

No. 684,238.

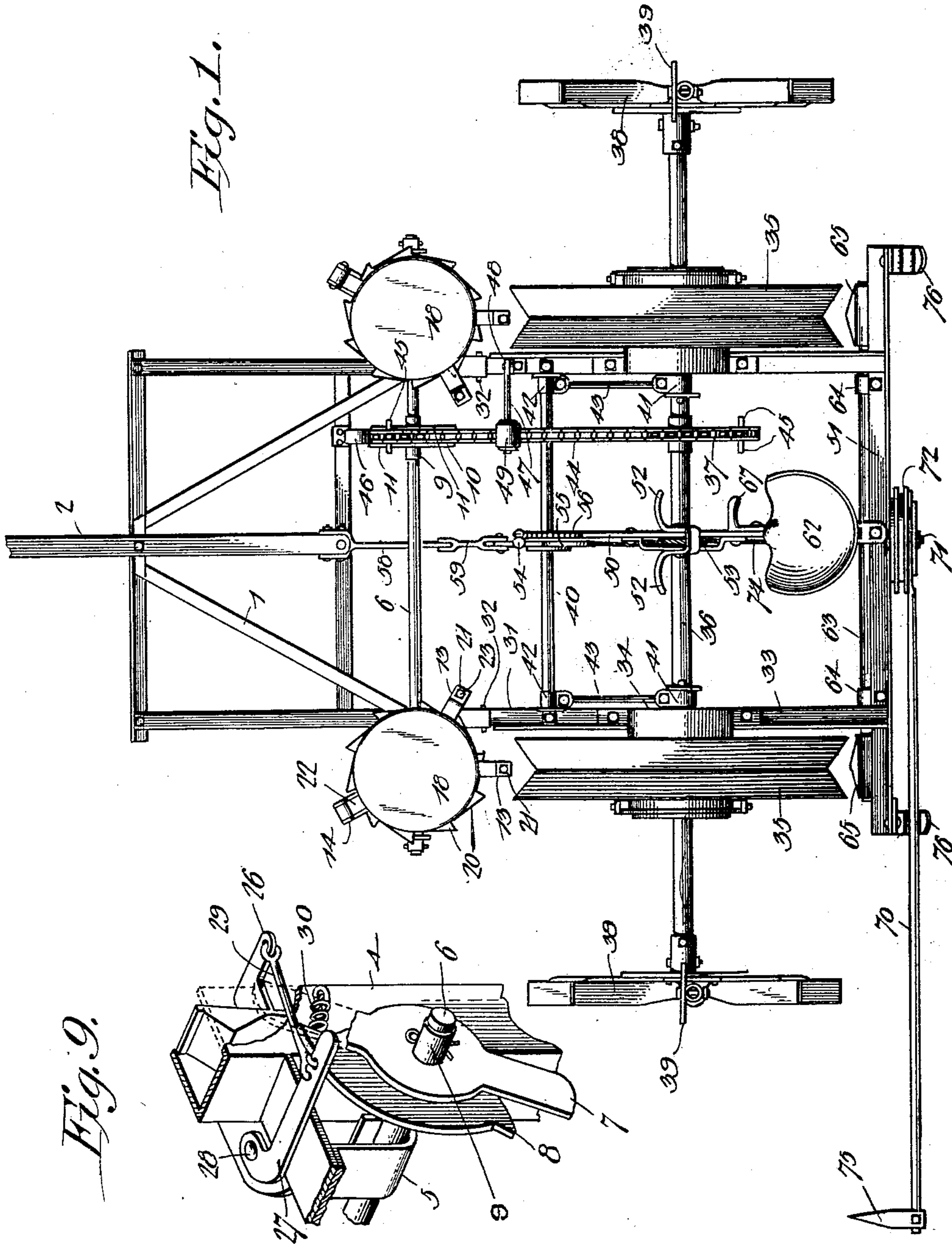
Patented Oct. 8, 1901.

