

No. 627,941.

Patented June 27, 1899.

F. C. ROTHBALLER.  
STREET INDICATING DEVICE.

(Application filed Dec. 31, 1898.)

3 Sheets—Sheet 1.

(No Model.)

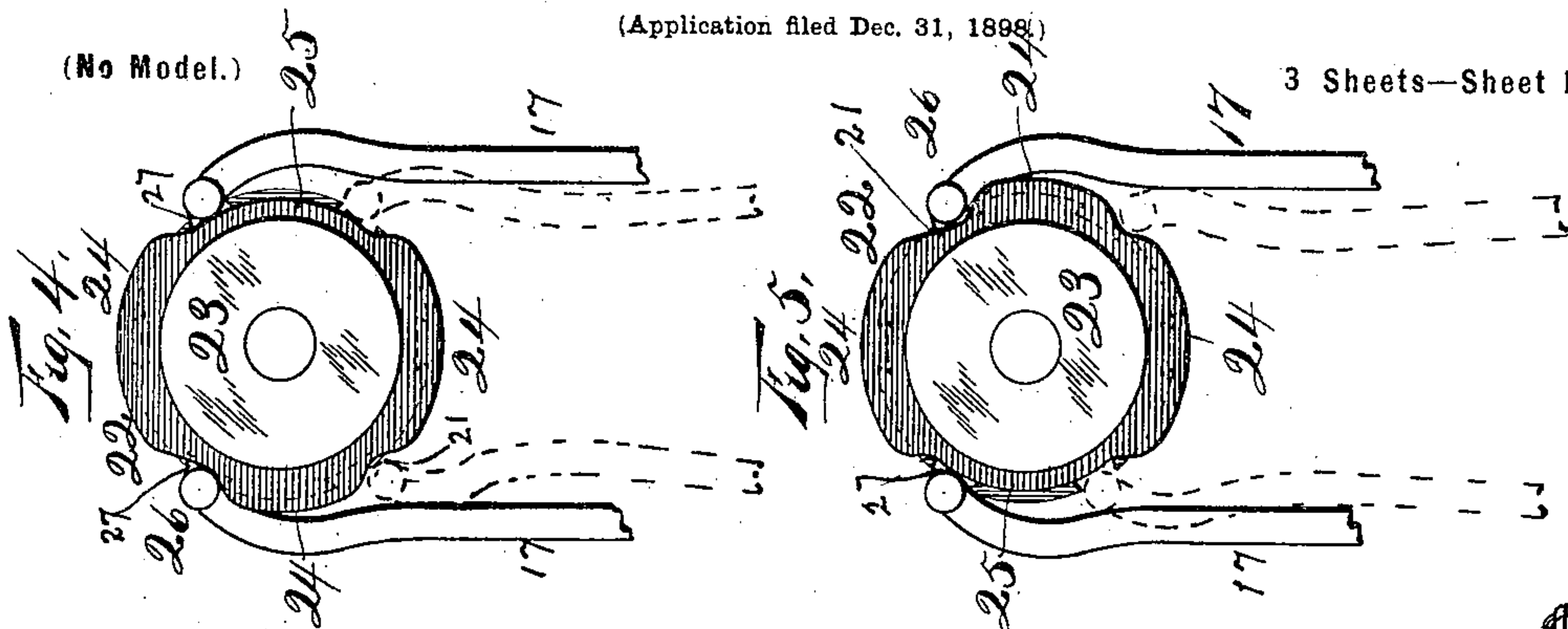
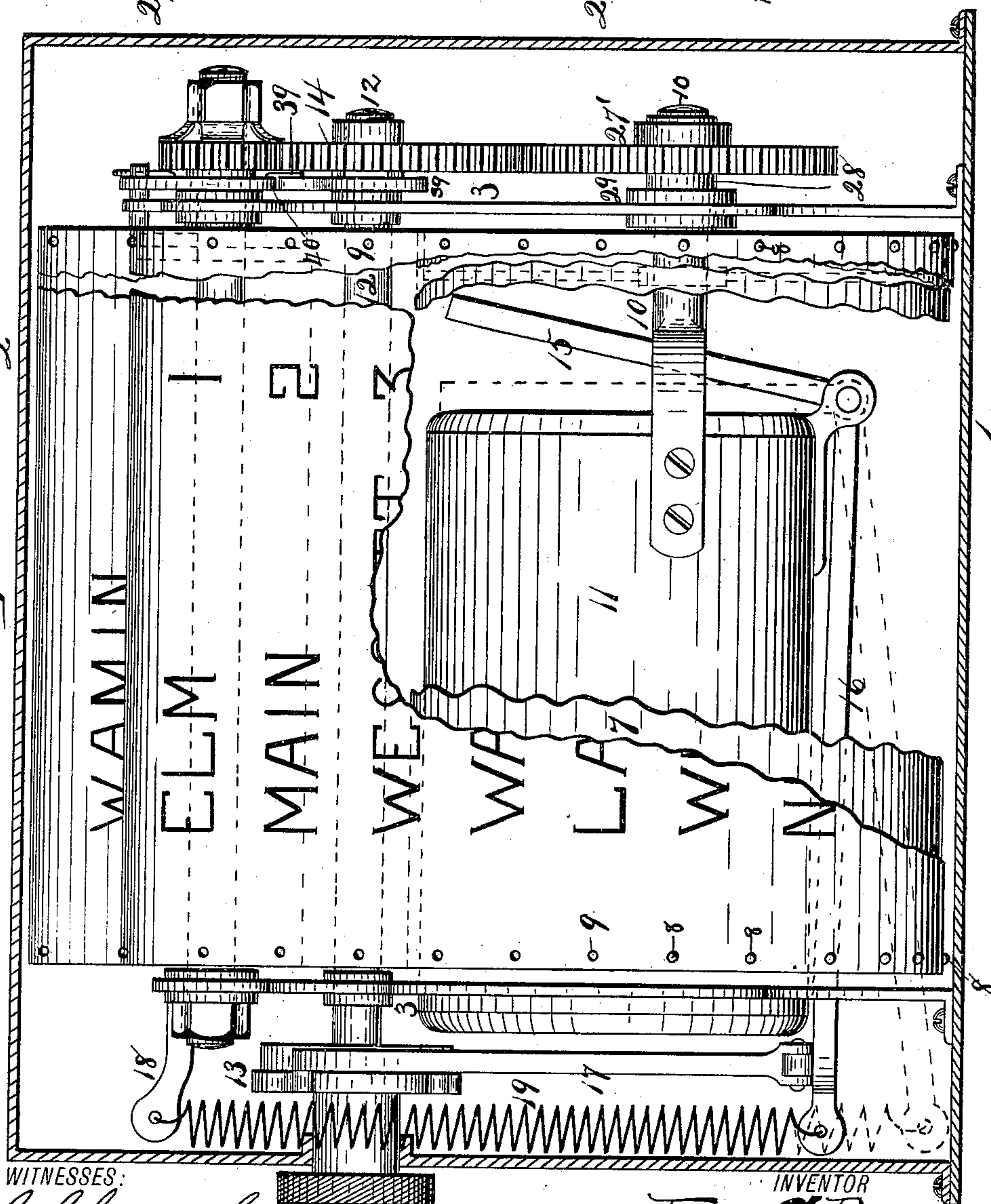


