

R. A. HATHHORNE.  
STATION INDICATOR.  
APPLICATION FILED MAY 11, 1908.

966,914.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 1.

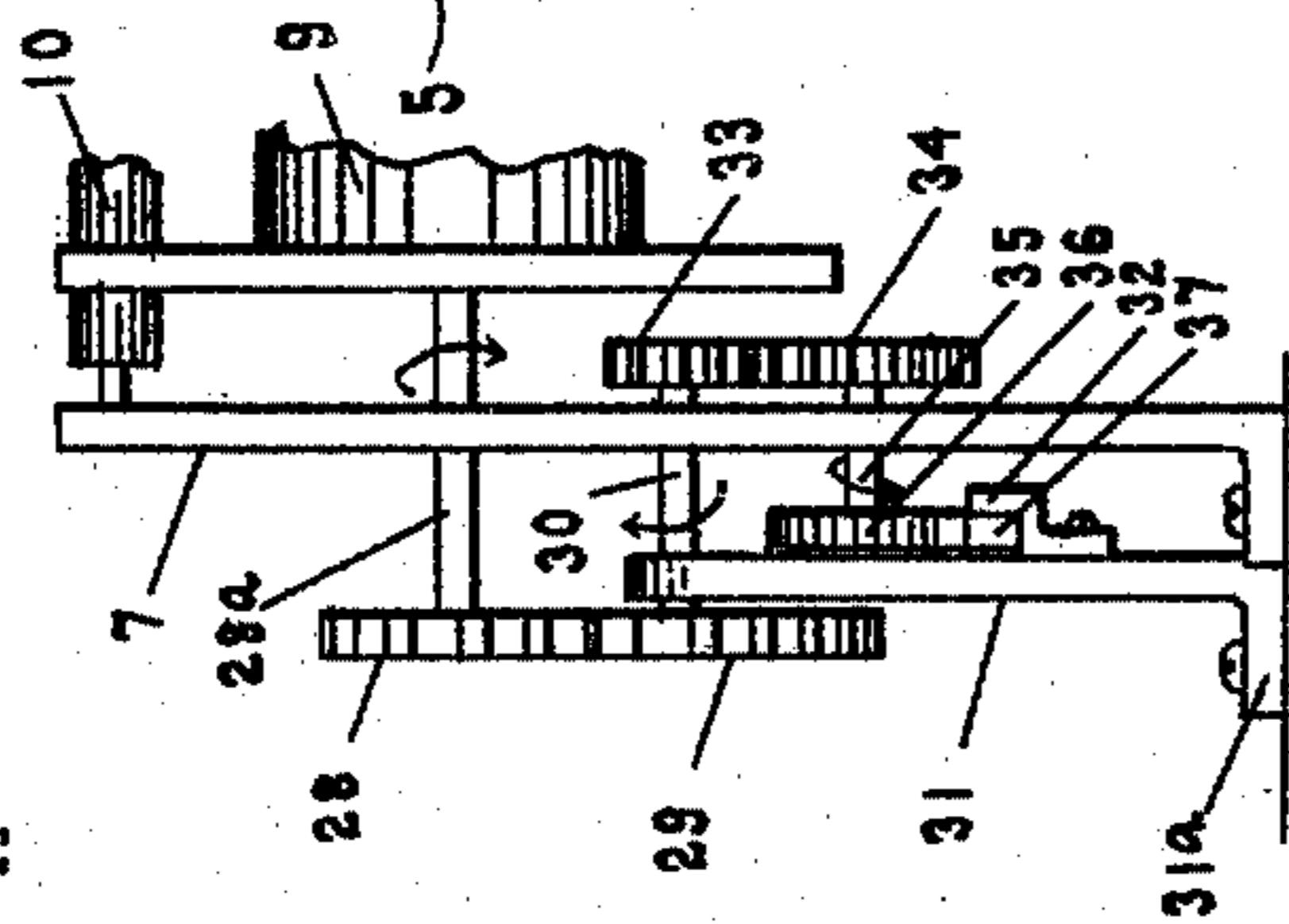
