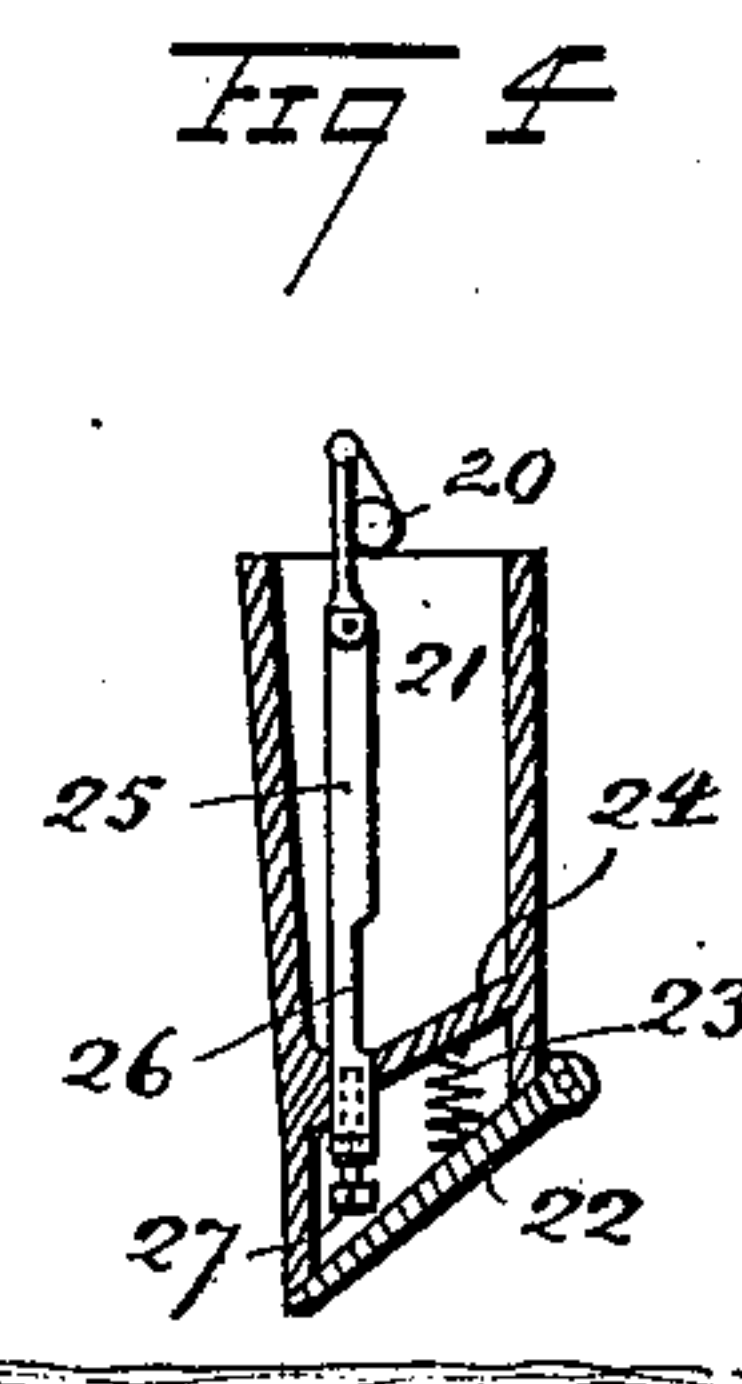
