

(No Model.)

3 Sheets—Sheet 1.

J. P. CASSELMAN.
TURN TABLE.

No. 583,843.

Patented June 1, 1897.

Fig. 1.

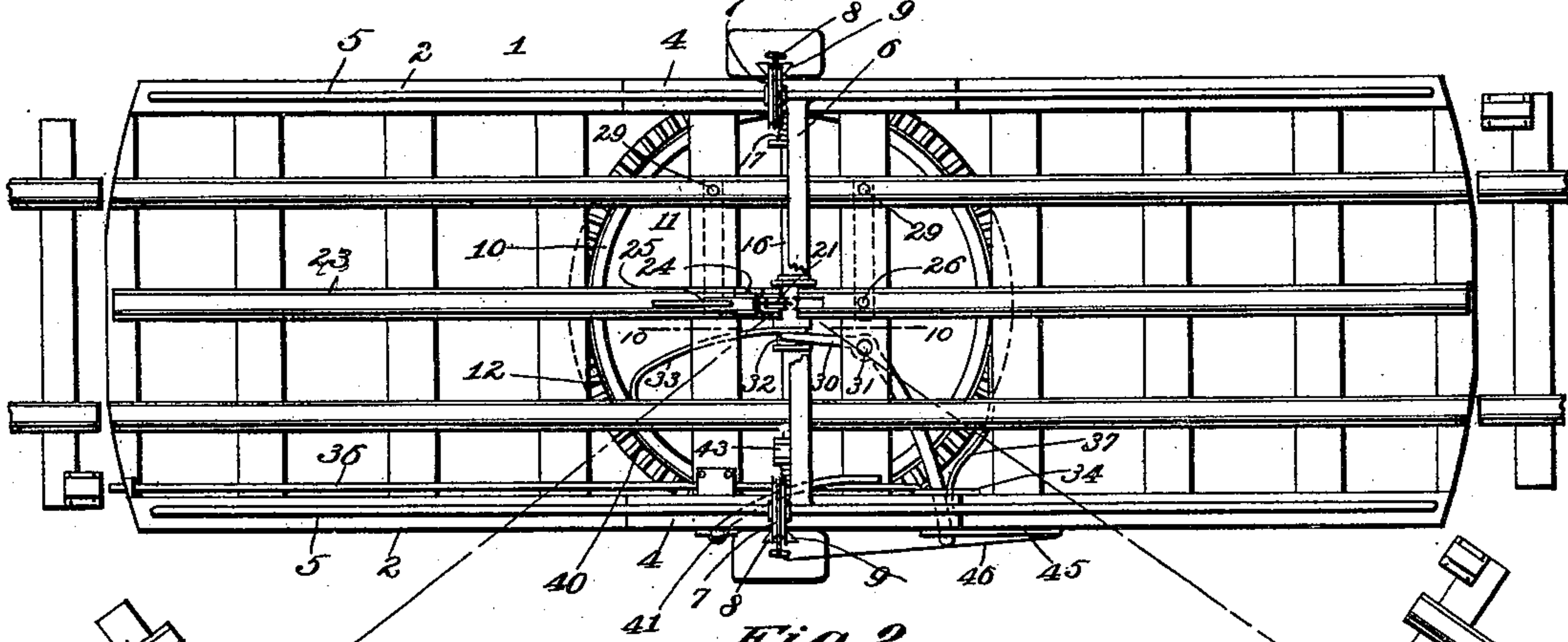


Fig. 2.

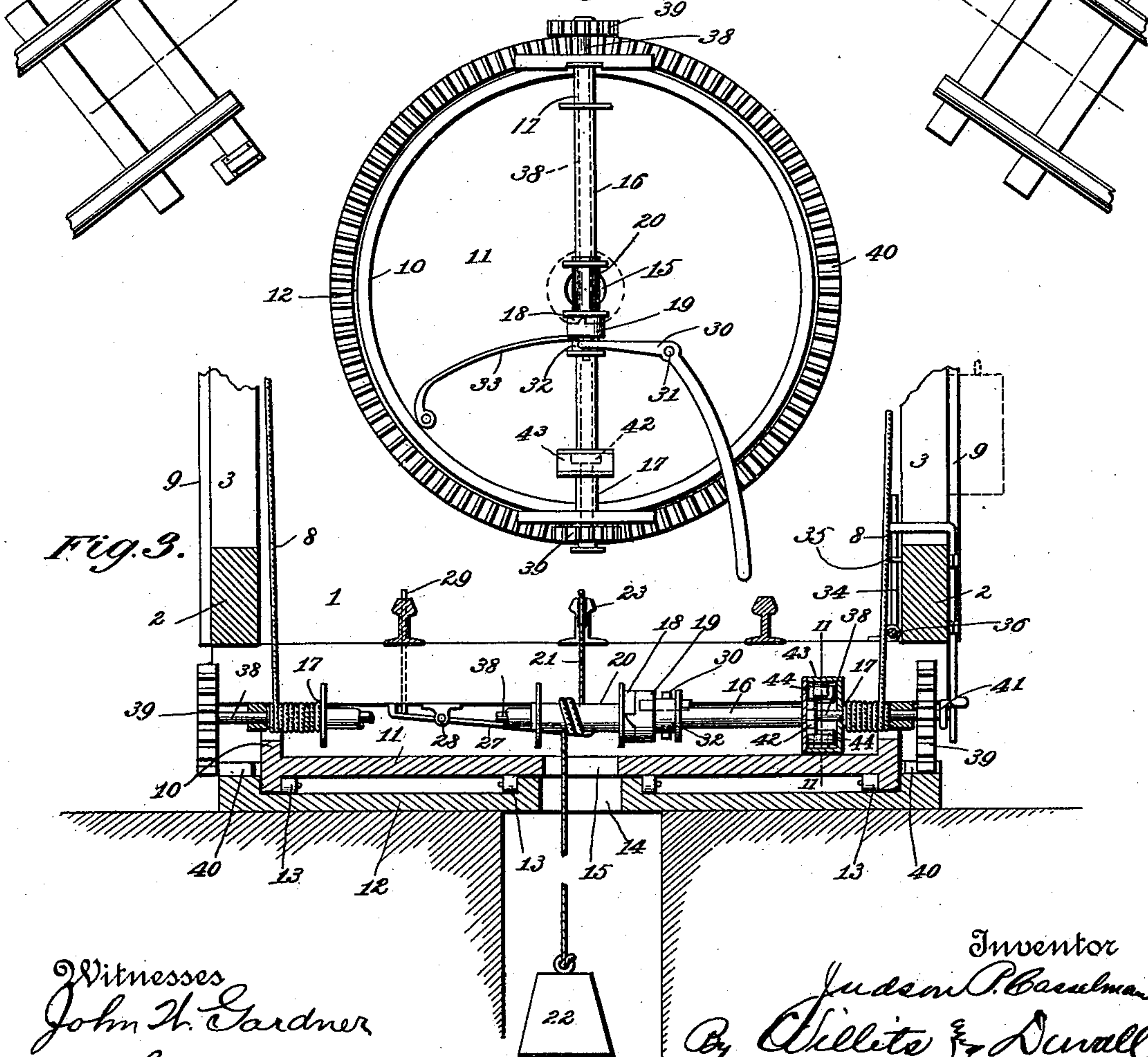
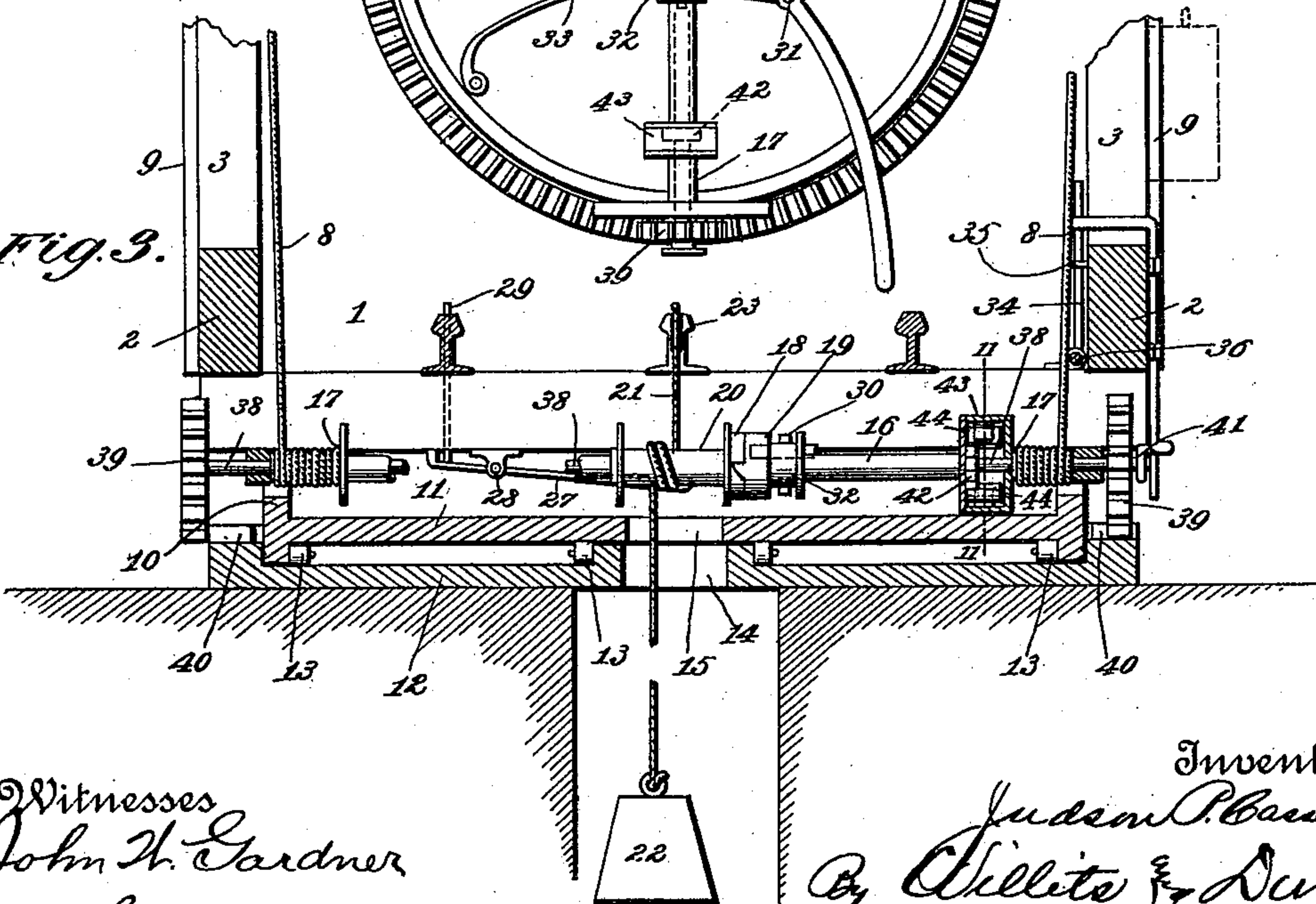


