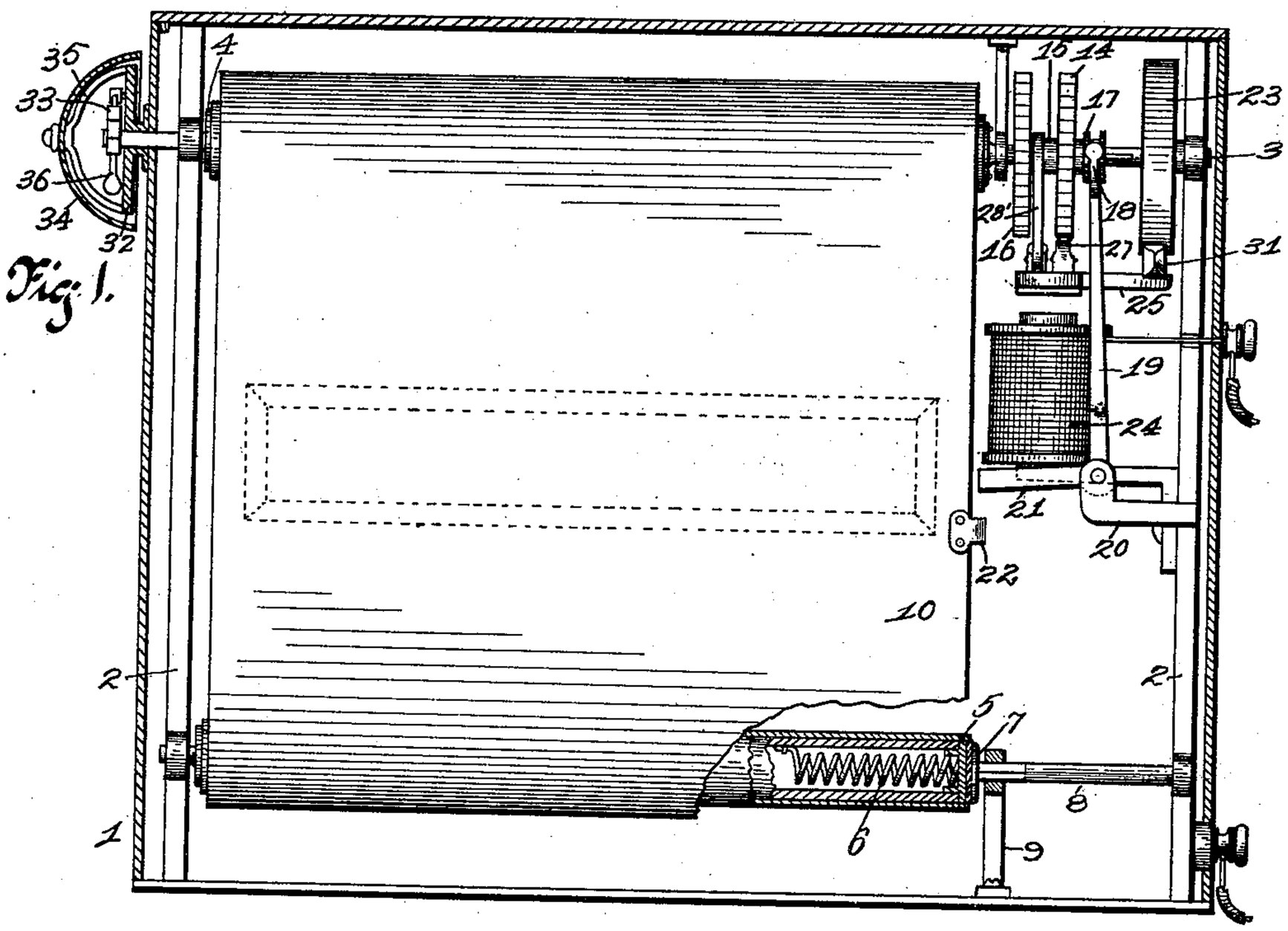


Fig. 2.

