

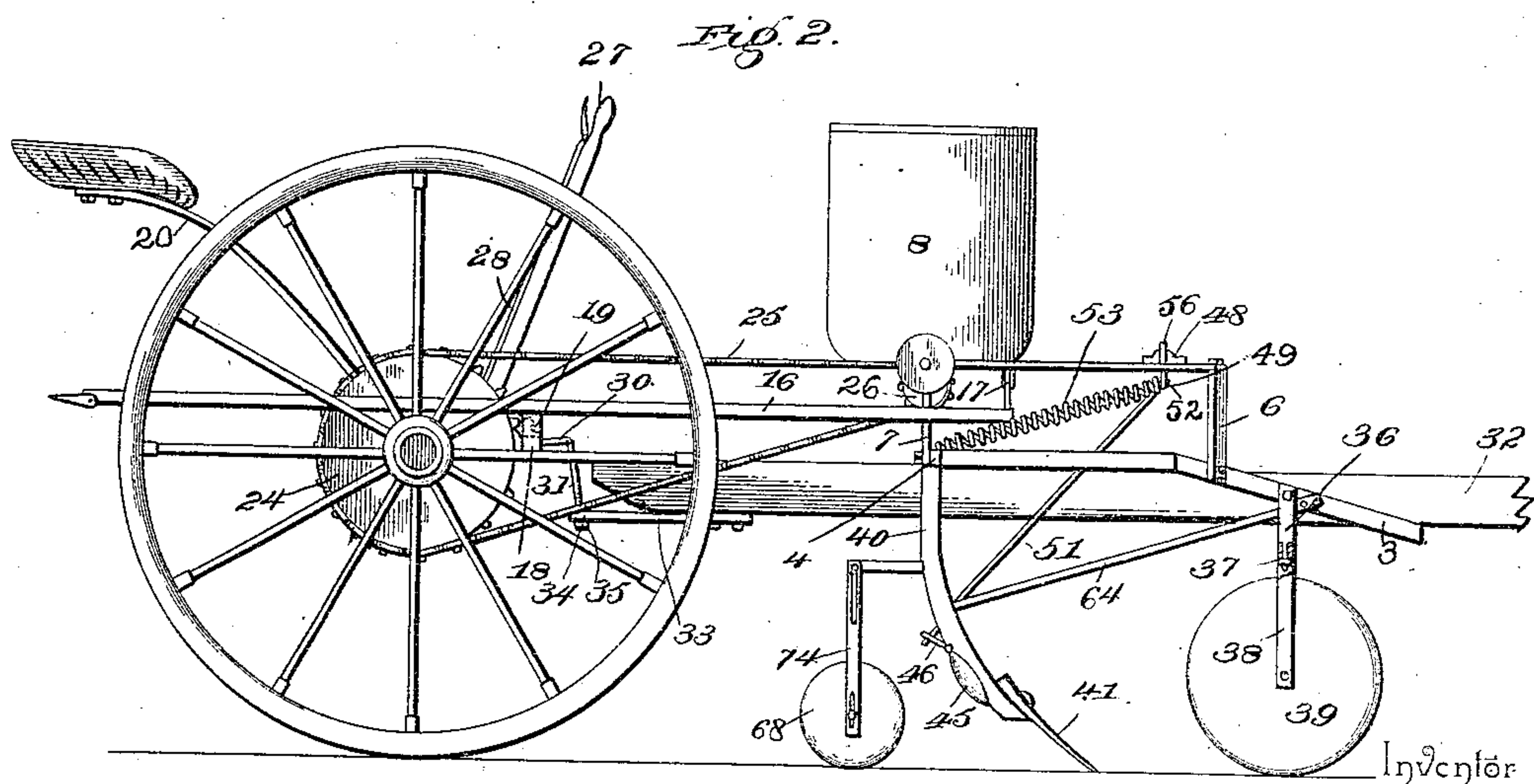
