

(No Model.)

2 Sheets—Sheet 1.

J. M. KING.
PLANTER.

No. 495,495.

Patented Apr. 18, 1893.

FIG. 1.

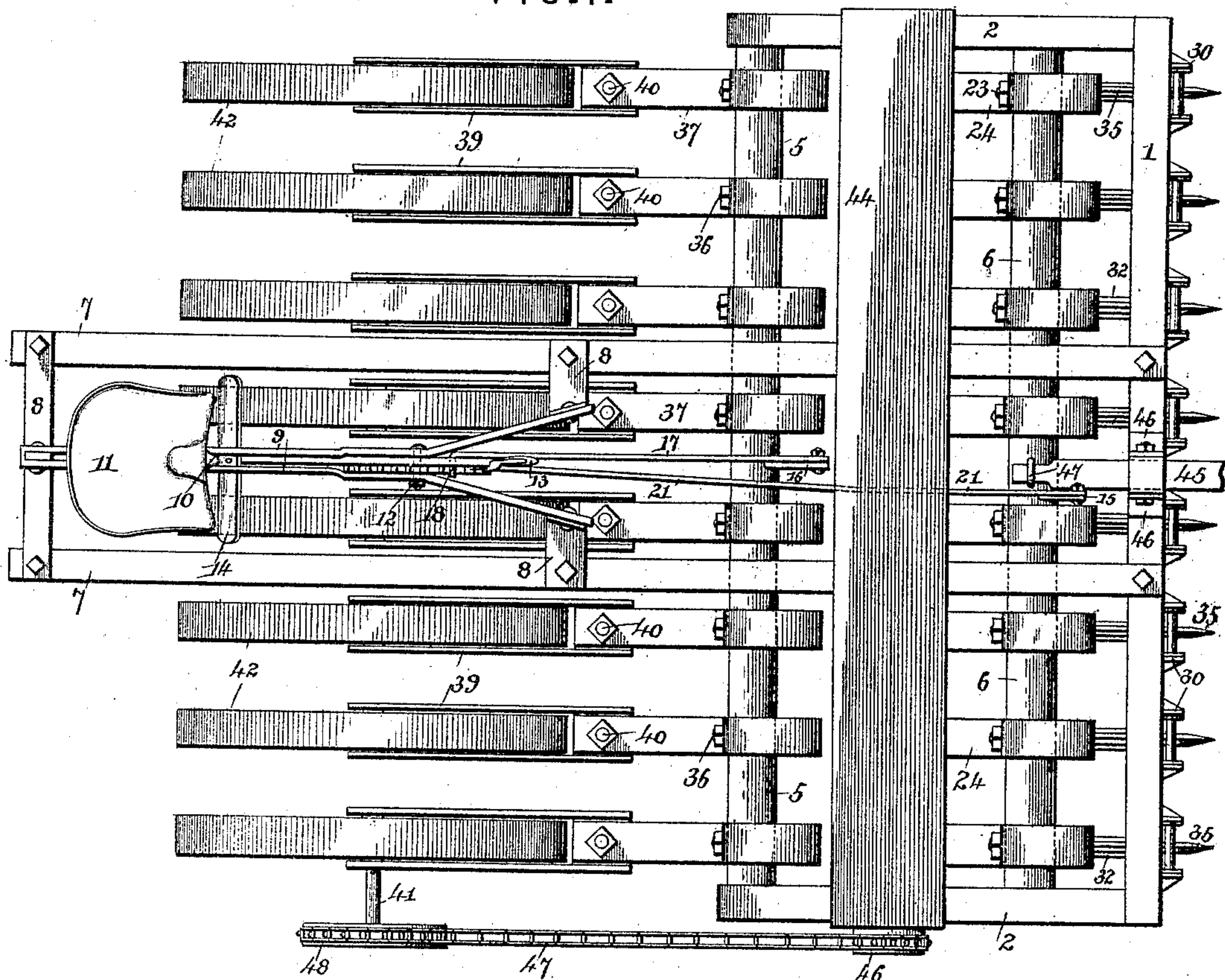
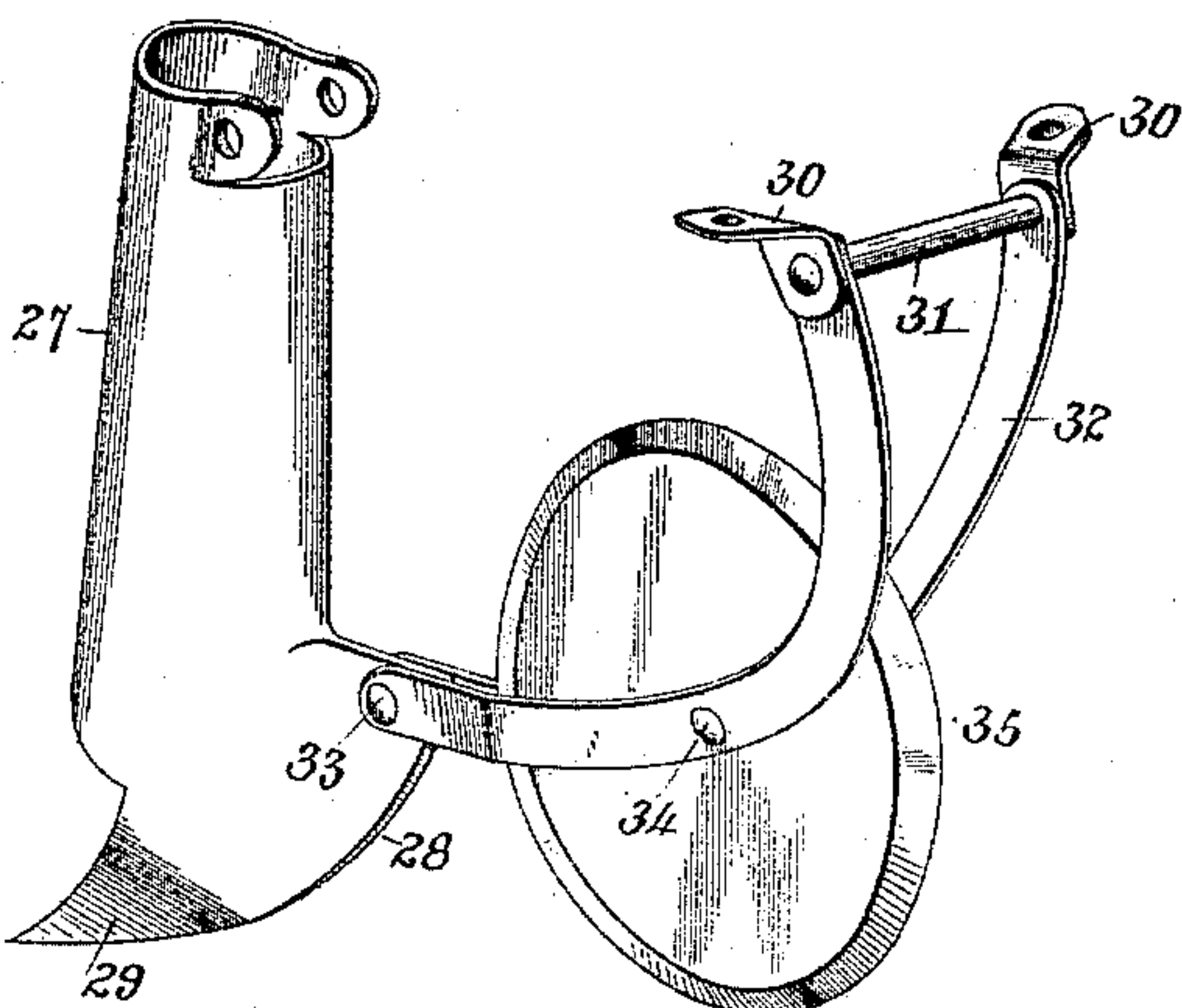


FIG. 4.



