

No. 891,587.

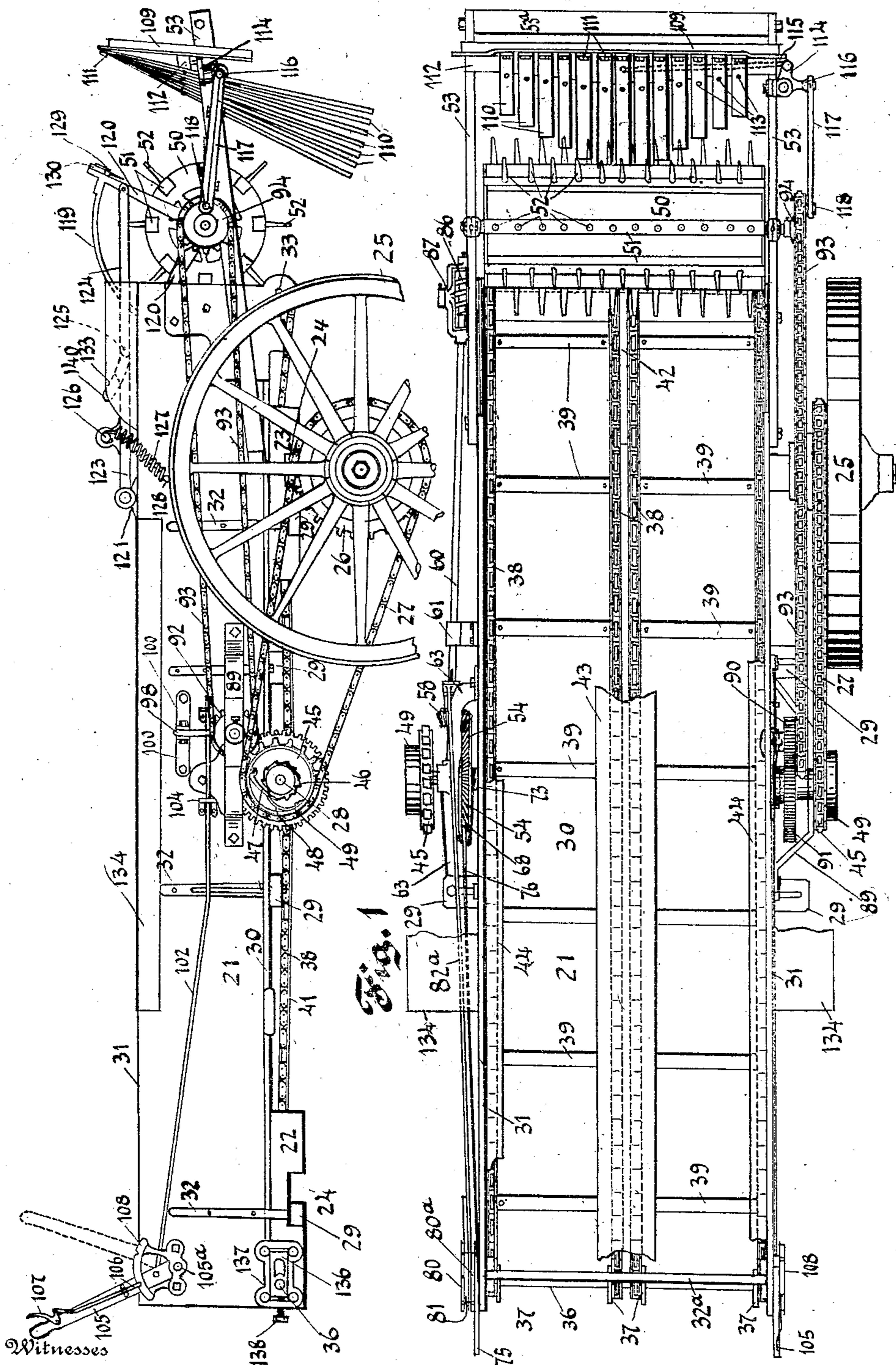
PATENTED JUNE 23, 1908.

J. L. BARKER.

MANURE SPREADER.

APPLICATION FILED JAN. 9, 1907.

4 SHEETS—SHEET 1.



Witnesses
Matter Drachstein
Gertrude H. Poink

John L. Barker, Inventor
By Charles W. Moore, Attorney

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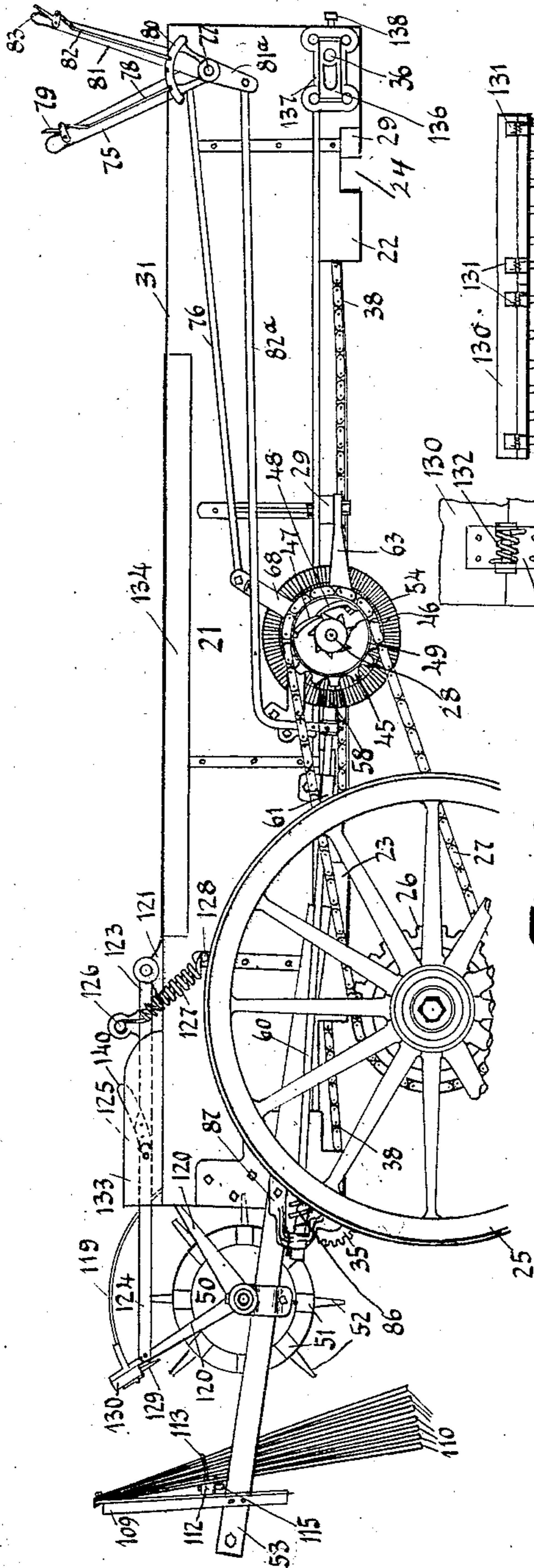