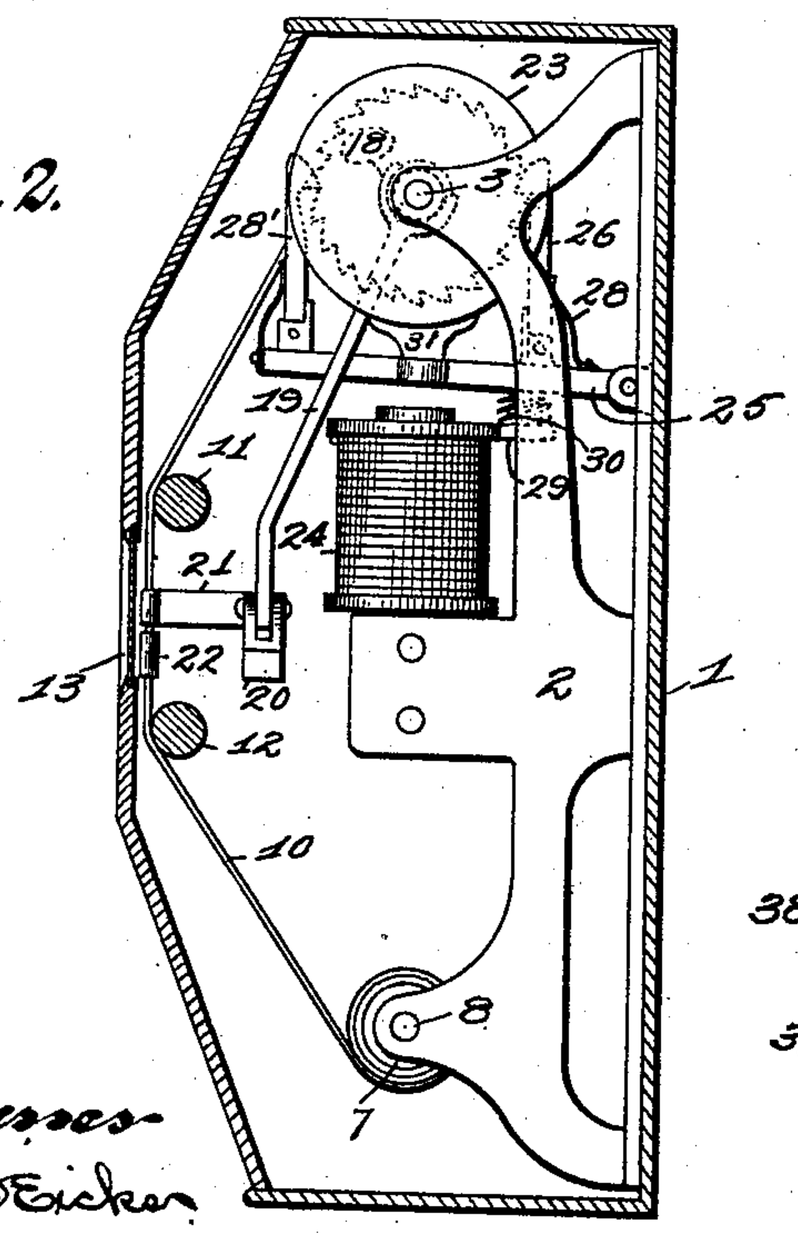


Fig. 3.

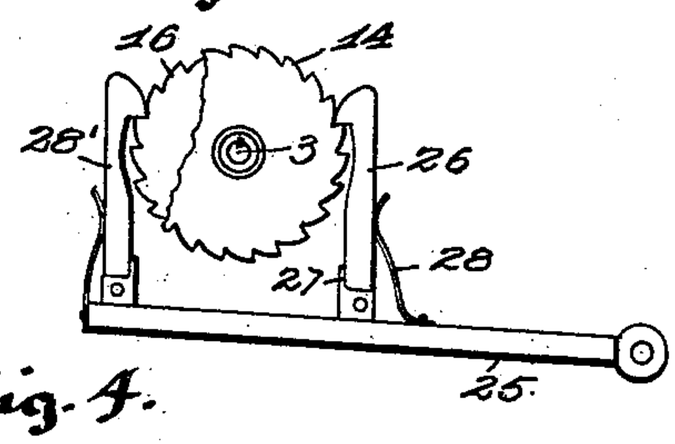
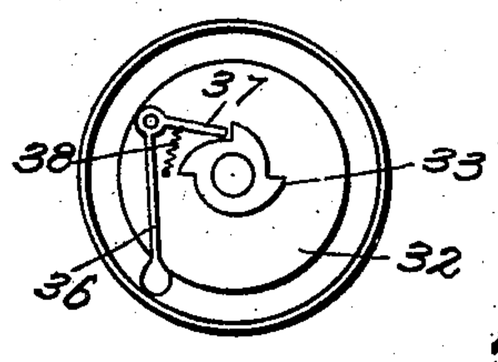


Fig. 4.



