

No. 823,374.

PATENTED JUNE 12, 1906.

F. THÜRRID.
 PLOW AND SEEDER.
 APPLICATION FILED FEB. 24, 1906.

2 SHEETS—SHEET 1.

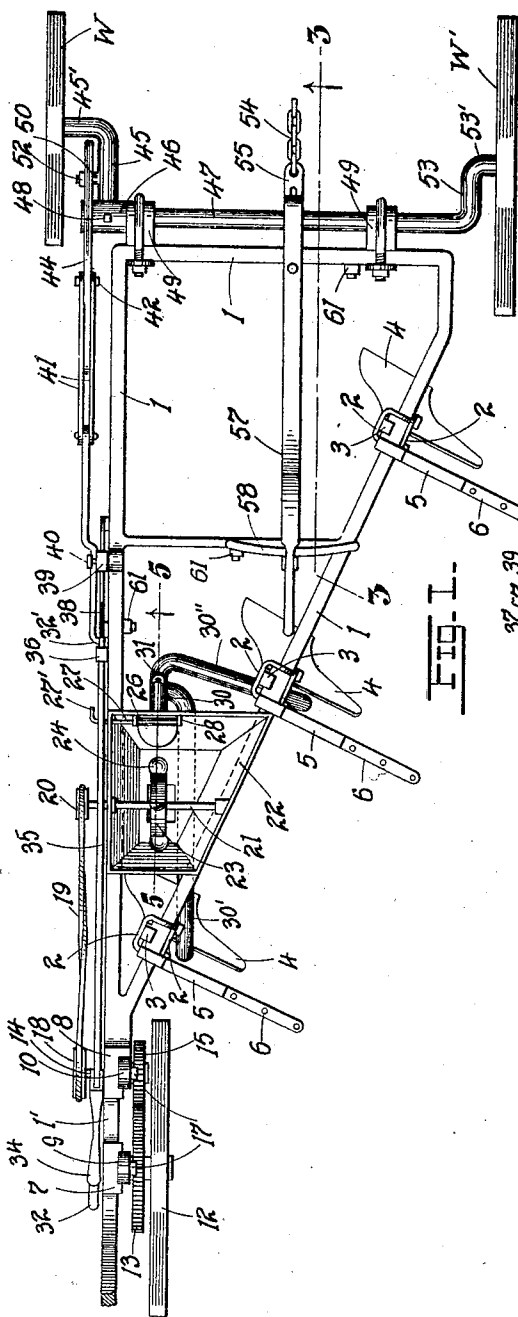


FIG. 1.

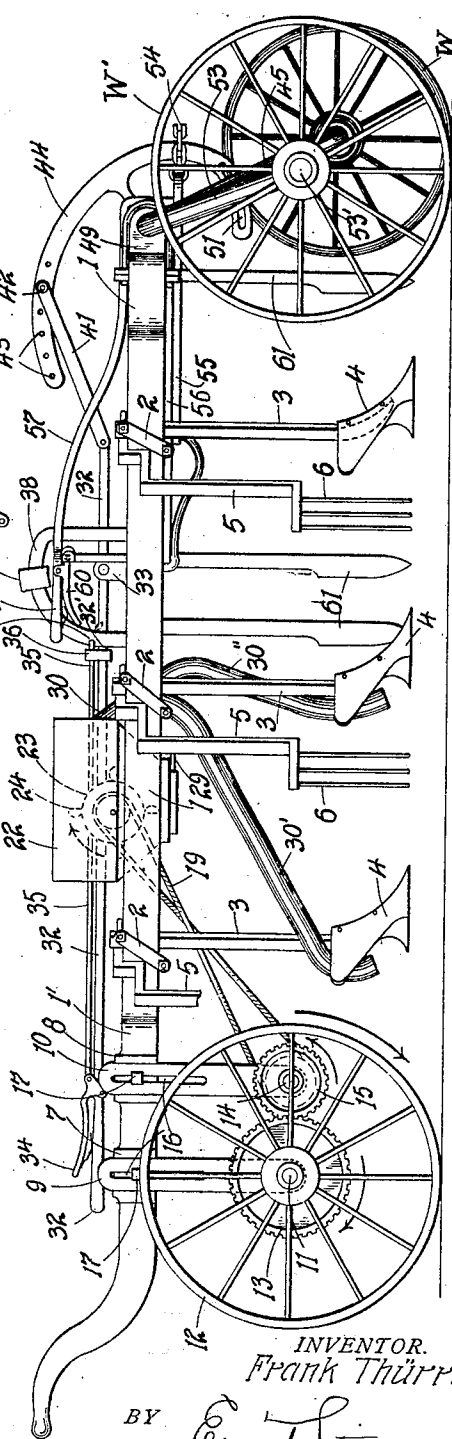


FIG. 2.