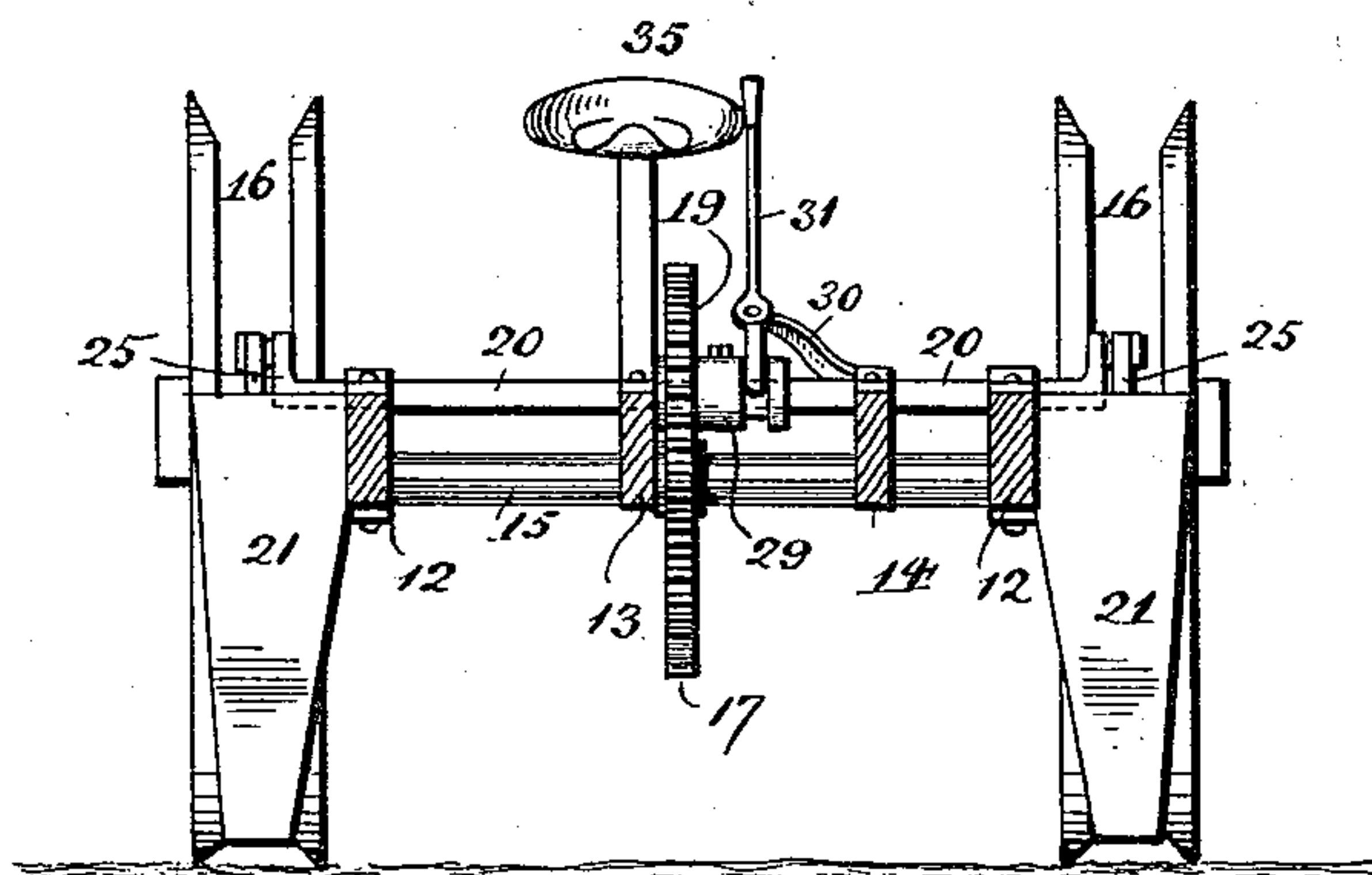
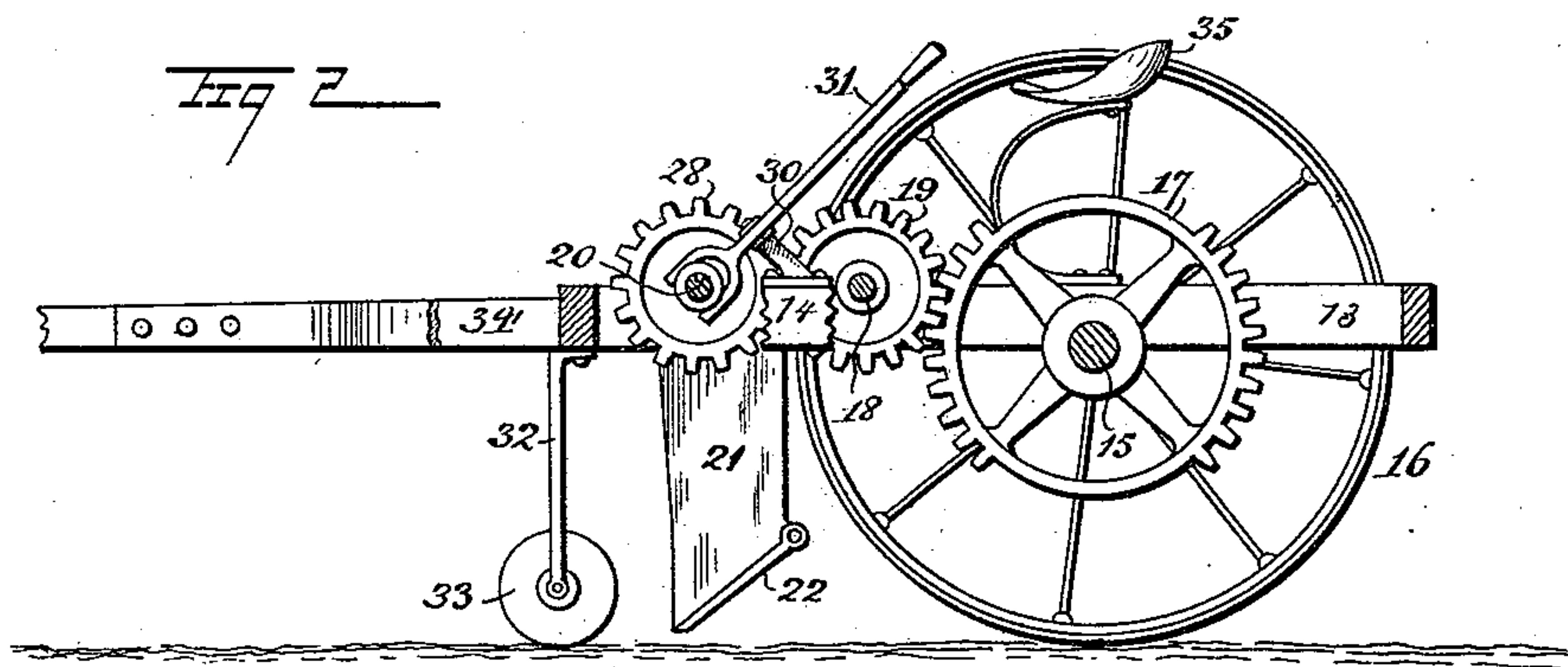