Fig. 1.



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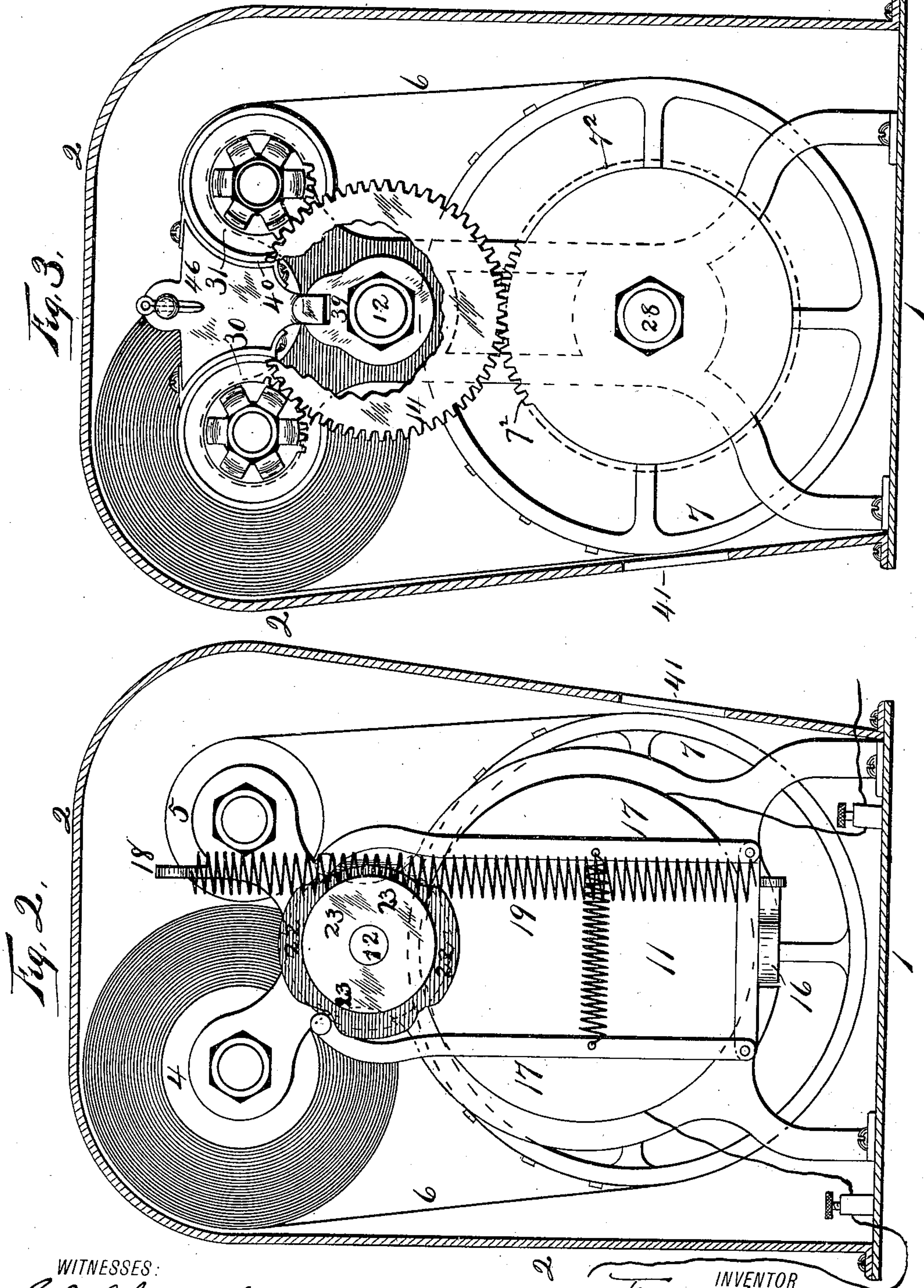