Witnesses

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

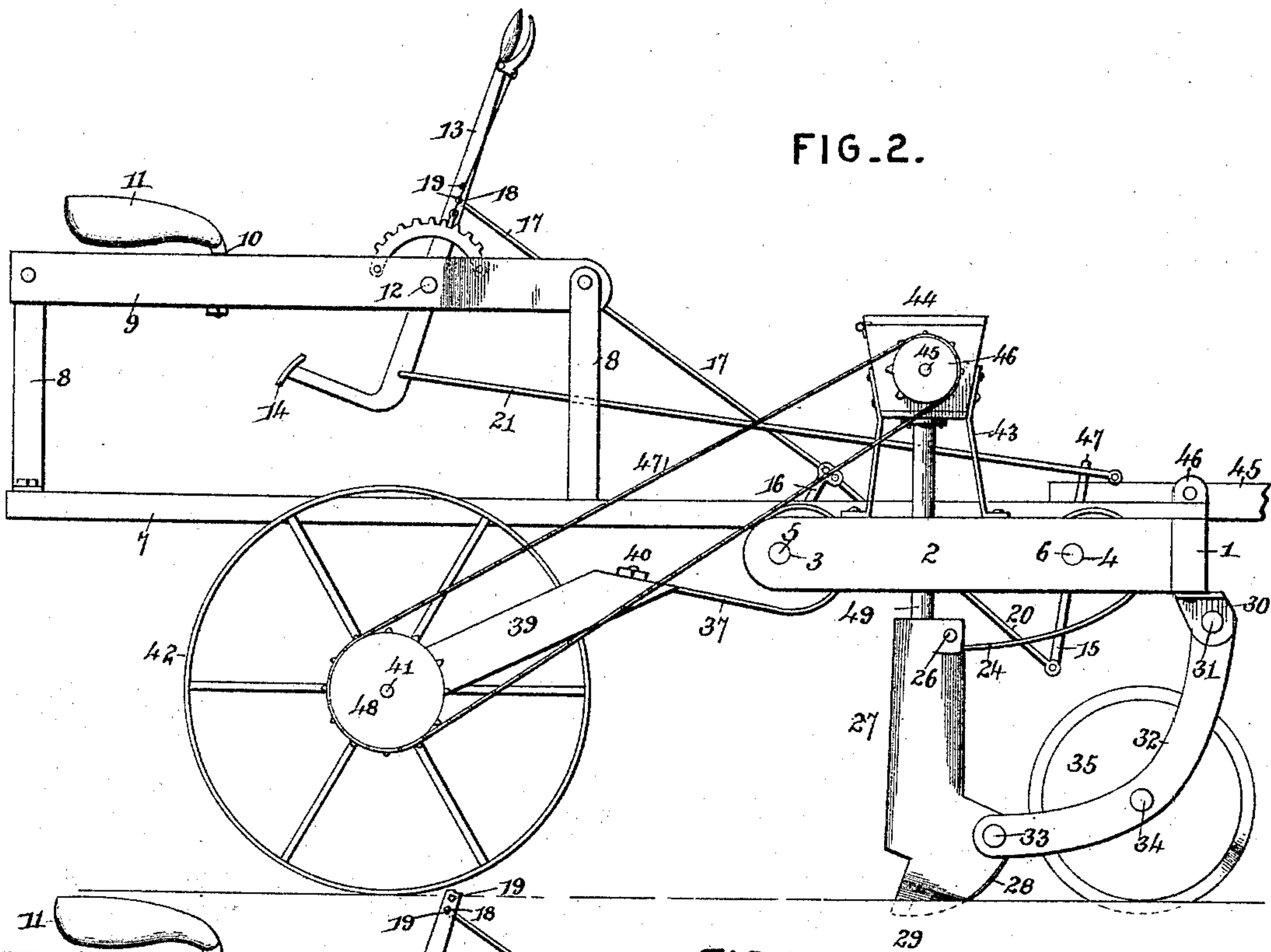
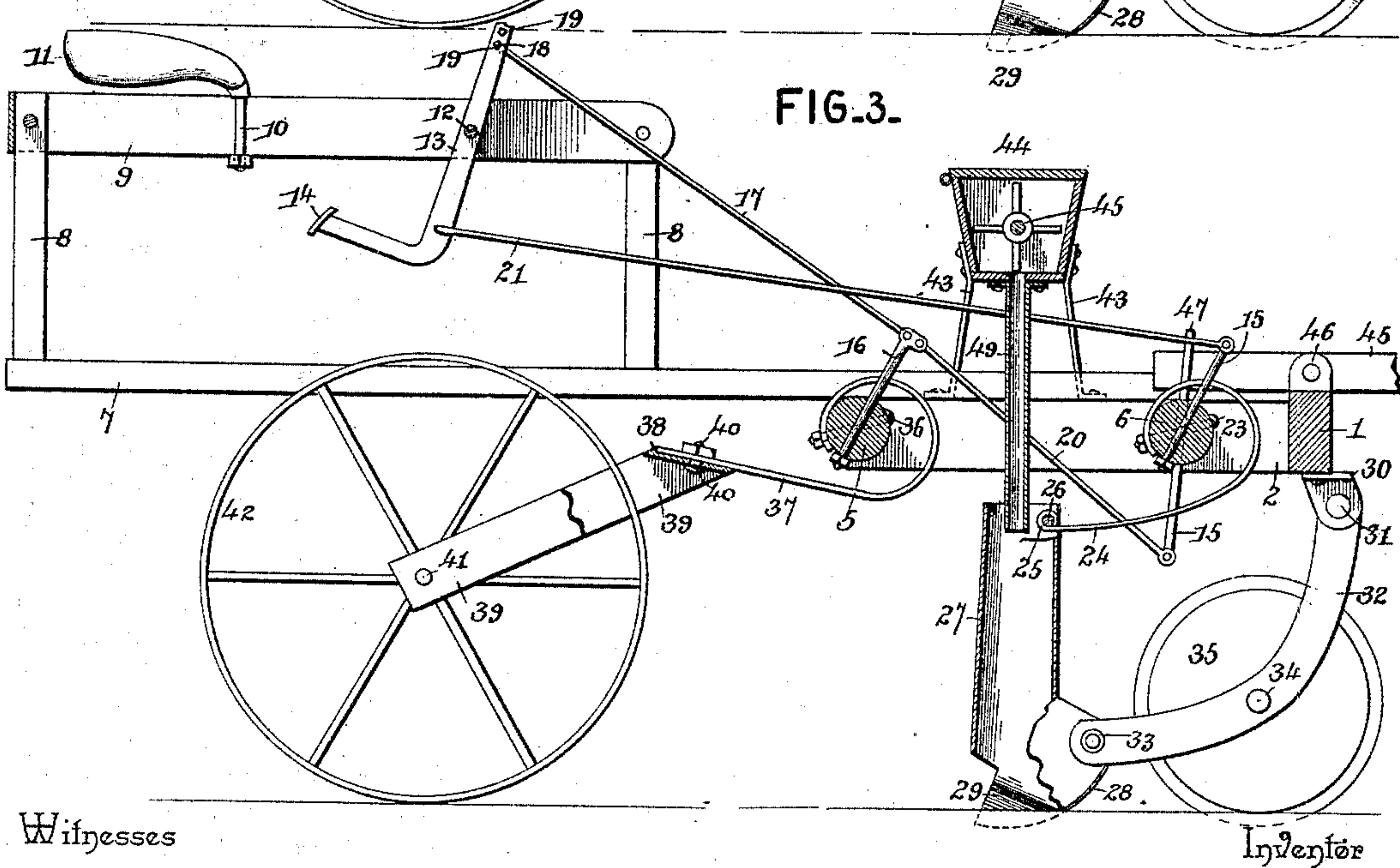


FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES M. KING, OF HEBRON, NEBRASKA.

PLANTER.

SPECIFICATION forming part of Letters Patent No. 495,495, dated April 18, 1893.

Application filed November 21, 1892. Serial No. 452,723. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. KING, a citizen of the United States, residing at Hebron, in the county of Thayer and State of Nebraska, have invented a new and useful Planter, of which the following is a specification.

My invention relates to improvements in planters; the objects in view being to provide a cheap and convenient machine that is adapted to uniformly open and form a furrow, drop seed therein, close the furrow, and pack the same, all in one continuous operation; furthermore to so construct said machine as to adapt the same to plant perfectly upon uneven ground; and finally to so arrange the parts as to place them entirely within the control of the driver, who may increase or decrease the depth of planting by a regulating-lever, and also elevate said planting mechanism out of the ground when it is desired to transport the machine to and from the field of operation.

With these and various other objects in view, the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a plan view of a planter embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a central longitudinal sectional view. Fig. 4 is a detail in perspective of one of the disks and seed-spouts.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ an oblong frame, which is transversely-disposed and consists of a front transverse bar 1, and opposite short side-bars 2, which side-bars are provided at their rear extremities and a short distance in advance thereof, with bearings 3 and 4, respectively. In the bearings 3 and 4 are located rock-shafts 5 and 6, respectively.

A pair of longitudinal bars 7 have their front extremities secured to the cross-bar 1 of the framework, extend rearward, and are supported by the rock-shafts 5 and 6 and project a considerable distance beyond the same. Pairs of standards 8 rise from the bars 7 and each pair is connected by a pair of longitudinal rails 9. The rails 9 converge near their front ends and lie adjacent to each other from

this point to their rear ends, thus forming an intermediate slot, and in said slot there is mounted for sliding a shank 10 formed on the front of a seat 11 designed to accommodate the driver, and by means of which, as will hereinafter appear, he may shift his weight backward or forward for purposes to be hereinafter described.

At the point of convergence of the rails 9, there is fulcrumed at 12 between the same a lever 13, the upper end of which terminates in a handle within easy reaching distance of the hand of the driver, and the lower end of which is provided with a transverse foot-rest 14 within easy reach of the driver. The lever is provided with a locking-pawl, and at one side thereof a segmentally-toothed locking standard is located into which said pawl may engage for the purpose of locking the lever at any point of its adjustment. Diametrically opposite rock-arms 15 extend from the rock-shaft 6, and a single rock-arm 16 extends from the rock-shaft 5. A connecting rod 17 is connected loosely in the upper end of the rock-arm 16, and has its rear end bent to form a hook 18 for engaging in one of a series of perforations 19 formed in the lever 13. A connecting-rod 20 leads from the upper or front end of the rock-arm 16 to the lower end of the lowermost rock-arm of the pair 15. A connecting-rod 21 is loosely connected to the uppermost of this pair of rock-arms 15, extends rearward and is connected to the lever 13 loosely near its lower end, so that as will be apparent, by oscillating the lever the shaft 6 will be turned in a direction opposite to that in which the shaft 5 is turned.

At intervals the shaft 6 has passed there-through bolts 23, the same serving as a securing medium for a series of springs 24. These springs are partially coiled, that is, they extend forward and over the rock-shaft from the point at which they are secured thereto in front of the same, thence under the rock-shaft and to the rear where they terminate in a series of transversely-aligning eyes 25. The eyes of the springs are by bolts 26 connected to the upper ends of a series of seed-drills 27, the connection being pivotal. These drills terminate at their lower ends in furrow-opening shoes 28, which are provided with

sharp or toothed edges, and the walls of which are flared outward toward their rear ends, thereby forming turning-shovels 29.

Pairs of brackets or bearing ears 30 depend from the cross-bar 1 in front of each drill-tube and between each pair there is pivoted or loosely hung by a bolt 31 a pair of quadrant-shaped hangers 32, the rear ends of which embrace the front end of the shoe 28 of the drill immediately in rear thereof and are pivoted thereto by a pivot-bolt 33. The hangers are converged toward their lower portions and have bearings in which are mounted the short transverse axles 34 that accommodate the colter-wheels 35 that run immediately in advance of the shoes of the drills.