Fig. 3

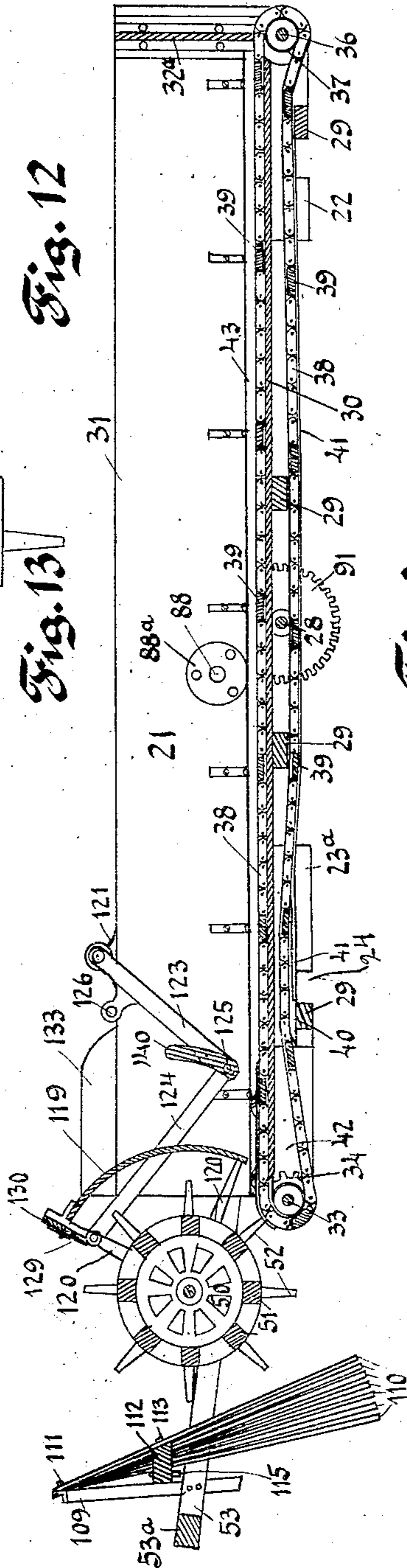


Fig. 4

Fig. 12

Fig. 13

Witnesses

Walter D. Machleit
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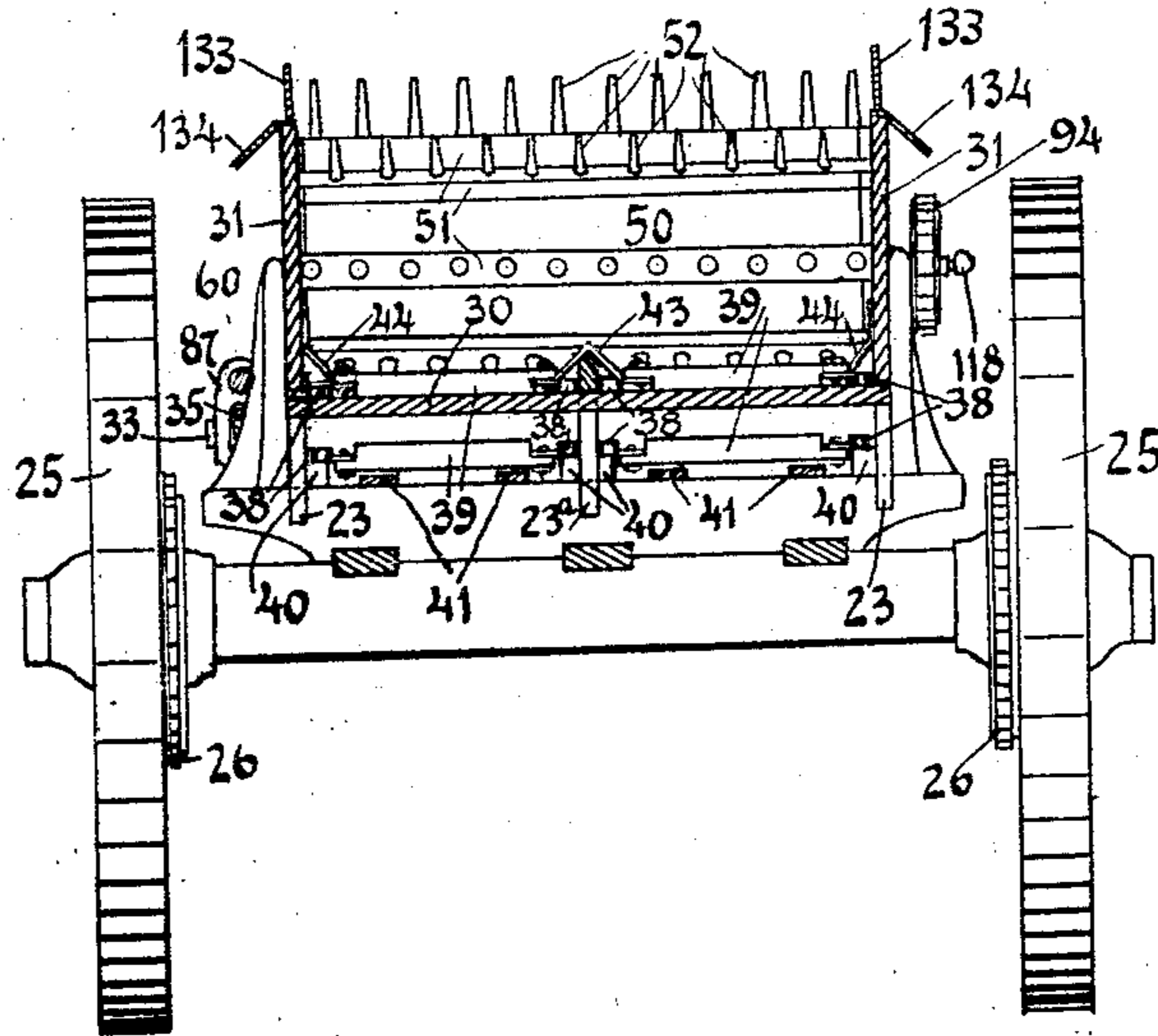