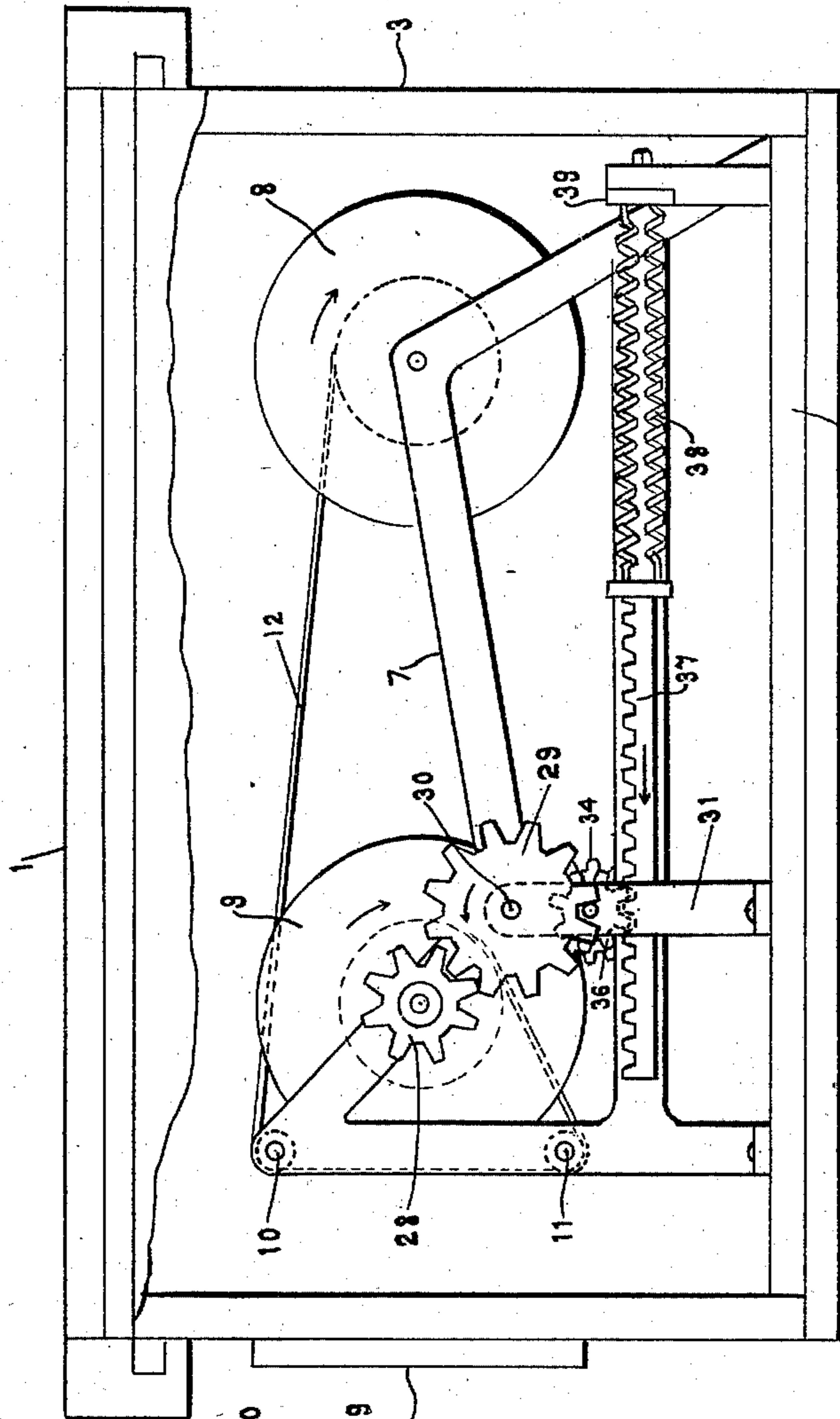
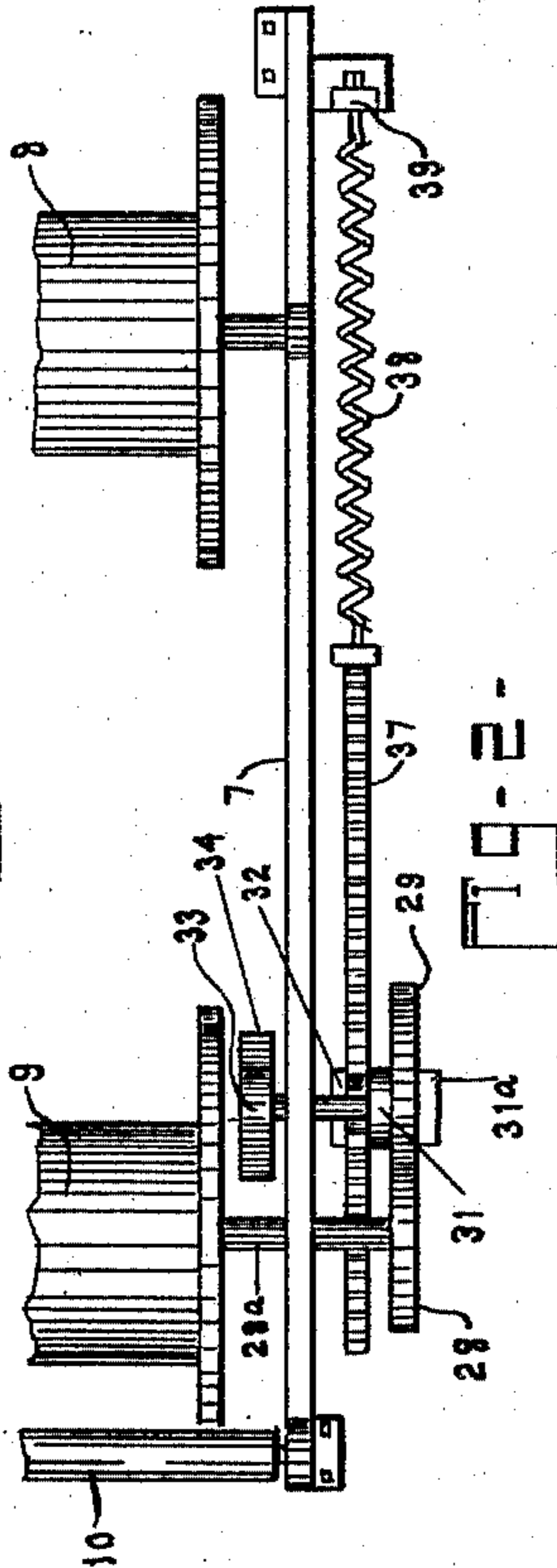


