

No. 626,011.

Patented May 30, 1899.

R. STUCKWISCH.

COMBINED LAND ROLLER AND SEED PLANTER.

(Application filed Oct. 29, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

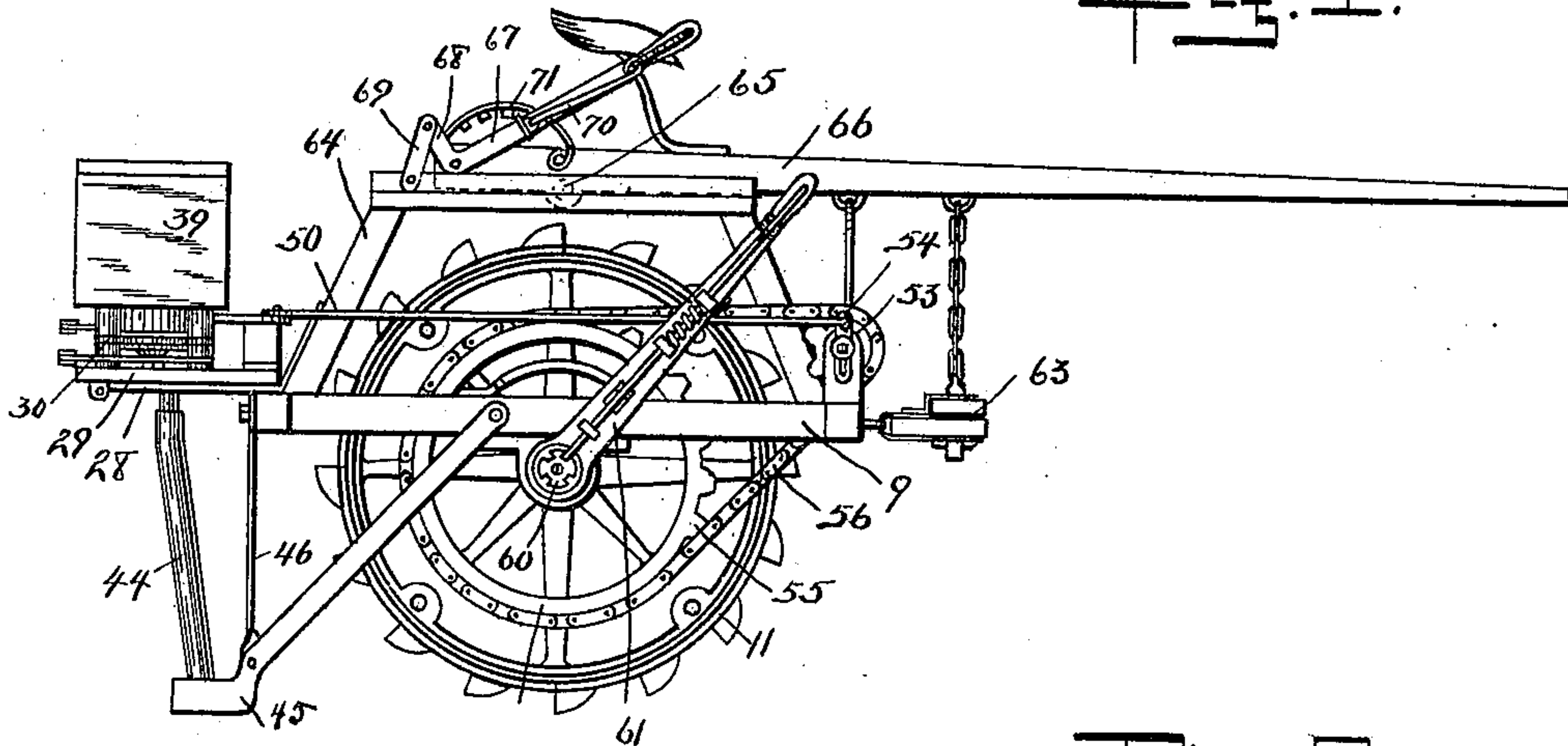


Fig. 2.