Fig. 3.



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Fig. 5.

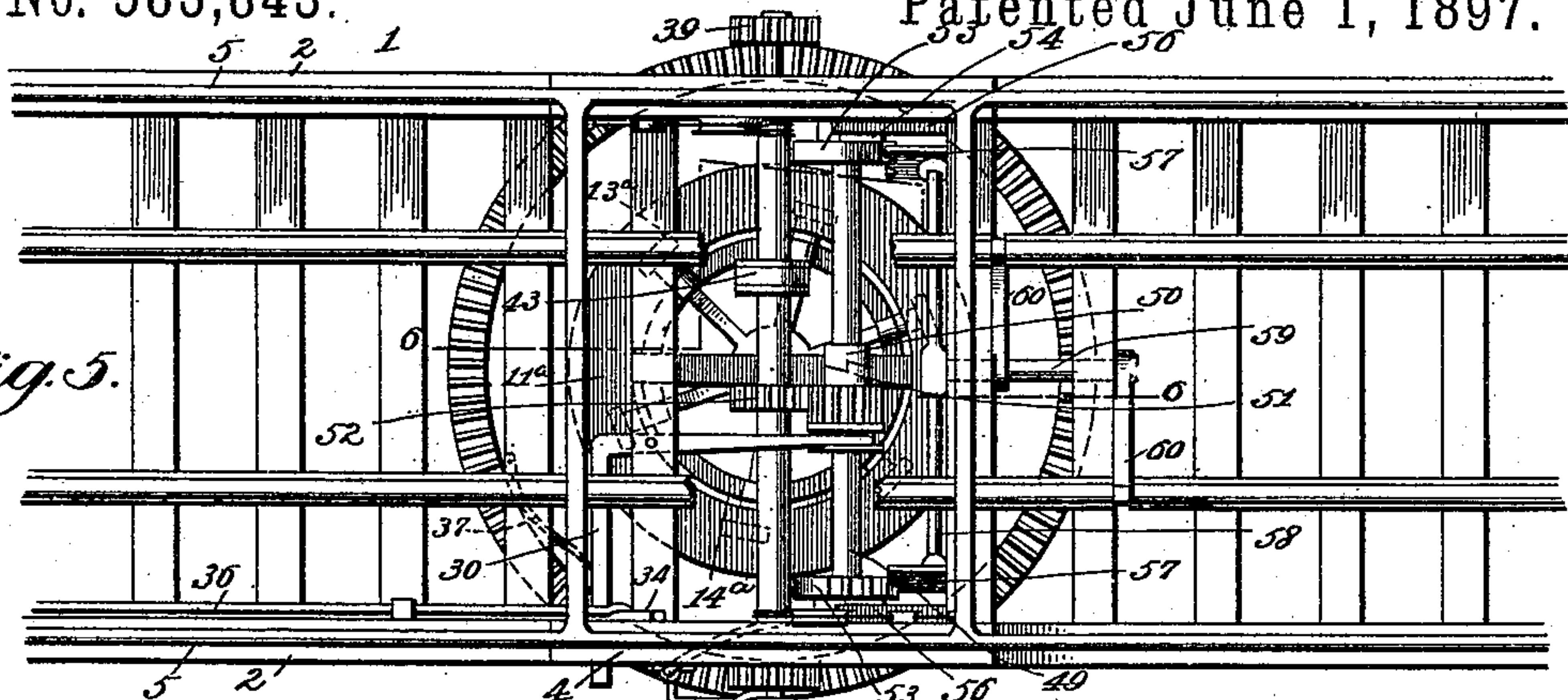


Fig. 6.