T. M. HENDRICKSON.  
CHECK ROW CORN PLANTER.

(Application filed May 8, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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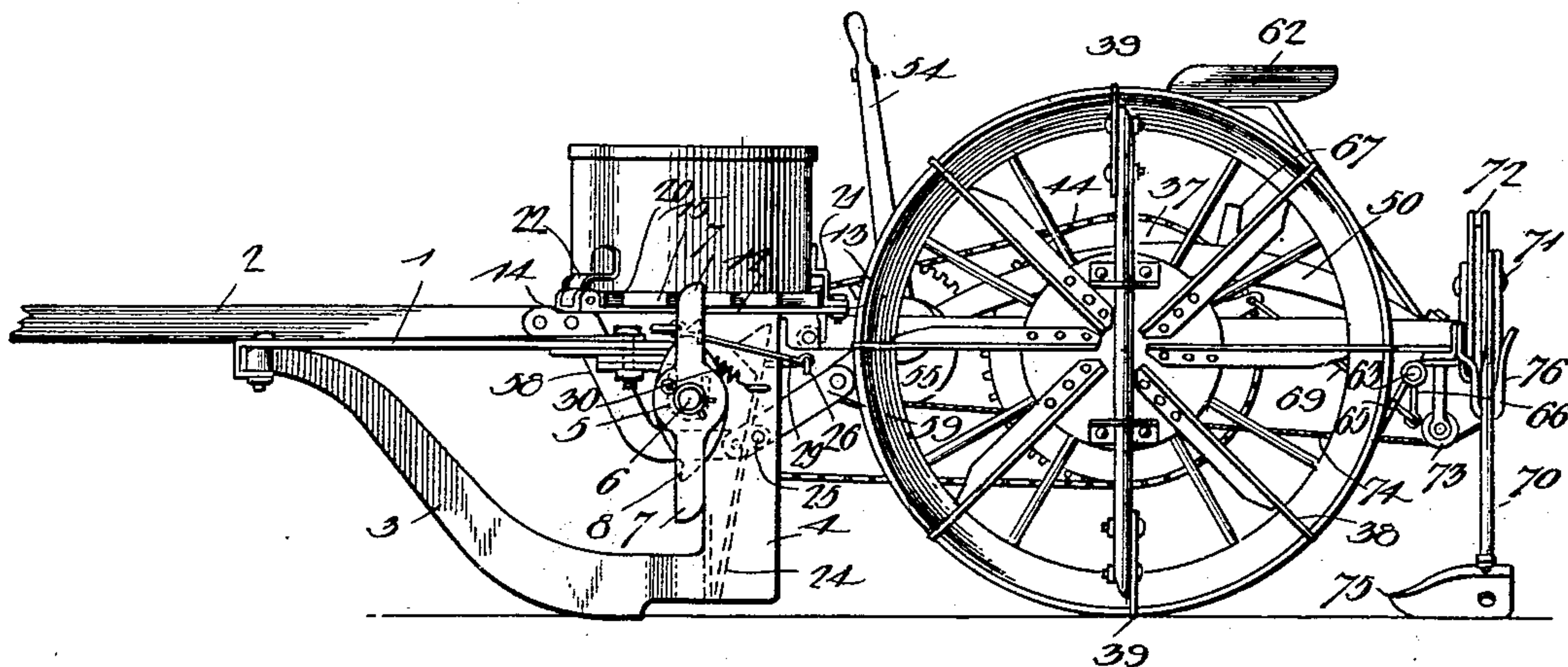
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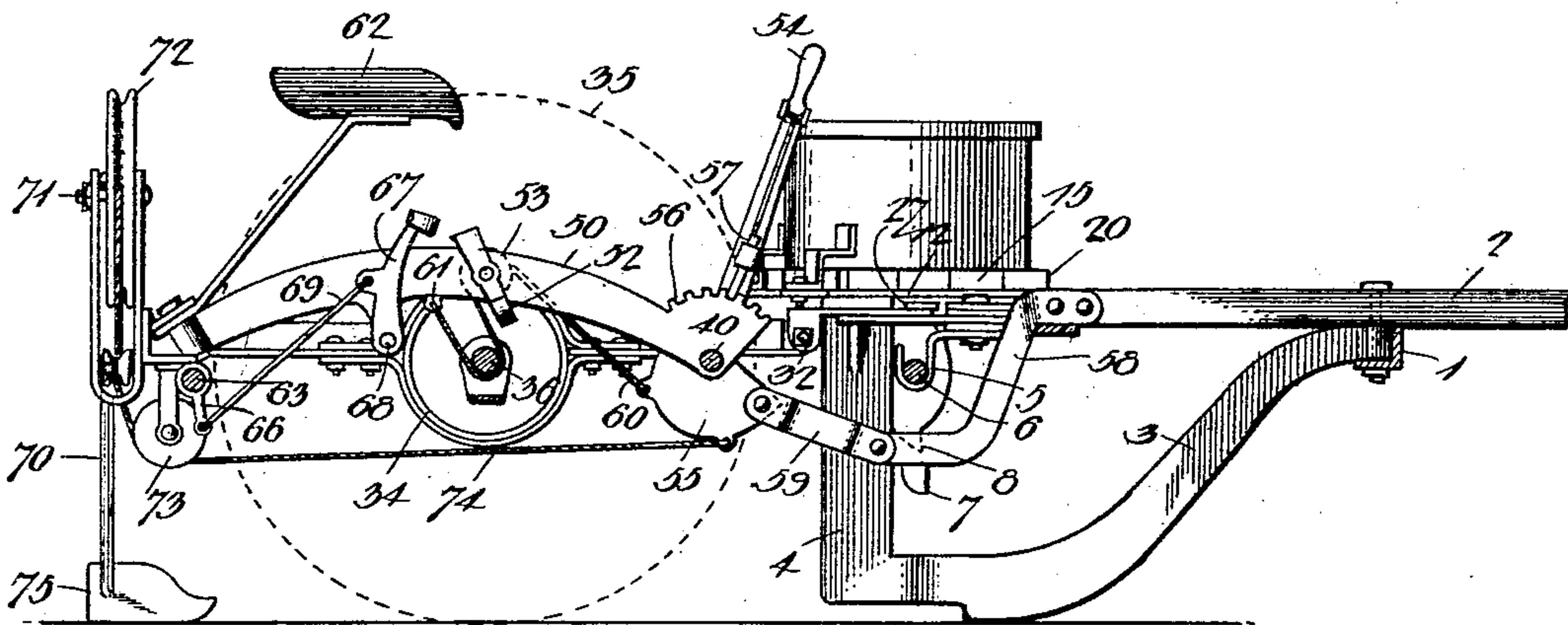
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*Fig. 2.*