Witnesses-
Alfred A. Ricker
John H. Riffey

Inventors:
John Davies
Thomas P. Ryan
By Hazledon & Longan attys.

UNITED STATES PATENT OFFICE.

JOHN DAVIES AND THOMAS P. RYAN, OF ST. LOUIS, MISSOURI.

STREET OR STATION INDICATOR.

SPECIFICATION forming part of Letters Patent No. 689,839, dated December 24, 1901.

Application filed March 12, 1901. Serial No. 50,882. (No model.)

To all whom it may concern:

Be it known that we, JOHN DAVIES and THOMAS P. RYAN, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Street-Indicators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to street-indicators; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of our invention is to provide an improved and simplified street or station indicator designed for use in public conveyances and consisting of two rotary rollers or shafts supported in a case and having the ends of a curtain attached thereto to be wound alternately from one roller to the other and to exhibit the names of the streets or stations along the route. Two ratchet-wheels are feathered on one of the roller-shafts and an electromagnet is supported below the wheels and actuates an armature, to which are attached pawls, which operate upon and rotate the wheels, and thereby the shafts carrying the curtain. A shifting device is made use of to move the ratchet-wheels on the shaft to bring them in alinement with the pawls, so that when one pawl is operating upon its ratchet-wheel the other pawl is free, permitting the shaft to be turned alone by the pawl in engagement with the ratchet.

Figure 1 is a view showing our improved street-indicator in the case, the front of the case being removed. Fig. 2 is a vertical section showing the arrangement of the operating mechanism. Fig. 3 is a detail view of the armature and the ratchet-wheels. Fig. 4 is a sectional view showing the gong or sounding device used in combination with our improved indicator.

In the case 1 a frame 2 is carried adjacent to each end. A shaft 3 is supported by the upper ends of the frames 2, and fixed upon the said shaft 3 is a roller 4. A roller 5 is supported in the lower side of the case 1, and the said roller is hollow and carries therein a spring 6, one end of which is attached to the roller, and the opposite end is connected to a disk 7, rigid with the rod or shaft 8, rigidly supported by means of the right-hand frame 2 and a post 9. A curtain 10, upon which are printed the names of the streets or stations, has its upper end attached to the roller 4, and its lower end is connected to the roller 5, the tension of the spring 6 serving to hold the roller 5 in opposition to the movement of the curtain, whereby the curtain will be held straight across the opening in the front of the case.

In the front of the case is formed a transverse opening, and above the said opening within the case is a roller 11, and a similar roller 12 is directly below the said roller 11, the function of these rollers being to hold the curtain across the opening 13 to exhibit the names of the streets or stations to be passed. The positions of these parts are best shown in Fig. 2.

Upon the shaft 3 are located the ratchet-wheels by which the rollers are operated to move the curtain. The outer ratchet-wheel 14 has right-hand teeth and is rigid with an inwardly-extending sleeve or hub 15, on the opposite end of which is the inner ratchet-wheel 16, provided with left-hand teeth and designed to rotate the roller 4 in the direction opposite from which it is rotated by the wheel 14. The outer side of the hub of the wheel 14 is provided with a collar 17, from which extends two flanges, making a groove between them, within which rest the upper ends of a fork 18, carried by the lever 19. The said lever 19 is pivoted to a support 20, carried by the frame 2, and is provided with a horizontal arm 21, the inner end of which terminates adjacent to the edge of the curtain 10. The wheels 14 and 16 are feathered on the shaft 3, and as the lever 19 is moved the said wheels will be moved upon the said shaft. A small clamp 22 is secured to the curtain 10 adjacent to its lower end, so that when the curtain has about reached the limit of its upward movement and has been unwound from the roller 5 and wound onto the roller 4 the said clamp 22 comes into contact with the arm 21 and raises it, thereby pushing the lever 19 to the right, which moves the wheels 14 and 16 on the shaft 3 and moves the wheel 14 away from its pawl and brings the wheel 16 in alinement with another pawl, by which it is rotated to unwind the curtain from the roller 4 and permit it to be wound upon the roller 5 by the reaction of the spring 6. A balance-wheel 23 is fixed upon the shaft 3 to the right of the ratchet-wheel above described.