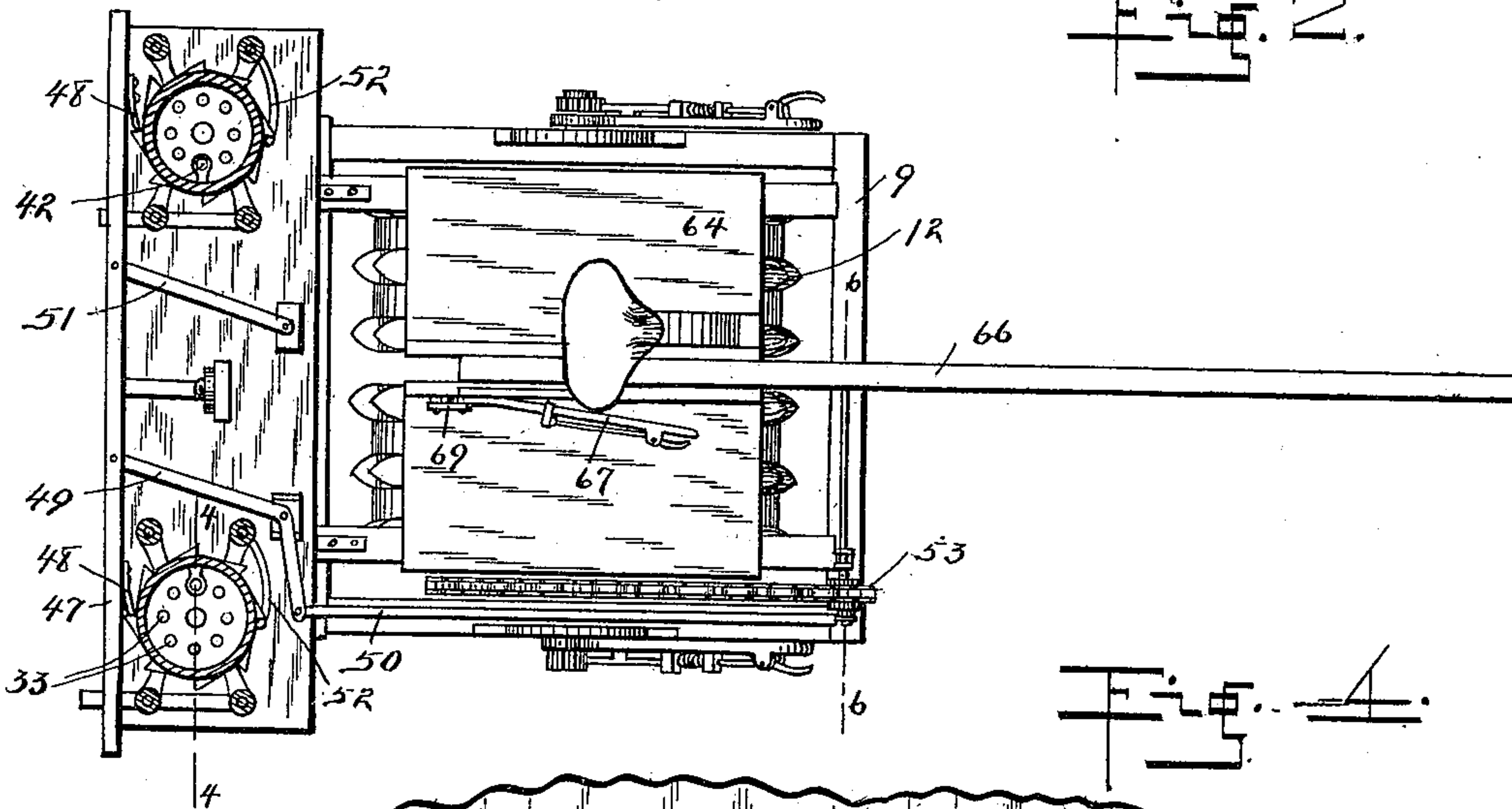