*Fig. 3.*



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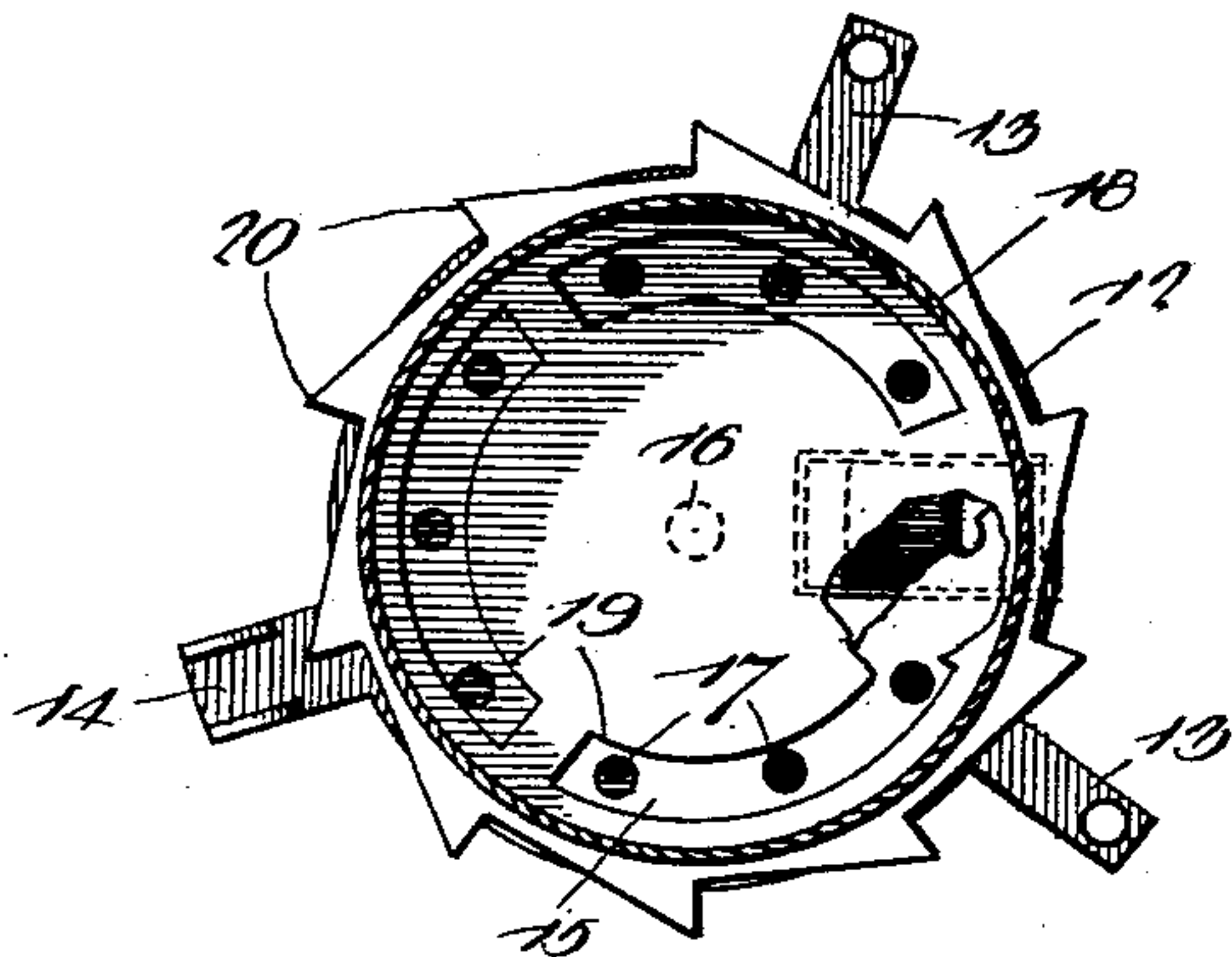


Fig. 4.

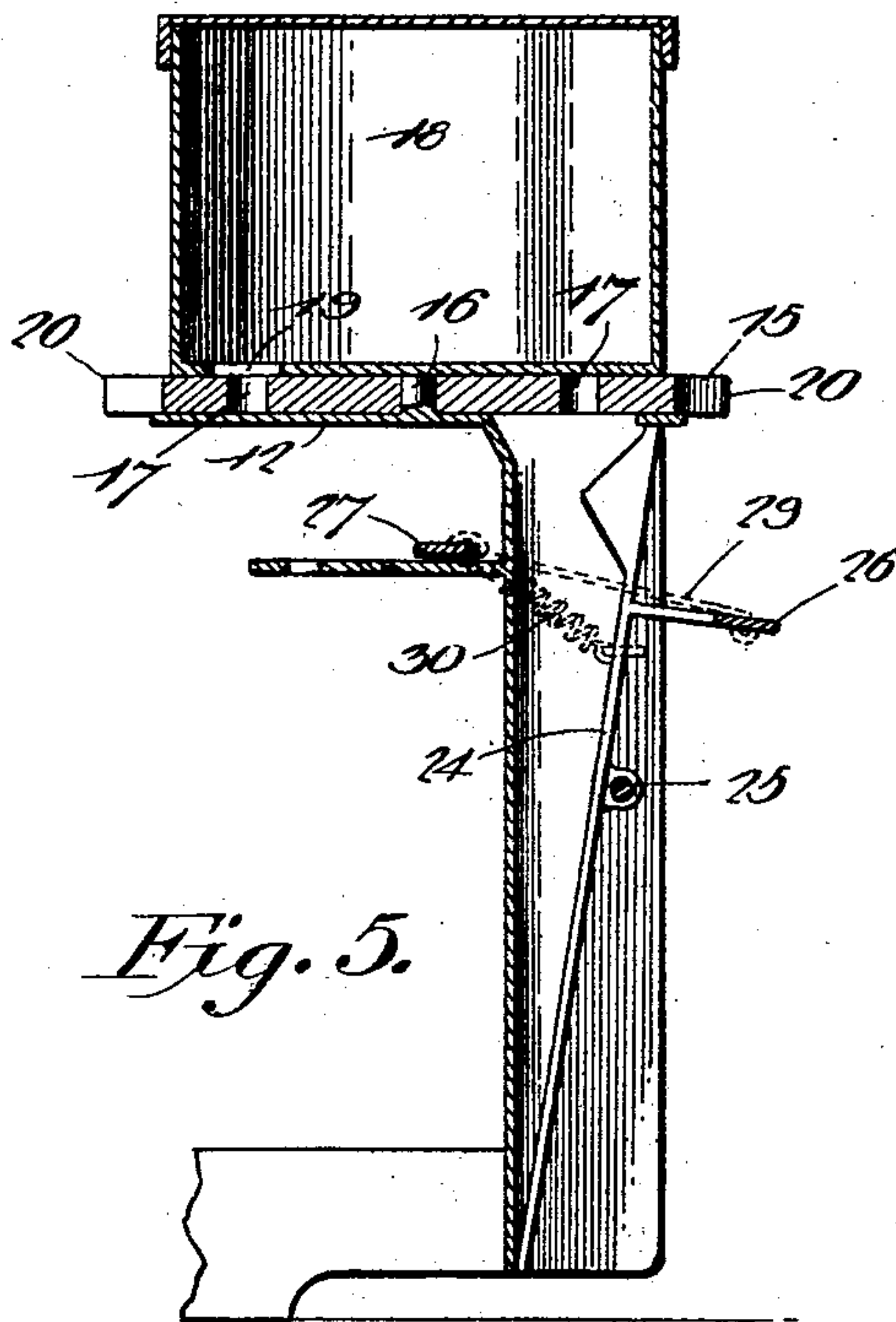


Fig. 5.