Fig. 1-

Fig. 2a-



WITNESSES:

C. D. Scott  
J. D. Murray

INVENTOR

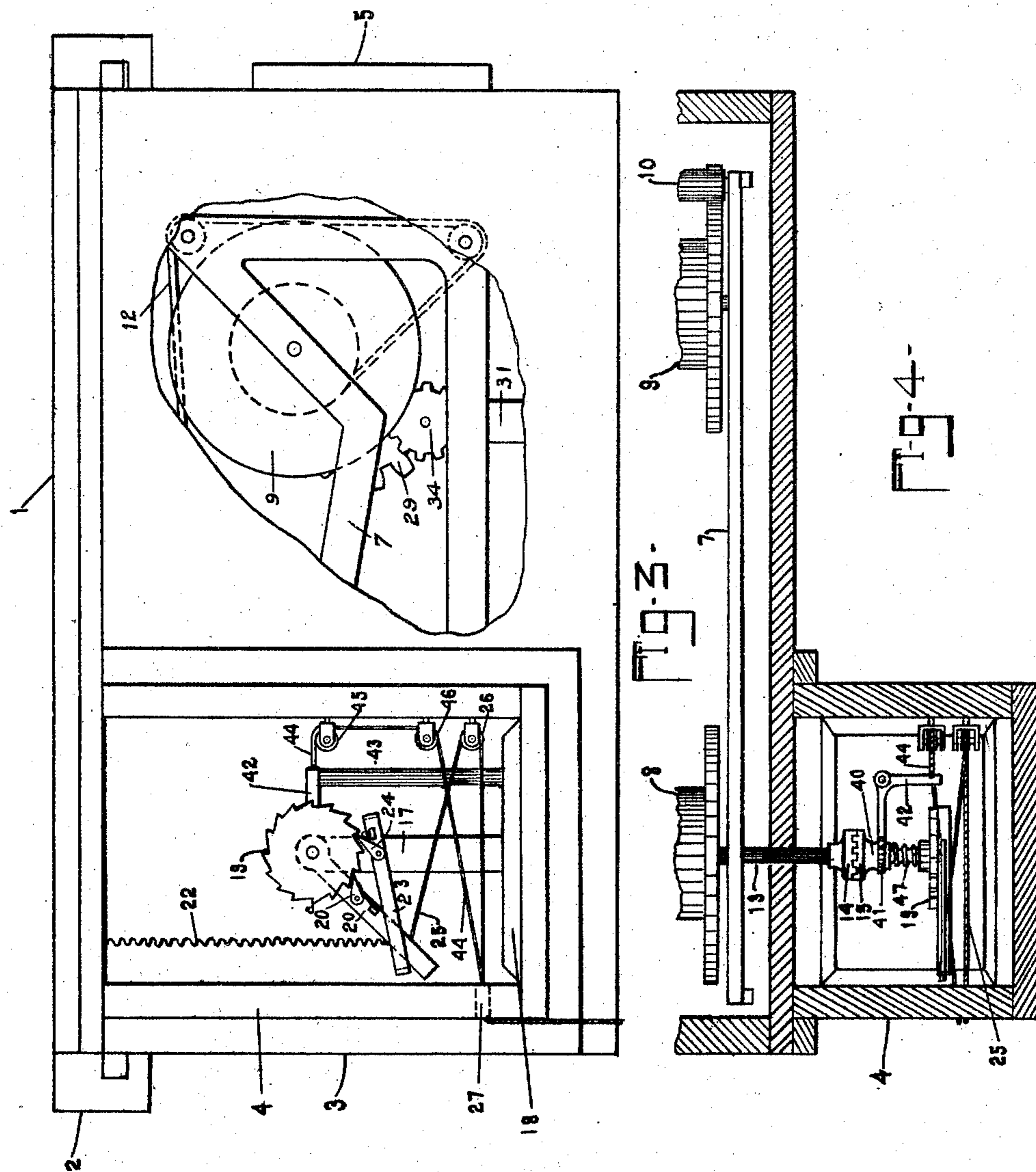
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