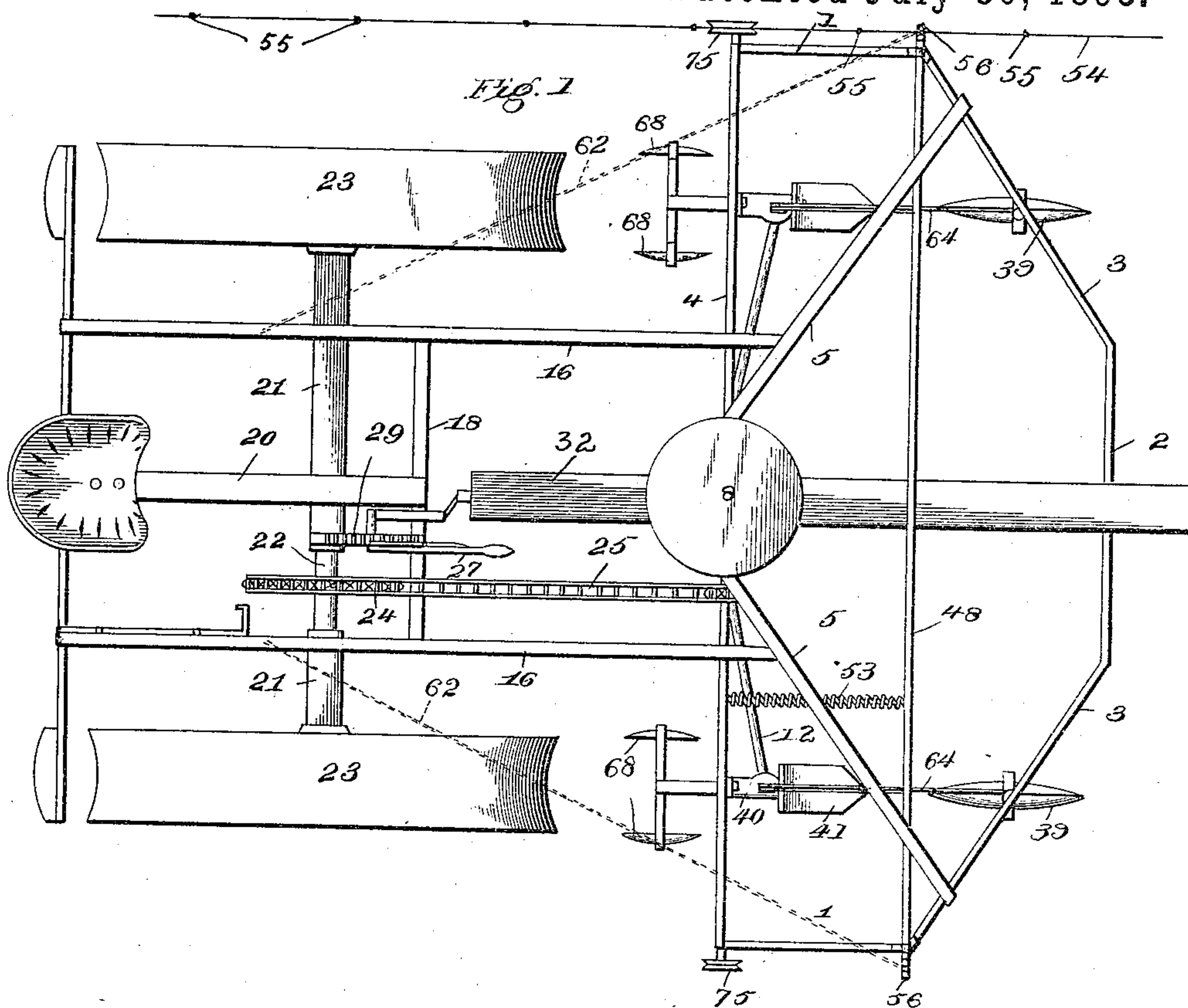
(No Model.)

