No. 844,429.

PATENTED FEB. 19, 1907

L. E. WATERMAN.

SEEDING MACHINE.

APPLICATION FILED NOV. 12, 1906.

4 SHEETS—SHEET 1.

Fig. 1.

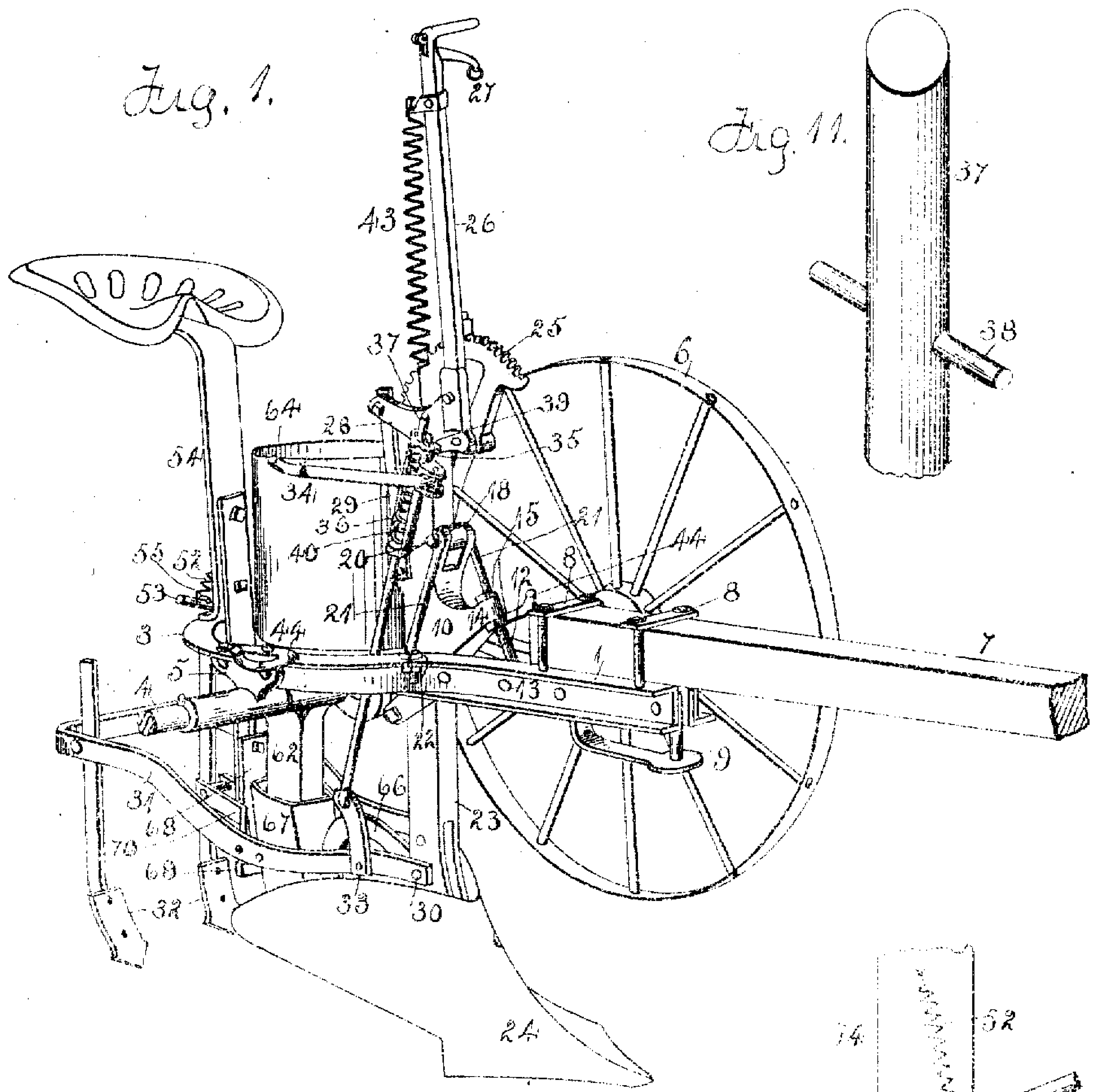

Fig. 11.