Fig. 5

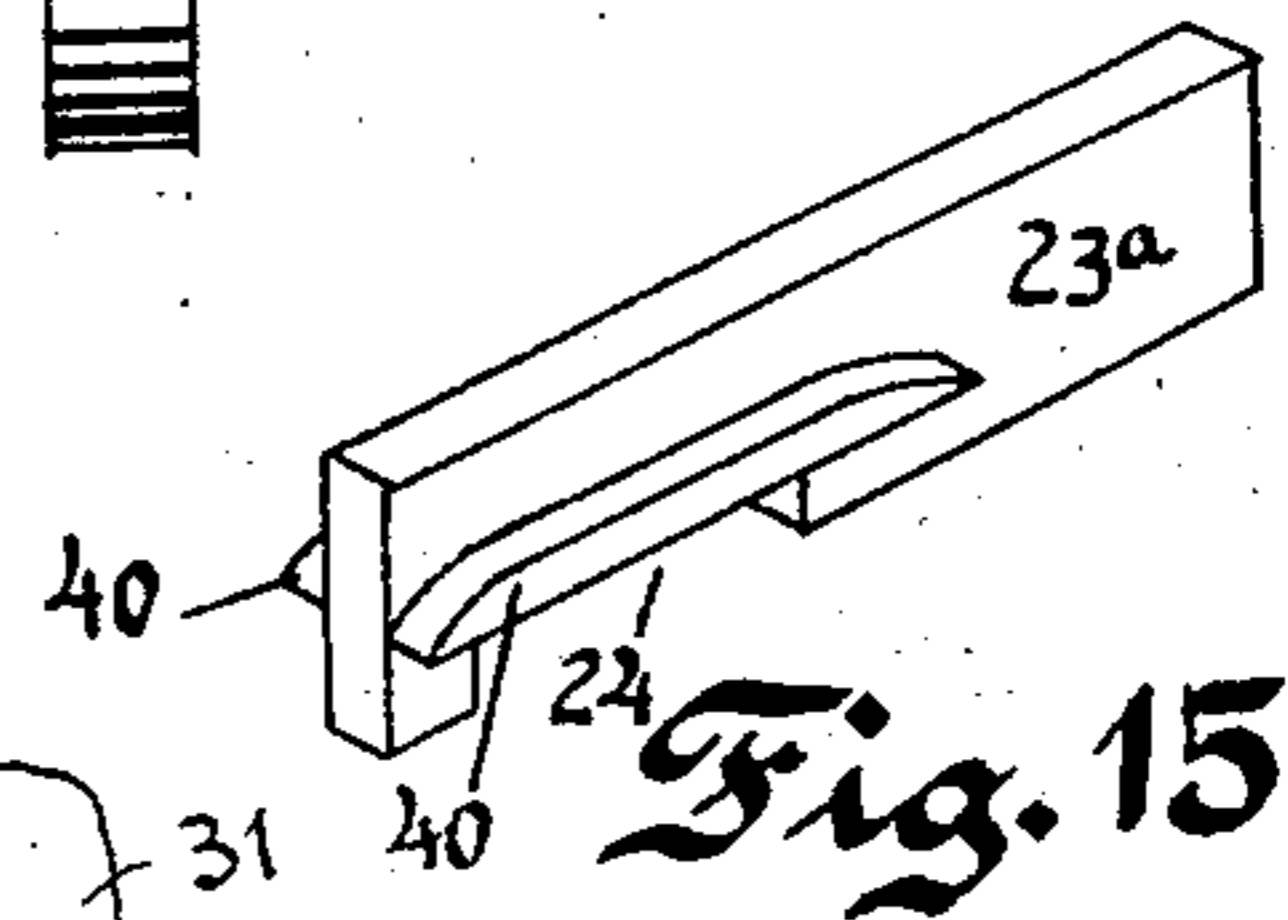


Fig. 15

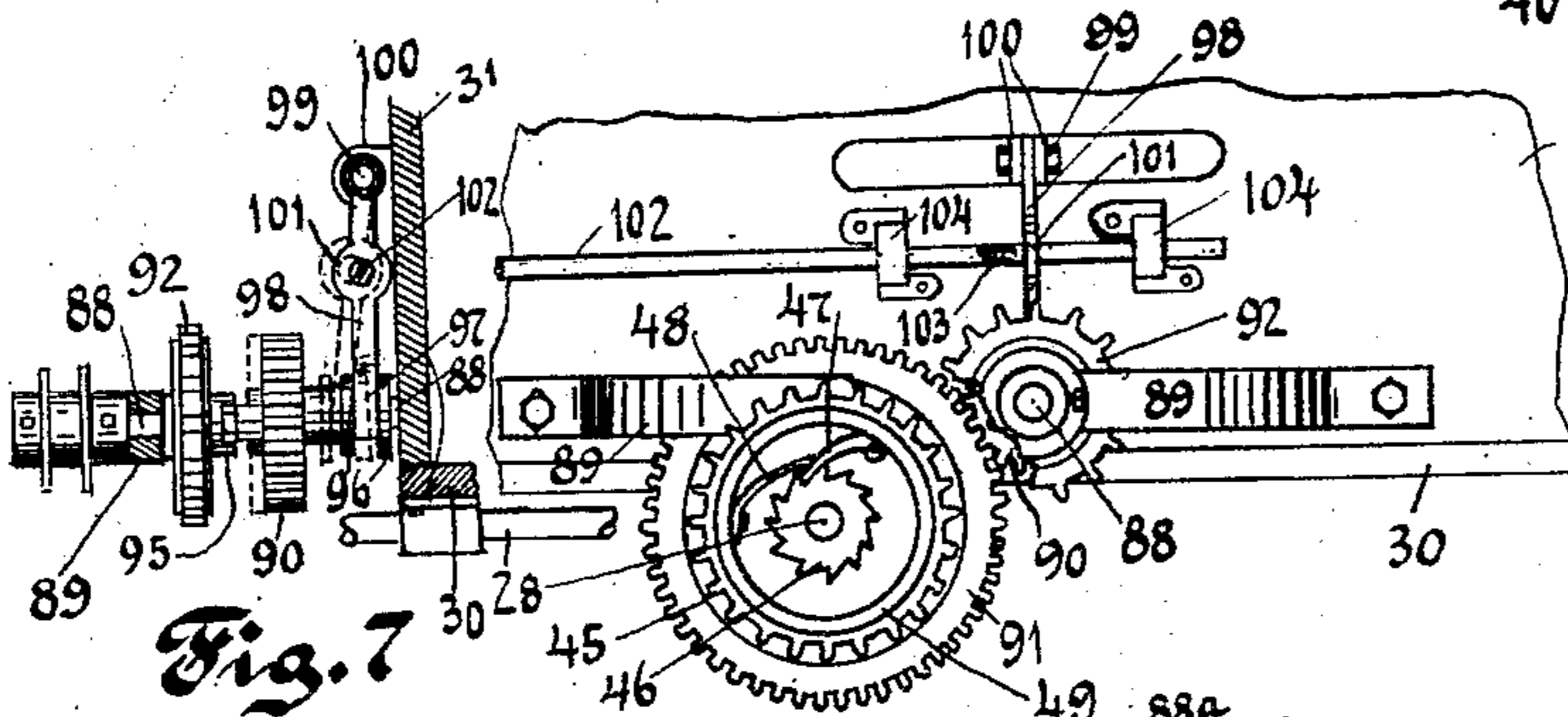


Fig. 7

Fig. 6

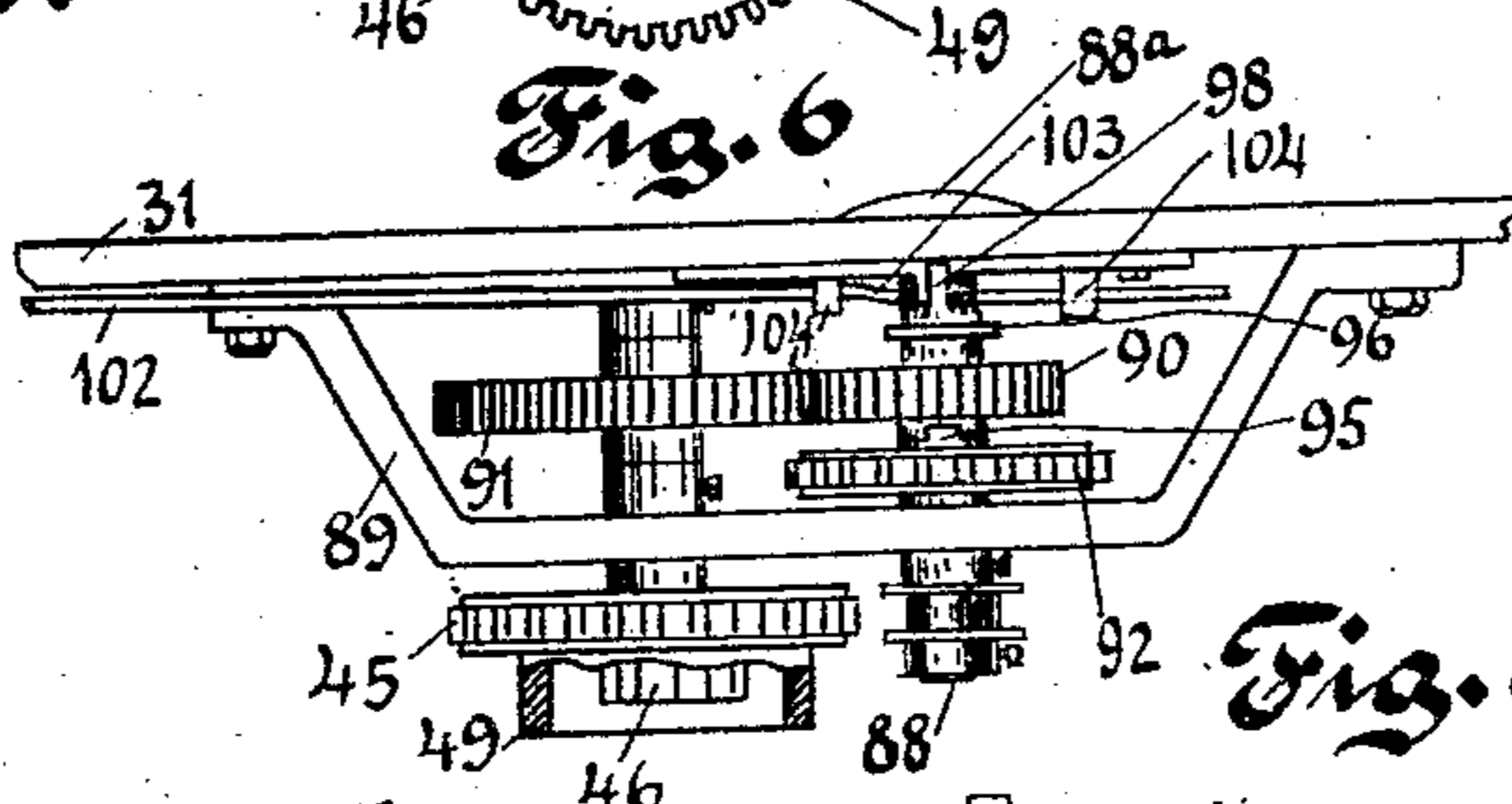


