

No. 848,483.

PATENTED MAR. 26, 1907.

A. C. McEWEN.
REGISTERING DEVICE.
APPLICATION FILED OCT. 19, 1905.

2 SHEETS—SHEET 1.

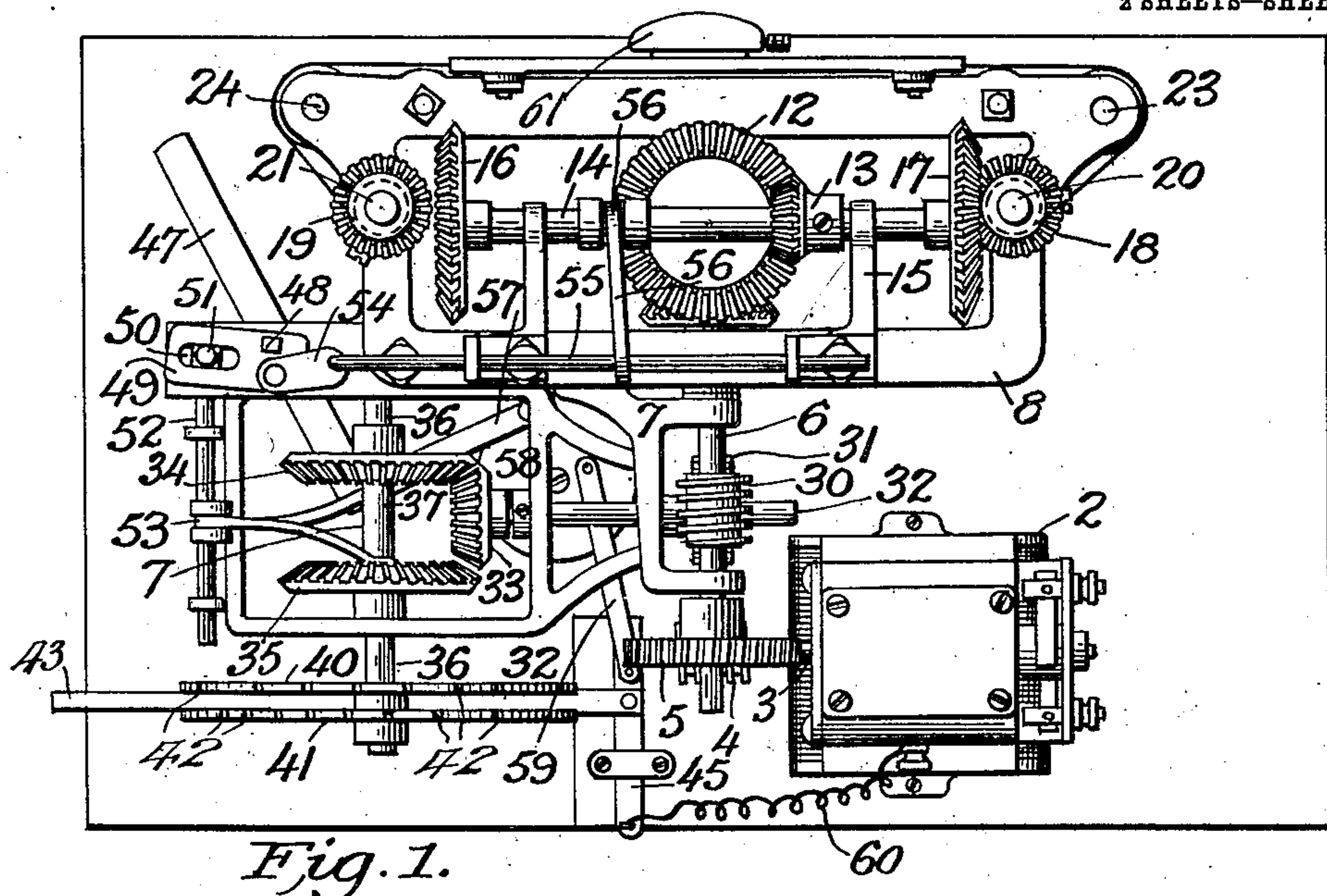


Fig. 1.