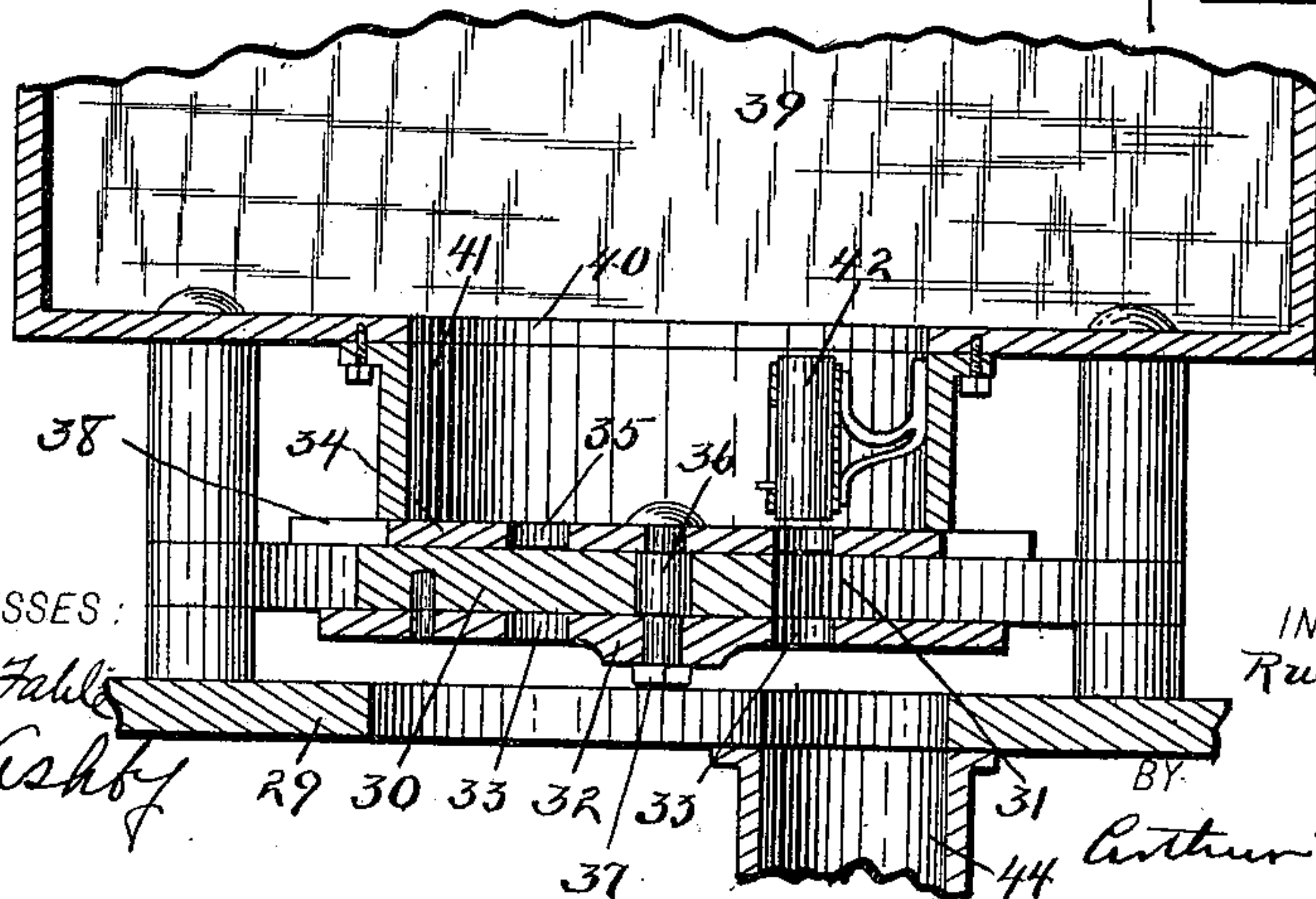