Fig. 8

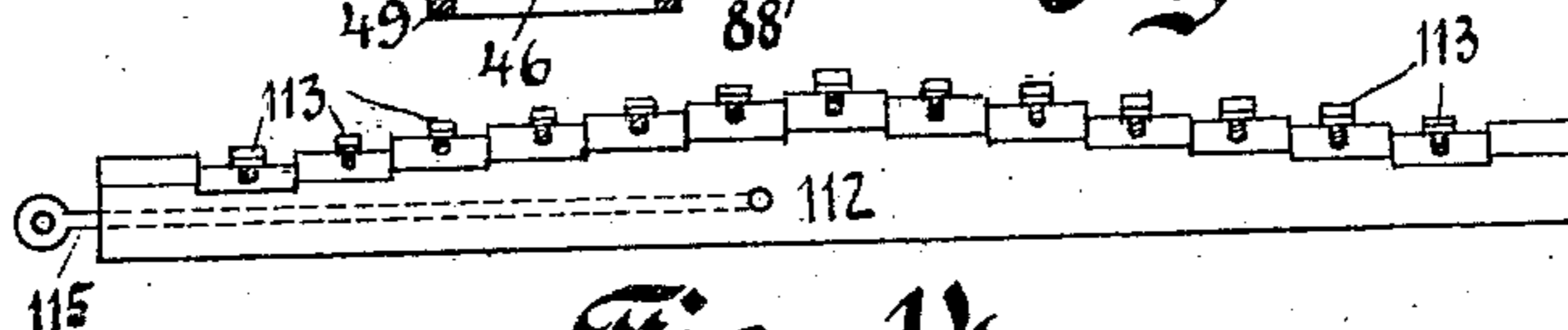


Fig. 14

Witnesses

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4 SHEETS—SHEET 4.