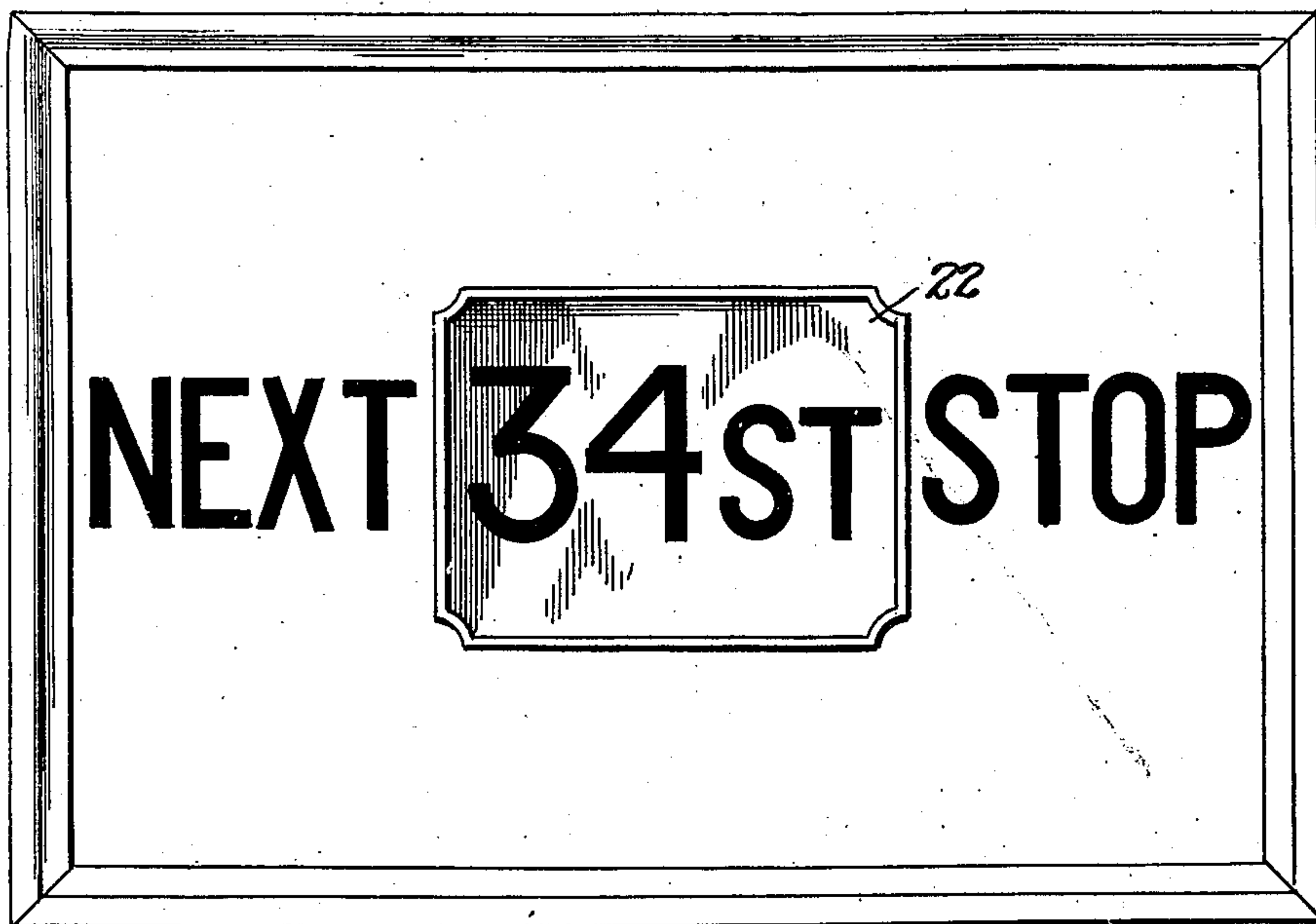