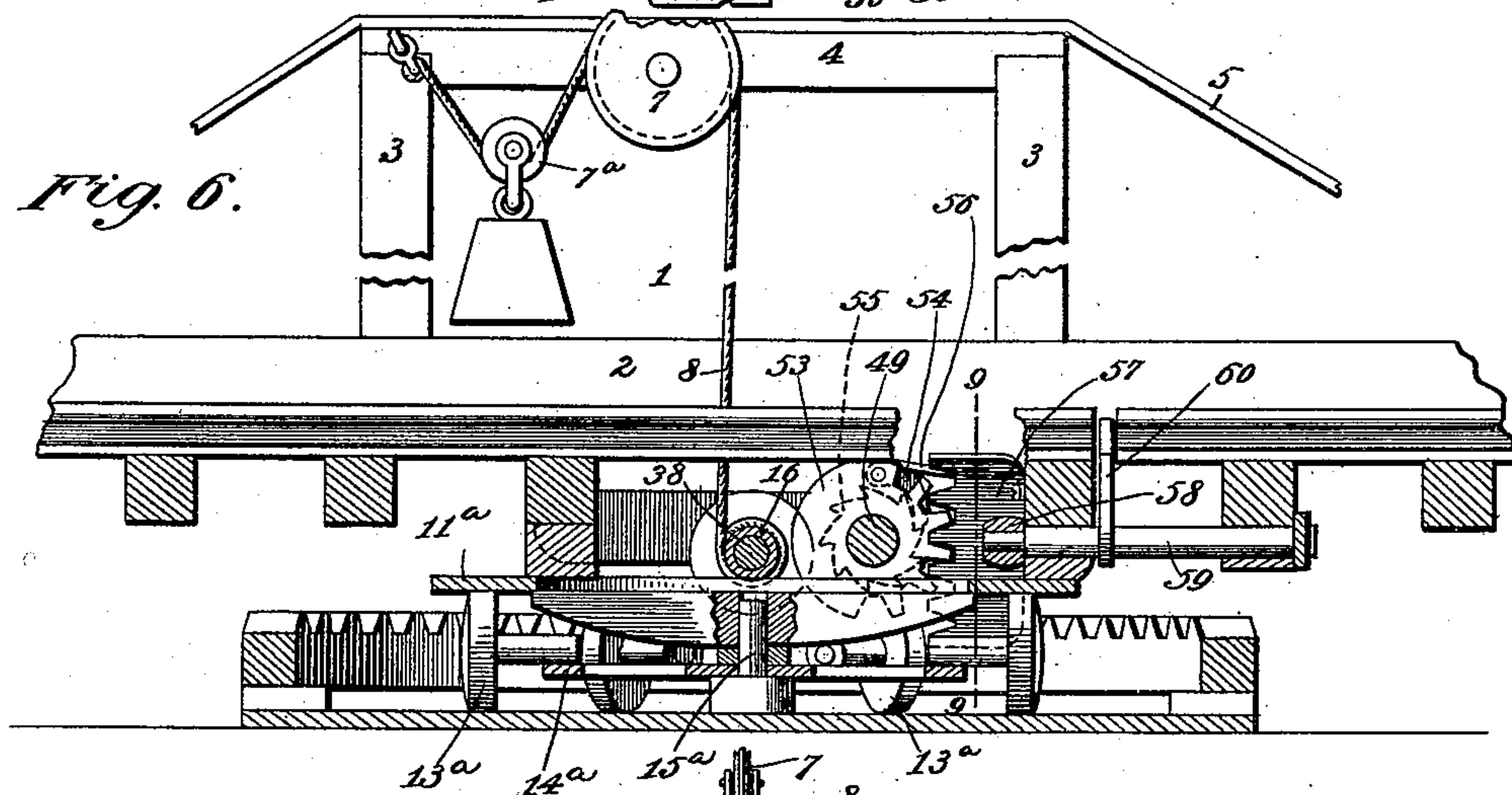
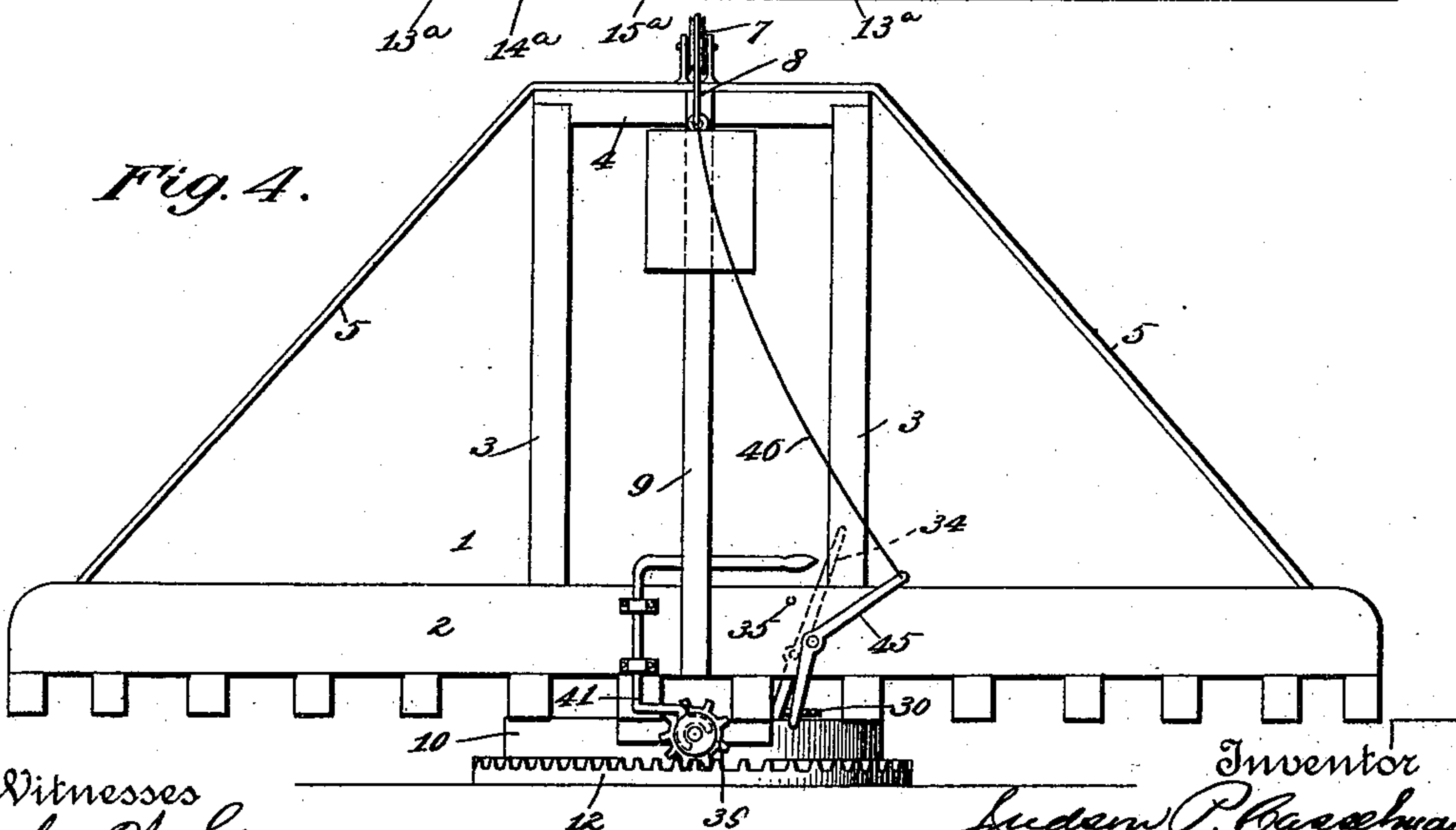


Fig. 4.



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Fig. 7.

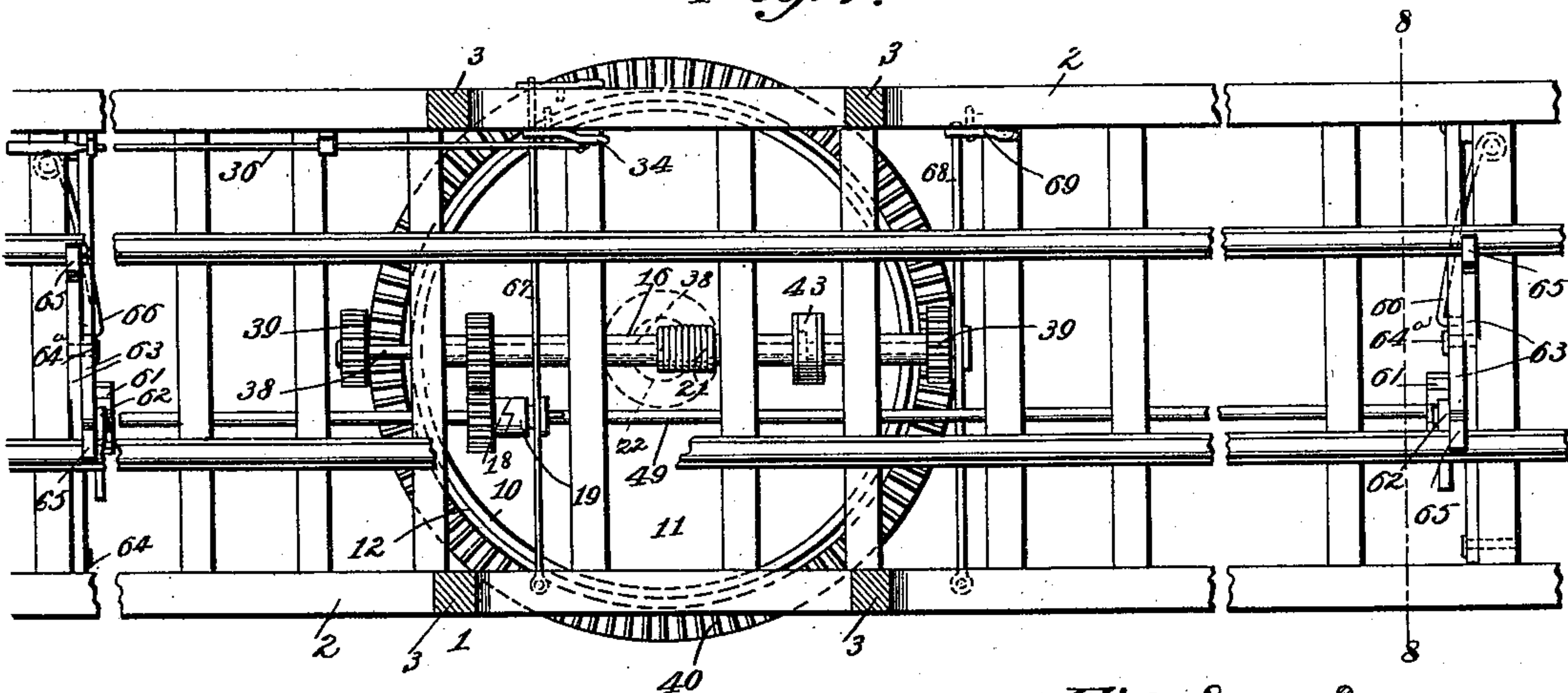


Fig. 11.