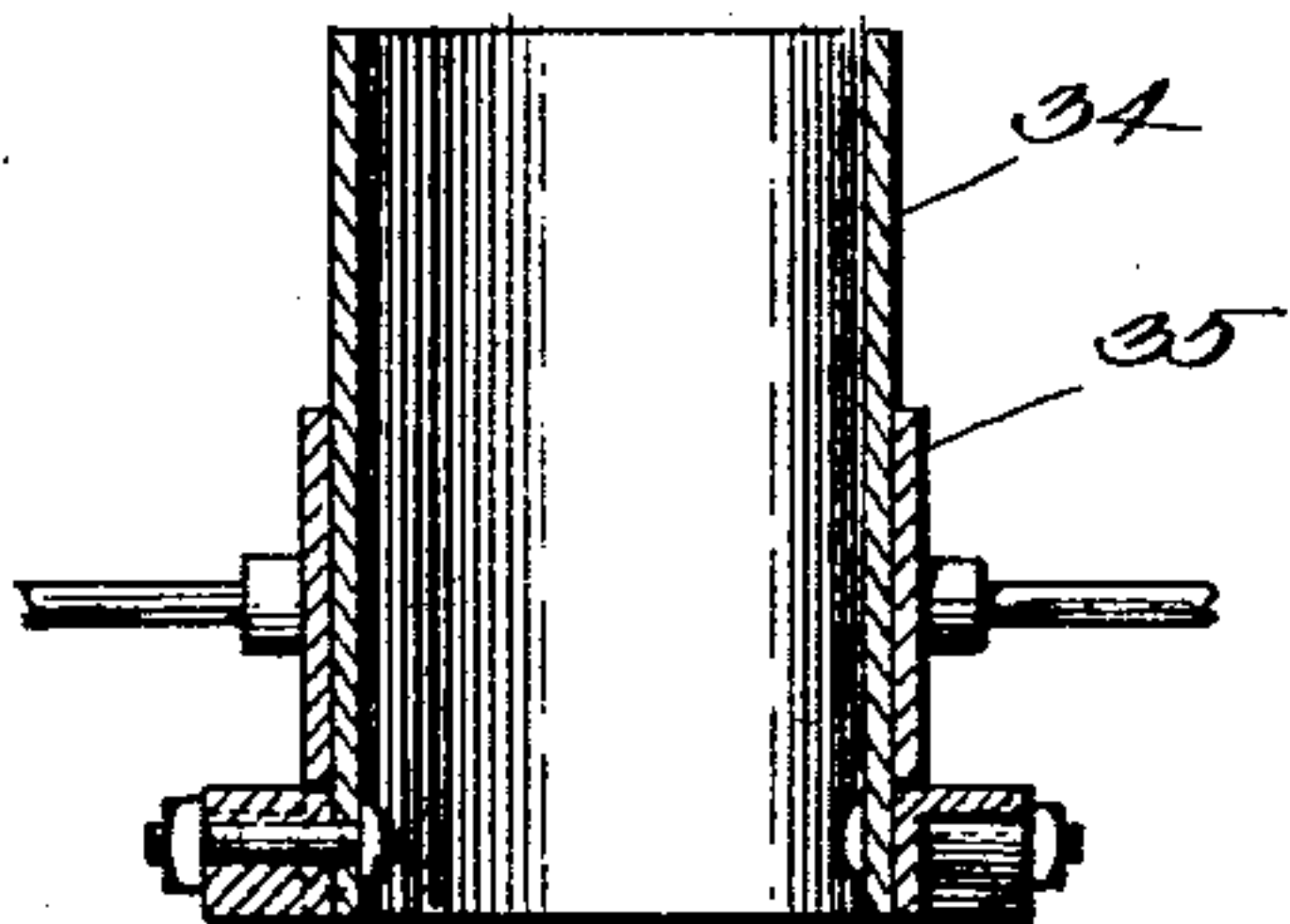


Fig. 6.