Fig. 3.



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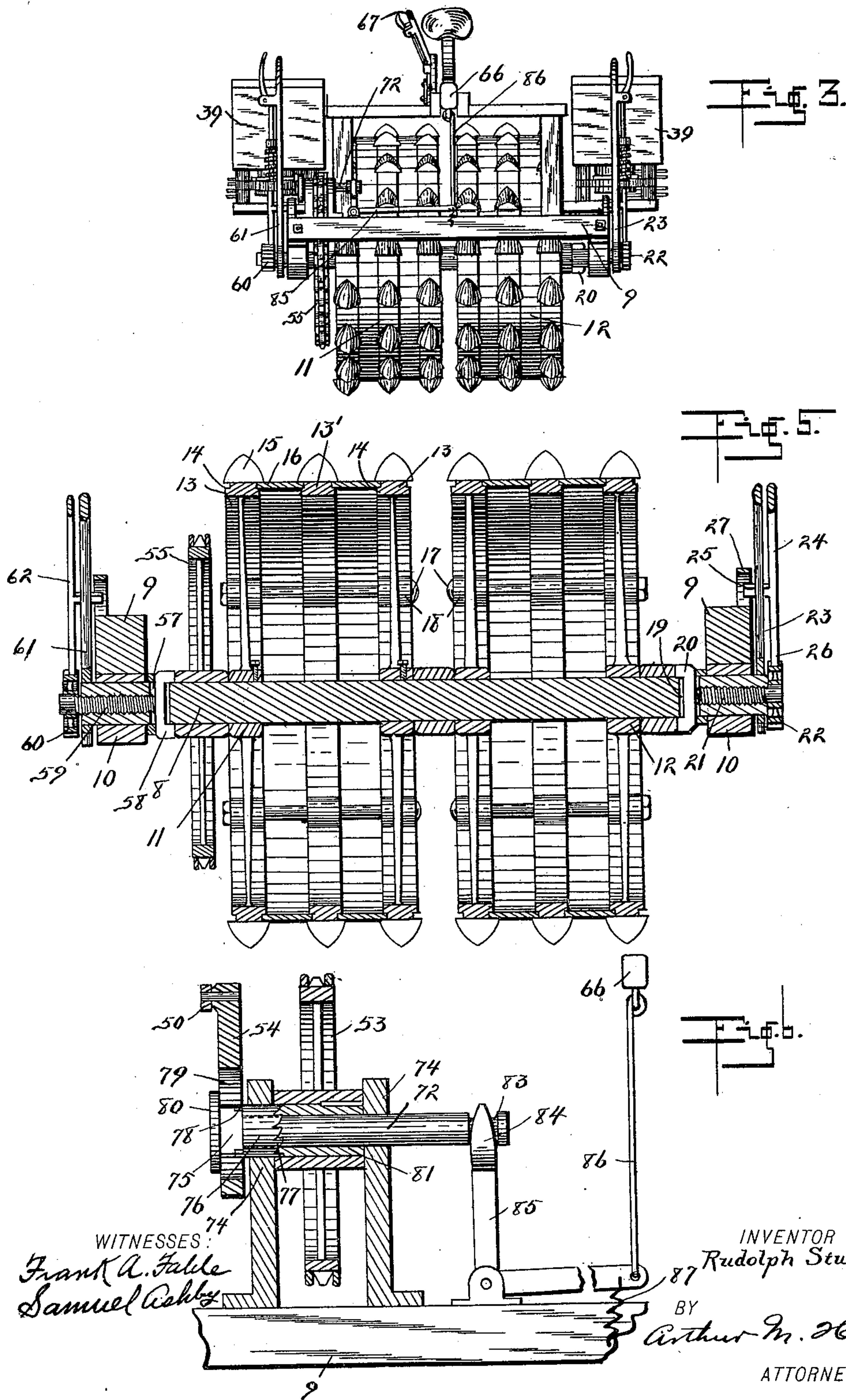
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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

RUDOLPH STUCKWISCH, OF INDIANAPOLIS, INDIANA.

COMBINED LAND-ROLLER AND SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 626,011, dated May 30, 1899.

Application filed October 29, 1898. Serial No. 694,920. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH STUCKWISCH, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Combined Land-Roller and Seed-Planter, of which the following is a specification.