WITNESSES:

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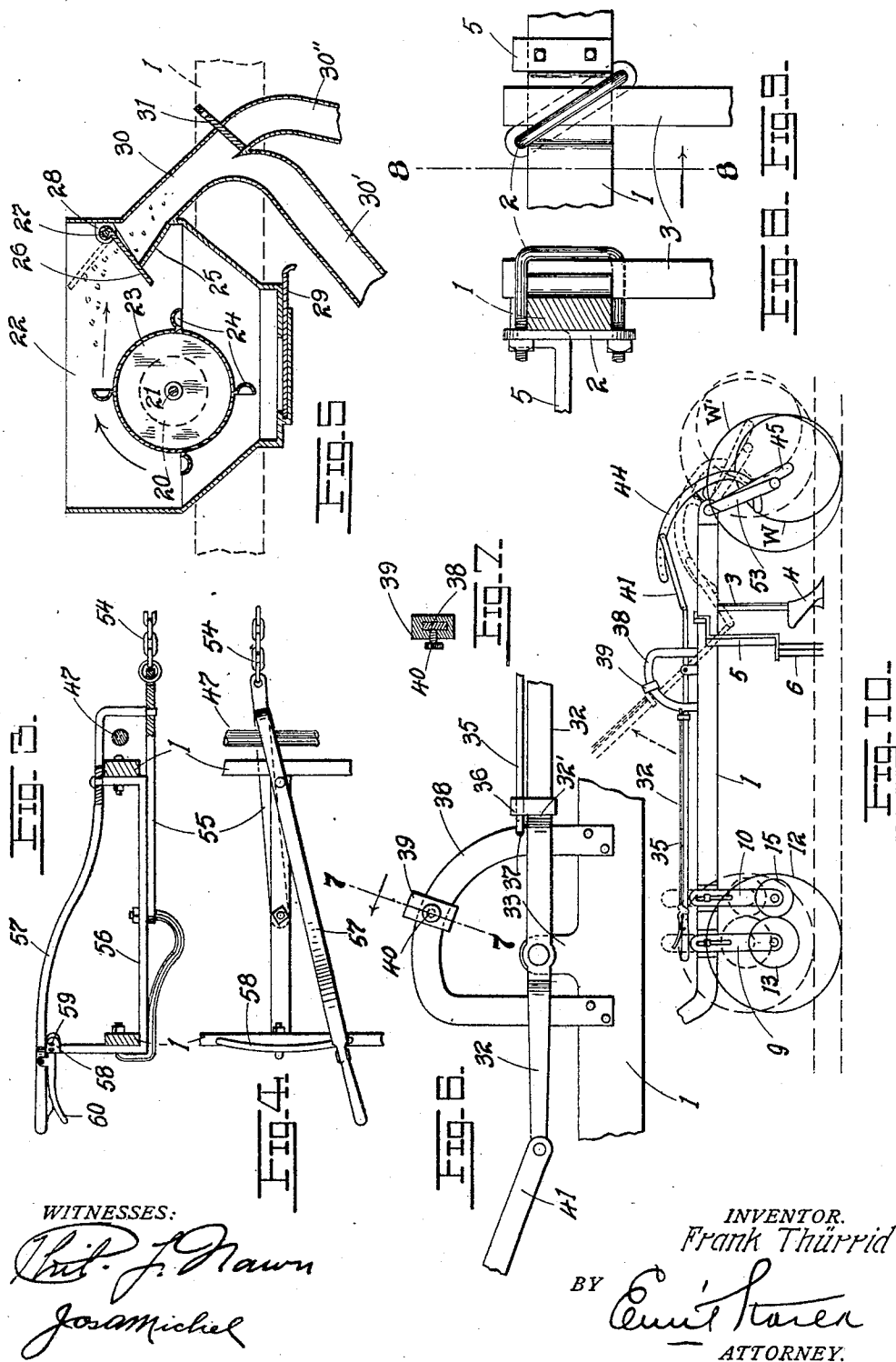
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UNITED STATES PATENT OFFICE.