24 indicates an electromagnet which is supported below the ratchet-wheels 14 and 16 and which is arranged to be energized at intervals to move the curtain. An armature 25 is pivoted above the cores of the said magnet, and a pawl 26 is carried vertically by the said armature and rests against a stop 27, which prevents it from falling to a horizontal position. A spring 28 assists in holding the pawl 26 in its upright position, and when the wheels 14 and 16 are at the left on the shaft 3, as shown in Fig. 1, the said wheel 14 will be in alinement with the pawl 26 and will be rotated as the armature 25 is moved whenever the magnet is energized. The shaft 3 will thus be rotated, and this operation will continue until the curtain has been wound from the roller 5 onto the roller 4, at which time the clamp 22 comes into contact with the arm 21, as above described, and moves the lever 19. This brings the wheel 14 away from the pawl 26 and brings the wheel 16 in alinement with the vertical pawl 28′, arranged similarly to the pawl 26. This permits the shaft 3 to be rotated in an opposite direction from which it was rotated by means of the pawl 26 and unwinds the curtain from the roller 4 and permits it to be wound upon the roller 5 by the reaction of the spring 6. A small arm 29 projects under the armature 25 and supports a spring 30, by means of which the armature will be raised whenever the circuit is open. A brake-shoe 31 is carried by the arm extending from the armature 25 and operates against the wheel 23 and serves to stop the rotation of the shaft 3 when the armature is elevafed. A clamp similar to the clamp 22 is carried near the upper end of the curtain 10 and comes into contact with the arm 21 when the curtain has been wound from the roller 4 onto the roller 5, and thereby moves the lever 19, shifting the wheels 14 and 16, and again brings the wheel 14 in alinement with its pawl 26. After this operation a reverse movement of the curtain occurs, and it is again wound from the roller 5 onto the roller 4.

As shown in Fig. 1, the shaft 3 is extended through the case 1 and projects through a disk 32, secured to the side of said case 1. A number of projections 33 are rigid with the end of the shaft 3 outside the disk 32, and the function of the said projections is to operate the arm which sounds the gong. The bell 34 of the gong is supported by the arms 35, rigid with the disk 32. The sounding arm or clapper 36 is pivoted to the disk 32 and is provided with an arm 37, which terminates over the end of the shaft 3. A spring 38 connects the arm 37 with the disk 32, and thereby holds the end of the arm 36 against the bell of the gong. When the shaft 3 is rotated as above described, the arm 37 will be raised at intervals by the projections 33, and the continued rotation of the shaft will remove the projections from under the said arm 37, permitting the tension of the spring 38 to throw the end of the arm 36 against the bell of the gong to sound the same. Thus it is seen that the gong will be sounded a number of times each time the curtain is moved by the rotation of the shaft 3, thereby attracting attention to each change, as indicated by the said curtain.

We claim—

1. A street-indicator, consisting of a roller, two ratchet-wheels feathered thereon, means for moving the ratchet-wheels, an electromagnet, an armature adapted to be moved by the magnet, pawls carried by said armature and operating upon the said wheels and thereby rotating them when the armature is moved, a second roller to which one end of the curtain is connected, a suitable case having an opening in its front, for inclosing the parts mentioned, means for holding the curtain adjacent to said opening and a shifting device operated by the curtain for moving the ratchet-wheels to reverse the movement of the said parts mentioned, substantially as specified.

2. In a street-indicator, a suitable case having an opening in its front side, a roller supported in the upper side of the case, two ratchet-wheels feathered on said roller, an electromagnet, an armature to be operated thereby, two pawls carried by said armature and adapted to operate the ratchet-wheels and thereby rotate the roller, a lever connected to said ratchet-wheels for moving them upon the shaft, a curtain having its upper end connected to said roller, a second roller in the lower end of the case, the lower end of the curtain being connected thereto, means carried by the curtain for moving the lever in order to reverse the movement of the curtain, and means for holding the curtain across the opening in the front of the case, substantially as specified.

3. A street-indicator, consisting of a case having an opening in its front, a roller supported in the upper side of the case, ratchet-wheels carried upon the shaft of said roller, a second roller supported in the lower side thereof, a curtain adapted to be wound upon said rollers, an electromagnet, an armature to be operated thereby, connections between the armature and the upper roller whereby the said roller will be rotated whenever the armature is moved, a gong adapted to be sounded when the roller is rotated, a suitable shifting device operated by the curtain for moving the ratchet-wheels upon the shaft, and means for reversing the movement of the curtain when the ratchet-wheels are moved, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN DAVIES.
THOMAS P. RYAN.

Witnesses:
JOHN D. RIPPEY,
ALFRED A. EICKS.