2 Sheets—Sheet 1.

M. GROSS.  
CORN PLANTER.

No. 543,648.

Patented July 30, 1895.



Inventor

Witnesses

*A. Johnson*  
*E. D. [Signature]*

By *hcs* Attorneys.

*Mannin Gross*

*Cashnow & Co.*

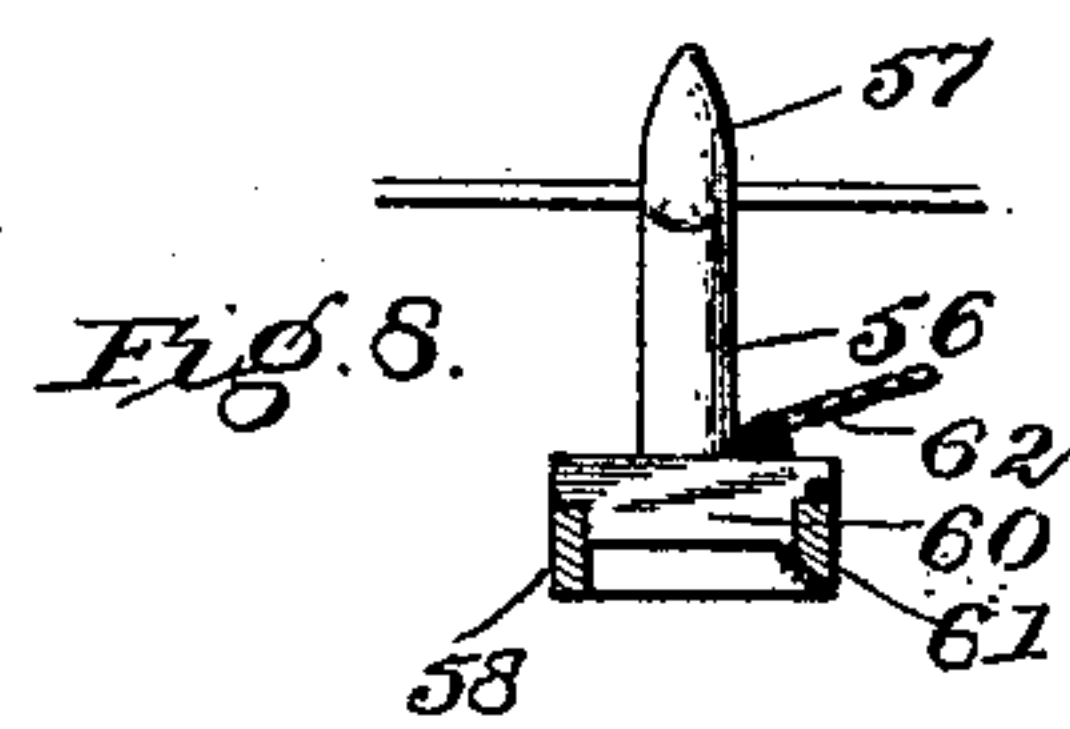