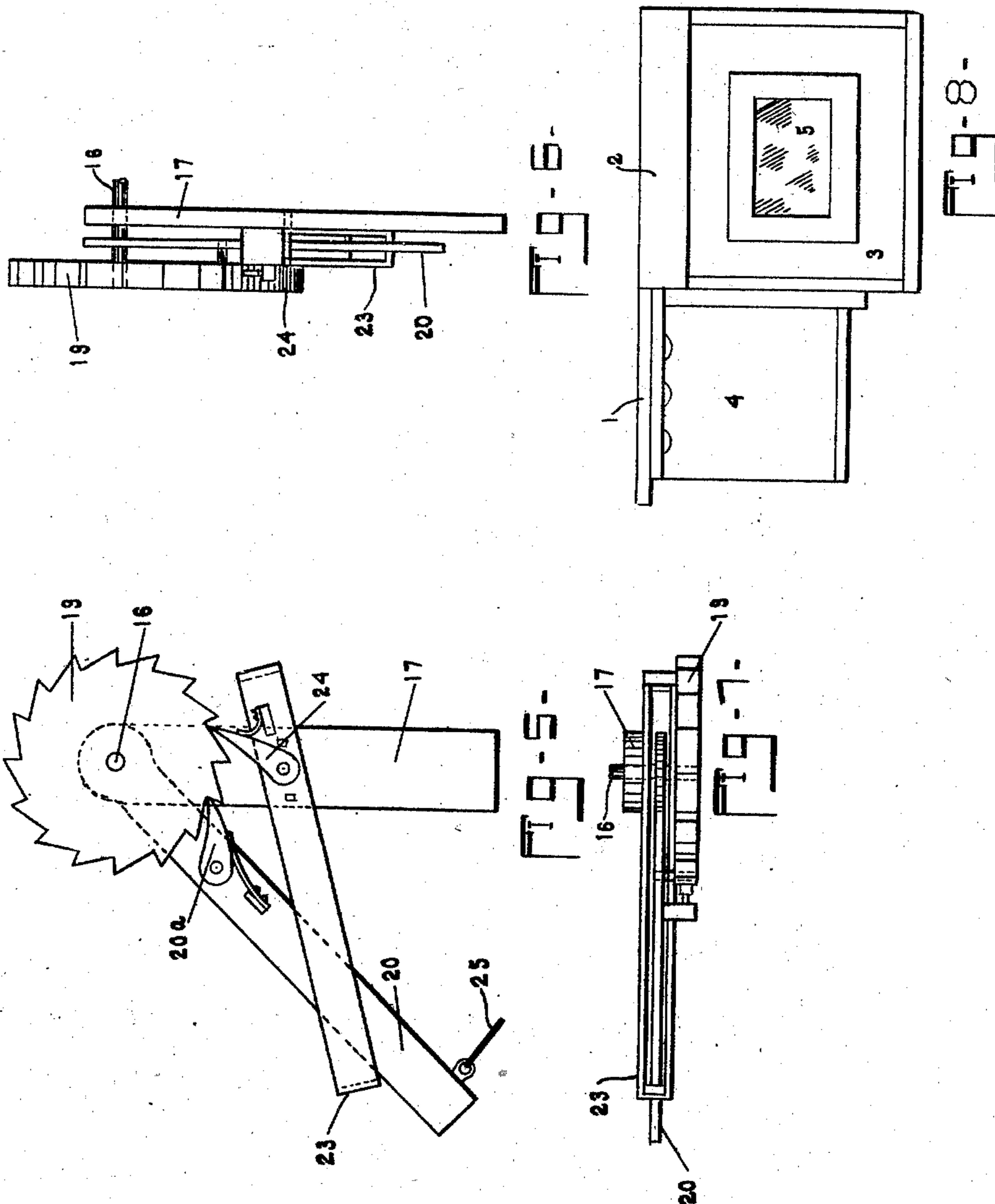
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# UNITED STATES PATENT OFFICE.