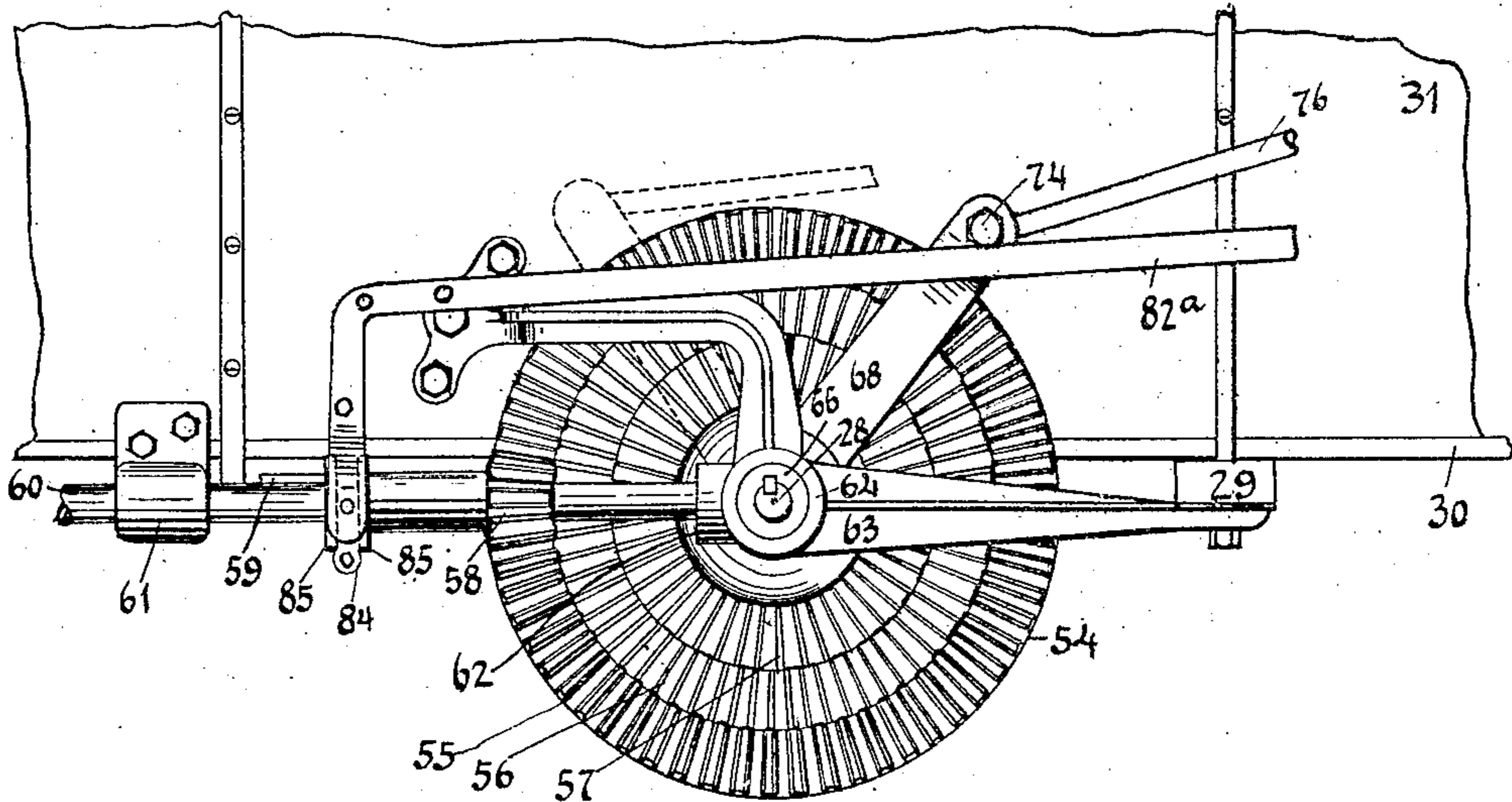


Fig. 9

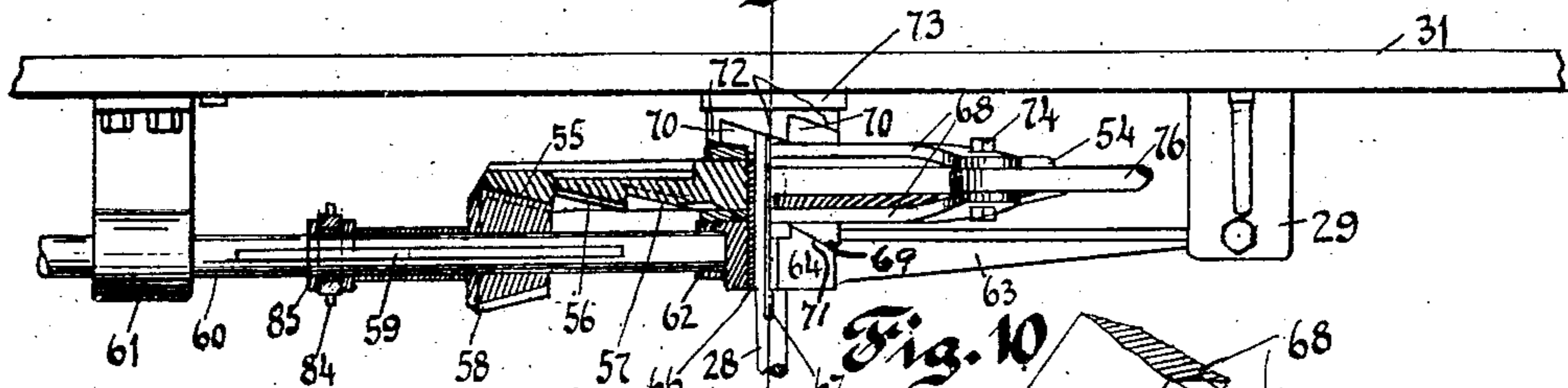


Fig. 10

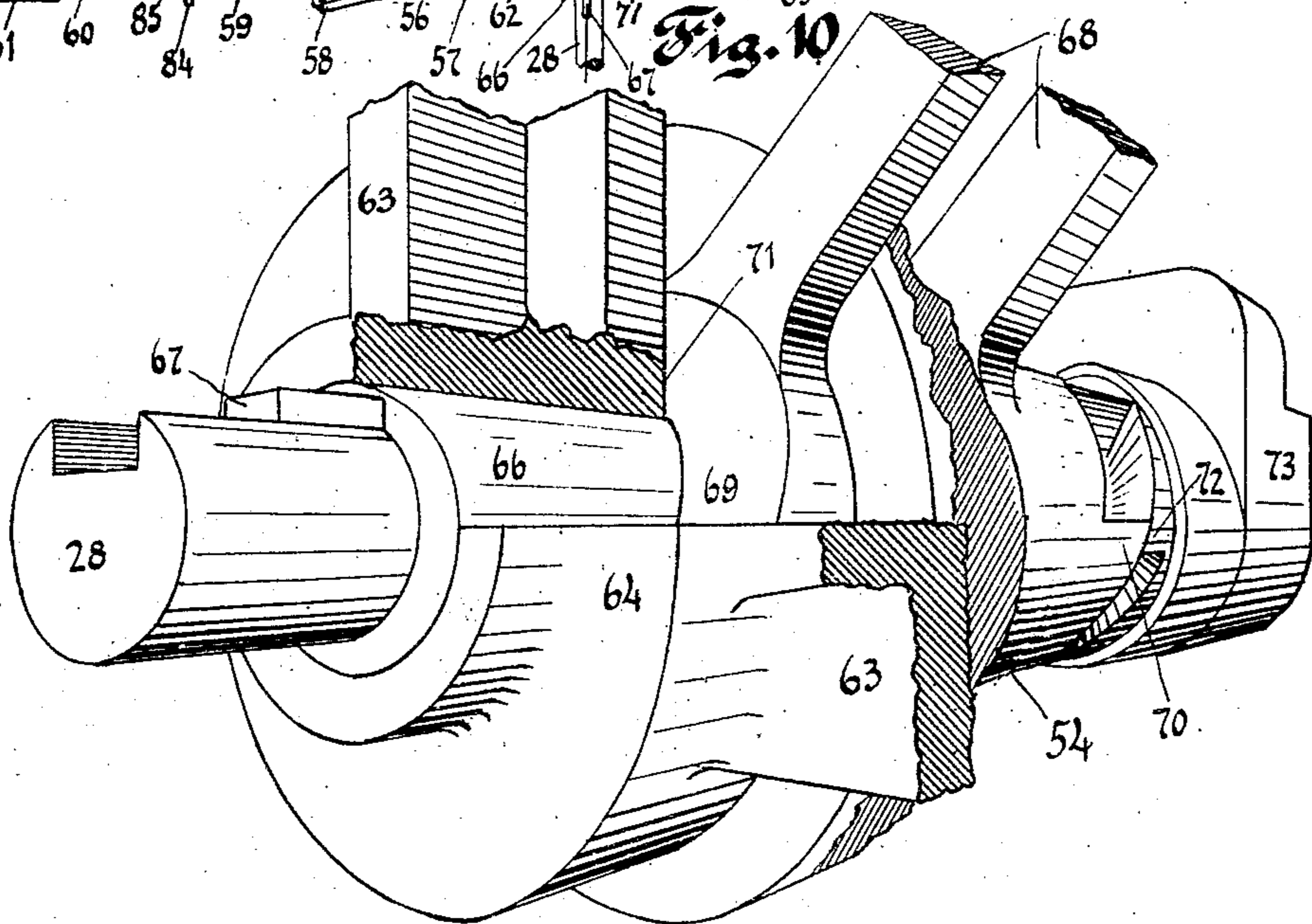


Fig. 11

Witnesses

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Gertrude A. Bink

John L. Barker, Inventor
By *George W. Moore* *Attorney*

UNITED STATES PATENT OFFICE.

JOHN L. BARKER, OF RACINE, WISCONSIN.

MANURE-SPREADER.

No. 891,587.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed January 9, 1907. Serial No. 351,413.

To all whom it may concern:

Be it known that I, JOHN L. BARKER, of Racine, Wisconsin, have invented a Manure-Spreader, of which the following is a specification.

My invention relates to improvements in that type of manure-spreaders, comprising a wagon-box for holding the manure to be distributed, which is provided with an endless carrier traversing its entire length, means for propelling said carrier in such a manner as to convey the manure slowly toward the rear end of the beater, and a distributing mechanism at the rear end which raises the manure from the carrier, and scatters it upon the ground.

The principal objects of my invention are: first, to provide a movable wagon-box which can be readily lifted off the running-gear, in order that the latter may be used for other purposes when not in use as a manure-spreader; second, to provide one or more endless carriers for delivering the manure to the beater, with means for driving them continuously in one direction, and thereby avoid the necessity of reversing the direction of travel of the carriers, in order to return them to their original position for loading after the load has been removed; third, to construct and operate the aforesaid carriers, so that they will pass over both the front and rear bolsters of the running-gear, whereby they do not interfere with the reach and the latter may be retained in the running-gear, which is impossible where the carrier or its equivalent passes below the rear-bolster; fourth, to so construct and operate the carriers that they will operate freely at all times in their passage over the bolster without being obstructed by the sagging of the wagon-box when heavily loaded or by the warping, twisting, or winding of the slats of the carrier; fifth, to provide a shield in connection with the beater or distributor at the rear of the wagon-box, and so construct said shield that it will prevent the manure from coming into direct contact with the beater, so long as the carriers are stationary, but which will be raised automatically from its position in front of the beater when the carriers are started, thereby permitting the material to be brought into contact with the beater, and which will also fall automatically as the last of the load approaches the beater, so as to

hold the very last of the load thereagainst, and cause it to be carried out of the box, thereby avoiding the necessity of a traveling end-gate, which has heretofore been used to accomplish this result; sixth, to provide a spring-comb or rake, operating in conjunction with the beater, and constructed to open and permit obstructions such as sticks or stones to pass through, without at the same time opening across the entire beater and thereby momentarily ceasing to operate at points where there is no obstruction; seventh, to construct a lateral distributing device, which will scatter the material in a lateral direction beyond the sides of the wagon-box, and thus allow a wagon-box of ordinary width set in an ordinary running-gear to serve the same purpose as the extra-wide box and consequent special running gear which have heretofore been in use,—this having the further advantage of reducing the number of wheel tracks in covering the ground, which is an essential object in soft ground, such as meadow-land; eighth, to construct a driving mechanism having a variable speed-connection, operated by the driver of the spreader, whereby the speed of the carrier or carriers is varied, so as to vary the rate at which the manure is distributed, and further, means for starting and stopping the beater independently of the carrier.