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

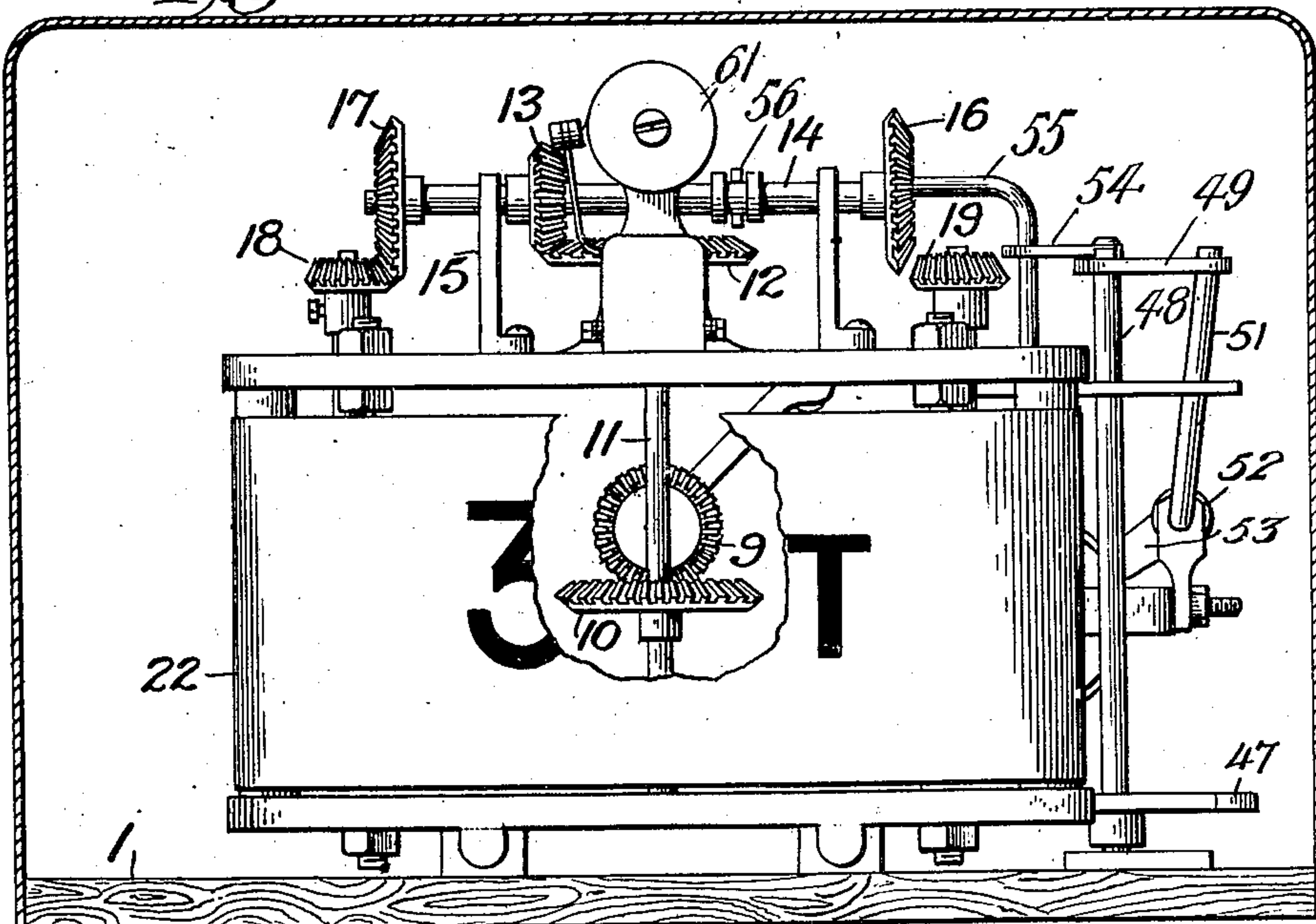