ROBERT A. HATHHORNE, OF HOUSTON, TEXAS.

## STATION-INDICATOR.

966,914.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed May 11, 1908. Serial No. 432,209.

*To all whom it may concern:*

Be it known that I, ROBERT A. HATHHORNE, citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Station-Indicators, of which the following is a specification.

My invention relates to new and useful improvements in station indicators.

The object of the invention is to provide an indicating device comprising a web and means for moving the same across an opening to exhibit intermittently the names of stations or streets, and more particularly to provide means whereby the web is manually operated in one direction and mechanically operated in the opposite direction.

With the above and other objects in view, my invention has relation to certain novel features of construction and operation an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is an elevation of one side of the station indicator, a portion of the casing being broken away to show the mechanism. Fig. 2 is a partial top view of the mechanism the portion shown being that seen in Fig. 1. Fig. 2<sup>a</sup> is an end view of that portion of the indicator mechanism, illustrated by Figs. 1 and 2. These three views serve mainly to make clear the spring operated mechanism whereby the indicator is driven on the return trip of the car in which it is installed. Fig. 3 is an elevation of the opposite side of the indicator to that shown in Fig. 1. The side wall of the auxiliary casing, which contains the mechanism for manually operating the indicator on the out trip of the car, is omitted to show said mechanism and a portion of the main casing is broken away, showing one of the spools and the frame. Fig. 4 is a horizontal sectional view of the parts seen in Fig. 3 the mechanism in the auxiliary casing, and a portion of that in the main casing being shown. Fig. 5 is a detail side view of a pawl and ratchet mechanism positioned in the auxiliary casing, and serving to transform a manually produced lever movement to a rotary motion of one of the spool spindles. Figs. 6 and 7 are side and top views

respectively of the same mechanism. Fig. 8 is a front view of the indicator inclosed in a casing showing the window through which the street names upon the web may be read.

In the drawings the numeral 1 designates a supporting board which is suitably secured to the ceiling or other suitable part of the car or vehicle. Along a portion of its side it is provided with grooved hangers 2 slidably receiving a casing 3, which abuts a smaller casing 4 permanently secured to the supporting board. At its forward end the casing 3 is provided with a glass covered exhibiting opening 5 through which the names of the streets or stations are exhibited.

In the casing 3, a base board 6 is secured to the bottom thereof and securely supports side frame bars 7 between which spools 8 and 9 are mounted to revolve. The forward ends of the frame bars support horizontal rollers 10 and 11, one above and the other below the opening 5. A web 12 on which the names of the streets or stations are transversely placed has one end secured to the rearward spool 8. The web is passed forward above the spool 9, over the roller 10, down and under the roller 11 to the spool 9 to which it is attached. In this way the web is caused to travel vertically across the opening 5. This web is first wound about the spool 9 and wound upon the spool 8 as it is intermittently moved to display or exhibit the names.

In order to wind the web upon the spool 8 the same is provided with a laterally extending shaft 13 projecting into the casing 4 and carrying on its outer end, a clutch gear 14. This clutch gear is adapted to be engaged by a clutch gear 15 slidably mounted on, and adapted to turn with a shaft 16 supported in a standard 17 mounted on a base board 18 secured in the casing 4. This shaft carries on its outer end, a ratchet wheel 19 and a pawl lever 20 carrying a suitable spring pressed pawl 20<sup>a</sup> engaging the said ratchet wheel, the outer end of the lever having connection with the lower end of a coiled spring 22 secured to the top of the casing. The pawl lever swings in a guard frame 23 secured to the standard 17, and serving to limit the upward motion of the lever produced by the spring 22. A

spring pressed pawl 24 secured to the guard frame 23 engages the teeth of the ratchet to hold it against rearward rotation as the pawl lever 20 is swung up to take a fresh hold upon the teeth of the wheel.

A flexible connection or cord 25 is secured to the lower end of the lever 20 and passed over a pulley 26 secured to the casing, and thence passes out of the casing through an aperture 27, where it is suspended within reach of the conductor.

It is obvious that when the cord 25 is pulled down by suitable means, the lever 20 is swung downward against the tension of the spring 22, revolving the ratchet wheel 19 and turning the shaft 16. When the cord 25 is released, the spring 22 returns the pawl lever to its normal position, the pawl lever 20<sup>a</sup> slipping over the teeth of the ratchet wheel which is held against backward rotation by the spring pressed pawl 24. Motion thus imparted to the shaft 16 is transmitted to the shaft 13 by the clutch gears 14 and 15. Each time the ratchet wheel 19 is rotated, the spool 8 will be rotated winding the web 12 thereon. The web is thus intermittently moved so as to bring each time, the name of the succeeding street or station into view at the opening 5. This operation is carried out until the end of the "run" has been reached when the web will have been wound upon the spool 8.