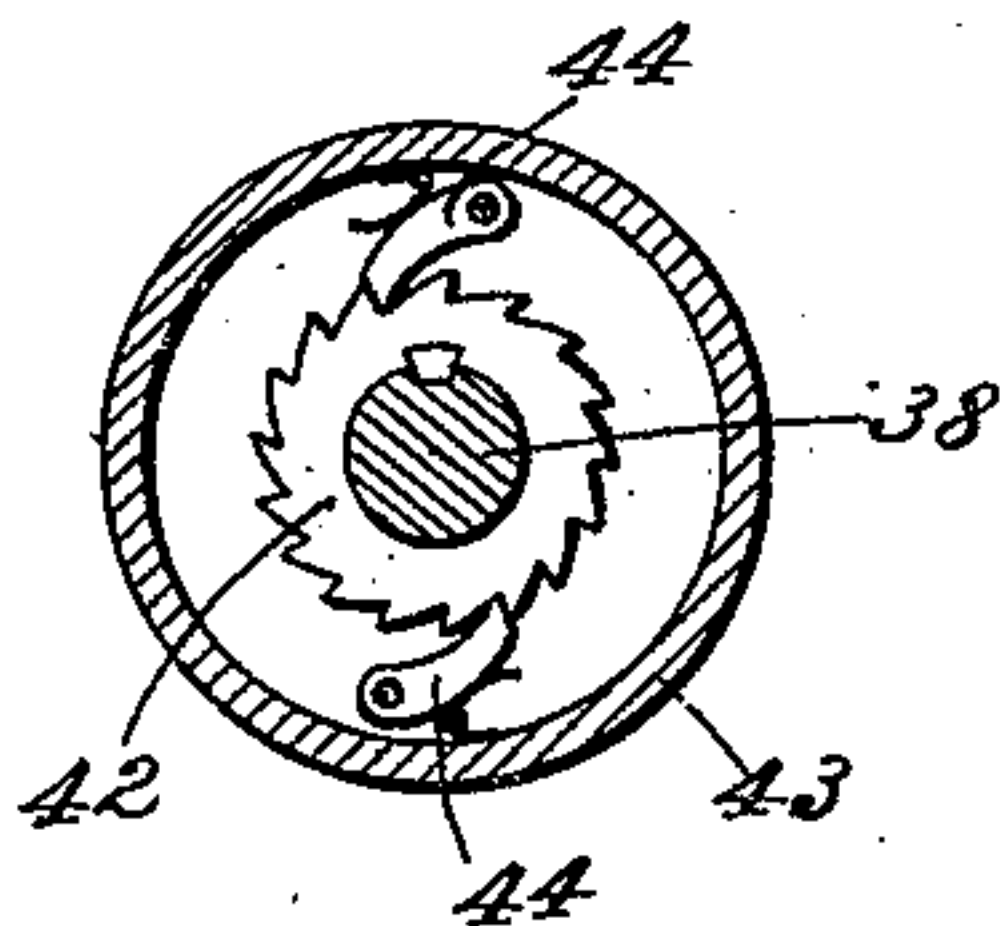


Fig. 8.

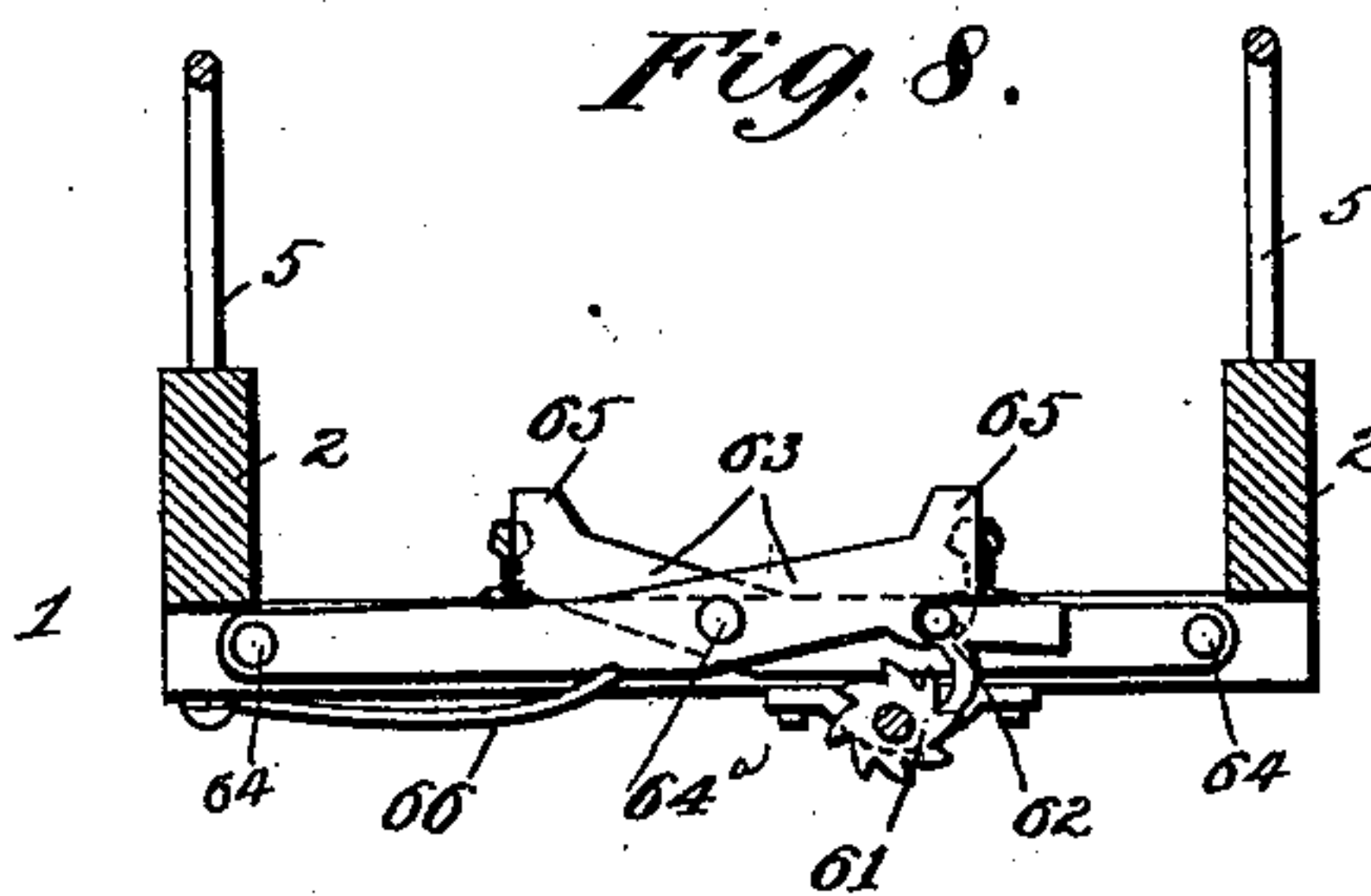


Fig. 9.