Through the medium of a series of bolts 36 that pass through the rock-shaft 5, a series of coiled-springs 37 are secured, said springs being similar to those described upon the shaft 6, and at their rear ends they take into the upper recessed ends 38 of a series of inverted U-shaped harrow frames 39. The springs fit the recesses at the upper ends of the frames, the bottoms of the recesses being disposed at an obtuse angle to the frames, and a series of bolts 40 serve to secure the frames and springs together at this point. Each of the frames has its terminals provided with bearings, and in the bearings of each pair of terminals a short axle 41 is journaled, and the same carries a packing-wheel 42 having a broad tire and designed to follow directly in the path of the seed-drill.

Standards 43 rise from the bars 2 and support an ordinary transversely-disposed seed-hopper 44 in which is journaled an agitator-shaft 45 carrying at one end a sprocket-wheel 46, which is run through the medium of a chain 47 that passes over a sprocket-wheel 48 with which one of the end axles 41 is provided.

In operation, when the driver desires to proceed to the field for planting, he swings the lever 13 to the rear, operating the same by foot or hand power or by both, and in so doing partially rocks the rock-shaft 5 to the rear, and the packing-wheels being pressed against the ground and unable to penetrate the same the increased tension or strain under which the springs 37 are put serves to elevate the front portion of the frame slightly. The same movement of the lever rotates the rock-shaft 6 a slight distance to the front, thus decreasing the tension of the springs attached thereto, and lifting the seed-drills upward, such upward movement likewise by reason of the pivotal connection between the drill-tubes and colter-bars or hangers, swings the latter to the rear and the driver sliding his seat toward the rear counterbalances the weight of these parts in a measure, and lifts the front portion of the machine from the ground. A draft-tongue 45 is pivoted in a pair of brackets or ears 46 on the front cross-bar 1, and has its rear end reduced and entering into an inverted U-shaped

keeper 47 rising from the shaft 6 and loosely receiving the end of the draft-tongue. Such forward movement or rocking of the shaft 6 serves to clamp or bind the keeper upon the rear end of the draft-tongue, thus depressing said rear end and making the connection between the tongue and the machine perfectly rigid. The machine may now be readily transported to any point of operation. When the field of operation has been reached, the operation described is reversed, the driver slides forward in his seat and throws the lever 13 to the front. Such movement of the lever causes the rock-shaft 6 to rock slightly to the rear, thus lower the colter-wheels and seed-drills to an operative position, and decreasing the tension on the springs 37 of the packing-wheels. The operation of planting is now carried on and will be readily understood, and may be briefly stated as follows: As the machine moves along the seed is fed from the hopper in the usual manner, and through the flexible tubes 49 is delivered into the seed-drills. The colters in advance of the drills score or form a path into which the points of the drills or their shoes may take, and the furrow being formed the seed is dropped therein, the curved ends of the shoe serving to return the soil to the furrow closing the same. Following this is the series of packing-wheels, and they serve to pack the earth or soil snugly upon the seed. It will be noticed that all the wheels, the colters, and the seed-drills are free and independent of each other, and therefore in planting in a hilly field no depressed portions or gullies therein are omitted, but these parts being under spring-tension will descend into the gully or uneven part and perform the same operation as their companions do on the higher ground, so that the consequence is an evenly and efficiently planted field.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a planter, the combination with a framework, a rock-shaft journaled therein and transversely-disposed, and a tongue pivoted upon the framework and extending over and above the rock-shaft, of an inverted U-shaped staple or keeper rising from the rock-shaft and loosely receiving when in a vertical position the rear end of the tongue, and a lever connected with the rock-shaft and adapted to oscillate the same so as to bind the staple upon the tongue, substantially as specified.

2. In a planter, the combination with a frame, and front and rear rock-shafts, of aligning pairs of springs secured to and coiled about said rock-shafts, frames secured to the rear springs, packing-wheels supported by the frames, seed-drills connected with the front springs, and colter-frames pivoted at their

front ends to the frame in advance of the seed-drills and at their rear ends to seed-drills, colters mounted in the frames, a hopper mounted on the frame above the drills, and means for rocking the shafts, substantially as specified.