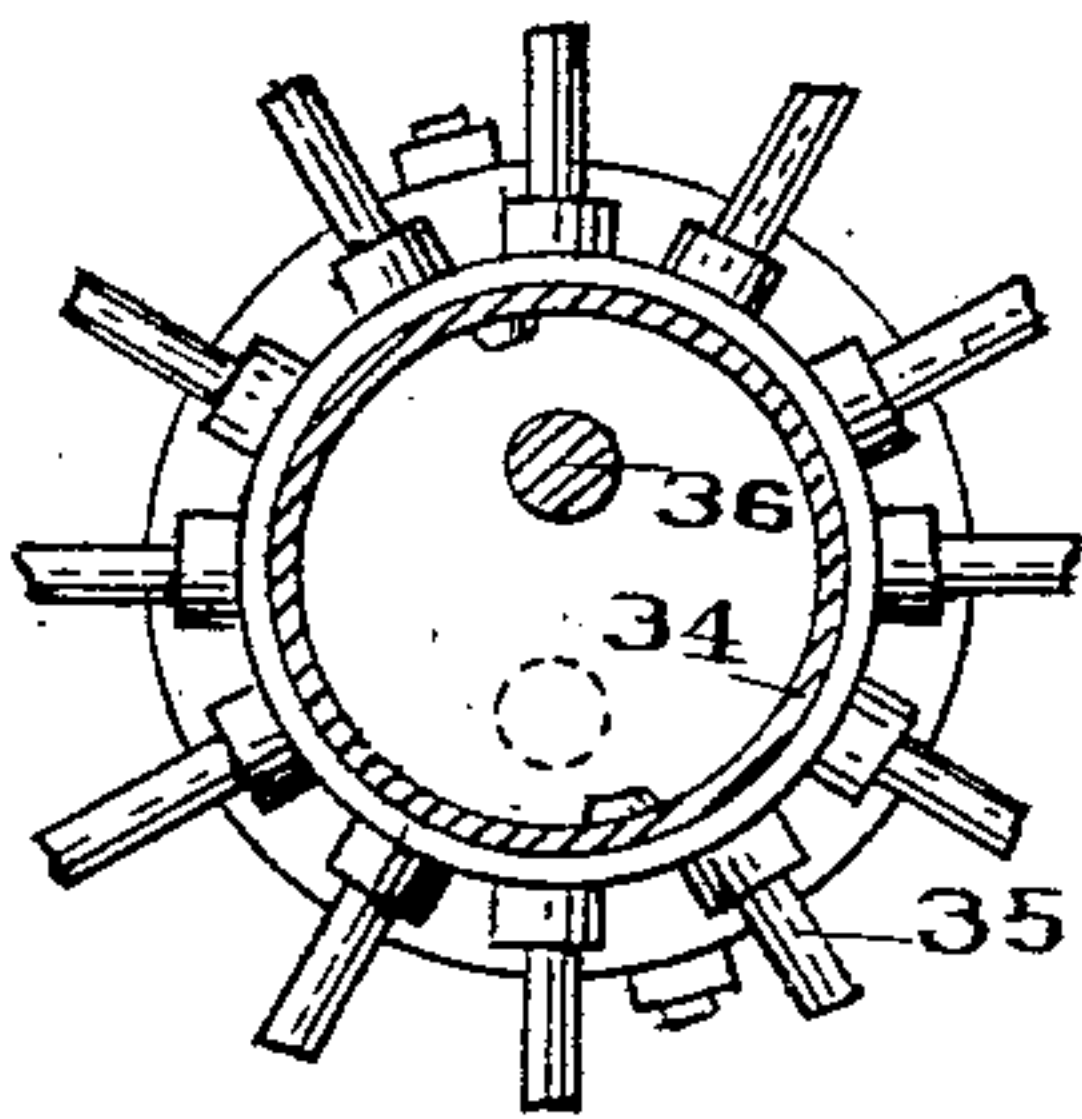


Fig. 10.

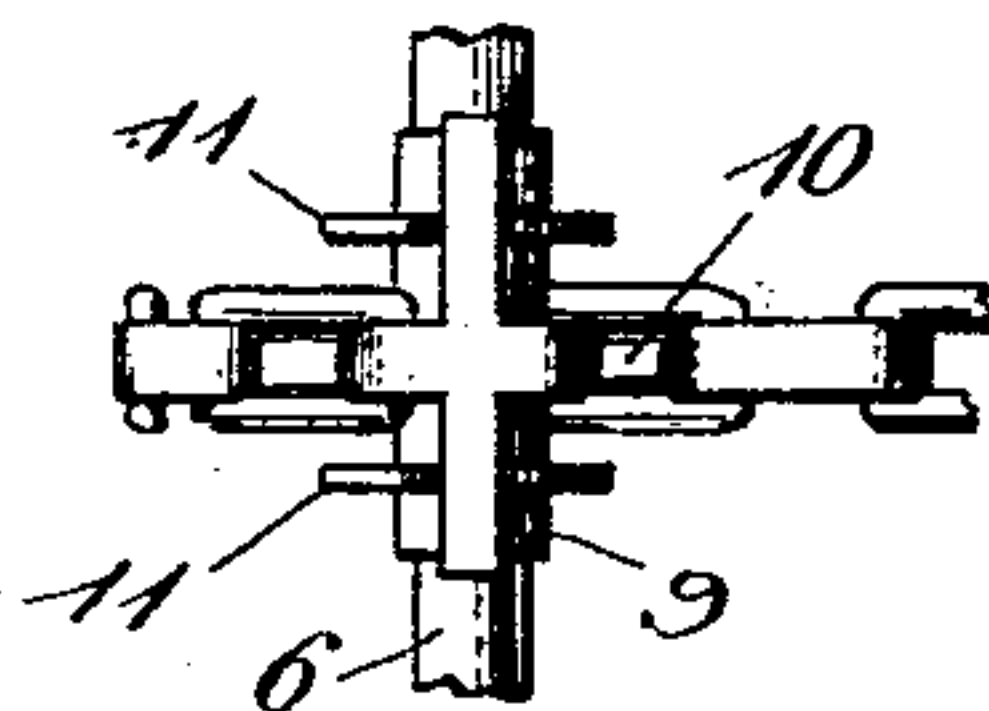


Fig. 7.