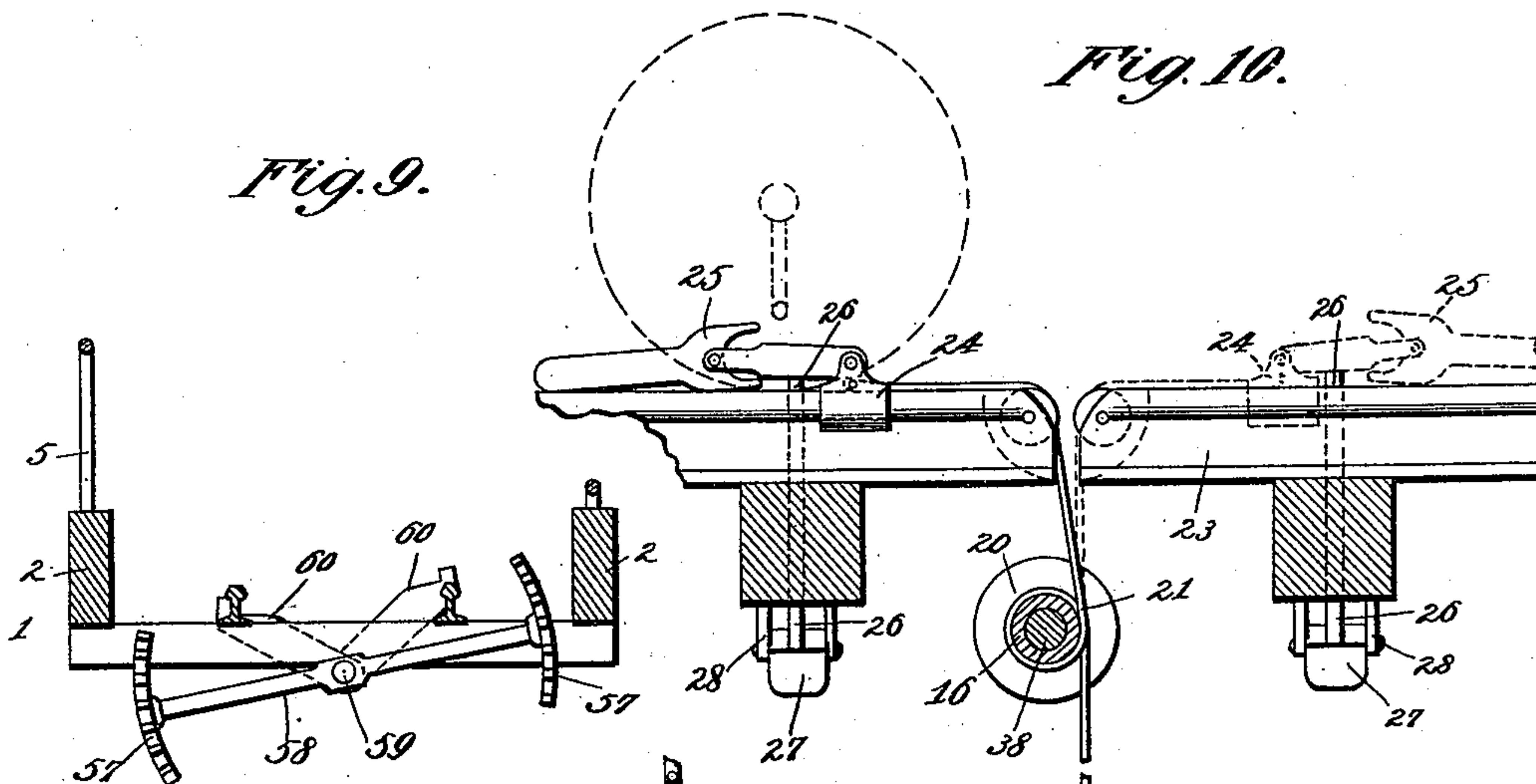
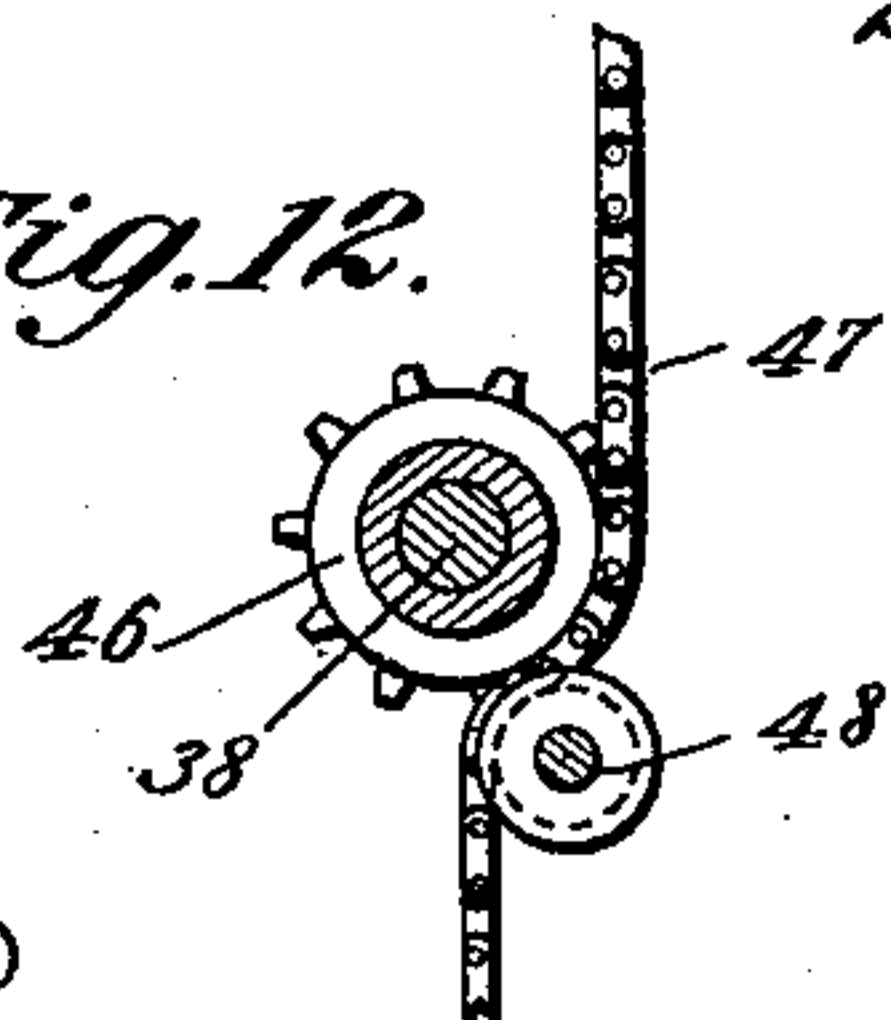


Fig. 10.

Fig. 12.



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UNITED STATES PATENT OFFICE.

JUDSON P. CASSELMAN, OF NEBRASKA CITY, NEBRASKA.

TURN-TABLE.

SPECIFICATION forming part of Letters Patent No. 583,843, dated June 1, 1897.

Application filed September 19, 1896. Serial No. 606,402. (No model.)

To all whom it may concern:

Be it known that I, JUDSON P. CASSELMAN, a citizen of the United States, residing at Nebraska City, in the county of Otoe and State of Nebraska, have invented certain new and useful Improvements in Turn-Tables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to improvements in turn-tables for use in conjunction with railroad-roundhouses or points in railway systems where the construction is such as to necessitate the use of a turn-table; and the primary object of the invention is to dispense with all manual labor possible and render the turning of the same automatic.

By means of this invention the engine may be quickly and automatically placed in alignment with any tracks of a radiating series or may be entirely reversed in position for travel upon the same track.

With these and other objects and advantages in view my invention consists in certain new and novel features of construction and combination of parts hereinafter described and claimed, and fully illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the turn-table. Fig. 2 is a plan view of the crown-gear and connected parts. Fig. 3 is a transverse sectional view of Fig. 1. Fig. 4 is a side elevation. Fig. 5 is a plan view of a modified form of turn-table. Fig. 6 is a sectional view of the same on the line 6 6. Fig. 7 is a further modification in plan view. Fig. 8 is a sectional view of the same on the line 8 8. Fig. 9 is a sectional view taken on the line 9 9 of Fig. 6. Fig. 10 is a detail sectional view taken on the line 10 10 of Fig. 1. Fig. 11 is a detail sectional view on the line 11 11 of Fig. 3, and Fig. 12 is a detail view of a modification.

Like numerals of reference designate like parts throughout all the figures of the drawings.

1 represents the pivoted track-section of the turn-table, the ties of which are connected by the side bars 2, having located thereon at a central point the vertical upright posts 3, situated in pairs and carrying the connecting cross-beams 4. These opposite pairs of up-

rights and their cross-beams are firmly braced by the brace-rods 5, secured to the ends of each side bar 2 and running over the tops of the cross-beams 4, and by the transverse brace 6, connecting the cross-beams. Mounted on each of the cross-beams, centrally of the uprights 3, is a pulley 7, over which passes a cable or chain 8, carrying at its outer end a weight guided by and traveling upon a vertical track or guideway 9, said track being in alinement with the pulleys 7. This track-section 1 is mounted midway of its length upon the annular flange 10 of a circular table 11, to which it is firmly secured in any suitable manner, and this table 11 is pivoted or mounted concentrically upon a bed-plate 12, provided with an annular toothed flange forming a crown-gear exterior to the annular flange of the circular table 11.