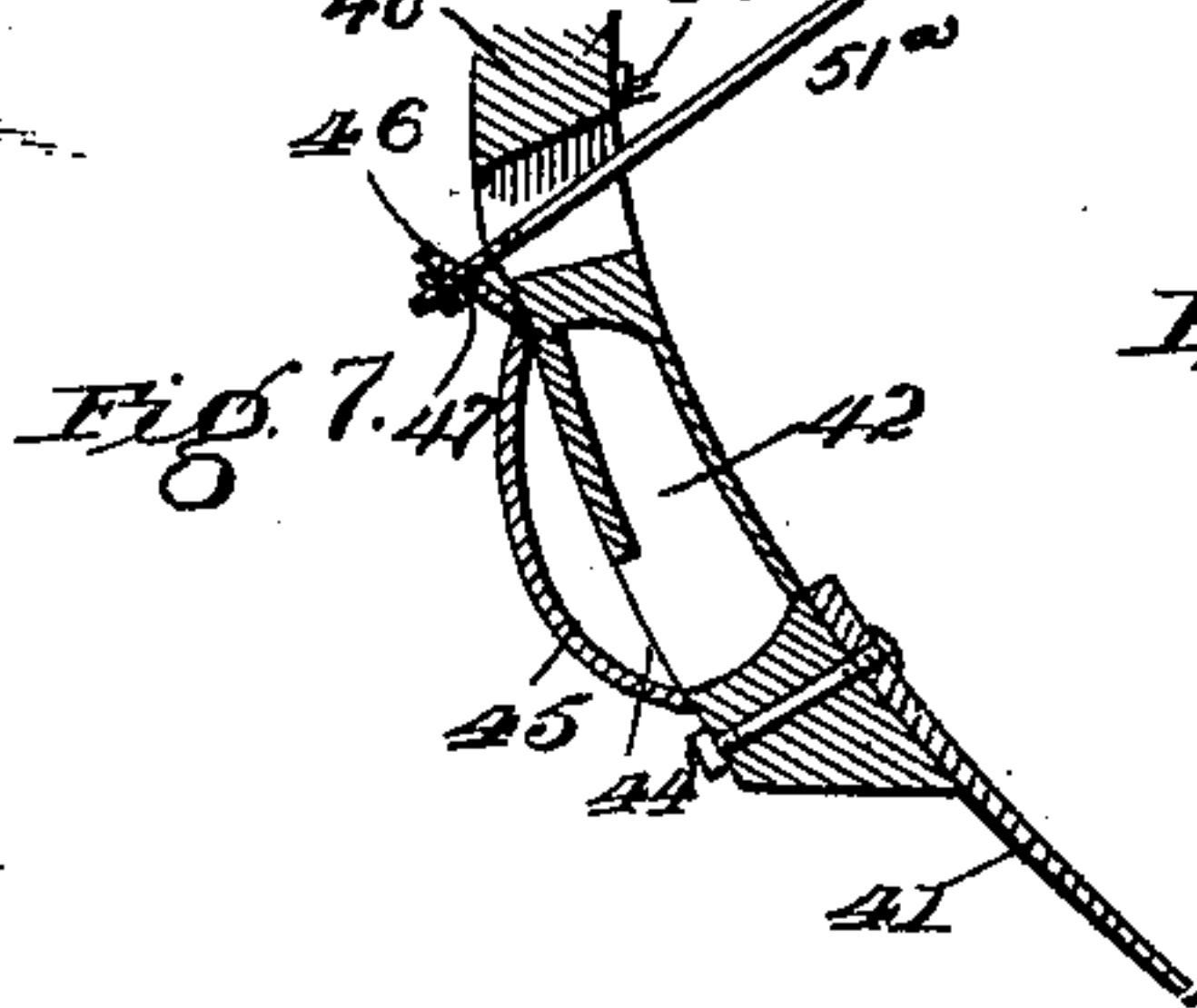
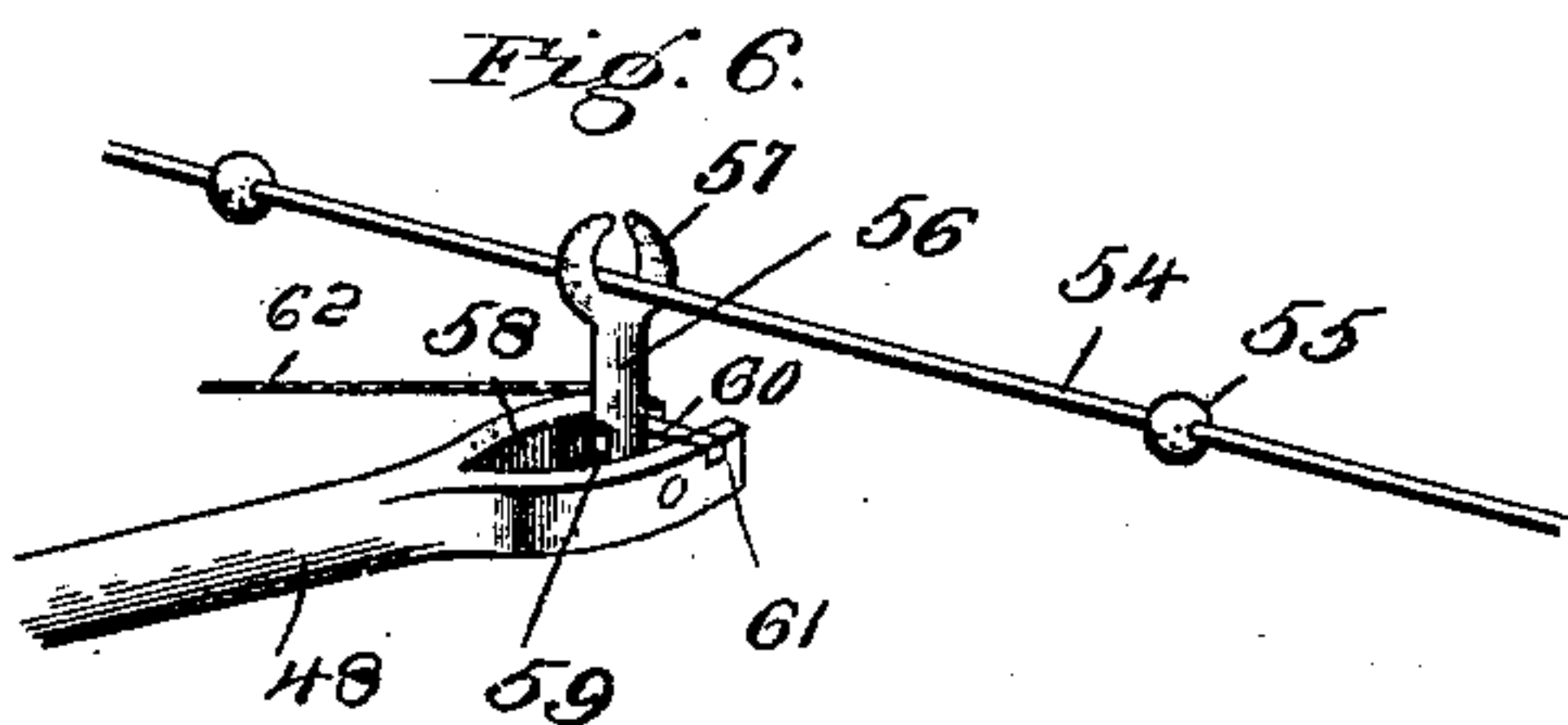
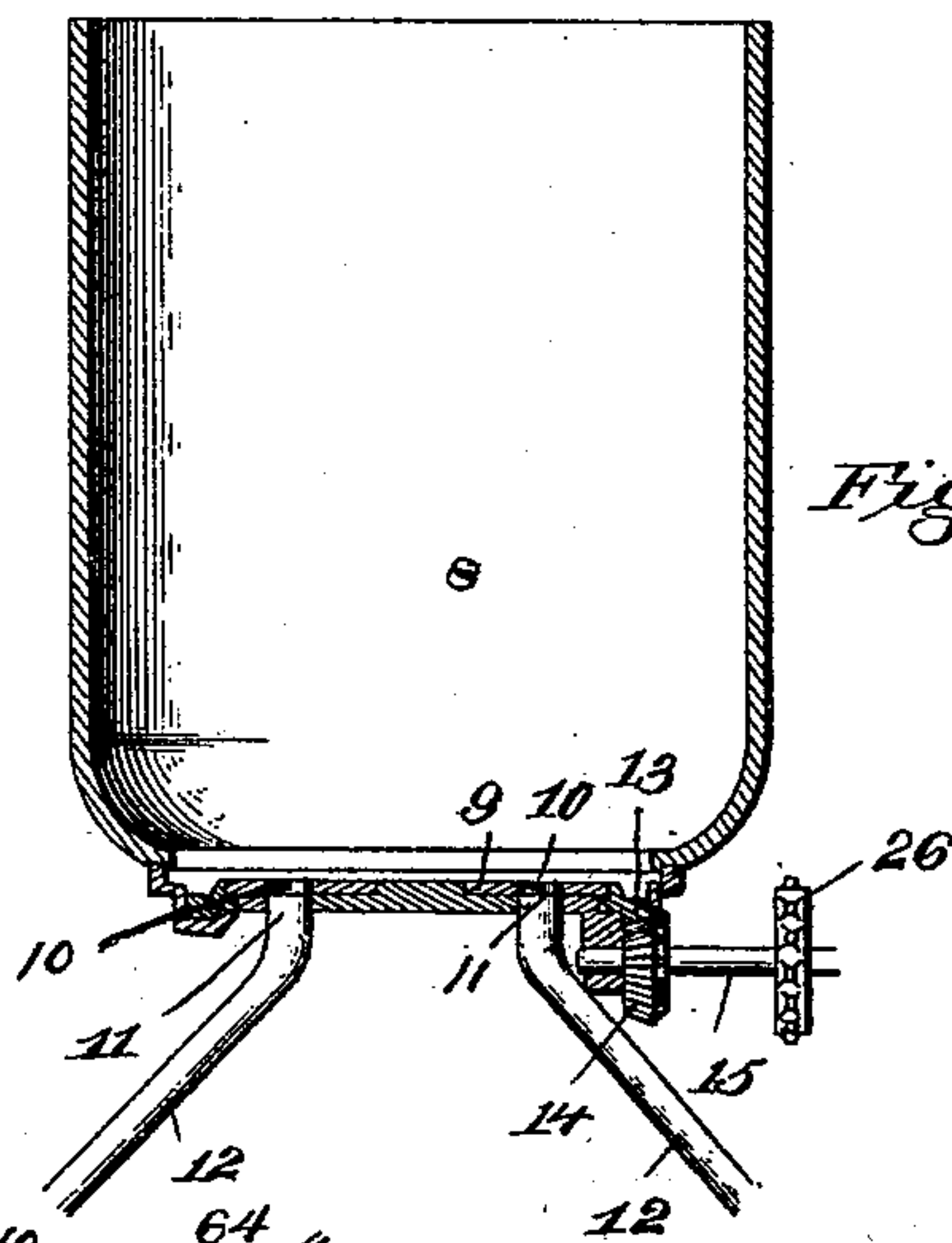