FRANK THÜRRIID, OF ST. LOUIS, MISSOURI.

PLOW AND SEEDER.

No. 823,374.

Specification of Letters Patent.

Patented June 12, 1906.

Application filed February 24, 1906. Serial No. 302,762.

To all whom it may concern:

Be it known that I, FRANK THÜRRIID, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Plows and Seeders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in plows and seeders; and it consists in the novel construction and arrangement of parts more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a top plan of the machine. Fig. 2 is a side elevation thereof. Fig. 3 is a vertical longitudinal section on line 3 3 of Fig. 1. Fig. 4 is a top plan of Fig. 3, with, however, the draft-bar and lever controlling the same swung to an oblique position. Fig. 5 is an enlarged longitudinal vertical section through the seed-hopper on line 5 5 of Fig. 1. Fig. 6 is an enlarged elevational detail of the bracket engaged by the pawl of the lever which adjusts the vertical position of the frame of the machine. Fig. 7 is a cross-section on line 7 7 of Fig. 6. Fig. 8 is a cross-section on line 8 8 of Fig. 9. Fig. 9 is an inner elevational detail of the strap for securing the arm which carries the plowshare; and Fig. 10 is a diagrammatic elevational view of the frame and wheel-trucks, showing manner of elevating and depressing the frame relatively to the ground passed over.

The object of my invention is to construct a combined plow, planter, and harrow which shall be simple, contain a minimum number of operating parts, one readily adjustable for the depth of the furrow to be plowed, one adapted for planting any kind of seed, one adapted to accommodate any number of plowshares for opening a series of furrows, one which shall be light, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, 1 represents a triangular frame along whose hypotenuse or longest side are adapted to be clamped by means of straps 2 a series of rigid arms or standards 3, carrying terminal plowshares 4. Adjacent to each arm 3 and behind the same is an angular bracket 5, whose lower end is provided with the rake-arms or harrows 6. The triangular frame 1 aforesaid has a rear

extension 1', the inner vertical face of which is provided with a pair of lateral grooved formations or bearings 7 8, the former receiving the longitudinally-slotted bar 9 and the latter the correspondingly longitudinally slotted bar 10. The lower end of the bar 9 is provided with a stud 11 for the support of the wheel 12, and the gear-wheel 13 is secured to the hub thereof. The lower end of the bar 10 is provided with a spindle 14 for the support at one end of a pinion 15, meshing with the gear 13. These parts may be adjusted relatively to the frame by the slots 16 16, through which operate the clamping-bolts 17, the latter being tightened when the bars 9 10 are once adjusted to the proper positions. The opposite end of the spindle or shaft 14 carries a grooved pulley 18, from which extends a cross-belt 19 over a grooved pulley 20 at the outer end of a shaft 21, mounted on top of the frame between the walls of a hopper 22, the intermediate portion of the shaft within the hopper carrying a disk 23, along whose peripheral surface are disposed a series of cups 24 for a purpose presently to appear. Disposed on the inner face of the front vertical wall of the hopper 22 is a chute 25, Fig. 5, adapted to be closed by a gate 26, carried by a hinge-rod 27, which is mounted in lugs 28, formed with the hopper-wall. The hinge-rod projects through the adjacent wall of the hopper outside the frame 1 and has a deflected end 27', by which it may be rocked to either close or open the gate 26. The bottom of the hopper is adapted to be closed by a sliding gate 29.

From the connections described it is apparent that with a forward advance of the machine over the surface to be plowed the wheel 12 will have rotation imparted to it, as shown by the arrow in Fig. 2, the gears 13 and 15 in turn imparting rotation, as shown, to the disk 23, carrying the cups 24. The hopper being filled with seed (corn, for example) and the gate 26 being swung to an open position, the revolving cups 24 will pick up the individual grains of corn and deliver them into the chute 25. Leading from the side of the chute is a pipe or conveyer 30, which terminates in a series of (two shown here) open-ended branches 30' 30'', leading, respectively, to the rear of the plowshares 4, the grain or seed delivered into the chute being conveyed in substantially equal proportions through the pipe 30 into either of the branches 30' or 30'', whence it drops into the

furrows plowed by the shares, after which the seed is covered up by the harrows. Should it be desirable to eliminate one of the branches 30" from service, the same can be accomplished by closing the receiving end by a sliding gate or damper 31.