My invention relates to an improvement in a combined seed-planter and land-roller.

The object of my invention is to produce a seed-planting device which may be easily attached to and detached from a land-roller, to provide means for dropping the seeds at regular distances, to provide means for throwing the markers or plows out of the ground, to provide an improved dropping mechanism, to provide means for automatically throwing the dropping mechanism out of gear when the markers are thrown out of the ground, to provide improved means for independently throwing the dropping mechanism out of gear, and to provide such improvements in details of construction as shall be pointed out and claimed.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation thereof. Fig. 2 is a plan view. Fig. 3 is a front elevation. Fig. 4 is a section, on an enlarged scale, on line 4 4 of Fig. 2. Fig. 5 is a section, on an enlarged scale, through the axle. Fig. 6 is a similar section on line 6 6 of Fig. 2.

In the drawings, 8 indicates an axle upon which is supported the main frame 9, which is provided with bearings 10 10, through which the ends of the shaft are passed and within which the said shaft may rotate. The shaft 8 forms an axis for the two rollers 11 and 12. Each roller is composed of two outside sections 13, each of which is provided with a hub adapted to receive the shaft. Each of the sections is provided on each edge of its periphery with a short flange 14, which is slightly less in diameter than the central portion of the periphery, and secured to or formed integral with the central portion of the periphery is a series of sharpened lugs 15, the sides of said lugs projecting over the flanges 14, thus forming a series of recesses into which may be inserted one edge of a thin annulus 16, the outer edge of said annulus being preferably of the same diameter as the central

portion of the section 13. As many of these sections 15 may be used as desired, the adjacent edges of each pair being supported by a section 13', which is similar in construction to the sections 13. If desired, however, the central sections 13' may be without hubs, as shown in the drawings. The various sections composing the roller are clamped together by bolts 17, which extend through lugs 18, carried upon the inside of the rims of the several sections. In the present machine the roller 11 is secured to the shaft, so as to cause said shaft to turn therewith, while the roller 12 is loosely mounted on the shaft. In order that when desired the roller 12 may be clamped to the shaft, I mount in a diametrical keyway 19, formed through the shaft near one end thereof, a key 20, the ends of which are adapted to engage the hub of said roller. Key 20 may be forced into engagement with said hub by means of a screw 21, which is mounted in a threaded opening extending through the center of the shaft from the keyway 19 to the end of the shaft. Upon the outer end of said screw is secured a notched wheel 22, by means of which the screw may be turned. For convenience in turning screw 21 the shaft 8 is extended through the bearing 10, and pivotally mounted on said extended end is a lever 23, the upper end of which is extended up into convenient reach. Mounted upon said lever is a spring-catch 24, which is provided with two fingers 25 and 26. The finger 25 passes through the lever and engages a segment 27, while the finger 26 is adapted to engage in the notches of wheel 22. By this arrangement when the catch 24 is depressed from its normal position it simultaneously throws finger 25 out of engagement with the segment and finger 26 into engagement with the wheel 22. In ordinary straight courses the roller 12 is clamped to the shaft and rotates therewith; but in turning corners the operator loosens screw 21, and thus frees the roller 12, so that it may rotate independently upon the shaft.

Projecting from the rear of frame 9 are arms 28, to the outer ends of which is pivoted the outer or rear edge of a platform 29, the forward edge of which rests upon the inner ends of said arms. Mounted upon the platform 29 is a series of seed-dropping mech-