For the better understanding of my invention, I have illustrated my spreader in the accompanying drawings, wherein

Figure 1 is a side elevation of the spreader from the left side, the front wheels and running-gear being omitted for clearness sake; Fig. 2 is a plan view of the same, parts being broken away; Fig. 3 is a side elevation of the same from the right side; Fig. 4 is a longitudinal section through the spreader, slightly on one side of the center line; Fig. 5 is a transverse section looking toward the rear; Figs. 6, 7 and 8 are respectively a front view, side elevation and plan view of the beater driving-gearing and clutch; Figs. 9 and 10 are respectively a front elevation and a plan, partly in longitudinal section, of the driving-gearing for the pushing-devices; Fig. 11 is a perspective view of the hub-portions of the same; Fig. 12 is a view from the rear of the opening-rake; Fig. 13 is a similar view of one end of the same on an enlarged scale; Fig. 14 is a plan of the stepped bar for the

lateral distributing mechanism; Fig. 15 is a perspective view of the rear central sill-block, showing the guides for the carriers.

In these drawings, every reference character refers always to the same part.

The drawings, Figs. 1, 2, 3, and 4, show a box wagon-body 21, which is of the same width as an ordinary farm wagon-box, and is designed to fit onto an ordinary farm-wagon running-gear; said wagon-body comprising a bottom 30, side-pieces 31, and a front or dash-board 32^a. The rear end is left open, and has the beater and distributing mechanism located therein, as will be hereinafter described. The body 21 is supported and braced by the usual girth-strips 29, and bracing arrangements 32; but the girth-strips 29 at the ends of the body, instead of being close to the bottom thereof, are spaced apart therefrom by the interposition of sill-blocks 22, at the front end, and 23 and 23^a at the rear end. Each of these sill-blocks is notched as shown at 24 on its under side to receive the bolster of the running-gear. There are three blocks 22, one central and one at each side, and two side blocks 23, while the central rear block, being somewhat differently formed from the side blocks, is designated 23^a.

At the rear end of the wagon-body 21 is mounted a transverse shaft 33, which carries four sprocket-wheels 34 keyed thereto along its length, and a worm-wheel 35 at the right-hand end thereof; and at the front end is similarly mounted a transverse shaft 36 which carries four flanged idle-pulleys or rolls 37, these pulleys lying in line with the several sprocket-wheels 34. These pulleys and wheels form mountings for the carriers, which are herein two in number, each consisting of a pair of sprocket-chains 38, cross-connected by floats or wooden bars 39, the latter being arranged to slide along the bottom 30 of the wagon-body when in operation, and in so doing to push the manure toward the rear. The shaft 33 acts as the driving-shaft, the sprocket-wheels 34 engaging with the links of the carrier-chains; and to maintain the proper tension, the shaft 36 is journaled in blocks 136 sliding in frames 137 on the side-pieces 31, and provided with screws 138 whereby the blocks 136 are drawn forward to tighten the chains 38. Returning, the carriers pass over the running gear and close to the bottom 30 of the wagon-body; and to enable this to take place, the end girths 29 are set apart at a distance below the bottom board, as aforesaid. The general arrangement of the carriers is clearly seen from Fig.

4. To lift the carriers clear over the bolsters and girths 29, I provide the rear sill-blocks 23 with a bead or flange 40 along the center thereof on the inner side, said bead being rounded at its ends, and the center sill-block 23^a has two such beads 40, one on each side,

for the central chains of the carriers, while the carriers are supported between the end-girths 29 by two pairs of metal straps 41, which form slide-ways for the floats 39, and their arrangement in transverse section is clearly shown by Fig. 5. It has been found unnecessary to provide any beads 40 on the front sill-blocks 22, and therefore such are not shown. The drive-shaft 33 is also supported in the center against the bending moment brought thereon by a journal-block 42. Along the center of the wagon and at each side are mounted shield-plates 43 and 44, which cover the chains and prevent them from becoming clogged with fertilizer, and these plates are pitched obliquely, as shown in Fig. 5, whereby the material is caused to slide down on to the bottom of the wagon where it will be reached by the bars 39.

Although my invention is not necessarily confined to the use of double carriers, I deem such construction an important feature thereof. The advantages gained thereby are principally as follows: When only two chains are used, the floats are so long that they are liable to warp, twist, or bend to such a degree that they will not easily pass around the ends of the wagon-box, and more particularly, they will not pass between the wagon-bolster and the body, unless the latter is raised very much higher than would be desirable, since this would involve increased labor in loading. The liability of a single carrier to be obstructed in its passage over the bolster, would also be augmented by the tendency of the bottom of the wagon-body to sag in the middle when loaded, as the support of the girth 29 is removed therefrom; but the arrangement of the two carriers not only overcomes these difficulties, but enables the bottom 30 to be supported at the center by means of the block 23^a, and moreover the slats being less than one-half as long, may now be very much lighter to provide the same strength, each slat having to do only half the work that a single long slat would do. Moreover, the load of the wagon is more evenly divided between the two sides by means of the central double-pitched shield-plate 43.

All the mechanism connected with my manure-spreader, is operated and set in motion by means of a shaft 28 mounted transversely below the wagon-body and at the center thereof, and said shaft itself driven by means of gearing connecting it with each of the hind-wheels 25 of the wagon. The hind-wheels are provided with sprocket-wheels 26 secured to their hubs, while the shaft 28 has on each end a sprocket-wheel 45, which is connected to its respective wheel 26 by a chain 27. The sprocket-wheels 45 are not keyed to the shaft 28, but are operatively connected therewith through a pair of ratchet-wheels 46, which are keyed to said shaft, and each wheel 45 has on its face a pawl 47

which is pressed into engagement with the teeth of one of the wheels 46 by means of springs 48. This differential gearing is applied in order to render the two driving-wheels independent of each other in cases where one turns faster than the other, as in turning a corner. Each sprocket-wheel 45 is preferably provided with a cylindrical guard-flange 49, within which the ratchet-wheel 46 lies, and which acts to prevent manure from falling thereon and clogging its action.

At the open rear end of the wagon-body 21 is mounted a beater-drum 50, said drum consisting of a pair of end-plates connected by bars 51, in which are set beater-teeth 52, which in the revolution of said beater engage the manure and carry it upward over the top thereof, as seen in Fig. 1. This beater is journaled on a pair of rearwardly projecting arms 53, which are secured to the sides 31 of the wagon-body, and connected together at their free ends by a beam 53^a. The beater 50 is driven from the shaft 28 through gearing, which will be presently described.

The driving-gearing for the carriers and that for the beater-drum 50 are independent of each other, the former being on the right-hand and the latter on the left-hand end of the shaft. The driving-gearing for the chains comprises a bevel-gear-plate 54, carrying three rows of teeth 55, 56 and 57; one within the other, and each of which is adapted to mesh with the teeth of a bevel-pinion 58, which is keyed in a slidable manner by a spline 59 to a longitudinal shaft 60, which turns in a bearing-block 61 and projects into a bearing-lug 62 formed on a yoke-piece 63, which also carries a hub 64 to receive the hollow journal 66 of the gear-plate 54 which slides on the shaft 28. The bevel-pinion 58 may slide forward or backward to engage any one of the three series of gear-teeth on the plate 54, and it will be of course understood that these teeth cannot be cut with mathematical exactness so that each set will fit the bevel-pinion, but the action will be sufficiently precise for the purpose at hand.