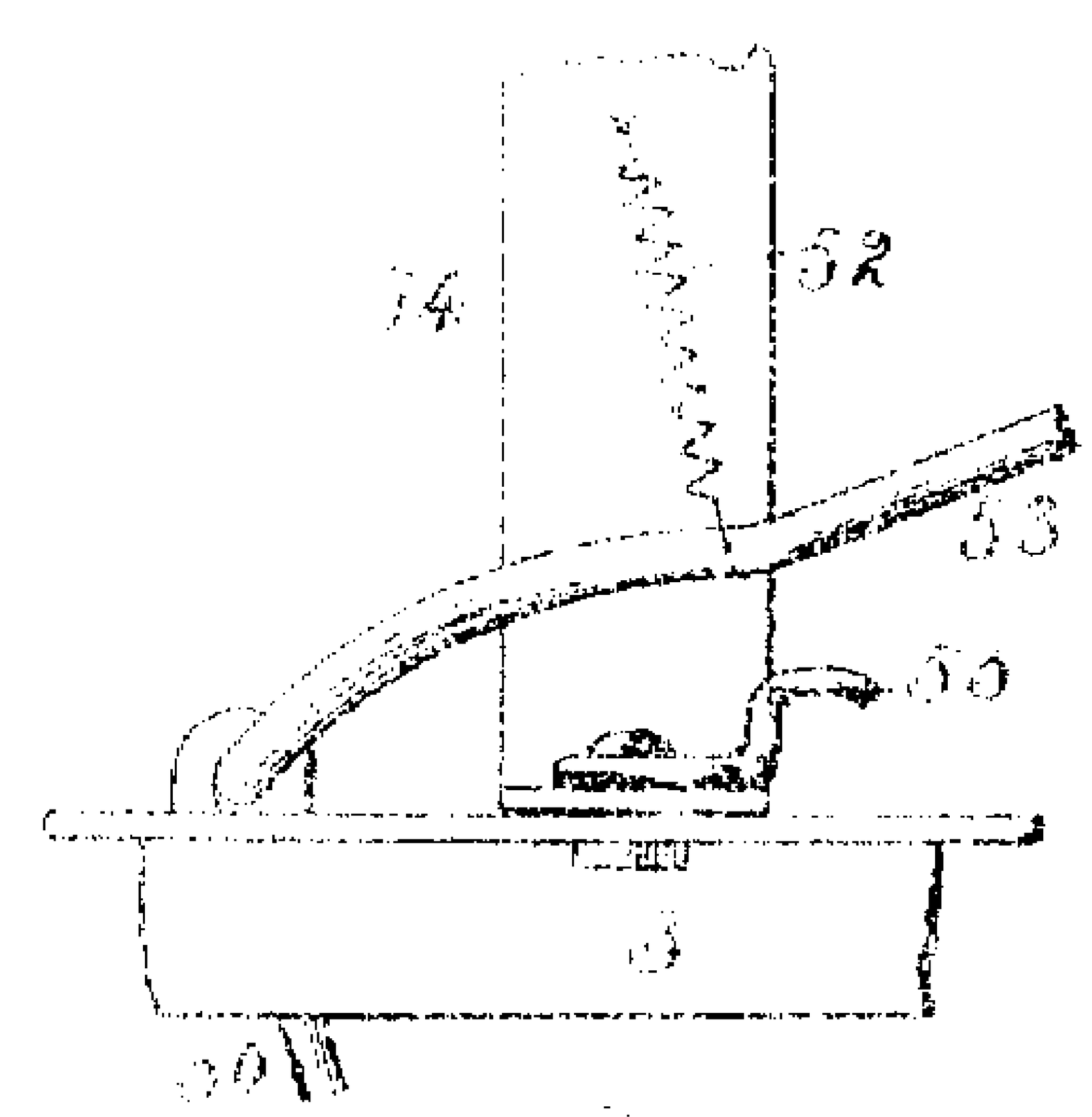

Fig. 10.