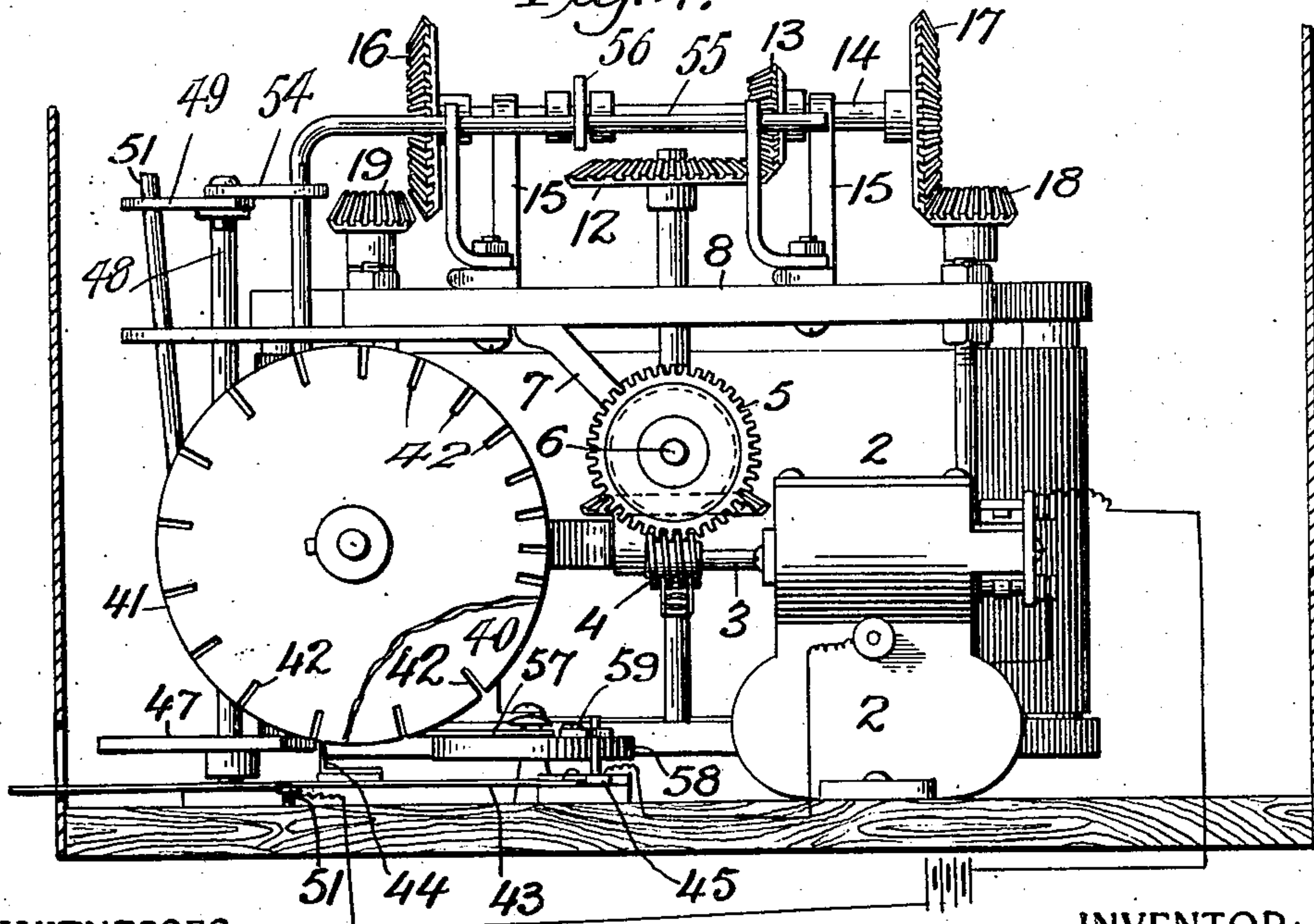