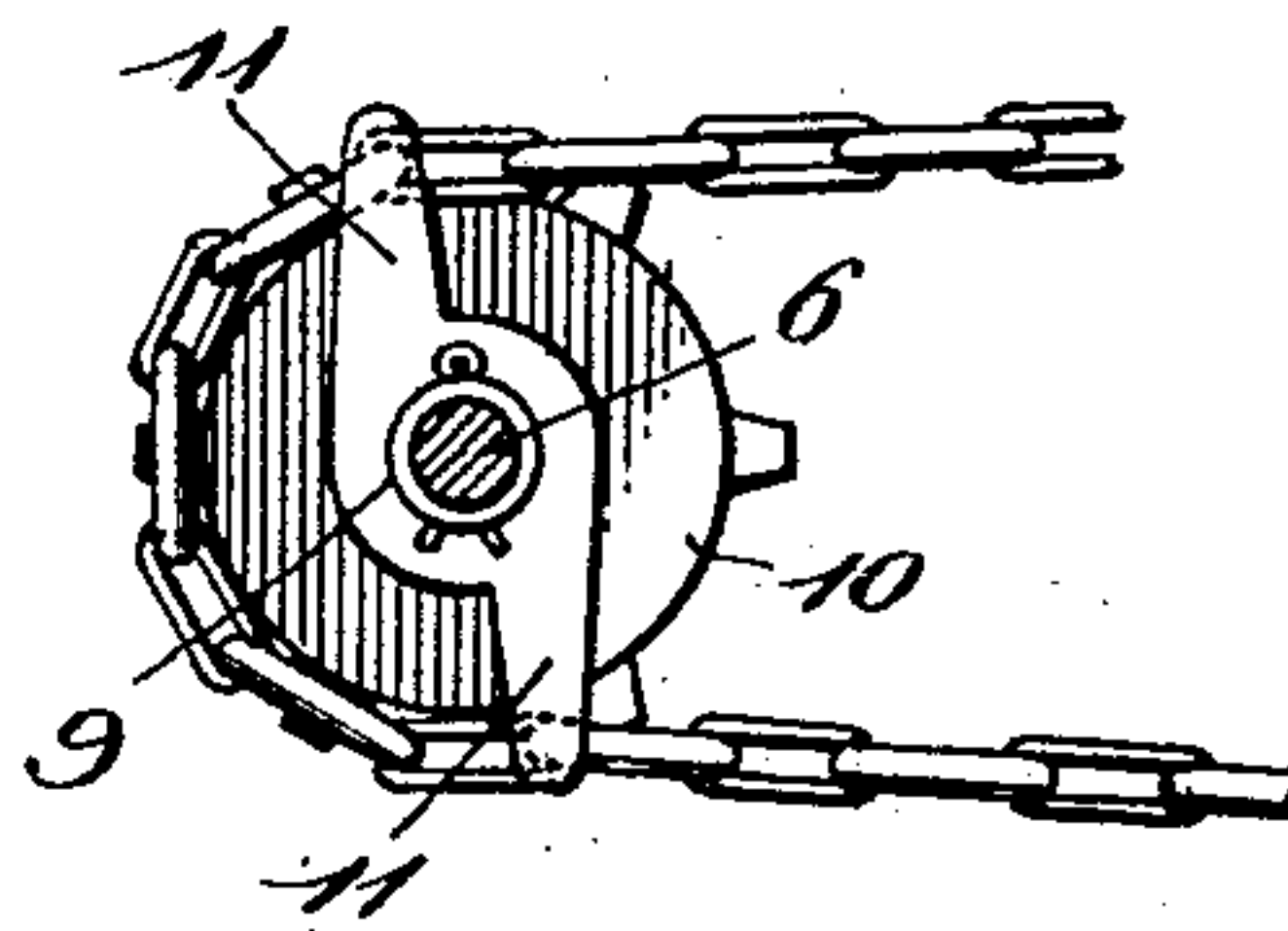


Fig. 8.

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# UNITED STATES PATENT OFFICE.

THOMAS M. HENDRICKSON, OF LEES SUMMIT, MISSOURI.

## CHECK-ROW CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 684,238, dated October 8, 1901.

Application filed May 8, 1901. Serial No. 59,298. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS M. HENDRICKSON, a citizen of the United States, residing at Lees Summit, in the county of Jackson and State of Missouri, have invented a new and useful Check-Row Corn-Planter, of which the following is a specification.

My invention is an improved check-row corn-planter; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a check-row corn-planter constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal sectional view of the same. Fig. 4 is a sectional view through one of the seed-hoppers, showing the bottom thereof and the seed-disk. Fig. 5 is a vertical sectional view through one of the seed-hoppers and seed-spouts. Fig. 6 is a detail sectional view of one of the supporting covering-wheels and the sleeve on which it rotates. Fig. 7 is a detail top plan view of the chain for conveying power from the main shaft to the shaft which actuates the seed-disks and seed-valves. Fig. 8 is a side elevation of the same. Fig. 9 is a detail horizontal sectional view taken on a plane intersecting one of the said hoppers. Fig. 10 is a detail view showing one of the sleeve-bearings, a supporting-wheel journaled thereon, and the vertically-movable power-shaft extending through the said sleeve-bearing, said shaft being shown in cross-section and in two positions—one in full lines and one in dotted lines.

The front or runner frame 1 is of suitable construction, provided with the tongue 2, shoes or runners 3 for opening the furrows, and the seed-spouts 4, which deliver the seeds into the furrow. In suitable bearings 5, with which the said frame is provided, is journaled a shaft 6. The said shaft extends transversely across the rear portion of the front frame, is disposed in advance of the seed-spouts, and is provided at its ends on the outer sides of the seed-spouts with radial tappet-arms 7. On the said shaft on the inner sides of said tappet-arms 7 and at a suitable distance therefrom are tappets 8. A tubular sleeve 9 is keyed or otherwise secured on the

shaft 6 and rotates therewith. A sprocket-wheel 10 is loose on said sleeve, and the latter is provided on opposite sides of said sprocket-wheel with oppositely-projecting tappets 11. At the upper end of each seed-spout is a circular base-plate 12, provided with radial arms 13 14. A seed-disk 15 revolves on the upper side of each of said base-plates and has its bearing on a stud 16, which projects from the center thereof. Hence the seed cups or openings 17 in each of said seed-disks successively pass over the upper ends of the seed-spouts. On each of the seed-disks is disposed a seed-hopper 18. The bottom of the hopper is provided with openings 19, through which seeds may pass into the seed cups or openings 17. That portion of the bottom of each hopper which is disposed above a seed-spout is imperforate and forms a cut-off. Hence as each of the seed-disks rotates the successive cups or openings 17 thereof drop seed-corn into the seed-spout below. The seed-disks 15 are provided with peripheral ratchet-spurs 20, which correspond in number with the seed openings or cups 17 thereof. Each of the seed-hoppers is provided at its base with projecting arms 21 22. The latter are pivotally connected to the arms 14 of base-plates 12, whereby the hoppers are hinged at their lower sides to the said base-plates and are adapted to be opened therefrom to uncover the seed-disks 15. When the hoppers are disposed in their operative vertical positions shown in the drawings, the arms 21 thereof bear on the arms 13 of the base-plates and are secured to the latter by bolts 23 or other suitable devices.