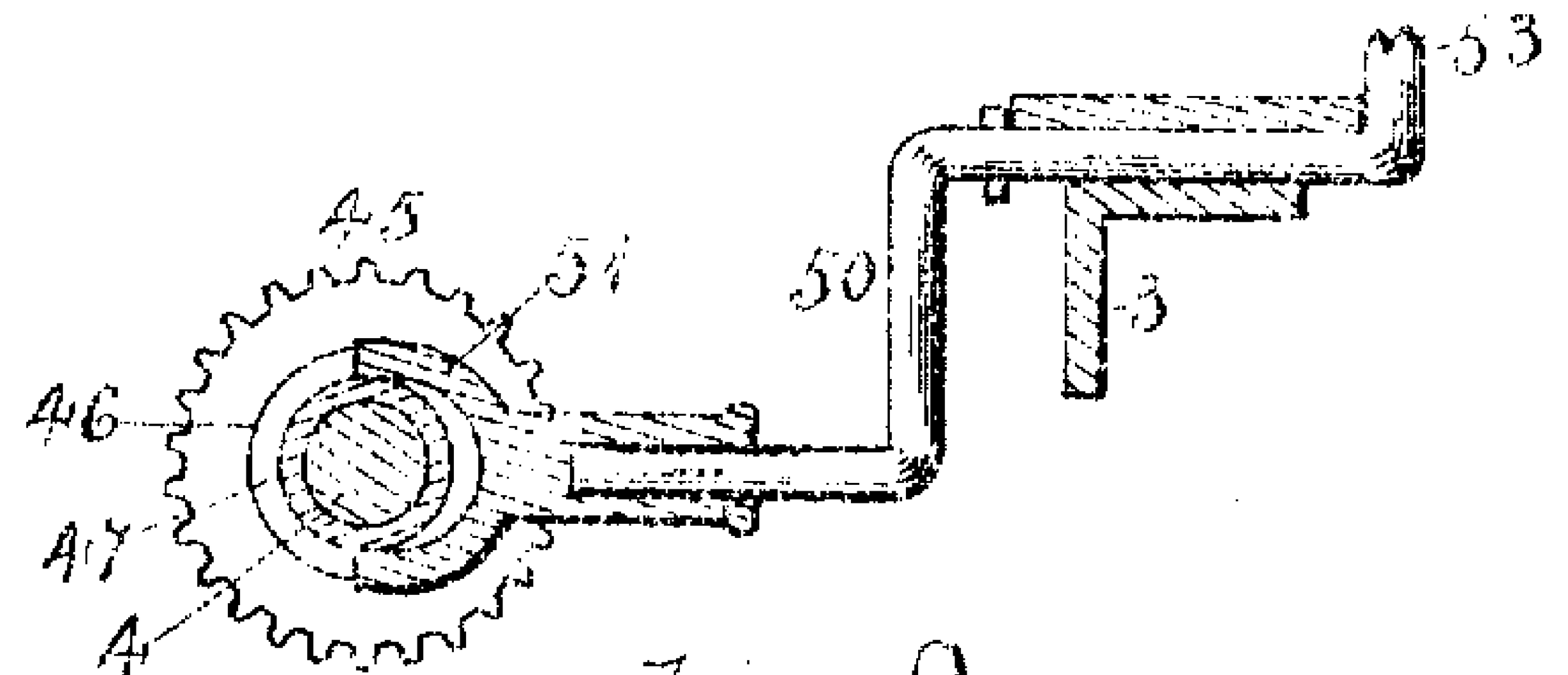

Fig. 9.

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4 SHEETS—SHEET 2.

Fig. 3.

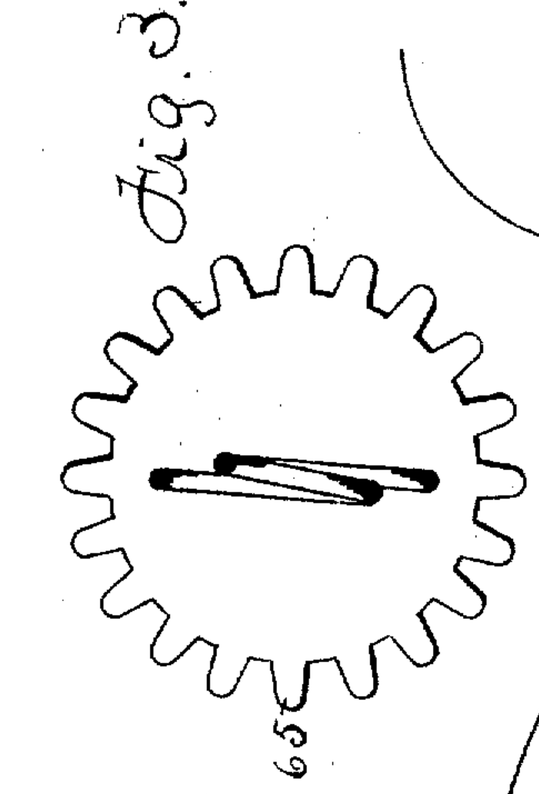

Fig. 2.

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4 SHEETS—SHEET 3.