Interposed between the bed-plate 12 and the circular table 11 and supporting the latter are the friction-rollers 13. The rollers may be journaled all to the table 11 or all to the bed-plate 12, this being immaterial. The bed-plate and the table are provided with central registering perforations or openings 14 and 15, leading down into the weight-cavity.

Mounted in diametrically opposite bearings on the table 11 is a tubular driving-shaft 16, carrying on each end a drum 17, upon which is wound the inner end of the cable or chain 8. Loosely mounted on this tubular shaft 16 is a clutch member 18, the companion of which, 19, is keyed upon said shaft. It is, however, allowed sufficient longitudinal movement to be readily thrown out of engagement with the clutch member 18 in a manner to be hereinafter fully described. Integral with the loosely-mounted member 18 is a drum 20, around which a cable 21, carrying at its lower extremity a weight 22, is given several turns and then passed upward between two pulleys journaled in an intermediate rail 23. The cable passes through a division in the rail and is secured to a sliding sleeve 24, mounted on the said rail and adapted to travel in both directions from said division in the intermediate rail. Attached to this sleeve is a link carrying a reversible dog or catch 25. This dog or catch is adapted to be set for an engine traveling in either direction on the track-section and to be lifted

into engagement with some suitable part of said engine, preferably a low transverse bar, by means of pins 26, working in perforations in said intermediate rail and resting on lever-bars 27, fulcrumed at 28 and actuated by pins 29, resting on the opposite end of the weighted lever-bar 27. These pins 29 are set in the rail of the track proper and project slightly above the surface thereof, sufficiently, however, to actuate the lever-bars 27 when pressed down by the tread of the engine-wheels. It will be understood that this mechanism is duplicated on the other side of the intermediate rail division in order that the forward traction-wheels of the engine may lift the jaws of the catch 25 into positive engagement with the low transverse bar which follows.

As above stated, while the clutch member 19 is keyed upon the said tubular shaft 16 it is designed to have sufficient longitudinal movement to be thrown into and out of engagement with the loosely-mounted companion member 18 by the bell-crank lever 30, pivoted at 31 and having the short arm of the said bell-crank lever bifurcated and in engagement with an annular groove 32 in the clutch member 18. This member is normally pressed into engagement with the companion member 18 by a spring 33. When the catch 25 is in engagement with the engine, the parts 18 and 20, when engaged with the part 19, act upon the tubular driving-shaft 16 as a break mechanism to stop its revolution and that of the driven shaft, to be described later. The bell-crank lever 30 is operated by the hand-lever 34, pivoted at the point on the inner side of the bar 2 indicated and limited in movement by a stop-pin 35, also by the lever 45, pivoted upon the outside of the bar 2 and connected to the sliding weight by the cable 46, through which medium said weight, when it reaches its uppermost point, draws said lever and moves the bell-crank lever 30, thus throwing the clutch members out of engagement. Connected to the hand-lever 34, at a point between its contact with the bell-crank lever and its pivot, is a locking bolt or rod 36, adapted to lock the track-section into engagement with any of the tracks radiating from said turn-table and to which this track-section may be turned. The spring-arm 37, by pressure upon the long arm of the bell-crank lever 30, indirectly secures the bolt 36 in its locked position and also assists the clutch member 19 into engagement with the member 18.

Mounted in the tubular shaft 16 for rotation and carrying at each extremity a pinion 39 is a shaft 38, somewhat longer than the diameter of the crown-gear 40. The length of the shaft 38 is such that one or the other of these pinions may be thrown into engagement with the crown-gear by the U-shaped lever 41 at will, and thus reverse the direction of travel or revolutions of the track-section. Secured to the shaft 38 and housed by the

hollow sectional casing 43, attached to the tubular shaft 16, is a ratchet 42, and pivoted at diametrically opposite points in the housing 43 and engaging with the said ratchet are the spring-pressed pawls 44.

From the foregoing description of mechanism and arrangement of parts it will be seen that when an engine or locomotive enters upon the turn-table track-section and the dog or catch 25, engaged by the depending transverse bar thereof, raises the weight 22, which is allowed vertical movement within a suitable central cavity beneath the bed-plate 12, and at the same time revolves the tubular shaft through the medium of the clutch members 18 and 19, the weights attached to the cables 8 will be raised to their greatest height. This is due to the winding of the cables 8 upon the drums 17, which are integral with the tubular shaft 16. Then when the weights reach the uppermost point on the tracks 9 the lever 45, connected to one of the weights by the cable or chain 46, is drawn, and acting upon the long arm of the bell-crank 30 moves the sliding clutch member 19 upon its key and out of engagement with the loosely or revolvably mounted clutch member 18. Then the driving-shaft 16 is oppositely revolved within the clutch member 18 and drum 20 by the unwinding of cables 8, caused by the descent of the thereto-attached weights. As the shaft 16, provided with the housing 43, carrying the spring-pressed pawls, reverses its revolution the said pawls drop into engagement with the ratchet 42, keyed to interior shaft 38 and drives said shaft forward in the same direction as the shaft 16. This driven shaft 38, it will be remembered, carries at its extremities the toothed pinions 39, either one or the other of which, according to the direction in which it is desired the turn-table shall revolve, is in mesh with the crown-gear 40. These pinions by traveling on said crown-gear give the desired movement to the turn-table. Accordingly as one or the other of the two pinions is in engagement with the crown-gear so is the table 11 and the track-section 1 caused to revolve in one direction or the other and when in alinement with the desired track is locked by means of the locking bolt or rod 36. By allowing the track-section so to turn the locomotive may be turned end for end on the same track from which it came.

The disengagement of the clutch members, which can also be accomplished through the working of the hand-lever 34, renders the reverse revolution of the shaft 16 possible. This reversing of the revolution of shaft 16, it will be noticed, is dependent upon the disengagement of the clutch members, as it is not desirable nor convenient to remove the catch 25 from its connection with the locomotive at this moment, and without such removal or such mechanism as is above described it would be impossible to revolve the shaft 16, as desired. Hence the clutch member 18 with its inte-

gral drum 20 is revolubly mounted, and when the separation occurs the shaft 16 is free to revolve within said drum and said catch 25 to remain engaged with the part of the locomotive designed for the purpose. When the turn-table is alined with the desired track, the catch may be dropped by simply backing the engine until the catch-holding rod passes the division in the intermediate rail.

Where it is desirable to stop the table at a point short of where the completed descent of the weights would naturally stop it, the hand-lever 34 is employed to operate a brake mechanism or parts performing the functions of a brake mechanism. The parts which combine to form a brake mechanism, and which are fully set forth in the following description, act positively upon the driving-shaft 16 to stop its revolutions. By removing the pressure of lever 34 from the elbow-lever 30 the clutch member 19 is permitted to spring into engagement with its companion member 18 and thereby lock the shaft against revolution, as above stated. This is owing to the adverse force exerted on the said shaft by the tension of the cable or chain 21, which remains attached to the engine by the reversible catch 25 until the bolt 36 has been shot by lever 34 and the table locked in alinement with the desired track and against rotation. The catch 25 may then be dropped by the engine and service completed.

In Fig. 12 I have illustrated a slight change in the member having the drum by substituting for said drum a sprocket-wheel 46 and replacing the cable with a sprocket-chain 47, and to cause the chain to hug the sprocket-wheel I employ an idler-pulley 48. By this construction I avoid the winding of the cable around the clutch member.