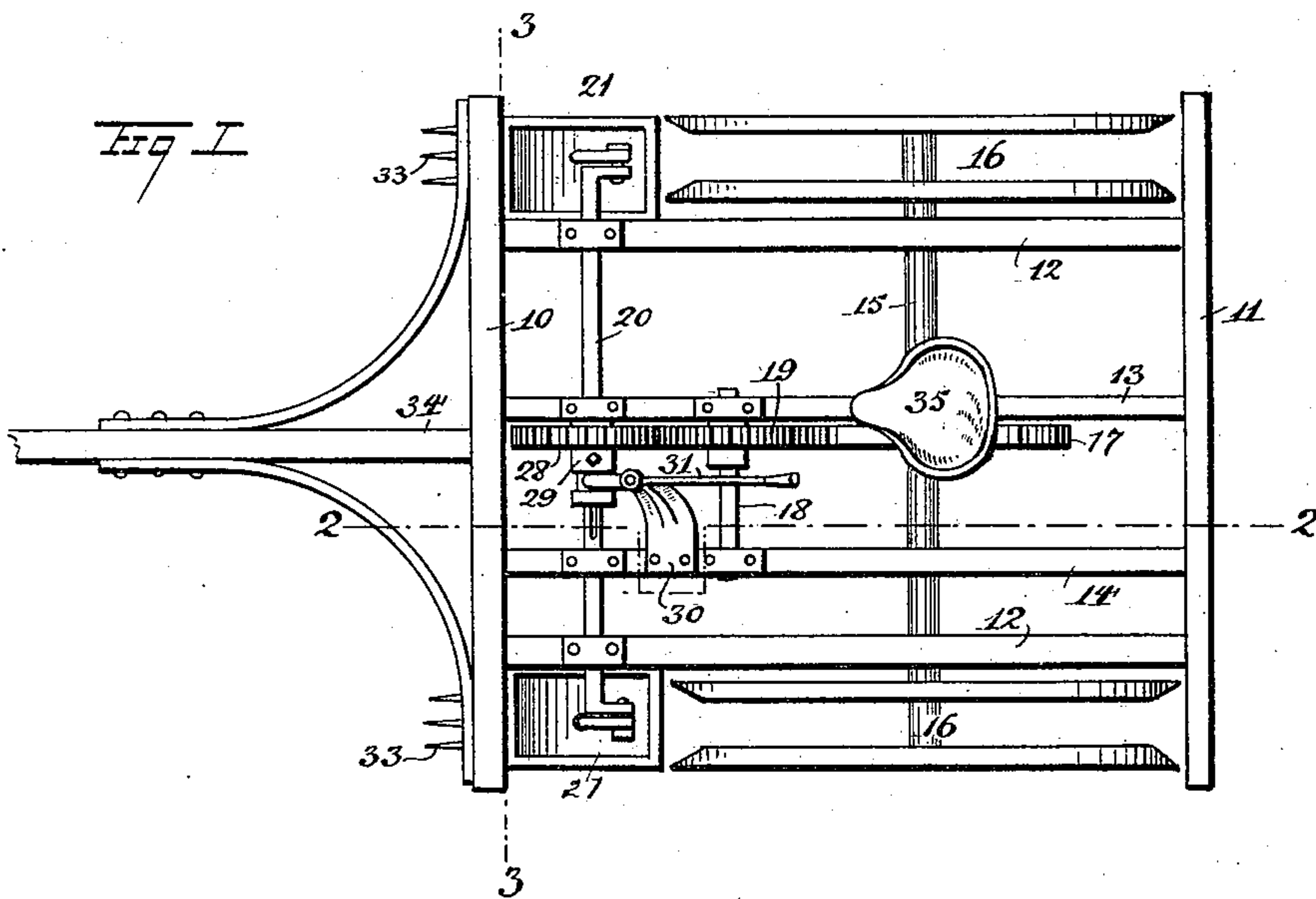