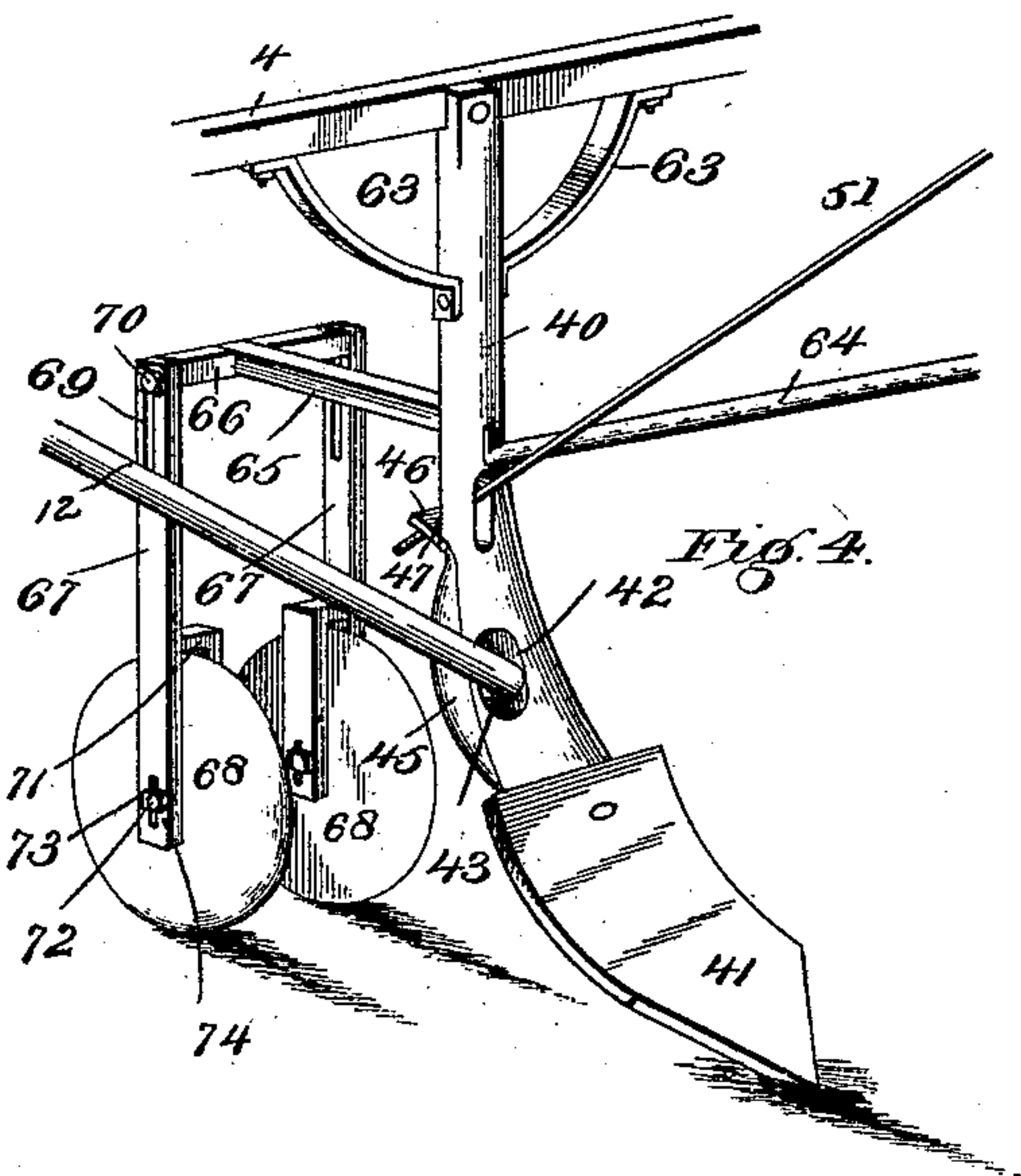
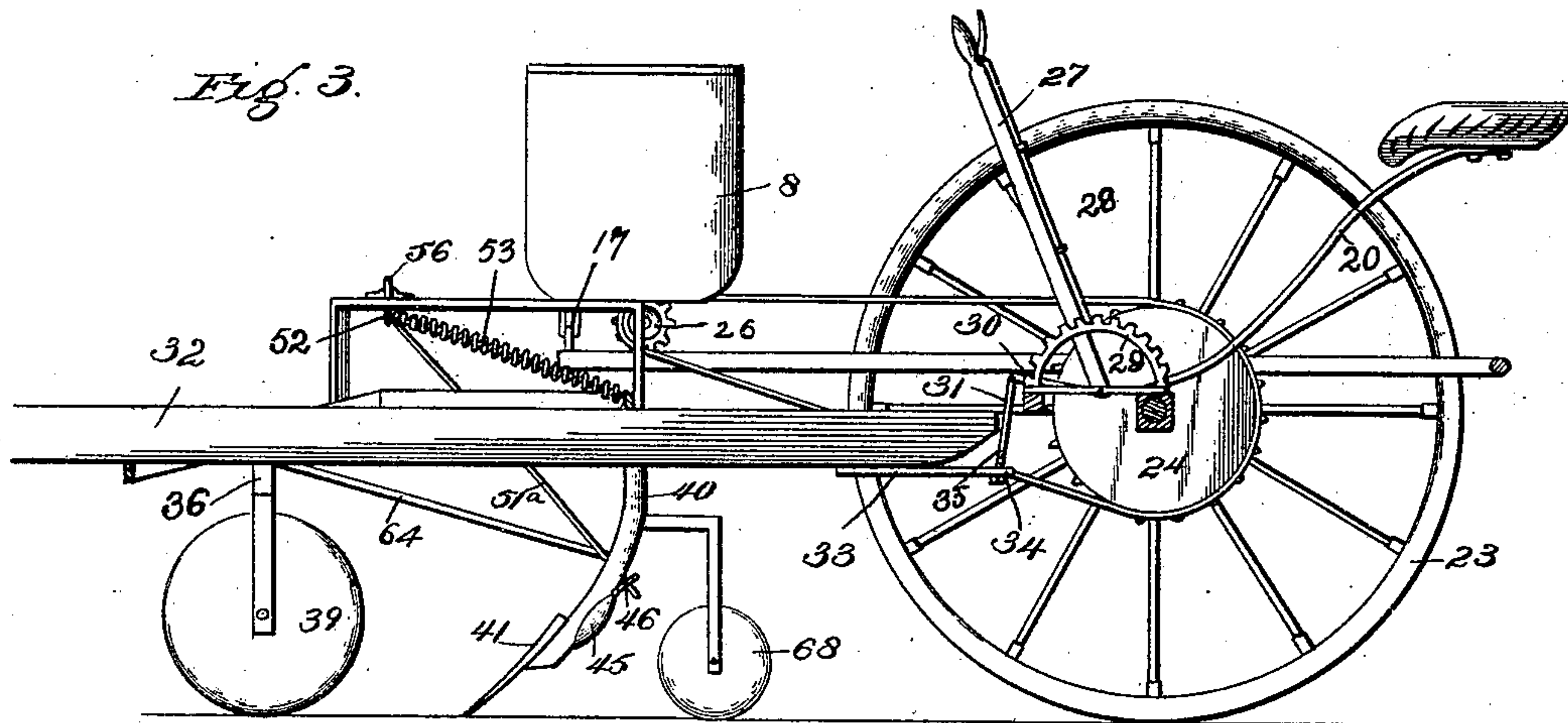
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Witnesses