In Figs. 5 and 6 I have illustrated a modification of my weight-lifting mechanism, the construction otherwise practically remaining the same as in the first form. I provide a separate shaft for the clutching device, which said shaft 49 is provided with a fixed clutch member 50 and a loosely-mounted clutch member 51, having gear-teeth formed integrally therewith, which are designed to mesh with a gear 52 of somewhat smaller diameter than the diameter of the gear of the clutch member. This clutch member 51 is formed with an annular depression, into which the bifurcation of the bell-crank lever 30 is adapted to take and throw said member into or out of contact with said fixed clutch member 50. This shaft 49 has its ends reduced, and on the same are loosely-mounted the segmental gears 53, carrying the pawls 54, engaging with the ratchets 55, keyed fast to the reduced ends of said shaft 49. Springs 56 bear upon the upper surfaces of the pawls and force them into close contact with said ratchets. These segmental gears 53 are partially revolved by rack-bars 57, secured to the extremities of a centrally-pivoted rock-bar 58, which pivot is the end of a rock-shaft 59, ar-

ranged longitudinally of the track-section and beneath the ties thereof. This rock-shaft is provided with the oppositely-disposed rock-arms 60, having projections extending upwardly therefrom and lying in the intervals between the rails. These rock-arms are spaced some distance apart on the rock-shaft in order that they may be actuated at different periods of time and alternately oscillate the rock-bar 58 or cause first one rack-bar and then the other to move downwardly. It will thus be seen that when the clutch members are in engagement with each other the pressure of the treads of the locomotive-wheels will rock the shaft 59, oscillate the bar 58, and by means of the rack-bars 57 partially revolve first one and then the other segmental gear, cause the pawls attached thereto to actuate the ratchets, and so revolve the shaft 49, which, through the medium of the fixed clutch and the gearing before mentioned, will cause the tubular shaft 16 to revolve and then to raise the weights through the mechanism contained in the housing on said tubular shaft, consisting of the pawls engaging with the ratchet fixed on the shaft 38, to communicate motion to said shaft 38, when the bell-crank 30 is operated, and to the pinions 39, as in the first form before described. In this modification the tracks 9 are done away with and the cable 8 passes over the pulley 7 and is secured to the framework of the superstructure and a weight suspended from said cable by the pulley 7^a, as illustrated. The pulleys 7 will be changed from the position shown in Fig. 1 and will be journaled on the inside of each cross-beam 4.

In Fig. 7, a further modification, I have shown the mechanism of Fig. 5 placed longitudinally of the tracks and substituted for the mechanism for actuating the shaft 49, which in this form will be considerably lengthened. I provide a ratchet 61, actuated by a gravity-pawl 62, pivoted to one of a pair of crossed arms 63, pivoted at 64 and 64^a and provided with track projections 65, normally pressed above the tread of the rails by a spring 66. A series of these crossed arms or ratchet-actuating devices may be placed along the length of the shaft 49, and thus rapidly raise the central weight 22, which in this form of mechanism directly influences the revolution of the shaft 38 through the pawl-and-ratchet mechanism before mentioned. The clutch member 19 is keyed upon the shaft 49, the same as in the first form, Fig. 1, to allow longitudinal play and is thrown into and out of engagement with the loose pinion-formed clutch member 18 by the lever-rod 67, actuated by the lever 34 in a manner similar to that in Fig. 1, and a like lever-rod 68, attached to lever 69, actuates shaft 38 longitudinally.

It will be seen from the foregoing description of mechanism and arrangement of parts that I have constructed an automatic turn-table both simple and durable and suitable.

for use in any system where it is desirable to change a locomotive from one track to any other of a radiating series or to reverse it end for end.

5 I do not desire to limit or confine myself to the precise details of construction herein shown and described, but reserve to myself the right and privilege to alter the same within the bounds of mechanical ingenuity
10 without departing from the spirit of the invention.

Having thus fully described my invention, what I claim is—

1. In a turn-table, the combination with
15 the rotatable track-section, of means actuated automatically by an engine traveling on said section for rotating the section and a brake mechanism for stopping the rotating mechanism whereby the track-section may be stopped
20 at any point desired.

2. In a turn-table of the character described, the combination with the rotatable section, of means adapted to be operated by an engine moving on said track-section in
25 either direction for automatically rotating said section in any direction, and mechanism for stopping the table or track-section at any point desired.

3. In a turn-table, the combination with
30 the rotatable track-section and mechanism for reversing the rotation of the same, of means actuated automatically by an engine traveling on said section for rotating the section.

35 4. In a turn-table of the character described, the combination with the rotatable track-section, mechanism for reversing the rotation of the track-section, means, actuated automatically by an engine traveling on said
40 section, for rotating the section, and mechanism for stopping the rotation of said track-section at any point.

5. In a turn-table of the character described, the combination with the base provided with a crown-gear, the concentric circular plate rotatable thereon, the track-section secured thereto, the laterally-movable shaft having a pinion at each end and means for
45 throwing said pinions into and out of mesh with said crown-gear, of means substantially as described actuated by an engine moving on said track-section for rotating said section in either direction.

6. In a turn-table of the character described, the combination with the base provided with a crown-gear, the rotatable circular concentric plate mounted on said base, the track-section secured thereto, the laterally-movable shaft having a pinion at each
55 end and means for throwing said pinions into and out of mesh with said crown-gear, of the driving-shaft connected with said laterally-movable shaft, the cables wound thereon, provided with weights, means connected with
60 said counter-shaft adapted to be actuated by an engine moving on said track-section for winding up said cables and elevating the

weights and means for releasing said shafts so as to allow the weights to rotate the pinions and track-section, substantially as described. 70

7. In a turn-table of the character described, the combination with the crown-gear, the concentric plate rotatably mounted thereon, the track-section secured thereto, the laterally-movable shaft having a pinion at each
75 end and means for throwing said pinions into and out of mesh with the crown-gear, of the driving-shaft, connected with said laterally-movable shaft, the cables wound thereon, the weights connected with said cables, the
80 weighted cable also connected with said driving-shaft, the intermediate track secured to said track-section, the slidable sleeve, and the reversible catch connected to said sleeve, substantially as described. 85

8. In a turn-table of the character described, the combination with the base, provided with a crown-gear, the rotatable circular plate mounted on said base, the track-section secured thereto, the diametric rotatable
90 and laterally-movable shaft having a pinion at each end, means for moving said shaft to throw said pinions into and out of mesh with said crown-gear, the driving-shaft connected with said laterally-movable shaft so as to rotate
95 therewith, the rotatable drum mounted on said driving-shaft and means for connecting it therewith and disconnecting it therefrom, the cable engaging with said drum, the weight at one end thereof, the slidable sleeve
100 to which the other end of said cable is secured, the link pivoted thereto, and the reversible catch, pivoted to said link and means substantially as described for connecting and disconnecting said drum and counter-shaft. 105

9. In a turn-table of the character described, the combination with the base provided with a crown-gear, the circular plate rotatably mounted on said base, the track-section secured thereto, the diametric laterally-movable shaft having a pinion at each
110 end, and means for throwing said pinions into and out of mesh with said crown-gear, of the driving-shaft, the cables wound thereon, the weights secured to said cables, the drum
115 mounted on said driving-shaft and means for connecting and disconnecting said drum and counter-shaft, the cable connected with said drum having a weight at one end, the slidable sleeve with which the other end of said
120 cable is connected, the intermediate rails on which said sleeve is mounted, the link pivoted to said sleeve, the reversible catch pivoted to said link, the vertically-movable pins projecting up above the track-rails of said
125 track-section, the pivoted levers contacting therewith and the vertical pins projecting above said intermediate track contacting with said levers and links, substantially as described. 130

10. In a turn-table of the character described, the combination with the base provided with a crown-gear, the rotatable circular plate mounted thereon and the track-section

tion secured thereto, of the diametric movable shaft, having a pinion at each end, the driving-shaft connected therewith, the cables wound thereupon and provided with weights, the drum rotatably mounted on said driving-shaft provided with a clutch member, the corresponding slidable clutch member and means for engaging and disengaging said clutches, the cable connected with said drum having a weight at one end, the slidable sleeve at the other end of said cable, the link pivoted thereto, and the reversible catch pivoted to said link, substantially as described.

11. In a turn-table of the character described, the combination with the base provided with a crown-gear, the rotatable plate mounted thereon, the track-section secured to said plate, and the laterally-movable shaft having a pinion at each end, and a ratchet-wheel, of the driving-shaft through which said shaft passes, the housing, the pawls pivoted thereto, and engaging with said ratchet-wheel, the drum rotatably mounted on said driving-shaft and provided with a clutch member, the slidable clutch member and means for engaging and disengaging the same, the cable connected with said drum, the weight at one end thereof, the slidable sleeve to which the other end of said cable is secured, the link pivoted thereto, and the reversible catch pivoted to said link, substantially as described.