In order to disconnect the gearing of the driving-shaft 33, and also to change from one set of teeth on the plate 54 to another, the plate 54 is separated from the pinion 58 by moving it endwise on the shaft 28 away from the pinion. The plate 54 is keyed nonrotatably on the shaft 28 by means of a key or spline 67, and in order to provide for the endwise movement of the plate 54 upon the shaft 28, there is provided a yoke 68, whose ends are on opposite sides of the plate and are provided with oblique cam-lugs 69 and 70, the former on the outside and the latter on the inside of the gear-plate. The cam-lugs 69 are two in number, and cooperate with similarly shaped oblique surfaces 71 on the hub 64; while the oblique-edged lugs 70

correspond with oblique-edged lugs 72, preferably four in number, which are formed on the bearing-block 73 for the shaft 28, which is secured to the wagon-body on the inner side of the gear-plate 54. The direction of obliquity of all of these oblique lugs and surfaces is the same, whereby the rocking of the yoke 68 into one position causes the gear-plate 54 to advance endwise on the shaft 28, and the rocking of said yoke in the other direction causes it to be retracted from the pinion 58 and no longer to mesh therewith, and when in this position the pinion 58 can be shifted so as to mesh with any of the three sets of gear-teeth 55, 56, or 57 when the plate 54 is moved forward again.

The end of the yoke 68 is connected by a bolt 74 to a hand-lever 75 by an intermediate link 76, the hand-lever being mounted on a pivot 77 at the front end of the wagon, and having a bolt-rod 78 engaging in a notched quadrant 80^a and operated by a finger-lever 79. The notched quadrant 80^a in which the bolt-rod 78 engages is immediately behind the quadrant 80 for the hand-lever 81, which is mounted on the same pivot and has a bolt-rod 82 operated by a finger-lever 83 and engaging in the notches of the said quadrant 80, this latter lever being for the purpose of operating the pinion 58 to shift it longitudinally in order to change the rate of distribution of the fertilizer. The lever 81 has a depending end 81^a, which is connected by a shifting-rod 82^a with a collar 84, turning between flanges 85 on the periphery of the pinion 58, so that the pinion may be shifted by the turning of the lever 81 without interfering with its rotation. The worm shaft 60 has on its rear end a worm 86 turning in a frame 87 and engaging the teeth of the worm 35, which is also journaled in the frame 87.

The beater drum 50 rotates in a direction opposite to that of the rear wheels and the shaft 28, and it is therefore necessary to provide means for reversing its direction. The said means, as herein shown, comprises a short shaft 88, one end of which is journaled in a bearing plate 88^a on the side 31 of the wagon-body, and the other end in a yoke 89 also mounted on the side 31. The shaft 88 carries a loose gear-wheel 90, which meshes with a gear 91 keyed to the shaft 28, and rotating therewith. A sprocket-wheel 92 is loosely mounted on said stub-shaft and is connected by a driving-chain 93 with a sprocket-wheel 94 on the shaft of the beater. The sprocket-wheel 92 is arranged to be clutched and driven by the wheel 90, there being interlocking clutch-teeth 95 on the hubs of the two wheels, and the wheel 90 has an endwise movement on the shaft toward and from the wheel 92 to engage and disengage it therewith. To effect this movement, the hub of the wheel 90 has on its inner side a pair of flanges 96, which are engaged

by a fork 97 on the end of a lever 98, which is fulcrumed at 99 to ears 100 on the side of the wagon-body. The said lever 98 is provided at an intermediate point with an eye 101 through which passes a shifting-rod 102, said shifting-rod having an oblique offset 103 (Fig. 8) which lies between a pair of guide-blocks 104 on opposite sides of said lever 101. When the rod 102 is shifted endwise, the offset-103, in passing through the eye 101 of the shifting-lever 98, moves it in one direction or the other, as indicated by the dotted and full-line position in Fig. 7, so as to move the wheel 90 endwise on its shaft and engage or disengage the sprocket-wheel 92. The endwise movement of the rod 102 is effected by a lever 105 pivoted on a fulcrum or pin 105^a at the front end of the wagon, and with which the end of the rod 102 is connected; and said lever is preferably provided with the usual locking-bolt 106, finger-lever 107 and quadrant 108, whereby it is held in the position to which it is set.

The bracket-arms 53, which support the beater-drum 50, are prolonged to the rear of said drum, and connected by a cross-beam 53^a, and carry the lateral distributing-device. This device comprises a yoke 109, which may be an angle-iron bar having its ends bent vertically and secured to the ends of the arms 53. Along the center of this yoke are attached a plurality of distributing-bars 110, which are pivoted on pivot-bolts 111. A stepped cross-beam 112, the form of which is best shown in Fig. 14, is laid across the whole series of bars 110 at the rear thereof, and is pivotally secured to each bar by means of a bolt 113, the arrangement being such that the beam 112 oscillates freely with the distributing-bars 110 in a horizontal direction. On the left-hand arm 53 is pivoted a bell-crank lever 114, one arm of which is connected by a link 115 to the center of the beam 112, while the other arm has a ball-and-socket joint connection 116 with a pitman 117, whose other end is connected also by a ball-and-socket joint with an eccentric pin 118 on the sprocket-wheel 94.

The arrangement is such that the rotation of the sprocket-wheel 94 causes the oscillation of the bell-crank lever 114, and hence of the distributing-bars 110, which oscillate rapidly from side to side as the manure is thrown over them by the beater in its revolution, and thus cause it to be scattered laterally over a suitable width of ground. The stepped arrangement of the distributing-bars is such that any manure falling on them is thrown outwardly from the central bar towards the outer bars on both sides.

The spreader, as thus far described, is sufficiently complete for practical use, but in some cases I may also use a further device, the purpose of which is to prevent the manure from engaging and resting upon the

beater-drum before the latter has begun to revolve; to prevent said manure from falling out of the rear of the wagon while being brought to the place of distribution; and further to hold the last of the load against the beater. This device comprises a hood 119 (omitted from Figs. 2 and 5) which is in the form of a cylindrical segment and mounted on radial arms 120 oscillating about the shaft of the beater. The upper part of the arm 120 on each side is connected to a post 121 at the side of the wagon by means of a pair of jointed bars 123, 124 connected together by a pin 125. Each bar 123 has a laterally projecting pin 126 which is acted on by a spring 127 to draw it downwardly, this spring being of any preferred form, and herein shown as a coiled tension spring having one end fixed to a pin 128 at the side of the wagon. The action of the spring is to draw the jointed rod 123, 124 downwardly, pulling the hood 119 forwardly and downwardly into the position shown in Fig. 4, so that it closes the end of the wagon and cuts off the manure therein from the beater, when the latter is not in action. When the beater and carriers are started up, the hood 119 is thrown up into the position shown in Fig. 3, and this is caused to take place by means of a board or plate 140, which is attached to the arms 123 in the position shown (see Figs. 3 and 4) extending across the wagon-body in a position to be pressed upon by the manure as soon as it starts to move rearwardly, and the pressure of the manure on it holds it in the raised position as long as there is any manure in the wagon. As the last of the load passes over the board 140 the hood drops and holds the remnant of manure up against the beater to enable it to be properly distributed by the latter.

In order to break up the manure, I provide on the rear edge of the hood a comb or rake, which is divided into two or more sections designated 129. Each section is secured to a cross-piece 130 carried by the arms 120 and is hinged thereto by a common spring-hinge 131 having a torsion-spring 132 on the pintle thereof, the action of which is to turn the comb sections into the extended position. As the manure is carried over by the beater-teeth, it strikes the comb-teeth and is opened out and separated, and by dividing the comb into several sections I gain the advantage of having each portion of the circumference acted on by its own comb, whereby any large clod would not raise the entire comb and thus allow pieces to get through without being properly opened. While I do not consider this arrangement a necessary element of my spreader, it is an advantageous addition thereto.

To prevent manure from falling over the sides of the wagon-body when carried up by the drum, I provide a pair of extension guards

133 at the rear end of the sides 31, and other guard-plates or shields 134 are set along the sides to prevent manure from falling upon the gearing.

5 While I have hereinabove described the preferred form of my invention, I wish it understood that I do not limit myself to any one of the particular features thereof, and I fully realize that it is capable of numerous modifications without departing from the principle thereof, and I consider such modifications and any omissions may be made without departing from the principle of my invention.