J. Johnson  
[Signature]

By his Attorneys,

C. A. Snow & Co.



# UNITED STATES PATENT OFFICE.

MANNIN GROSS, OF BURLINGTON, KANSAS.

## CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 543,648, dated July 30, 1895.

Application filed September 25, 1894. Serial No. 524,088. (No model.)

*To all whom it may concern:*

Be it known that I, MANNIN GROSS, a citizen of the United States, residing at Burlington, in the county of Coffey and State of Kansas, have invented a new and useful Corn-Planter, of which the following is a specification.

My invention relates to corn-planters of the class known as "check-row planters," and the objects in view are to provide a simple and effective furrow opening and closing attachment adapted to be applied to various forms of planting-machines. Furthermore, to provide improved means for conveying the grain from a hopper to the point of delivery, to provide improved means for operating the valve which controls the seed-discharge opening, and to provide improved means for holding the check-row wire in operative relation with the machine and for disconnecting the same at the end of a row.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a planting mechanism embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is a similar view showing the opposite side of the machine with the adjacent ground-wheel removed. Fig. 4 is a detail view in perspective of the furrow opening and closing attachment. Fig. 5 is a detail sectional view of the hopper or seed-box to show the means for communicating motion to the seed-disk. Fig. 6 is a detail view in perspective of the guide-arm for the check-row wire, showing the means for mounting and holding the same in its operative position. Fig. 7 is a detail vertical section of one of the furrow-opening shovels and connected parts. Fig. 8 is a detail front view of one of the holding-arms.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The planter-frame comprises the side beams 1, the front cross-bar 2, the ends of which are connected to the front ends of the side bars by means of the forwardly-convergent braces 3, and a rear cross-beam 4, which connects the rear ends of the side beams 1. Arranged upon this planter-frame is a raised frame

consisting of the forwardly-divergent bars 5, connected at their front ends to the braces 3 by means of uprights 6, and at their rear ends to the cross-beam 4 by means of the uprights 7. Resting upon this raised frame is a seed-box or hopper 8, provided in its bottom with a rotary seed-disk 9, provided with a series of seed-openings 10, adapted to register successively with the opposite twin-openings 11 in the floor of the hopper. Communicating with these openings 11 are the conductors or tubes 12, and the under side of the seed-disk is provided with a series of gear-teeth 13, with which engages the beveled pinion 14 carried by the counter-shaft 15. Arranged in rear of this planter-frame is the wheel or riding-frame having parallel side bars 16, connected at their front ends by means of short chains 17 (see Figs. 2 and 3) to the raised portion of the planter-frame and connected at an intermediate point by a cross-bar 18, said cross-bar being arranged slightly below the plane of the side bars 16 and being connected thereto by hangers 19. This cross-bar 18 supports the seat-standard 20, and the side bars in rear of said cross-bar support the bearing-sleeves 21, in which is mounted the shaft 22 of the supporting and compressing wheels 23.

Attached to the shaft 22, between the adjacent ends of the sleeves 21, is a chain-wheel 24, which is connected by means of a chain 25 with a chain-wheel 26 on the shaft 15, whereby motion is communicated from the driving-shaft 22 to the counter-shaft 15 to operate the seed-disk.

Pivotaly mounted upon the riding-frame adjacent to the seat-standard is a hand-lever 27, provided with a pawl 28 to engage a segmental rack 29, and having an arm 30, which is connected by means of a link 31 with the rear end of the draft-beam 32, which is attached to the planter-frame. The connection between said link 31 and the draft-beam or tongue 32 is attained by means of a plate-spring 33, secured to the under side of the rear end of the draft-beam and terminating in an eye 34, in which the lower extremity of said link is secured by a nut 35. It will be understood that by means of this hand-lever the rear end of the draft-beam may be elevated, and therefore the depth of the furrows



formed by the furrow-opening devices, hereinafter described, may be regulated to suit the nature of the grain which is to be planted.

Depending from the planter-frame, and preferably attached to the braces 3, are standards 36, provided with extensions or stems 37, which fit in sockets provided therefor in the centers of the yokes 38, said yokes supporting the double-convex marking and guiding rollers 39, which are adapted to precede the furrow-opening devices.

Attached to the rear beam 4 of the planter-frame are the standards 40 for the furrow-opening shovels 41, the lower portions of said standards being hollow or provided with cavities 42, in which terminate the conductors or seed-tubes 12, whereby as the machine progresses the corn or other grain is fed through the tubes 12 into the cavities 42. In addition to the inlet-openings 43 of said cavities they are provided with outlet or feed openings 44, covered by the controlling-valves 45, which terminate at their upper ends in ears 46, having perforations 47.