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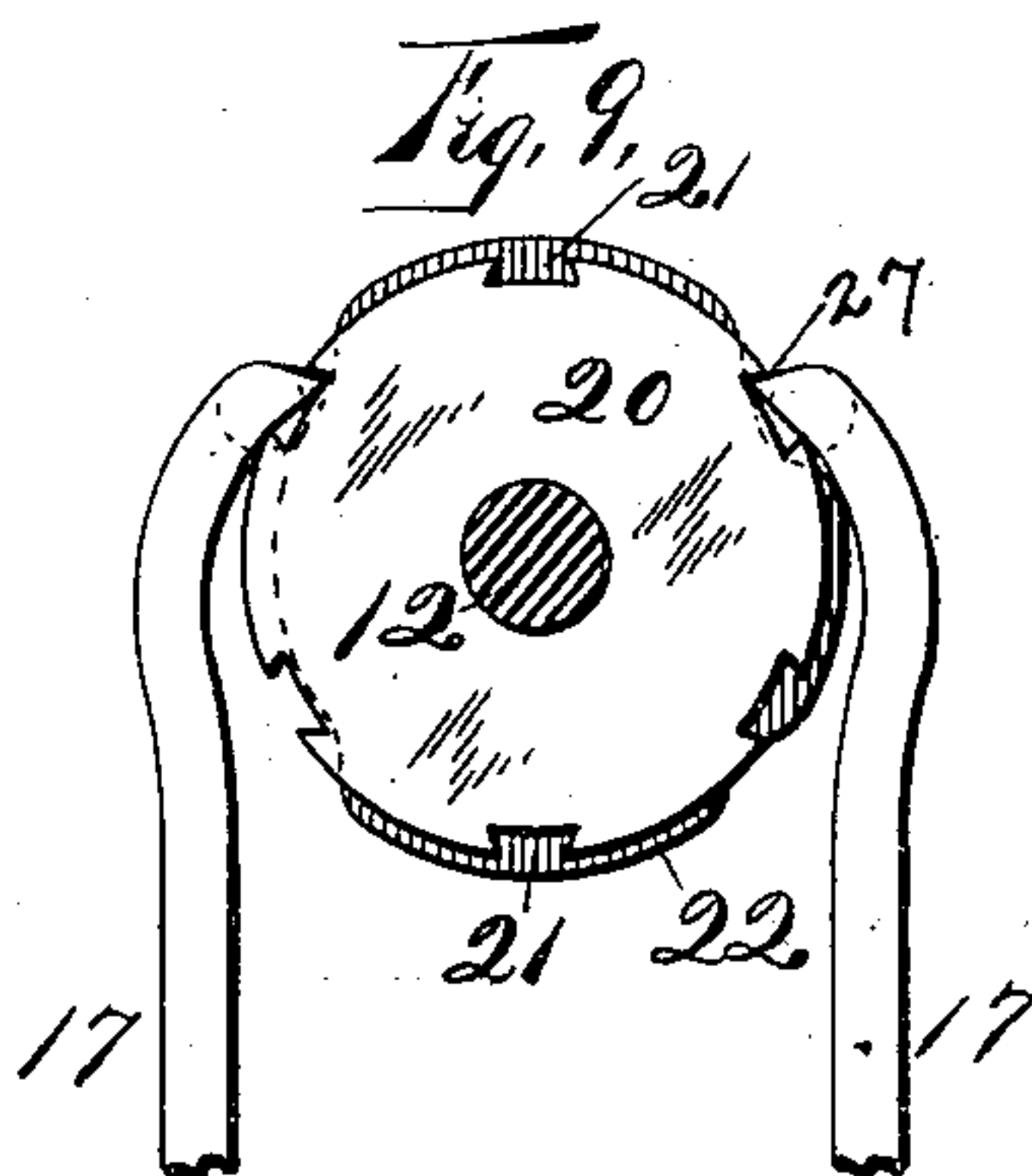