In each of the seed-spouts is a valve 24, positioned as shown in Fig. 5, pivotally mounted between the sides of the seed-spouts, as at 25, and adapted to alternately close and open the upper and lower ends of the spout. From the rear side of each valve 24 projects an arm 26. A tappet-link 27 is disposed transversely across the front side of each seed-spout, is supported on the bearing 5 thereof, and at its inner end pivoted to said bearing, as at 28, and the outer end of the said tappet-link, which is disposed in the path of the revolvable tappets 8, which are carried by the shaft 6, is connected to the arm 26, as by a rod or link 29. A spring 30 is connected to each of



the tappet-links 27 and draws rearwardly thereon, and thereby causes each tappet-link to normally maintain the valve 24, which is connected thereto in the position shown in Fig. 5, with the lower end of the seed-spout closed and the upper end thereof open. The ratchet or tappet teeth 20 of the seed-disks project into the paths of the tappet-arms 7, carried by the revoluble shaft 6, and hence said tappet-arms on the rotation of said shaft revolve the seed-disks by a step-by-step movement, and the links 27, which are operated by the tappets 8 simultaneously with the partial step-by-step rotation of the disks, cause the lower ends of the valves to open the lower ends of the seed-spouts and drop the seeds which have been accumulated thereon, while the upper ends of said valves close the upper ends of said spouts and receive the seeds dropped by the seed-disks, and as the said tappets 8 pass the said links 27 the latter are by the springs 30, as hereinbefore described, caused to restore the valves to their initial positions. (Shown in Fig. 5.)

To the rear side of the front or runner frame 1 is hinged a rear or wheel frame 31, as at 32. The side bars 33 of said rear frame are provided with horizontally and transversely disposed cylindrical sleeves 34 of suitable length and diameter. Supporting and covering wheels 35, which run immediately in rear of the seed-spouts and furrow-opening shoe, are journaled and revolve on the said sleeves 34, as is shown in detail in Fig. 4. A power-shaft 36 extends through the said sleeves 34. The diameter thereof is very much less than the interior diameter of said sleeves, said power-shaft being thereby adapted to rise and fall in said sleeves, and said power-shaft is provided with a sprocket-wheel 37. At the ends of said power-shaft, at a suitable distance from the outer sides of the supporting and covering-wheels 35, are traction-wheels 38, which may be either of the form here shown or of any other suitable form and which carry marking-blades 39. Said blades as they come in contact with the loose soil mark the same, and the diameter of said traction-wheels is such and the parts of the machine are so proportioned and adjusted that the marks made by the said blades 39 align with the hills planted by the seed-planting mechanism hereinbefore described.

A cross-bar 40 connects the side bars 33 of the rear frame at a suitable distance in advance of the centers of the sleeves 34. Bearing-collars 41 are disposed on said shaft 36, suitable bearing-collars 42 are disposed on said bar 40, and rods 43 connect said collars 41 42. Thereby said shaft 36 is flexibly connected to the rear frame and is adapted to move vertically independently thereof. A slack endless sprocket-chain 44 connects the sprocket-wheel 37 on shaft 36 with the sprocket-wheel 10 on shaft 6 and serves to convey power from the former to the latter, as will be understood, said sprocket-chain

being provided at suitable intervals with transversely-disposed tappets 45, which are caused by the motion of the chain to engage the tappet-arms 11 and partly rotate the same, and thereby rotate the shaft 6 by a step-by-step movement. A spring 46, which is carried by the front frame 1, bears against the upper end of the tappet-arms 11 when the latter are disengaged by the tappets 45 of chain 44 and prevent idle rotation or movement of the shaft 6, as will be understood, said spring yielding and permitting the tappet-arms 11 to pass the same when said tappet-arms are engaged by the tappets 45 of said chain 44. An arm 47 has its outer end pivotally connected to one side of frame 31, as at 48. The free inner end of said arm carries a weighted roller 49, which bears on the upper lead of chain 44 and tightens the same to the requisite extent to keep said chain from slipping on the sprocket-wheel 10. It will be understood from the foregoing that the sprocket-wheel 10, being loose on the shaft 6, is continuously in operation when connected by the chain 44 to the sprocket-wheel 37 and that the shaft 6, the rotation of which is arrested by the spring 46, revolves by a step-by-step movement only when the tappets 45 of chain 44 engage and turn the tappets 11.

Power is communicated to the seed-dropping mechanism by the traction-wheels which carry the markers, and since the shaft of said traction-wheels is capable of vertical movement independently of the supporting and covering wheels said traction-wheels are not affected by inequalities in the ground and the hills are planted in check-rows regardless of inequalities in the surface of the ground.