anisms, each of which is constructed in the following manner: Supported a short distance above the platform is a base-plate 30, which is provided at one point with a slot or opening 31, which extends therethrough. Pivoted upon the under face of plate 30 is a rotatable cut-off plate 32, which is perforated by a series of holes 33, adapted to be successively brought opposite the opening 31 in the plate 30. Pivoted upon the upper face of the base-plate is a seed-plate 34, which is perforated with a circular series of openings 35, each of which is adapted to be brought into engagement with the opening 31. The cut-off plate and the seed-plate are mounted upon the same pivot-pin 36, the middle of which is preferably larger than the end, so that by tightening the nut 37 the two plates may be caused to rotate together. By loosening the nut either plate may be independently rotated and, if desired, the relative positions of the plates changed. The periphery of the seed-plate is provided with a series of ratchet-teeth 38, by which said plate may be rotated. Mounted above the seed-plate is a seedbox 39. Secured to the bottom of the seedbox and surrounding the discharge-opening 40 thereof is a spout-section 41, the diameter of which is somewhat greater than the diameter of the circular series of openings 33, there being sufficient room for seeds to pass between said openings and the wall of the spout. The openings 33 are of such size as to hold a definite number of seeds, and for the purpose of preventing a flow of a greater number of seeds at a given moment through said openings into the opening 31 I mount above said opening 31, within the spout 41, a wiper 42, which is supported above the seed-plate in close proximity thereto, as shown in Fig. 4. The spout 41 is of such size that considerable room is left between the casing of wiper 42 and the walls of the spout, so that seeds may pass freely therebetween. By this means the seeds as they are carried around by the movement of plate 34 may pass upon either side of the wiper, thus preventing choking.

The number of openings in the cut-off plate and in the seed-plate is immaterial, except that the number in the cut-off plate is less than that in the seed-plate. In the drawings the cut-off plate is provided with two openings, while the seed-plate is provided with eight. With this arrangement the seed-plate will allow four sets of seeds to be deposited in the opening 31 before the seeds will be permitted to drop through the cut-off plate and from thence down through the usual guide-spout 44 into the furrow formed by the marker or furrow-opener 45. Marker 45 is pivoted at its upper end to the frame 9 and is braced by means of the rod 46, the upper end of which may be adjustably secured to the frame 9.

For the purpose of automatically rotating the seed-plate and the cut-off plate I mount

above the platform 29 a sliding arm 47, upon which is secured a series of spring-fingers 48, adapted to engage the ratchet-teeth formed on the periphery of each seed-plate. Arm 47 is pivoted near one end to the outer end of one arm of a bell-crank lever 49, to the other arm of which is pivoted a pitman 50, and the other end of said arm 47 is pivoted to the outer end of a link 51, pivoted upon the platform 29. In order to prevent a backward movement of the seed-plates, I mount near each plate, so as to engage the teeth thereof, the usual spring-detent 52. By removing pin 36 both the seed-plate and the cut-off plate may be easily removed, the operation being facilitated by swinging the platform 29 upward about its hinges.

Mounted upon the frame 9 is a sprocket-wheel 53, which operates a crank 54, to which is pivoted the forward end of the pitman 50. Loosely mounted upon the shaft 8 next the roller 11 is a sprocket-wheel 55, over which and the sprocket-wheel 53 is carried a link belt 56. In order that the sprocket-wheel 55 may be easily clamped to and released from the shaft 8, I mount in a diametrical slot or keyway 57, formed through the shaft near one end thereof, a key 58, the ends of which are adapted to engage the hub of said sprocket-wheel and force the said wheel into engagement with the roller 11. Key 58 may be forced into engagement with the sprocket 55 by means of a screw 59, which is mounted in a threaded opening extending through the center of the shaft from the keyway to the end of the shaft. Upon the end of said screw is secured a notched wheel 60, by means of which the screw may be turned. The end of the shaft is extended through its bearing 10, and mounted on this extended end is an operating-lever 61, upon which is mounted a catch 62, similar in construction and operation to the catch 25 already described, the screw 59 being operated thereby in the same manner as the operation of the screw 21, already described.

The frame 9, together with the parts carried thereby, is substantially balanced upon the shaft 8, and the machine as a whole is drawn along by a team hitched to a suitable connection 63, carried by the forward side of the frame.