Mounted transversely on the planter-frame in suitable bearings at the front ends of the side beams 1 is a rock-shaft 48, provided with depending arms 49, and connecting-rods 51 are secured at their lower extremities in the ears 46 by means of nuts, and are attached at their upper ends to the arms 49. Connected to the rock-shaft, by means of a small pendant arm 52, is a coiled return-spring 53, whereby the rock-shaft is normally held in position to close the controlling-valves 45.

54 represents a check-row wire provided with the usual projections or buttons 55, and 56 represents holding and guiding arms at the extremities of the rock-shaft 48, and are provided with bifurcated or forked upper extremities 57, for the reception of the check-row wire. This holding arm is preferably pivoted at its lower end in a bifurcation 58 at the end of the rock-shaft, and is held from swinging inward beyond a vertical position by a stop or stud 59, arranged in said bifurcation, and for holding the arm in its vertical or operative position, as shown clearly in Figs. 6 and 8, I employ a spring-actuated pivotal latch 60, pivoted to one side of the bifurcation 58 and engaging a notch 61 in the opposite side thereof. Connected to this latch at its free end is a cord 62, which extends to within convenient reach of the driver's seat, and by drawing said cord the latch may be raised to disengage the holding-arm to allow the latter to drop and release the check-row wire at the end of each row.

Each standard 40, which carries a furrow-opening shovel 41, is provided with lateral braces 63 and with a front brace 64, which is connected at its forward extremity to one of the braces 3, and projecting rearwardly from the standard is a horizontal arm 65, terminating in a cross-head 66. Adjustably connected to the terminals of this cross-head 66 are the standards 67 of the furrow-closing disks 68.

The upper ends of the standards 67 are provided with longitudinal slots 69, through which extend bolts 70, for securing the standards to the terminals of the cross-head, and by loosening said bolts the standards may be adjusted to cause the furrow-closing disks to throw the desired amount of earth upon the grain.

The lower ends of the standards are provided with yokes or forks 71, between which the disks 68 are mounted, and the spindles 72 of the disks are fitted in vertical slots 73 in the arms of the yoke or fork 71, and are secured at the desired adjustment therein by means of nuts 74. This constitutes an additional means for securing the desired adjustment of the disks.

Guide-rolls 75 are arranged respectively in rear of the holding-arms at the extremities of the rock-shaft 48, and the check-row wire is adapted to run under said guide-rolls, whereby as the holding-arms are released, as above described, the downward pressure upon the wire which is exerted by said roll will cause the arm to swing into a position for releasing the wire.

This being the construction of the improved planting mechanism, it will be understood that the standard 40, with its attached furrow-opening shovel and the means for receiving the grain, the furrow-closing disks and attached parts, comprise an attachment which may be applied to any planting-machine, and that in connection therewith the means for imparting motion to the controlling-valve 45 may or may not be used, according to the requirements. If it is desired to plant continuously or list the grain the controlling-valve may be omitted, and a listing-plow may be attached to the standard 40 in lieu of the furrow-opening shovel 41. This arrangement, however, will be understood without specific illustration thereof.

It will be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, I claim—

1. In a planter, the combination with a supporting framework and ground-wheels, a hopper arranged upon the longitudinal center of the framework, feeding-mechanism for the hopper, a plurality of conveyers in communication with the hopper to which the grain is fed, and connections between said feeding-mechanism and the ground-wheels, of standards secured to the framework and provided with cavities with which communicate the lower ends of said conveyers, furrow-opening shovels carried by said standards, furrow-closing disks arranged in rear of the shovels, valves closing the rear open sides of the cavities in said standards, a rock-shaft mounted transversely on the framework, connections between said rock-shaft and the said valves,



5 a check-row wire guide-arm pivotally connected to said rock-shaft and adapted to be depressed to disengage the wire, and means for normally holding said wire guide-arm in its upright or operative position, substantially as specified.

10 2. The combination with a framework and planting mechanism, of a rock-shaft provided with a bifurcated extremity, a forked holding and guide arm pivotally mounted in the bifurcation of the rock-shaft and adapted to engage a check row wire, said holding and guide arm being adapted to swing in the plane of the rock-shaft, a stop to limit the inward  
15 swinging movement of the holding and guide arm, and a spring actuated latch arranged in the path of the holding and guide arm to normally hold it in its operative position, substantially as specified.

20 3. The combination with a supporting framework, a hopper, grain feeding mechanism,

ism, and means for operating the grain feeding mechanism, of a double-convex marking or scoring roll, a hollow standard arranged in rear of said roll for carrying a furrow-opening shovel, the cavity in the standard having an outlet or feed-opening and the cavity being in communication with the outlet-opening of the hopper, furrow-closing disks arranged in rear of the furrow-opening shovel and having standards carried by the standard of said furrow-opening shovel, and check-row operated mechanism for controlling the discharge through the outlet or feed opening in the hollow standard, substantially as specified. 25 30 35

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

MANNIN GROSS.

Witnesses:

JOHN H. SIGGERS,  
E. G. SIGGERS.