3. In a planter, the combination with a frame and front and rear shafts, of aligning pairs of springs secured to and coiled about said shafts, frames secured to the rear springs, packing-wheels supported by the frames, seed-drills connected with the front springs, colter-frames pivoted at their front ends to the frame in advance of the seed-drills and at their rear ends to the seed-drills, colters mounted in the frames, and a hopper mounted on the frame above the drills, substantially as specified.

4. In a planter, the combination with a frame and front and rear rock-shafts, of aligning pairs of springs secured to and coiled about said rock-shafts, frames secured to the rear springs, packing-wheels supported by the frames, seed-drills connected with the front springs, colter-frames pivoted at their front ends to the frame in advance of the seed-drills and at their rear ends to the seed-drills, colters mounted in the frames, a hopper mounted on the frame above the drills, and means for simultaneously rocking the shafts in reverse directions, substantially as specified.

5. In a planter, the combination with an oblong transversely-disposed frame, transverse shafts mounted therein, front and rear aligning-springs secured at one end to and coiled in the same direction about the shafts, packing-wheels carried by the rear springs, seed-drills connected to the front springs, of a pair of bars secured to the frame and extending over and in rear of the shafts, rails supported on the bars, a sliding seat loosely mounted on the rails, a lever for oscillating the shafts, and a hopper connected with the drills, substantially as specified.

6. In a planter, the combination with an oblong transversely-disposed frame, front and rear rock-shafts, coiled springs secured to the rock-shafts, seed-drills carried by the front springs, and packing-wheels carried by the rear springs, of a superimposed hopper, a pair of longitudinal bars extending rearward from the frame over and beyond the packing-wheels, standards rising from the bars, rails supported by the standards said rails lying adjacent to each other toward their rear ends, a seat loosely mounted on the rails and having a shank extending between the same, a lever fulcrumed between the rails, a locking standard supported at the side of the lever, a rocking-pawl for the standard, a rest at the

lower end of the lever, and connecting rods between the lever and the shafts, substantially as specified.

7. In a planter, a transverse shaft and planting mechanism arranged in front of the same, combined with an inverted U-shaped frame having a recess at its upper end, a coiled spring connected with the shaft and having its rear extremity taking into the recess, a bolt passed through the spring and frame, an axle journaled in the frame, and a packing-wheel mounted on the axle, substantially as specified.

8. In a planter, the combination with a framework, a transverse rock-shaft and a superimposed hopper and means for operating the same, of a coiled spring secured to the rock-shaft and terminating in rear of the same in an eye, a seed-tube pivotally connected to the eye and having its lower rear end flared to form turning-shovels and its front end beveled to form a cutting point, a pair of hangers of quadrant shape pivoted at their front ends to the frame and at their rear ends to the seed-tube, and a colter-wheel having its axle journaled between the hangers, substantially as specified.

9. In a planter, the combination with a transverse framework, front and rear rock-shafts, a series of coiled springs mounted on each of the rock-shafts, a series of seed-drills having their upper ends loosely connected with the front springs, a series of pairs of hangers pivotally connected to the framework at their front ends and at their lower rear ends pivotally connected to the seed-drills, colter-disks mounted in the hangers, a series of inverted U-shaped frames secured to the rear springs, and packing-wheels mounted in the frames, of a rock-arm extending from the rear shaft, upper and lower rock-arms extending from the front shaft, a hand lever fulcrumed in the framework, a connecting-rod between the front rock-arm of the front shaft and the lower end of the hand-lever, a connecting-rod between the lower rock-arm of the front shaft and the rock-arm of the rear shaft, and a short connecting-rod between the rock-arm of the rear shaft and the hand-lever above its point of fulcrum, substantially as specified.

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

JAMES M. KING.

Witnesses:

CHAS. P. SCHIVER,
W. F. THORNBURY,
C. M. SUTHERLAND.