When the machine is not upon the ground in which the seeds are to be planted it is desirable that the markers be lifted from the ground and that the seed-dropping mechanism be stopped. I therefore erect, upon the frame 9, a superstructure 64 upon which is pivoted, at 65, above the shaft, a tongue 66 the forward end of which is adapted for engagement with the harness neck-yoke. The rear end of the tongue extends a short distance back of the pivot and pivoted to this extended end is an operating-lever 67. The short arm 68 of this lever is substantially at right angles to the other arm and pivoted to the end of

this shorter arm is a link 69 the opposite end of which is pivoted to the superstructure. Lever 67 may be held in any desired position by means of the usual catch 70 and segment 5 71. The vertical position of the front end of the tongue being determined and substantially constant owing to its connection with the neck-yoke, the operator may cause the frame 9 to swing upon the shaft, so as to lift 10 the markers out of the ground, by swinging the lever 67 to the rear, this motion depressing the rear end of the tongue.

It is desirable that the operation of the seed-dropping mechanism be automatically 15 suspended when the markers are thrown out of the ground. In order to accomplish this result, the shaft 72 is mounted so as to be both rotatable and longitudinally movable in a pair of bearings 74 74. One end of this 20 shaft is provided with a flattened head 75, and mounted on this end is a removable collar 76, having on its inner end a series of clutch-teeth 77. At its outer end the collar 76 is partially cut away, so as to leave a pair of 25 projecting ears 78, the sides of which register with the flattened portion of the shaft-head. The flattened head of the shaft and the ears 78 of the collar 76 are adapted to be received within a slot 79, formed in the crank 30 54, the said crank being held in any desired position on said head by means of a cap 80, the arrangement being such that the effective length of the crank may be varied. Mounted between the bearings 74 and upon shaft 72 is 35 a bushing 81, one end of which is provided with clutch-teeth adapted to engage with the clutch-teeth 77. Upon this bushing is keyed the sprocket-wheel 53. By this arrangement the clutch-teeth 77 may be thrown out of en- 40 gagement with the sprocket-wheel by shifting the shaft 72 a short distance to the left. (See Fig. 6.) For this purpose the free end of the shaft 72 is provided with a peripheral groove 83, which receives a yoke 84, carried at the 45 upper end of one arm of a bell-crank lever 85. Attached to the other arm of said lever is one end of a link 86, the other end of which is attached to the tongue 66, the arrangement being such that when the forward side of the 50 frame 9 is depressed shaft 72 will be automatically thrown to the left and thus disengaged from the sprocket-wheel. The parts will be returned to their normal positions when the front end of the frame is allowed 55 to rise by means of a suitable spring 87.

I claim as my invention—

1. The combination with a roller, of a pul- 60 ley mounted so as to rotate upon the shaft of said roller, a keyway cut through said shaft, a key mounted in said keyway and adapted to engage said pulley, a screw mounted ax- 65 ially and longitudinally movable within said shaft and adapted to engage said key, means for forcing said screw into engagement with the key, a suitable frame carried by the roller, seed-dropping mechanism carried by the frame, and intermediate connections between

the said seed-dropping mechanism and the pulley.

2. The combination with a roller, of a pul- 70 ley mounted so as to rotate upon the shaft of said roller, a keyway cut through said shaft, a key mounted in said keyway and adapted to engage said pulley, a screw mounted ax- 75 ially and longitudinally movable within said shaft and adapted to engage said key, a notched wheel, carried by the outer end of said screw, an operating-lever pivotally mounted upon the roller-shaft and provided with means to engage said notched wheel, a suit- 80 able frame carried by the roller, seed-dropping mechanism carried by the frame, and intermediate connections between the seed-dropping mechanism and the pulley.

3. The combination with a shaft, of a roller 85 mounted thereon, a keyway formed through said shaft, a key mounted therein, a screw mounted axially in said shaft, and means by which said key may be forced against the screw, whereby the key may be forced against 90 the roller and thereby clamp the roller to the shaft.

4. In a seed-dropping mechanism, the com- 95 bination with a base-plate having an opening therethrough, of a rotating cut-off plate mounted upon the underside of the base-plate and provided with one or more openings adapted to be brought into register with the opening through the base-plate, a seed-plate 100 rotatably mounted upon the upper side of the base-plate, the said seed-plate being provided with a series of openings greater in number than the number of openings through the cut- 105 off plate, each adapted to be brought into register with the opening through the base-plate, and means for rotating said rotatable plates together.