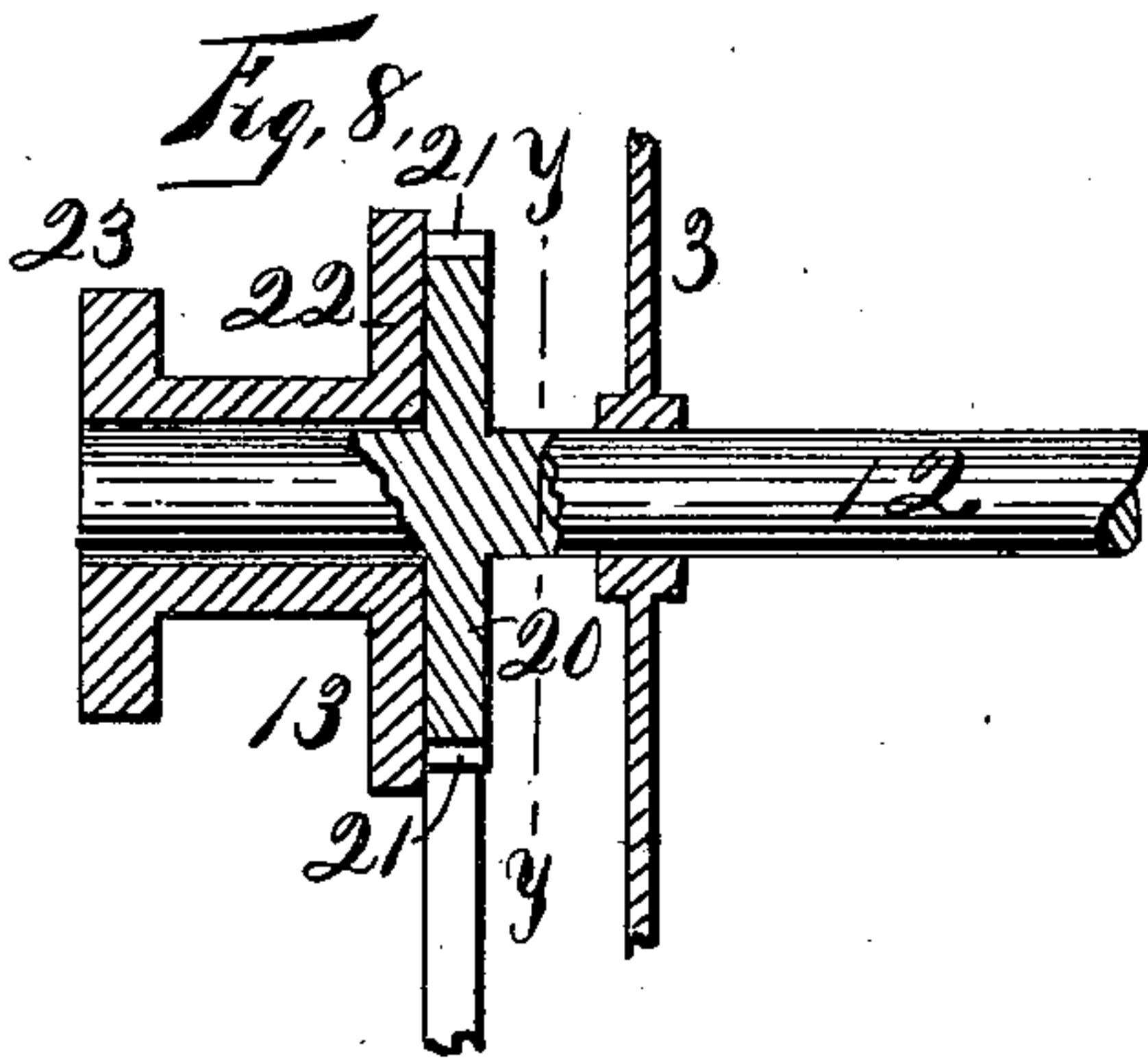
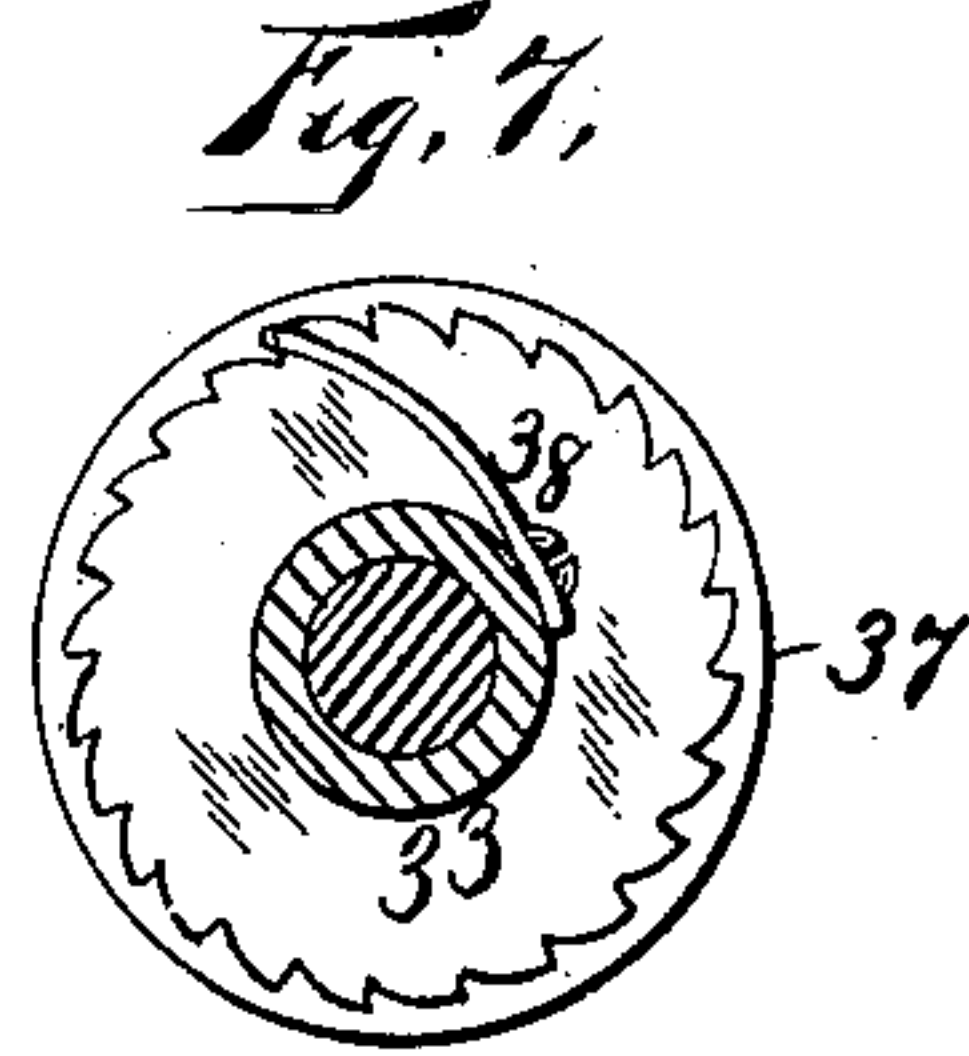
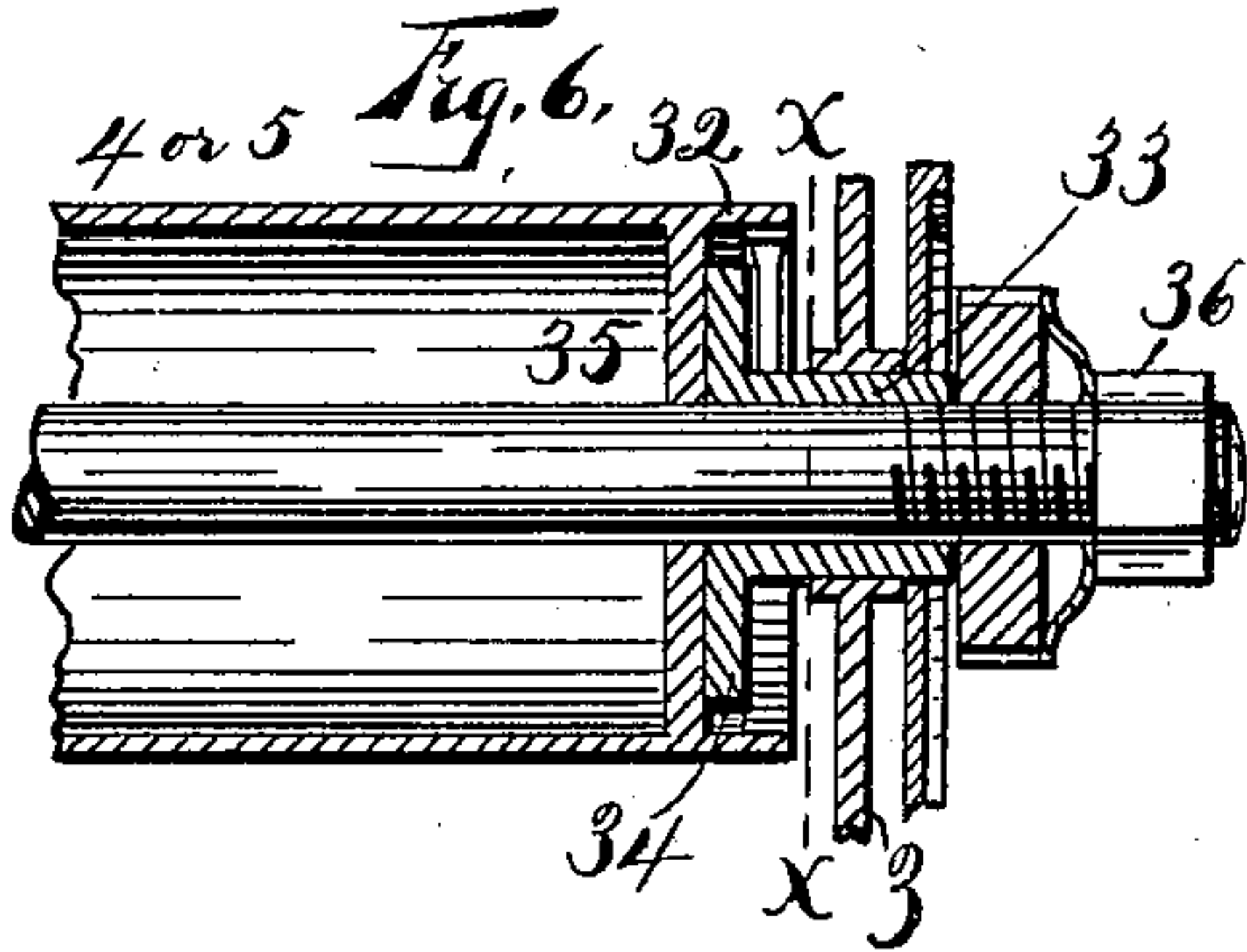
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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