Fig. 4

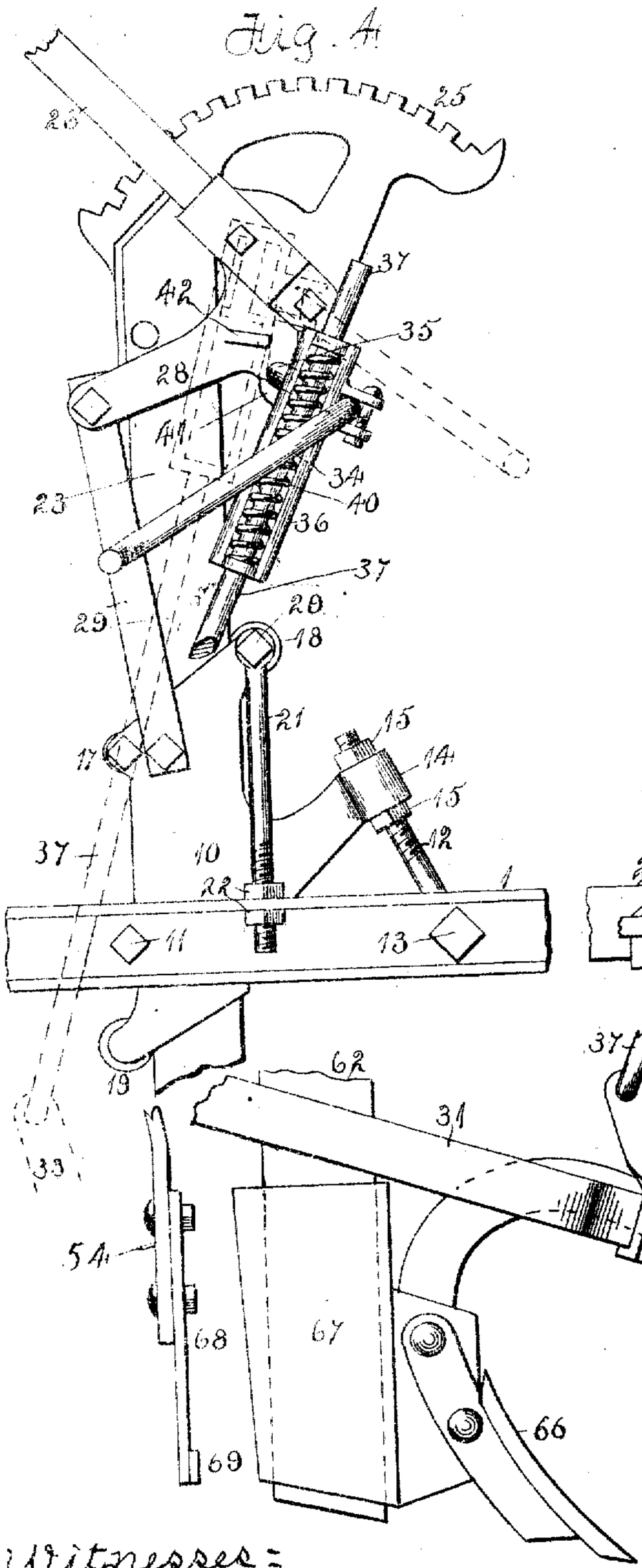
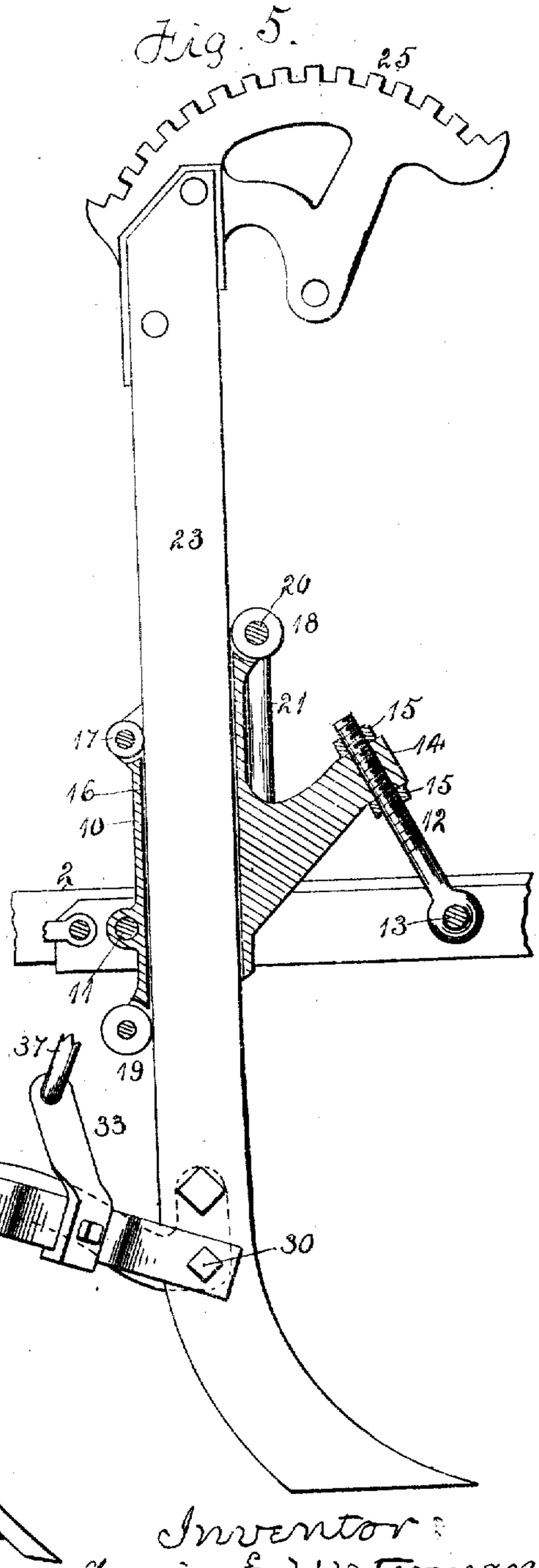