(No Model.)

K. BULAND.
CORN PLANTER.

No. 428,377.

Patented May 20, 1890.



WITNESSES:

H. Walker
C. Bedgwick

Fig 3

INVENTOR:

K. Buland
BY
Munn & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

KNUT BULAND, OF LINN GROVE, IOWA.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 428,377, dated May 20, 1890.

Application filed February 27, 1890. Serial No. 341,922. (No model.)

To all whom it may concern:

Be it known that I, KNUT BULAND, of Linn Grove, in the county of Buena Vista and State of Iowa, have invented a new and useful Improvement in Corn-Planters, of which the following is a full, clear, and exact description.

My invention relates to an improvement in corn-planters, and has for its object to provide a simple and durable machine, in which the seed-dropper also acts as a marker; and the invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the machine. Fig. 2 is a section taken on line 2 2 of Fig. 1. Fig. 3 is a section taken on line 3 3 of Fig. 1, and Fig. 4 is a central vertical section through the seed-box.

In carrying out the invention the frame consists of a front beam 10, a rear beam 11, two side beams 12, beyond which the front and rear beams extend, and intermediate beams 13 and 14, parallel with the side beams.

In any suitable or approved form of bearings attached to the frame an axle 15 is journaled, and to the extremities of said axle drive-wheels 16 are keyed or otherwise secured. Two drive-wheels are usually employed at each end of the axle about two or three inches apart, having a beveled periphery, the inner edge being the lowest. Thus the drive-wheels are made to act effectively as cover-wheels, and the earth will not cling thereto, as it would if a single grooved wheel were employed. Upon the axle at or near its center a spur-wheel 17 is rigidly secured, which spur-wheel is provided with teeth upon opposite sides of its periphery only, as best illustrated in Fig. 2, it being adapted, through the medium of gearing to be hereinafter described, to provide for the seed dropping twice at every revolution of the said gear-wheel 17.

In front of the axle 15, between the intermediate beams 13 and 14, a short shaft 18 is journaled, having splined or otherwise secured thereon a pinion 19, adapted to mesh

with the teeth of the spur-gear 17, and near the front of the frame, in suitable bearings secured to the side and intermediate beams thereof, a crank-shaft 20 is held to revolve, the crank-arms being at the extremities, and in front of each wheel a seed-box 21 is secured to the frame.