12. In a turn-table of the character described, the combination with the base provided with a crown-gear, the circular plate rotatably mounted thereon, the laterally-movable shaft having a pinion at each end, and provided with a ratchet-wheel, of the driving-shaft, the rotatable weight-carrier mounted thereon, provided with a clutch member, the corresponding laterally-movable clutch member, the elbow-lever for turning said clutches into and out of engagement, the cables wound upon said driving-shaft, the weights connected therewith, the weighted cable connected with said rotatable carrier and means connected with said cable, actuated by the movement of an engine on said track-section to rotate said shafts substantially as described.

13. In a turn-table of the character described, the combination with the base, provided with a crown-gear, the circular rotatable plate, the track-section mounted thereon, the laterally-movable shaft having a pinion at each end and a ratchet-wheel and means for moving said shaft to throw either of said pinions into and out of mesh with said crown-gear, of the driving-shaft provided with pivoted pawls engaging with said ratchet-wheel, the cables wound upon said driving-shaft, the weights secured thereto, the drum rotatably mounted upon said driving-shaft, having a clutch member, the slidable clutch member and means for engaging and disengaging said clutches, the cable connected with said drum having a weight at one end, the

intermediate slotted rails on said track-section, the slidable sleeve, the link pivoted thereto, the reversible catch pivoted to said link, the pins projecting up above the main track-rails, the pivoted levers on which the lower ends of said pins rest and the pins projecting up above the intermediate rails with their ends abutting against said levers and links, substantially as described.

14. In a turn-table of the character described the combination with the base provided with a crown-gear, the rotatable plate mounted thereon, the track-section secured thereto, the laterally-movable shaft provided with a ratchet-wheel and having a pinion at each end, and means for moving said shaft for throwing either of said pinions into mesh with said crown-gear, of the driving-shaft, the pivoted pawls connected therewith engaging with said ratchet-wheel, the cables connected with said driving-shaft and provided with weights, the drum rotatable on said driving-shaft, provided with a clutch member, the slidable clutch member and means for engaging and disengaging said clutches, the elbow-lever engaging with said slidable clutch, the hand-lever for operating the same, the cable wound upon said drum, the weight connected with one end thereof, the slidable sleeve connected with the other end of said cable, the pivoted link and the double-headed clutch, substantially as described.

15. In a turn-table of the character described, the combination with the base provided with a crown-gear, the circular plate rotatably mounted thereon, the track-section secured thereto, the laterally-movable shaft provided with a ratchet-wheel and having a pinion at each end and means for moving said shaft for throwing the pinions into and out of mesh with said crown-gear, of the driving-shaft having pawls adapted to engage with said ratchet-wheel, the cables secured to said driving-shaft and provided with weights, the drum rotatably mounted on the driving-shaft and provided with a clutch member, the slidable clutch member and the elbow-lever, the hand-lever for operating the same, the cable connected with said drum having a weight at one end, the main and intermediate rails secured to said track-section, the slidable sleeve with which the drum-cable is connected, the pivoted link, the reversible catch, the pins projecting up above the main and intermediate rails and the pivoted levers with which said pins engage, substantially as described.

16. In a turn-table of the character described, the combination with the base provided with a crown-gear, the circular plate rotatably mounted thereon, the track-section secured thereto, the laterally-movable shaft having a pinion at each end and a ratchet-wheel and means for moving said shaft for throwing said pinions into and out of mesh with the crown-gear, of the driving-shaft provided with pawls engaging with said ratchet-

wheel, the cables secured to said driving-shaft, the elevated pulleys around which said cables pass, the weights secured to said cables, the rotatable drum having a clutch member, the slidable clutch member and means for throwing it into, and out of engagement therewith, the elbow-lever, the hand-lever bearing against the same, the lever also engaging with said elbow-lever connected with one of the cables of the driving-shaft, and means for rotating said drum by the movement of an engine on the track-section, substantially as described.

17. In a turn-table of the character described, the combination with the base, provided with a crown-gear, the circular plate rotatably mounted on said base, the track-section secured thereto provided with main rails, the laterally-movable shaft having a pinion at each end and a ratchet-wheel, and means for moving said shaft for throwing the pinions into and out of mesh with the crown-gear, the driving-shaft provided with pawls engaging with said ratchet-wheel, the cables secured thereto, the elevated pulleys, the weights secured to said cables, the drum rotatably mounted on said driving-shaft, provided with a clutch member, the slidable clutch member engaging therewith, the elbow-lever connected with said slidable clutch, the lever bearing against the same, the cable connected therewith and with one of said cables secured to the driving-shaft, the cable connected with said drum, the weight at one end thereof, the sleeve secured to the other end of said cable, slidable on the intermediate rails, the link pivoted to said sleeve and the reversible catch, substantially as described.

18. In a turn-table of the character described, the combination with the base provided with a crown-gear, the circular plate rotatably mounted on said base, the track-section secured thereto having main and intermediate rails, the laterally-movable shaft having a pinion at each end and a ratchet-wheel and means for moving said shaft for throwing the pinions into and out of mesh with the crown-gear, of the driving-shaft provided with pawls engaging with said ratchet-wheel, the cables secured to said driving-shaft, the elevated pulleys, the weights secured to said cables, the drum rotatably mounted on said driving-shaft, provided with a clutch member, the slidable clutch member engaging therewith, the elbow-lever, the lever engaging therewith, the lever connected by a cable with one of said cables and adapted to operate said elbow-lever, the cable connected with said drum provided with a weight, the sleeve connected with the other end of said cable and slidable on the said intermediate rails, the link pivoted thereto, the reversible catch, the vertically-movable pins projecting up above the main and intermediate rails and the levers with which said pins engage, substantially as described.

19. In a turn-table of the character de-

scribed, the combination with the base provided with a crown-gear, the circular plate rotatably mounted thereon, the track-section secured thereto, the laterally-movable shaft having a pinion at each end and a ratchet-wheel, and the U-shaped lever connected with one end of said shaft for moving the same for throwing the pinions into and out of mesh with the crown-gear, of the driving-shaft provided with pawls engaging with said ratchet-wheel, the cables secured to said driving-shaft, the elevated pulleys, the weights secured to said cables, the drum rotatably mounted on the driving-shaft provided with a clutch member, the slidable clutch member engaging therewith, the elbow-lever for operating said slidable clutch member, the hand-lever bearing against the elbow-lever, the lever also bearing against said elbow-lever, the cable connected therewith and with one of said cables, and means actuated by the movement of an engine on the track-section for operating said driving-shaft, substantially as described.

20. In a turn-table of the character described, the combination with the base provided with a crown-gear, the rotatable plate mounted thereon, the track-section secured thereto provided with main and intermediate rails, the laterally-movable shaft having a pinion at each end and a ratchet-wheel, and the U-shaped lever at one end of said shaft for moving it to throw the pinions into and out of mesh with the crown-gear, of the driving-shaft provided with pawls engaging with said ratchet-wheel, the cables secured thereto, the elevated pulleys, the weights, the drum rotatably mounted on said driving-shaft provided with a clutch member, the slidable clutch member engaging therewith, the elbow-lever, the hand-lever for actuating the same, the lever connected with one of said levers whereby said elbow-lever may be actuated automatically, the cable wound upon said drum provided with a weight, the sleeve connected with the other end thereof slidable on said intermediate rails, the link, the reversible catch, the pins projecting up above said main and intermediate rails, and the lever engaging therewith, substantially as described.

21. In a turn-table of the character described, the combination with the base provided with a crown-gear, the circular plate rotatably mounted on said base, the track-section secured thereto, the main and intermediate rails, the laterally-movable shaft having a pinion at each end and a ratchet-wheel, the U-shaped lever connected with one end of said lever for moving said shaft for throwing said pinions into and out of mesh with the crown-gear, of the tubular driving-shaft provided with a housing, the pawls pivoted thereto engaging with said ratchet-wheel, the cables secured to said driving-shaft, the pulleys, the weights, the drum rotatably mounted on said shaft and provided with a

clutch member, the slidable clutch member
engaging therewith, the elbow-lever, the hand-
lever for operating the same, the locking-rod
connected therewith, the lever connected with
5 one of said cables for also operating said el-
bow-lever, the cable wound upon said drum,
having a weight at one end, the sleeve con-
nected with the other end of said cable, slid-
able on said intermediate rail, the link, the
10 reversible catch, the vertically-movable pins

projecting up above said main and interme-
diate rails, and the levers engaging therewith
substantially as described.

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

JUDSON P. CASSELMAN.

Witnesses:

FRED W. RHODES,
HENRY D. HOLLOWAY.