Fig. 5.



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4 SHEETS—SHEET 4.

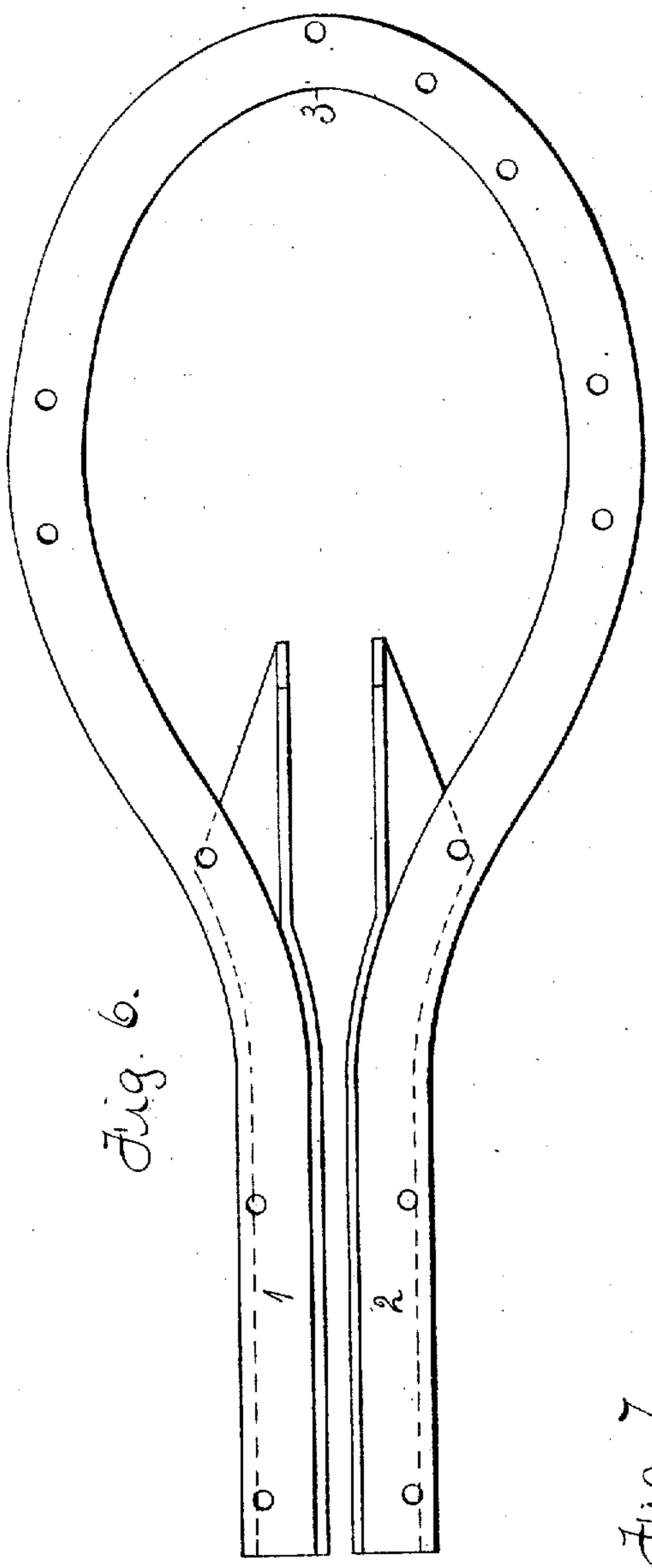

Fig. 6.