5. In a seed-dropping mechanism, the com- 110 bination with a base-plate having an opening therethrough, of a seed-plate rotatably mounted upon the upper side of said base-plate and perforated with a series of open- 115 ings adapted to be successively brought to register with the opening through the base-plate, a seedbox, mounted above the seed-plate, and a wiper mounted above the seed-plate immediately above the opening through 120 the base-plate, a space being left between said wiper and the walls of the seedbox for the free passage of seeds, substantially as and for the purpose described.

6. In a seed-dropping mechanism, the com- 125 bination with a base-plate having an opening therethrough, of a seed-plate rotatably mounted upon the upper side of the base-plate and perforated with a series of openings adapted to be successively brought to regis- 130 ter with the opening through the base-plate, a seedbox mounted above the seed-plate, a wiper-guide mounted in the seedbox over the base-plate opening and having its lower end entirely separated from the walls of the seed- 135 box so as to afford room for the free passage of seeds therebetween, and a wiper-weight

mounted in said guide in position to cooperate with the seed-plate, substantially as described.

7. The combination with a roller, of a shaft carried thereby, a frame mounted on said shaft, seed-planting mechanism carried upon the rear side of said frame, a tongue pivoted upon the frame upon a pivot substantially above the shaft, and means for adjusting the horizontal angle of the tongue with relation to the frame, whereby the frame may be tilted upon the shaft, substantially as described.

8. The combination with a roller, of a shaft carried thereby, a frame mounted on said shaft, seed-dropping mechanism carried upon the rear side of said frame, a tongue pivoted upon the frame upon a pivot substantially above the shaft, an operating-lever pivoted upon the tongue to the rear of its pivot, and a link pivoted at one end to the said lever and at the other end to the frame, whereby the frame may be tilted upon the shaft, as and for the purpose set forth.

9. The combination with a roller, of a shaft carried thereby, a frame mounted on said shaft, seed-dropping mechanism carried upon the rear side of said frame, a pulley 53 mounted upon the front side of said frame, a crank-shaft axially movable through said pulley, interacting clutch-teeth carried by said pulley and crank-shaft, connections between the crank and seed-dropping mechanism, connections between the pulley and the roller-shaft, a tongue pivoted upon the frame above the main shaft, means for adjusting the horizontal angle of the tongue, and means operated by the swinging of the tongue for shifting the crank-shaft axially through the pulley carried thereby, substantially as described.

10. The combination with a roller, of a shaft

carried thereby, a frame mounted on said shaft, seed-dropping mechanism carried upon the rear side of said frame, a pulley 53 mounted upon the front side of said frame, a crank-shaft, a bushing keyed within the pulley and rotatably and longitudinally movable upon the crank-shaft, clutch-teeth carried by said bushing, a collar keyed to the crank-shaft and provided with clutch-teeth adapted to engage the clutch-teeth of the bushing, connections between the crank and the seed-dropping mechanism, connections between the pulley and the roller-shaft, a tongue pivoted upon the frame above the main shaft, means for adjusting the horizontal angle of the tongue, and means operated by the swinging of the tongue for shifting the crank-shaft axially through the pulley, substantially as and for the purpose set forth.

11. The combination with a roller, of a shaft carried thereby, a frame mounted on said shaft, seed-dropping mechanism carried upon the rear side of said frame, a pulley 53 mounted upon the front side of said frame, a crank-shaft, a bushing keyed within the pulley and rotatably and longitudinally movable upon the crank-shaft, clutch-teeth carried by said bushing, a collar keyed to the crank-shaft and provided with clutch-teeth adapted to engage the clutch-teeth of the bushing, connections between the crank and the seed-dropping mechanism, connections between the pulley and the roller-shaft, and means for axially shifting the crank-shaft through the pulley, substantially as and for the purpose set forth.

RUDOLPH STUCKWISCH.

Witnesses:

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