FRANK C. ROTHBALLER, OF SYRACUSE, NEW YORK.

## STREET-INDICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 627,941, dated June 27, 1899.

Application filed December 31, 1898. Serial No. 700,825. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK C. ROTHBALLER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and  
5 useful Improvements in Street-Indicating Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in  
10 devices for successively displaying within the car the names of the streets as the car approaches them.

My object is to construct a device of the class described in which provision is made  
15 for operating the device by making an electrical contact from the trolley-wire as the car approaches the street or may be operated or contact made in any other manner desired; and with these objects in view my invention  
20 consists in the several new and novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to  
25 accompanying drawings, in which—

Figure 1 shows a front view of the machine, the central portion being broken away, so as to show both ends, the base and shell in section, and the drum over which the apron  
30 passes also being broken away, so as to show the location of the magnet. Fig. 2 is a view of one end of the machine, the left end referring to Fig. 1, the shell and base being in section. Fig. 3 is an end view of the opposite end  
35 of the machine, the wheel 4 being shown as broken away. Fig. 4 is an exterior view of the escapement, showing the dogs in position before they begin the work and in the dotted lines in the position which they assume when  
40 they are ready for operation to turn the shaft upon which it is mounted in one direction. Fig. 5 is a similar view showing the parts as they appear when rotating the shaft in the opposite direction. Fig. 6 is a longitudinal  
45 section of one of the spools upon which the apron is wound and showing means for making it fast or loose upon the shaft upon which it is mounted. Fig. 7 is a cross-section on line *x x*, Fig. 6. Fig. 8 is a section of the es-  
50 capement. Fig. 9 is a cross-section on line *y y*, Fig. 8, looking toward the left.

As shown in the accompanying drawings,

it will be seen that my invention consists in winding an apron from one spool to another upon which the names of the streets are placed  
55 in succession, so that they may be seen in some convenient place, and means for winding the apron from one spool to another.

1 is a base, and 2 is a shell inclosing the working parts of my machine, which I briefly  
60 describe as follows:

3 are uprights erected within the shell and upon which are mounted two spools 4 and 5.

In Fig. 2 the apron 6 is shown as wound upon one of the spools in the act of being  
65 wound or reeled onto the other.

7 is a drum having pins 8, adapted to engage with perforations 9 in the edge of the apron, so that when the drum rotates the lugs 8 will engage with the perforations 9 and reel  
70 the apron from one spool to the other. This drum 7 is mounted at one end upon the arm 10 and is provided with a bearing at the center of its opposite end of ordinary construction. This bearing is not shown for the sake  
75 of clearness, as it merely forms a support for this end of the drum. The opposite end of the drum is open, so that the electromagnet 11 may be supported within it and be out of the way. Beneath the spools 4 and 5 and above  
80 the drum 7 is mounted a shaft 12, having an escapement 13 upon one end and a cog 14 upon the opposite end.

To one end of the magnet 11 is hinged the armature 15, as shown in Fig. 1, and secured  
85 to one end of this armature is a lever 16, to one end of which are secured the dogs 17, which dogs are adapted to engage with the escapement 13, and in the upper part of the machine is an arm 18, to which is secured a coil-  
90 spring 19, and at its lower end to the arm 16, so that when the armature 15, by the current, is drawn over to the magnet the arm 16 will take the position shown in dotted lines and draw the dogs down until one of them en-  
95 gages with the teeth of the escapement, when the spring 19 will draw it up to the position as shown in Figs. 1 and 2, thereby rotating the shaft 12.

The escapement comprises two disks mount-  
100 ed upon the shaft 12, the inner one, 20, being secured tight thereon and provided with recesses 21 in its periphery, as shown in Fig. 9, and the other disk, 22, mounted loosely there-



on and having a finger-piece 23, by which it is operated. The periphery of said disk 22 is constructed as shown in Figs. 4 and 5—that is, three of its sides being swelled, as shown at 24, and one side cut away, as shown at 25. The object of this is to allow the arms 26 on the dogs 17 to throw the ends 27 out of engagement with the recesses 21 upon one side and allow it to enter upon the other side, so that the shaft will rotate in one direction. By turning the disk 22 around it will be seen that the dogs on the opposite side will come into engagement with the recesses upon the disk 20 and reverse the movement. Upon the opposite end of the shaft and in engagement with the cog 14 is a cog 7<sup>2</sup>, mounted upon the shaft 28, and 29 is a sleeve operated by said cog in engagement with the drum 7, by which it is caused to rotate.