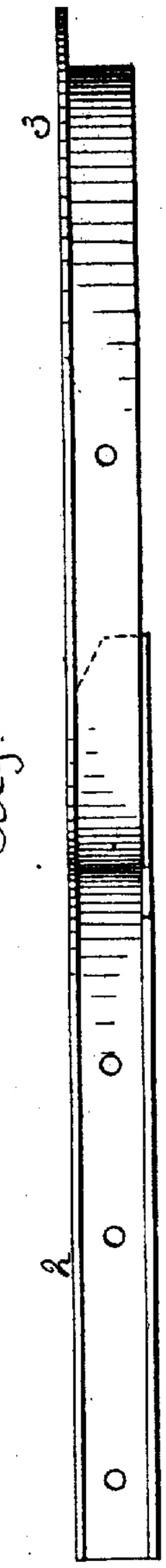

Fig. 8.

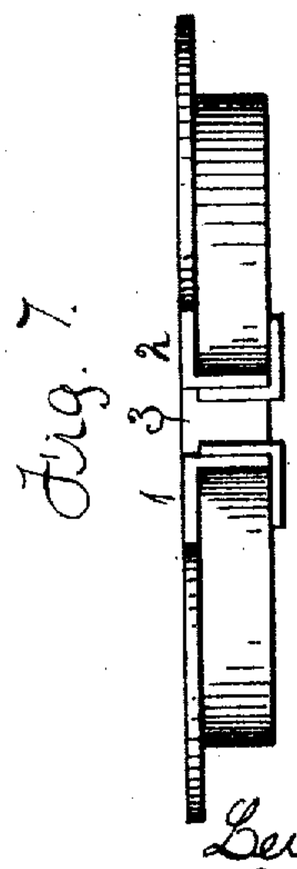

Fig. 7.

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UNITED STATES PATENT OFFICE.

LEWIS E. WATERMAN, OF ROCKFORD, ILLINOIS, ASSIGNOR TO EMERSON MANUFACTURING COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS.

SEEDING-MACHINE.

No. 844,429. Specification of Letters Patent. Patented Feb. 19, 1907.

Application filed November 12, 1906. Serial No. 343,048.

To all whom it may concern:

Be it known that I, LEWIS E. WATERMAN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Seeding-Machines, of which the following is a specification.

The object of this invention is to construct a seed-planter in which the covering-shovels have a raising movement with the sweep and a raising movement independent of the sweep.

The further object of this invention is to drive the picker-wheel through the gear that drives the agitator and means for breaking the driving connection with the agitator.

In the accompanying drawings, Figure 1 is a perspective view of my improved seeding-machine in which one supporting-wheel has been removed to more clearly show the other parts. Fig. 2 is a plan view of the seeding-machine in which the seedbox is removed. Fig. 3 is a plan view of the agitator. Fig. 4 is an elevation of the standard supporting the plow and the parts connected with it. Fig. 5 is a vertical section through the guideway for the standard. Fig. 6 is a plan view of the main frame. Fig. 7 is a front end view of the main frame. Fig. 8 is a side elevation of the main frame. Fig. 9 is a vertical section of the shipping-lever. Fig. 10 is a rear elevation of a portion of the main frame, seat-support, and shipping-lever. Fig. 11 is a perspective view of the upper end of the rod 37.

The main frame is formed of an angle-bar bent to form the two parallel portions 1 and 2 and the loop portion 3. This frame is connected to the axle 4 by the brackets 5, secured to the frame. These brackets hold the axle in a manner to permit it to rotate therein. Wheels 6 (only one being shown) support the axle in a manner to rotate it as the wheels move over the ground. A tongue 7 is fixedly connected with the parallel portions 1 and 2 of the main frame by the staple-formed irons 8. A connection of the draft is made with the clevis 9. A guideway 10 has a pivotal connection with the main frame at the point 11 and is held in an upright position by the screw-threaded rod 12, having one end pivoted at the point 13 with the main frame and its other end passing through a projection 14, extending from the guideway 10 and nuts 15, placed on each side of the projection. By means of these nuts the guideway can be rocked on its pivotal support and held in its adjusted position. The guideway has a rectangular lengthwise opening 16, and this guideway supports three rollers 17, 18, and 19, each extending within the opening. The bolt 20, supporting the roller 18, extends sufficiently beyond the guideway to receive the rods 21. The lower ends of these rods are screw-threaded and pass through the main frame, and nuts 22 are placed on the lower ends of the rods, one each side of the main frame, and these rods, in connection with the rod 12, hold the guideway firmly, in connection with the main frame, in an adjustable manner.

Within the guideway 10 is located a standard 23, having a cross-section to move freely vertically within the opening of the guideway 10. To the lower end of the guideway is secured a sweep 24 or double-moldboard plow.