Fig. 4.



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UNITED STATES PATENT OFFICE.

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REGISTERING DEVICE.

No. 848,483.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed October 19, 1905. Serial No. 283,519.

To all whom it may concern:

Be it known that I, ADDISON C. McEWEN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Registering Devices, of which the following is a specification.

This invention relates to registering devices such as are intended for use upon railroad or street cars to indicate the name of the next station at which the car will stop.

The objects of the invention are to improve and simplify the construction of such devices; furthermore, to increase their efficiency in operation and to decrease the expense attending their manufacture.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed as a practical embodiment thereof.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a registering device constructed in accordance with the invention. Fig. 2 is a front elevation thereof, the bell being omitted. Fig. 3 is a front elevation with the front end of the casing removed. Fig. 4 is a rear elevation with the rear end of the casing removed, the bell being omitted.

Like reference-numerals indicate corresponding parts in the different figures of the drawings.

The reference-numeral 1 indicates a base or support on which is mounted an electric motor 2, having an armature or operating-shaft 3. The electric motor 2 may be of any suitable size, form, shape, and construction and may be operated from any convenient source of power. Mounted upon the operating-shaft 3 is a worm 4, which is in mesh with a worm-wheel 5, mounted upon a shaft 6, journaled on a suitable support or bracket 7, secured to the frame 8 of the registering device. Mounted upon the forward end of the shaft 6 is a beveled gear 9, which is in mesh with a bevel-gear 10, mounted upon a vertical shaft 11. The upper end of the vertical shaft 11 is provided with a bevel-gear 12, which is constantly in mesh with a bevel-gear 13, splined upon a horizontal shaft 14, which is mounted for sliding movement in

brackets 15. The sliding shaft 14 is provided on the two ends thereof with bevel-gears 16 and 17. Mounted adjacent to the bevel-wheels 16 and 17 are similar bevel-wheels 18 and 19, mounted upon the upper ends of winding-rollers 20 and 21. When the shaft 14 is moved in one direction, the bevel-wheel 17 is thrown into mesh with the bevel-wheel 18, the bevel-wheel 16 being simultaneously moved out of mesh with the bevel-wheel 19, so that the power of the motor 2 is transmitted, through the gearing described, to the winding-roll 20, and when the shaft 14 is moved in the opposite direction the bevel-wheel 16 is thrown into mesh with the bevel-wheel 19, the bevel-wheel 17 being simultaneously moved out of mesh with the bevel-wheel 18, so that the power of the motor 2 is transmitted to the winding-roll 21. Wound at its opposite ends upon the rolls 20 and 21 is a movable belt 22, which is adapted to contain the names of the stations which the train will pass on its journey. It will be understood that if the improved registering device is used for some other purpose than indicating the stations at which a train will stop the belt 22 will be provided with other suitable indicating matter. After leaving the winding-rolls 20 and 21 the belt 22 passes forward around suitable idle rolls 23 24, journaled in the frame 8, and is exposed to view through a suitable opening in the forward end of the casing 25, which incloses the mechanism of the device. It will be understood that when the power of the motor 2 is transmitted to the winding-roll 20 the belt 22 is drawn in one direction, and when said power is transmitted in the manner described to the roll 21 the belt 22 is drawn in the opposite direction.

When the train passes one station and the conductor strikes or manipulates a suitable lever in the manner hereinafter described to cause the motor 2 to move the belt 22 forward, so as to expose the name of the next station at which the train will stop, it is necessary that a suitable step-by-step device be brought into action, so as to cause the motor 2 to stop as soon as the belt 22 has been moved a sufficient distance to bring into view the name of the next station. While any suitable step-by-step device may be employed for this purpose, it is preferred that the desired result be accomplished by the

use of the mechanism hereinafter described. Mounted upon the shaft 6 is a worm 30, which is in mesh with a worm-wheel 31, mounted upon a shaft 32. The shaft 32 is provided with a bevel-wheel 33, which is adapted to intermesh with either one or the other of a pair of bevel-wheels 34 35, mounted upon a shaft 36. The bevel-gears 34 and 35 are rigidly connected with each other by a sleeve 37 and are adapted to be moved longitudinally upon the shaft 36, as hereinafter described. The sleeve 37 is suitably splined upon the shaft 36. Mounted on the rear end of the shaft 36 is a pair of disks 40 41, which are formed in their peripheries with radial slots 42. The slots on one of the disks preferably are located at gradually-increasing distances apart from right to left, and the slots on the other disk are arranged at gradually-increasing distances apart from left to right for a purpose which will hereinafter be made apparent.

Arranged below the disks 40 and 41 is a spring-arm 43, which is provided with an upwardly-extending catch 44, adapted to fit into one of the slots 42 of one of the disks 40 or 41. The spring-arm 43 is mounted upon a sliding member 45, which is adapted to be moved longitudinally in order to cause the catch 44 to bear against the periphery of one or the other of the disks 40 and 41, but not against both.