The spools 4 and 5 are provided on their outer ends with cogs 30 and 31, adapted to engage with the cog 14, so that by the rotation of the cog 14 the spools will be rotated. It will be observed that as the apron is wound from one spool to the other the periphery of each roll will be changed, so that ordinarily the fixed rotation of the spools would not give off and take up the same length of apron each time. To obviate this, the spools 4 and 5 are mounted loosely upon their shafts, as shown in Fig. 6, and constructed with a cup-shaped end or extending flange 32, and 33 is a sleeve having a flange 34, adapted to bear against the end 35 of the spool, and 36 is a nut engaging a thread at the end of the shaft, upon which the spool is mounted, so as to force the sleeve 33 and flange 34 into frictional contact with the end of the spool 35. The inner end of the flange 32 is provided with a ratchet 37, and the sleeve 33 is provided with a spring 38, adapted to engage said ratchet and allow the shaft to turn independently of the roller in one direction and to hold it fast to the shaft when rotating in the opposite direction.

Upon the shaft 12 and inside of the gear 14 I secure an arm 39, adapted to engage a brake 40, so mounted that it will alternately engage the sleeve 33, which in turn engages the rollers 4 and 5, and thus forms a brake for these spools.

It will be observed that as the drum 7 rotates and draws the apron from the spool 4 it is wound onto the spool 5; but when the spool has the apron wound upon it, as shown in Fig. 2, by loosening the nut 36 the spool will be allowed to slip on its axis, so that the same amount of apron will continually pass over the drum 7, where it may be seen through the slotway 41 in the shell. On the other hand, the tightening of the nut 36 on the opposite spool will cause it to take up all of the apron which is reeled over the drum.

When the car is about to start, the finger-piece 23 is turned, so as to cause the apron to be wound from the filled cylinder to the empty one for the purpose of causing the apron to display the names of the streets in regular

order. By turning the finger-piece 23 the cut-away edge of the disk 22 is turned upon its shaft 12, so that that one of the dogs which is to operate the apron is brought into play, and every time the armature is operated this dog will engage with the recess in the disk 20, so as to cause the shaft to revolve. When the end of the route is reached, the conductor has but to turn the finger-piece 23, so that the cut-away edge of the disk 22 will be changed to the opposite side of the shaft, and then the movement of the apron will be reversed.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a street-indicator, two spools, a guiding-drum, an apron which is wrapped around both of the spools and passed around the drum, an electromagnet, electrical connections therefor, and two dogs operated by the armature of the magnet, combined with the disk loosely mounted upon its shaft and provided with recesses in its edge and having its edge cut away upon one of its sides, and a second disk 20 also provided with notches in its edges and with which the dogs engage, suitable wheels for connecting the drum, the disk-shaft, and the shafts upon which the spools are placed, substantially as shown.

2. In a street-indicating device, two spools, an apron having its opposite ends wrapped around the two spools, the guiding-drum around which the apron passes, an electromagnet, an armature therefor, two dogs loosely connected to one end of the armature, and suitable electrical connections for the electromagnet, combined with the shaft 12, the disk 22 loosely placed upon the shafts and provided with notches in its edges and having one side of the edge cut away, the disk 20 rigidly secured to the shaft and provided with notches in its edges with which the dogs engage, a gear placed upon the opposite end of the shaft 12 from the escapement, gears upon the ends of the two spools, and the drum, and which gears mesh with and are operated by the gear upon the end of the shaft 12, the disk 22 being adapted to be partially revolved upon its shaft for the purpose of changing the direction in which the apron is to move, substantially as described.

3. In a street-indicator, the spools 4, 5, loosely placed upon their shafts and provided with an internally-toothed flange at one end, the sleeve 33 provided with the flange 34 adapted to bear against the end of the spool, the nut 36 placed upon the end of the shaft for forcing the sleeve against the end of the spool, the pawl 38 adapted to engage the ratchet-teeth, the shaft 12, the gear placed thereon and engaging with the gears upon the ends of the spools, the arm 39 and the brake 40, substantially as set forth.

4. In a railroad-indicator, an electromagnet provided with a pivoted armature, two dogs loosely mounted upon one end of the armature and which dogs are provided with



both rollers, and sharp points, the disk 22 having the inner side of one of its edges cut away, and with which edge the rollers upon the dogs engage, said disk being placed loosely upon  
5 its shaft, combined with a disk 20, rigidly secured to the shaft and provided with notches in its edges to engage the sharp points of the dogs, the shaft 12, a gear mounted upon one end thereof, the two rollers, the gears mount-

ed upon their ends, and which mesh with the roller upon the end of the shaft, substantially as specified.

In witness whereof I have hereunto set my hand this 9th day of December, 1898.

FRANK C. ROTHBALLER.

Witnesses:

M. A. FRANKLIN,

HOWARD P. DENISON.