To the upper end of the standard 23 is fixedly connected a toothed segment 25. A hand-lever 26 has a pivotal connection with the toothed segment and is provided with the usual thumb-lever 27 and dog engagement with the toothed segment. From the hand-lever 26 extends an arm 28, and a link 29 connects this arm and the guideway 10. As the lower end of the link in its connection with the guideway 10 is practically stationary, except as the guideway is adjusted, by moving the hand-lever rearward the standard 23 will be raised and carry the sweep with it. By moving the hand-lever forward the standard will be forced down and held there by the dog of the hand-lever engaging a notch of the toothed segment. To the lower portion of the sweep at the point 30 is pivoted a frame 31, the rear portion of which supports the covering-shovels 32. To the frame 31 is connected an arm 33. To the arm 28 of the lifting-lever 26 is pivoted a foot-lever 34, having an offset bend 35. To the offset bend 35 is pivotally connected a casing 36, through which a rod 37 passes. The lower end of this rod 37 is pivotally connected to the arm 33 of the frame 31. A pin 38 passes through the rod 37 and is guided and held from turning by the grooved ways 39 in the casing 36. A spring 40 surrounds the rod 37 and is located within the casing, one end rest-

ing against the lower end of the casing and its upper end against the pin 38. By means of this foot-lever 34 the frame 31, carrying the covering-shovels, can be raised and lowered independent of the raising and lowering movements of the standard. As the foot-lever is carried by the arm 28, extending from the hand-lever 26, the standard and covering-shovel frame can be raised and lowered together. The spring 40 holds the covering-shovels down in a yielding manner. The stop 41 receives the offset portion 35 of the foot-lever and prevents further descent of the foot-lever, and the stop 42 serves to hold the foot-lever in its elevated position. A spring 43 has one end connected to the lifting-lever 26 and its other end to the upper portion of the standard 23, which will assist the operator in raising the standard and parts carried thereby. Foot-rests 44 are secured to the main frame. A bevel-gear 45 is loosely mounted on the axle 4 and is located within the main frame. This bevel-gear has two annular rings 46, between which is formed a groove 47. The hub of the bevel-gear 45 is formed with a lengthwise slot 48, which receives a pin 49, passing through the axle, which forms a driving connection between the axle and bevel-gear 45. A shipping-lever 50 is pivotally supported by the main frame and has one end 51 in fork-form, which is located in the annular groove 47 of the bevel-gear 45. A spring 52 has one end connected to the arm 53 of the shipping-lever 50 and its other end to the seat-support 54. A catch 55 is pivotally supported by the main frame and is adapted to pass over the arm 53 of the shipping-lever. A shaft 56 is supported in bearings 57, and to one end is pinned a bevel-gear 58, and to the other end is fixedly connected a picker-wheel 59. This picker-wheel is located within a casing 60, having an opening 61 communicating with a discharge-spout 62. A bevel-gear 63 is located within the seedbox 64 and meshes with the bevel-gears 45 and 58. An agitator 65 has a rotative connection with the bevel-gear 63. The rotations of the axle are transmitted to the picker-wheel 59 through the bevel-gears 45, 58, and 63. By placing the arm 53 of the shipping-lever under the catch 55 the bevel-gear 45 will be held out of engagement with the bevel-gear 63, thereby stopping the rotations of the picker-wheel and agitator. To the lower portion of the standard is fixedly connected a furrow-opener 66, which is located just in rear of the sweep. An extension 67 of the seed-spout is supported by the furrow-opener and moves with it. To the seat-support 54 is secured an extension 68, having a cross-bar 69 at its lower end. To the inner faces of the bars forming the frame 31, supporting the covering-shovels 32, are secured two bars 70, which extend rearward and embrace the extension 68 of the seat-support 54 and serve to hold the frame 31 from lateral movement. The cross-bar 69 will prevent the bars 70 from dropping down, and thereby becoming disengaged from the extension 68. By means of the adjustable guideway 10 the standard 23, carrying the sweep, can be adjusted to incline the standard to give the sweep more or less suck or penetration.

I claim as my invention—

1. The combination of a main frame, a guideway supported by the frame, a standard supported in the guideway, a toothed segment and hand-lever supported by the standard, and a connection between the hand-lever and main frame.

2. The combination of a main frame, a movable guideway supported by the frame, a standard supported in the guideway, a toothed segment and hand-lever supported by the standard and a connection between the hand-lever and guideway.

3. The combination of a main frame, a guideway having a pivotal connection with the main frame, a standard supported by the guideway and a lever for moving the standard supported by the standard and having a connection with the main frame.

4. The combination of a main frame, a guideway supported by the main frame, a standard supported by the guideway, a plow supported by the standard, a lever for moving the standard supported by the standard and having a connection with the main frame.