When a train has reached the end of its trip and is about to return to its starting-point, it is necessary that the shaft 14, containing the gear-wheels 16 and 17, the sleeve 37, containing the gear-wheels 34 and 35, and the sliding member 45, containing the spring member 43, be simultaneously shifted. This result preferably is accomplished by means of an arm 47, which is pivotally mounted upon a shaft 48, having a square upper end, on which is fitted a plate 49, formed with a slot 50, into which extends an upright projection 51 upon a longitudinally-slidable shaft 52, to which is secured in any suitable manner a forked member 53, which fits between the beveled wheels 34 and 35 and is adapted to move said wheels in one direction or the other when the shaft 52 is moved longitudinally by turning the plate 49 through the medium of the arm 47. Pivotaly connected with the plate 49 is a link 54, to which is connected one end of a slidable shaft 55, having an arm 56, which engages the shaft 14 and is adapted to move the same longitudinally when the shaft 55 is moved longitudinally. Pivotaly connected with the inner end of the arm 47 is a link 57, which is connected with the rotary disk 58. The disk 58 is eccentrically connected, by means of a link 59, with the sliding member 45. It will be apparent that by moving the arm 47 so as to rotate the shaft 48 the shafts 52 and 55 and the member 45 are simultaneously operated.

One of the wires 60 of the electric motor 2 preferably is connected with the sliding member 45, so as to include in its circuit the said member 45 and the spring member 43.

Constructed as above described, the improved device is used in the following manner: when the train starts, the conductor holds down the spring member 43, thus forcing said member into contact with a screw 51, which is in circuit with the wire 60. In this way the circuit of the electric motor is closed, so as to cause said motor to be operated. Through the gearing described the motor causes one or the other of the rolls 20 or 21 to be rotated to wind up the belt 22. It will be understood that one of the disks 40 or 41 is in engagement with the catch 44 on the spring member 43. Said disk therefore holds the spring member 43 in contact with the screw 51 until the belt 22 has been moved the proper distance, after which the spring member 43 causes the catch 44 to spring up into one of the slots 42 and break the circuit of the motor. As soon as the next station has been passed the operation is repeated by the conductor holding down the spring member 43 until the motor has been started, after which the disk 40 or 41, as the case may be, holds said spring member in position to close the circuit for a sufficient length of time, as previously described. The device shown in the drawings is arranged so that the winding-roll 20 will be operated by the motor 2. It will be understood that when the motor is first started the winding-roll 20 is small in diameter, for which reason it will be necessary to rotate said roll a greater number of times in order to move the belt 22—say three feet—than it will be necessary to rotate said roll when it has become larger in diameter, through the material wound thereon, in order to move the belt the same distance of three feet. Therefore it is necessary that the disks 41 and 42 be formed with slots arranged at such distances apart that when the motor is started at the beginning of a trip it will operate for a longer period of time than is necessary toward the end of the trip. Furthermore, it will be understood that when the trip has been completed the belt 22 is entirely wound upon the roll 20, for which reason said roll is large in diameter, while the empty roll is small in diameter. When the return trip is begun, the arm 47 is moved so as to shift the gear-wheel 16 into engagement with the gear-wheel 19, the gear-wheel 35 into engagement with the gear-wheel 33, and the spring member 43 into engagement with the other disk 40 or 41, as the case may be, so that the roll 21 will be operated a greater number of times toward the beginning of the return trip than toward the end thereof. If desired, an alarm, as a bell 61, may be placed in circuit to be energized during contact of the spring member 43 with the screw 51, whereby to audibly

indicate the change of the station-indicating belt.

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

5 1. A registering device comprising a motor, a pair of winding-rolls, gearing connecting said motor with said winding-rolls, means for moving said gearing into engagement with one or the other of said winding-rolls, a worm-
10 shaft connected with said gearing and having a bevel-wheel on one end thereof, a pair of bevel-wheels adapted to be thrown into and out of engagement with the bevel-wheel on
15 said worm-shaft, a pair of slotted disks operated by the pair of bevel-wheels, a sliding member having a spring-catch adapted to contact with the periphery of one or the other of the slotted disks, and means for simultaneously shifting the pair of bevel-wheels, the

sliding member, and gearing for rotating the 20 winding-rolls.

2. A registering device comprising a motor, a pair of winding-rolls operated thereby, a belt connecting said rolls, a manually-controlled device included in the motor-circuit, 25 and a disk operated by the motor and carrying a series of notches to receive said controlling device, said notches being arranged peripherally of the disk to gradually decrease the duration of each successive operation of 30 the motor.

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

ADDISON C. McEWEN.

Witnesses:

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