A longitudinally-disposed arch-bar 50 connects the center of the rear cross-bar 51 of frame 31 and the center of the cross-bar 40 thereof. Foot-rests 52 are secured on and project from opposite sides of said arch-bar. A sheave 53 is also carried by the latter. A hand-lever 54 is fulcrumed on the bar 40 and at its lower end has a segment 55. A rack-segment 56 is at the front end of bar 50. Said lever 54 has a spring-pressed dog 57 of the usual construction, which engages said segment-rack 56, and thereby locks said lever at any desired adjustment. An arm 58 projects downwardly and rearwardly from the tongue 2. Said arm is connected by a link 59 to the segment 55 of lever 54. A cord or rope 60 has one end attached to said segment 55. Said cord or rope passes over the sheave 53, from thence downward and rearward under the power-shaft 36, and its rear end is attached to the arched bar 50, as at 61. Hence by moving the upper end of the lever 54 rearwardly said cord or rope is tightened, thereby raising the shaft 36 and the traction-wheels 38, carried thereby, to raise the latter from the ground, and hence throw the seed-planting mechanism out of gear, and this movement of the lever 54 causes the link 59



and arm 58 to raise the rear end of the tongue 2, the front end of the latter being supported by the team, and hence the front frame 1, together with the furrow-openers, seed-spouts, and seed-dropping mechanisms carried thereby, is raised, so that the furrow-openers or shoes are cleared from the ground.

A seat 62 for the driver is supported above the bar 50. A rock-shaft 63 is journaled in suitable bearings 64 near the rear side of the rear frame 31. Said rock-shaft is provided at its ends with suitable scrapers 65, which are adapted to scrape the peripheries of the wheels 35. Said shaft is further provided with an arm 66, which depends therefrom. A foot-lever 67 is pivotally connected to the bar 50, as at 68, and is connected by a rod 69 to said arm 66. Hence the scrapers may be readily applied to the wheels 35 when necessary to clear the wheels of adhering earth.

A marker-bar 70 has its inner end pivotally mounted on the center of the rear side of rear frame 31, as at 71, and to the inner end of said marker-bar is attached a sheave or drum 72, which turns therewith. A direction-sheave 73 is disposed under the rear side of frame 31, at the center thereof. An operating-cord 74 is attached to the drum 72, passes under and engages the direction-sheave 73, and the front end of said operating-cord is attached to the segment 55 of the hand-lever 54. Hence when said hand-lever is moved rearward, as hereinbefore described, to put the corn-planter out of operation the marker-bar 70 is raised thereby and supported in a vertical position. The marker-bar is adapted to be swung to either side of the planter and is provided at its outer end with a runner or shoe 75, which is adapted to mark out a furrow parallel with the furrows which are in course of being planted by the machine. On the rear side of the frame 31, at the sides thereof, are arms or hangers 76, which support the marker-bar 70 in operative position when disposed on either side of the machine.

Having thus described my invention, I claim—

1. In combination with a seed-dropping disk, a shaft, a step-by-step mechanism connecting the same to the seed-dropping disk, a power element, and a step-by-step mechanism connecting the same to said shaft, an accumulating-valve, having an arm, a spring to close said valve, a pivoted tappet-link, a rod connecting said tappet-link to said arm, and tappets on said shaft to engage and operate said tappet-link, and thereby operate said accumulating-valve, substantially as described.

2. In combination with a seed-dropping disk having tappets, a shaft having tappets, to engage those of the disk and rotate the latter by a step-by-step movement, tappet-arms on said shaft, a wheel loose on said shaft, and an endless traveling power element engaging and rotating said wheel, said power element having tappets to engage and operate said tappet-arms and thereby rotate said shaft by

a step-by-step movement, substantially as described.

3. In combination with a seed-dropping disk having tappets, a shaft having tappets to engage those of the disk and rotate the latter by a step-by-step movement, tappet-arms on said shaft, a wheel loose on said shaft, an endless traveling power element engaging and rotating said wheel, said power element having tappets to engage and operate said tappet-arms and thereby rotate said shaft by a step-by-step movement, and a spring secured to a fixed point and interposed in the path of said tappet-arms, to engage the latter and thereby prevent idle rotation of said shaft, substantially as described.

4. The combination of a seed-dropping disk having tappets, a shaft having tappets to engage those of said disk and thereby rotate the latter by a step-by-step movement, a seed-spout, a valve therein, tappets 8 on said shaft, a pivoted link in the path of said tappets 8, a spring to normally close said valve in the lower end of said spout, and a connection between said pivoted link and said valve to operate the latter, substantially as described.

5. In a planter, the combination of a front frame carrying the seed-dropping mechanism, and a shaft 6 to actuate said seed-dropping mechanism, said shaft having tappets 11, a sprocket-wheel 10 on said shaft, a rear frame flexibly connected to the front frame and having supporting-wheels, a shaft 36, movable vertically independently of said rear frame and having traction devices whereby it is rotated, a sprocket-wheel 37 on said shaft 36, and a sprocket-chain connecting said sprocket-wheels, said sprocket-chain having tappets to engage and operate the tappets 11 on shaft 6 and thereby rotate the latter by a step-by-step movement, substantially as described.

6. In a planter, the combination of a front frame carrying the seed-dropping mechanism, and a shaft 6 to actuate said seed-dropping mechanism, said shaft having tappets 11, a sprocket-wheel 10 on said shaft, a rear frame flexibly connected to the front frame and having supporting-wheels, a shaft 36, movable vertically independently of said rear frame and having traction devices whereby it is rotated, a sprocket-wheel 37 on said shaft 36, a slack sprocket-chain connecting said sprocket-wheels, said sprocket-chain having tappets to engage and operate the tappets 11 on shaft 6 and thereby rotate the latter by a step-by-step movement, and a tightener bearing on a lead of said chain, substantially as described.

7. In a planter, the combination of a front frame having furrow-openers and seed-dropping mechanisms, a shaft 6, carried by said front frame, connections between the seed-dropping mechanisms and said shaft whereby the former are actuated by the latter, a rear frame flexibly connected to said front frame and having supporting-wheels, a shaft 36 car-



ried by said rear frame and movable vertically independently thereof, traction devices on said shaft 36 to rotate the same, power-conveying connections between said shaft 36  
5 and said shaft 6, and means to raise and lower said front frame and said shaft 36, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS M. HENDRICKSON.

Witnesses:

WILLIAM URQUHART,  
H. H. McDOWELL.