Disposed longitudinally of the frame 1 and along the side thereof is a vertically-oscillating lever 32, pivoted to a bracket 33, the long arm of said lever being provided with a bell-crank trigger 34, to which is pivotally coupled one end of a pawl or rod 35, passing loosely through a block or bearing 36, the free end of the pawl engaging a notch 37, cut in the outer edge of a U-shaped bracket or frame 38, the frame having slidably mounted thereon a block 39, which when properly adjusted on the frame is secured in position by the clamping-screw 40. The lever is bent at intervals to pass freely on the outside of the frame 1, an offset 32' being formed at the proper point to ride over the curved edge of the bracket 38. The end of the short arm of the lever is provided with a pair of links 41, which are in turn coupled, by means of a pin 42 passed through any one of the holes 43, to a curved connecting member or bar 44, which couples said links to the arm 45, having a terminal hub 46 passed over the adjacent end of the front shaft or axle 47 and to which it is clamped by a clamping-bolt 48, the axle being carried in bearings 49, strapped to the front member of the frame 1. The connection between the arm 45 and member 44 is effected by means of a stud 50 passed through a slot 51 in said member, the parts being securely clamped when once assembled by a nut 52 passed over the screw-threaded end of the stud. The arm 45 has an outwardly-bent portion or spindle 45' for the support of the small wheel W, the opposite end of the shaft 47 having a shorter arm 53, terminating in a spindle 53' for the support of the larger wheel W'.

By tripping the trigger 34 so as to relieve the pawl 35 from its notch 37 in the bracket 38 and throwing the lever 32 upwardly the effect will be to depress the end of the short arm of said lever. Were the frame 1 held supported above ground, the effect of a depression of the short arm of the lever 32 would be to draw on the curved connecting member 44 in such a way as to oscillate upwardly the arms 45 53 and rock the axle 47 about its axis, or, what amounts to the same thing, when the wheels W W' are on the ground, as shown in Fig. 2, a depression of the short arm of said lever 32 would result in a depression of that end of the frame 1 which is adjacent to the wheels W W'. In Fig. 2 the frame is shown elevated sufficiently to raise the plows off the

ground. To effect engagement of the plows with the ground, the operator simply throws up the long arm of the lever 32, (see Fig. 10,) the frame (or rather the front end thereof) continuing to depress until the end of the pawl encounters the limiting-block 39, when the downward depression ceases. In that way the plows may be adjusted relatively to the depth of furrow to be plowed. Of course the upward oscillation of the lever 32 merely depresses the forward portion of the frame 1. The rear portion may subsequently be adjusted by a proper adjustment of the bars 9 10, when complete horizontality for the entire frame is assured.

The draft-chain 54 is attached to the draft-bar 55, whose rear end is pivotally coupled to a bracket 56, carried by and forming a part of the main frame 1, the forward end of said draft-bar being in turn coupled to the end of the depending short arm of a controlling-lever 57, itself pivotally secured to the bracket 56 at a point between the rear end of the draft-bar and the point of connection of the latter with said lever, Fig. 3.

The rear end of the lever 57 (which swings in a horizontal plane) rides over a rail 58, having openings 59 for engagement with a trigger 60, pivoted to the lever. By tripping the trigger the lever 57 may be oscillated to any angle, thus shifting the draft-bar to an angle with its normally longitudinally disposed direction, Fig. 4. The draft on the bar 55 when thus deflected to an angular position being thus out of alinement with its general length has the effect of forcing the plowshares more deeply into the earth. In advance of each plowshare is a blade or colter 61, which starts the furrow eventually plowed by the share.

Having described my invention, what I claim is—

In a plow and seeder, a suitable frame having one of its sides disposed diagonally to the general length of said frame, a series of plowshares disposed along said diagonal side, a rear running-wheel for the frame, a seed-hopper on the frame, a series of conveying-pipes leading from the hopper, devices within the hopper for delivering the seed into said pipes, and suitable gearing interposed between the running-wheel and said delivering devices for actuating the latter with the advance of the machine over the ground being plowed, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK THURRID.

Witnesses:

EMIL STAREK,
JOS. A. MICHEL.