5. The combination of a main frame, a guideway supported by the main frame, means for adjusting the guideway, a standard supported by the guideway, a plow connected to the standard, a lever for moving the standard supported by the standard, and a connection between the lever and guideway.

6. The combination of a main frame, a guideway supported by the main frame, a standard supported by the guideway, a plow connected to the standard, means for moving the standard in its lengthwise direction, a frame pivotally connected to the standard, covering-shovels supported by the last-mentioned frame, a lever supported by the standard, and a connection between the lever and shovel-supporting frame.

7. The combination of a main frame, a guideway supported by the main frame, a standard supported by the guideway, a plow supported by the standard, a lever supported by the standard, a connection between the lever and main frame, a shovel-supporting frame pivotally connected to the standard, and a lever supported by the standard having a connection with the shovel-supporting frame.

8. The combination of a main frame, a plow, a movable support for the plow, a

shovel-supporting frame pivotally connected to the plow-support, and means for moving the shovel-supporting frame independently of the movements of the plow-support.

9. The combination of a main frame, a plow, a movable support for the plow, a furrow-opener fixedly connected with the plow-support, a shovel-supporting frame pivotally connected with the plow-support, and means for moving the shovel-supporting frame independently of the movement of the plow-support.

10. The combination of a main frame, a plow, a movable support for the plow, a shovel-supporting frame movable with and independently of the plow-support, and a lever for moving the shovel-supporting frame.

11. The combination of a main frame, a plow, a movable support for the plow, a shovel-supporting frame movable with and independently of the plow-support, a lever for moving the plow-support, and a lever for moving the shovel-supporting frame.

12. The combination of a main frame, an axle connected to the frame, wheels supporting the axle, a seedbox, an agitator located in the seedbox, gears for rotating the agitator, a picker-wheel, and gear connection between the agitator and picker-wheel.

13. The combination of a main frame, an axle connected to the frame, wheels supporting the axle, a seedbox, an agitator located in the seedbox, gears for rotating the axle, a picker-wheel, gears for connecting the axle and picker-wheel, and means for stopping the rotation of the agitator.

14. The combination of a main frame, a plow, a support for the plow, a shovel-supporting frame capable of a vertical movement, and a guide for the shovel-supporting frame holding it from lateral movement.

15. The combination of a main frame, a plow, a support for the plow, and a shovel-supporting frame located beneath the axle of the main frame, and having a vertical movement.

16. The combination of a main frame, a plow, a vertical movable support for the plow, a shovel-supporting frame capable of a vertical movement with and independently of the plow-support, and a spring connection between the shovel-supporting frame and the plow-support.

17. The combination of a main frame, a plow, a movable support for the plow, a shovel-supporting frame movable with and independently of the plow-support, and a foot-lever for moving the shovel-supporting frame.

18. The combination of a main frame, a plow, a support for the plow, a movable shovel-supporting frame, a foot-lever, and a yielding connection between the foot-lever and shovel-supporting frame.

19. The combination of a main frame, a guideway supported by the main frame, a standard supported by the guideway, a plow connected to the standard, a lever connected to the standard, and a link connecting the lever and guideway.

20. The combination of a main frame, a guideway supported by the main frame, a standard supported by the guideway, a plow connected to the standard, a toothed segment connected to the standard, a hand-lever connected to the standard, and a link connecting the hand-lever and guideway.

21. The combination of a main frame, a guideway pivotally supported by the main frame, means for adjusting the guideway, rollers supported by the guideway, a standard supported by the guideway, a plow connected to the standard, and means for moving the standard in the guideway.

22. The combination of a main frame, a plow, a support for the plow, a shovel-supporting frame, a toothed segment supported by the plow-support, a hand-lever pivotally supported by the plow-support, a connection between the hand-lever and main frame, a lever having a pivotal connection with the hand-lever and a connection with the shovel-supporting frame.

23. The combination of a main frame, a movable shovel-supporting frame, a pivoted lever, a casing supported by the lever, a rod connected with the shovel-supporting frame and extending within the casing, a spring located within the casing and surrounding the rod, and a pin passing through the rod and engaging the spring.

24. The combination of a main frame, a guideway having a pivotal connection with the main frame, means for moving the guideway on its pivot and in the lengthwise direction of the main frame, braces holding the guideway from lateral movement, a plow-support movable in the guideway, means for moving the plow-support, and a plow connected to the plow-support.

25. The combination of a main frame, an axle connected to the frame, wheels supporting the axle, a shaft located at right angles to the axle, an agitator, a gear connection between the axle and agitator, a gear connection between the agitator and shaft, and a picker-wheel connected with the axle.

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