15 Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a fertilizer distributor, the combination of a wagon-body, shafts mounted at either end thereof, a pair of endless flexible fertilizer-moving devices running on said shafts on opposite sides of said wagon-body, bolsters supporting said wagon-body and underlying the lower lap of said fertilizer moving-devices, means for driving said fertilizer moving-devices, and a support for the wagon-bottom at the center thereof and between said devices, said support acting to sustain the wagon-bottom centrally from the bolster and prevent it from sagging.

2. In a fertilizer distributor, the combination of a wagon-body, shafts mounted at either end thereof, a pair of endless flexible fertilizer-moving devices running on said shafts on opposite sides of said wagon-body, bolsters supporting said wagon-body and underlying the lower lap of said fertilizer moving-devices, means for driving said fertilizer moving devices, and means for directing the load in said wagon-body laterally upon said fertilizer-moving devices.

3. In a manure spreader, in combination with a fertilizer-moving device, a driving shaft therefor, and a speed-changing device connecting said device and shaft and comprising a rotatable member splined to said shaft, fixed supports on either side of said rotatable member, a yoke having legs on either side of said rotatable member between it and the opposite supports, said yoke being rotatable concentrically with said shaft and having oblique cam-faces on the ends of said legs engaging with opposing surfaces on said supports whereby the turning of said yoke about said shaft causes the endwise shifting of said rotatable member, and a second rotatable member engaging with and driven by said first-named rotatable member and operatively connected with said fertilizer-moving device.

4. In a manure-spreader, in combination with a fertilizer-moving device, driving means therefor, and a speed-varying transmission-device connecting them and comprising, in combination, a pair of shafts, a

pair of beveled gears splined to said shafts, one of said gears having a plurality of concentric sets of teeth and the other having teeth adapted to engage with either of said sets, means for moving one of said gears longitudinally upon its shaft, and means for moving the other member longitudinally upon its shaft comprising a pair of fixed pieces on opposite sides of said gear and a yoke having legs concentrically mounted with said gear on opposite sides thereof, said legs having oblique cam-faces coacting with the opposing surfaces of said fixed pieces whereby rotation of said yoke causes the endwise movement of the legs thereof with respect to said pieces and the endwise movement of said gear which is confined between said legs.

5. In a fertilizer-distributor, the combination of a wagon-body, a pair of longitudinal chains running along the center of said body at the bottom thereof, and a V-shaped shield mounted over and covering said chains whereby material lying thereon is thrown upon the bottom outside said chains.

6. In a manure spreader, a lateral spreading-device comprising a plurality of bars arranged in longitudinal planes and pivoted on fixed pivots at one end, and means for oscillating all of said bars simultaneously in a transverse direction.

7. In a manure-spreader, a lateral scattering-device comprising, in combination with a wagon-body, a plurality of bars arranged in longitudinal planes and in stepped relation, the central bar being the most advanced, and means for reciprocating all of said bars simultaneously in a transverse direction.

8. In a manure-spreader, in combination with a wagon-body and means for throwing manure from the rear end thereof, a lateral distributor comprising a plurality of bars arranged in longitudinal planes and in a stepped relation the central bar being the most advanced, and means for reciprocating said bars in a transverse direction.

9. In a manure-spreader, in combination with a wagon-body and means for throwing manure from the rear end thereof, a lateral distributor comprising a plurality of bars arranged in longitudinal planes and in a stepped relation, the central bar being the most advanced, a transverse bar to which all of said bars are pivoted at their upper ends, and means for oscillating all of said bars simultaneously in a transverse direction.

10. In a manure-spreader, in combination with a wagon-body and means for throwing manure from the rear end thereof, a lateral distributor comprising a plurality of bars arranged in longitudinal planes and in a stepped relation, the central bar being the most advanced, a transverse bar to which all of said bars are pivoted at their upper ends, a transverse stepped bar crossing said longitu-

dinal bars at a point intermediate to their length and connected to each of the latter by a pivot, and means for reciprocating said stepped bar.

11. In a manure-spreader, in combination with a wagon-body and means for throwing manure from the rear end thereof, a lateral distributor comprising a plurality of bars arranged in longitudinal planes and in a stepped relation, the central bar being the most advanced, a transverse bar to which all of said bars are pivoted at their upper ends, a transverse stepped bar crossing said longitudinal bars at a point intermediate to their length and connected to each of the latter by a pivot, a beater-drum at the rear of said wagon-body, means for rotating said drum, and a crank-and-pitman connection between said drum and stepped bar whereby the latter is reciprocated as said drum is rotated.

12. In a manure-spreader, in combination with a wagon-body, a beater arranged at the rear end thereof, means for moving the material in said body towards said beater, means for rotating said beater, and a lateral distributing device at the rear of said beater, said distributing-device comprising a horizontal bar, a plurality of longitudinal sloping bars pivoted thereto at their upper ends and arranged in stepped relation, the central bar having the greatest and the outer bar the least slope, a transverse bar connected to all of said longitudinal bars at a point intermediate of their length, and a crank-and-pitman connection between said transverse bar and said beater.

13. In a fertilizer-distributor, in combination with a wagon-body, a distributing-beater mounted at the rear end thereof, means for driving said beater, an automatic hood or guard over said beater and pivoted on the axis of the latter, and means for normally holding said hood in lowered position, said means being operated by the continued action of the machine when the manure is pressed thereagainst to raise said hood.

14. In a fertilizer-distributor, the combination of a wagon-body, a distributing-device mounted at the rear end thereof, means for driving said distributing-device, means for propelling the manure in said wagon-body towards said distributing-device, a segmental hood mounted over said device and rotatable about the axis thereof, and means for yieldingly holding said hood in lowered position.

15. In a fertilizer-distributor, the combination of a wagon-body, a distributing-device mounted at the rear end thereof, means for driving said distributing-device, means for propelling the manure in said wagon-body towards said distributing-device, a segmental hood mounted over said device and ro-

tatable about the axis thereof, and means for yieldingly holding said hood in lowered position, said means comprising a pair of links jointed together and connected at one end to said hood and at the other end to said wagon-body, and means acting to draw said links downwardly.

16. In a fertilizer-distributor, the combination of a wagon-body, a distributing-device mounted at the rear end thereof, means for driving said distributing-device, means for propelling the manure in said wagon-body towards said distributing-device, a segmental hood mounted over said device and rotatable about the axis thereof, and means for yieldingly holding said hood in lowered position, said means comprising a pair of links jointed together and connected at one end to said hood and at the other end to said wagon-body, and a spring acting upon the link which is pivoted to said wagon-body to draw it downwardly.

17. In a fertilizer-distributor, the combination of a wagon-body, a rotatable beater-drum mounted at the rear end thereof, means for pushing fertilizer in said wagon-body toward said beater-drum, a segmental hood rotatably mounted on the axis of said beater, and a pair of jointed links connecting said hood with the side of the wagon-body and extending inside the wagon-body, and a flat surface connected with said links against which the manure presses to raise said links and hood.

18. In a fertilizer distributor, the combination of a wagon-body, a beater-drum mounted at the rear end thereof, means for pushing fertilizer in said wagon-body toward said beater-drum, a segmental hood pivotally mounted, a pair of jointed links connecting said hood with the wagon-body in front of it, and a transverse board or plate mounted on the links which are pivoted on the wagon-body and adapted to be acted on by the manure to raise said links and hood.

19. In a fertilizer-distributor, in combination with a toothed beater-drum, a segmental cylindrical hood rotatably mounted on the axis of said drum, means for rotating said drum, a cross bar at the rear end of said hood, a plurality of spring-hinges mounted on said bar, and a plurality of comb-sections connected with said hinges whereby said sections are held resiliently projected in opposition with the teeth of said drum.

In testimony whereof I have hereunto signed my name in the presence of two witnesses.

JOHN L. BARKER.

Attest:

ALB. WALLBER,
GEORGE W. COLLES.