In order to store up power to rewind the web upon the spool 9 and exhibit the names of the streets or stations on the return "run" in their proper order, I have provided a spring motor. In carrying out this construction a pinion 28 is mounted upon the spindle 28<sup>a</sup> of the spool 9 and meshes with a gear 29 mounted on a shaft 30 supported in the side frame 7 and upon a standard 31. The shaft 30 projects through the frame and carries a pinion 33 which meshes with a gear 34 mounted on a shaft 35 passing through the side frame 7 and carrying a pinion 36 which meshes with a rack-bar 37 adapted to travel horizontally in the support 32 attached to the side of the standard 31. This rack-bar is connected at its rear end to a pair of horizontally disposed coiled springs 38 connected at their rear end to a post 39. As the spool 9 is unwound it is revolved from left to right with relation to Fig. 4, revolving the gears and pinions in the direction of the arrows which causes the rack-bar 37 to be moved forward and the springs extended. This extension of the springs is carried out during the intermittent movement of the spool 8, and when the clutch gears are separated, have sufficient tension to draw the rack rearward and revolve the pinions and gears in the opposite direction as well as the spools and wind the web on to the spool 9 from the spool 8.

It is obvious that it is desirable to inter-

mittently move the web as it is rewound and in order to do this I provide means for sliding the clutch gear 15 out of engagement with the clutch gear 14 which permits the springs to move the rack-bar and operate the spool, it being understood that the parts remain stationary so long as the clutch gears are in engagement, for the reason that the ratchet wheel 19 is held against backward movement by the spring pressed pawl 23.

In order to disengage the clutch gears 14 and 15, a grooved sleeve 40 is provided to the last named gear, and the groove of said sleeve is engaged by a yoke 41 carried at the extremity of one of the arms of a bell crank lever 42. This lever is pivotally mounted in a horizontal position upon the top of a rigid upright post 43. A cord 44, which is attached to the other arm of the lever, after passing over pulleys 45 and 46 passes out of the casing and is suspended within reach of the conductor. By pulling this cord at the proper intervals upon the return trip, the clutch gears will be disengaged, and the web will be set in motion by the action of the springs 38. The clutch gears are normally held in engagement by the action of a coiled spring 47 upon the shaft 16. The disconnection of the clutch gears is timed to permit the necessary travel of the web, as further rotation and movement will be prevented when tension upon the cord 44 is relieved and the clutch gears are made to mesh by the spring 47.

I am aware that changes may be made in the arrangement and proportion of parts and details of the herein described indicator, without sacrificing the advantages or departing from the spirit thereof, and I therefore reserve the right to make such changes and alterations in said device as fairly come within the scope of the following claims.

What I claim, is:

1. In an indicating device, the combination with a casing having an exhibiting opening, of spools rotatably mounted therein, a web connected to said spools and winding thereon adapted to intermittently move before said exhibiting opening, a pair of clutch gears communicating rotation to one of said spools, means whereby said gears may be thrown out of mesh, a ratchet wheel and pawl mechanism whereby rotation is communicated to the driving members of the clutch gears, and an elongated coiled spring adapted to be placed under tension by the force applied to the driven spool.

2. In an indicating device, the combination with a casing provided with an exhibiting opening, of a pair of spools rotatably mounted therein, a web attached to said spools and winding thereupon, guide rollers conducting the web in front of the exhibiting opening, a pair of clutch gears adapted to communicate rotation to one of said

spools, means whereby said gears may be  
thrown out of mesh, a pinion geared to the  
driving member of the clutch gears, a slid-  
able rack meshing with the pinion, and elon-  
5 gated coiled springs having one of their ex-  
tremities attached to said rack and the other  
fixed.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

ROBERT A. HATHHORNE.

Witnesses:

WM. A. CATHEY,  
A. SCHLAFT.