The lower end of each seed-box is downwardly beveled and provided with a hinged lid 22, the said lids being held normally closed by springs 23, attached to the inner surfaces of the lids and to a partition 24, located transversely in each box below the center, as best shown in Fig. 4. The partition 24 of each box is provided with an aperture near the forward side of the latter, and in the aperture of each partition a planter 25 is held to slide, which planter consists of a bar of suitable dimensions, having formed in its rear face a cavity 26, for the reception of seed contained in the upper chamber of the box. The lower end of each planter 25 has attached thereto an adjustable foot 27, of any approved construction, and the upper ends of the planters are connected with the cranks of the crank-shaft.

Upon the crank-shaft 20, between the intermediate beams 13 and 14, a pinion 28 is mounted, provided with a grooved hub 29, the said hub and its pinion being capable of sliding laterally upon the shaft, and yet of turning therewith by means of a feather formed upon the shaft and entering a groove in the hub of the pinion, as best shown in Fig. 1. From the intermediate beam 14, slightly to the rear of the crank-shaft, a bracket 30 is projected, upon which bracket a shifting-lever 31 is fulcrumed, embracing the hub of the pinion 28 at its grooved surface.

To the front face of the forward beam 10 of the frame, at each end, a hanger 32 is secured, in which hangers two or more (preferably three) pulverizing-disks 33 are held to revolve, the said disks being adapted to contact with the ground in advance of the seed-boxes 21. The frame is further provided with a suitable tongue or pole 34 and a seat 35, secured to the intermediate beam 13 and extending upward and rearward over the spur-gear 17.

When the pinions 28 and 19 are thrown into

gear and the pinion 19 is engaged with the teeth of the wheel 17, as the axle revolves the crank-shaft 20 is rotated, whereby as the cranks of the shaft are forced downward the lower end of each planter-bar contacts with the lid 22 of the planter-box in which it slides, forcing said lid open and carrying the seed located in the recess 26 into the lower compartment of the box, from whence it drops to the ground, and each planter-bar 25 in its downward movement leaves a mark in the ground. The ground is broken in advance of the planters by the pulverizing-disks 33, and the grooves in the drive-wheels, which follow immediately in the track of the planters, tend to cover the earth over the seed dropped.

It will be observed that as the planter-bars effectually mark the rows upon each downward movement the rows may be planted straight, as in turning the mark last made is rendered visible and a proper start for the next row may be made. As heretofore stated, the gearing is preferably so constructed that at each revolution of the spur-gear 17 each planter-bar will have descended twice.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a corn-planter, the combination, with the seed-boxes thereof, provided with an apertured partition near the lower end, and a spring-controlled lid, also at the lower end, of a crank-shaft mounted upon the frame of the planter, and planter-bars recessed to receive seed held to slide in the seed-boxes through the partition therein, the said planter-bars being of sufficient length to press open the lids of the seed-boxes upon their downward movement and to contact with the ground, substantially as shown and described.

2. In a corn-planter, the combination, with the frame, seed-boxes secured to the frame,

provided with a partition near the lower end, and a spring-controlled lid covering the said lower end, and pulverizing-disks attached to the frame in advance of the seed-boxes, of a crank-shaft mounted upon the frame, planter-bars held to slide in the seed-boxes and provided with recesses to receive the seed, the said planter-bars being attached to the crank-arms of the crank-shaft and constructed of sufficient length to pass downward through the partition of the boxes, open the lids thereof, and contact with the ground, and means, substantially as shown and described, for driving the said crank-shaft from the axle, as and for the purpose specified.

3. In a corn-planter, the combination, with a frame, an axle journaled therein, drive-wheels secured to the said axle, a gear attached to the axle between the drive-wheels, having teeth upon opposite sides only, a pinion journaled in the frame meshing with the teeth of the gear-wheel, and seed-boxes attached to the sides of the frame in advance of the wheel, each box being provided with an apertured partition near the lower end, and a spring-controlled lid covering the lower end, of a crank-shaft journaled near the front of the frame, planter-bars held to vertically reciprocate in the seed-boxes attached to the crank-arms of the crank-shaft and of sufficient length to pass downward through the partition of the boxes, open the lower lid thereof, and contact with the ground, a pinion mounted to slide upon the crank-shaft, and means, substantially as shown and described, for shifting the said pinion, as and for the purpose specified.

KNUT BULAND.

Witnesses:

W. O. MAGILL,
LULU EVANS.