

No. 886,412.

PATENTED MAY 5, 1908.

G. ROSS, DEC'D.

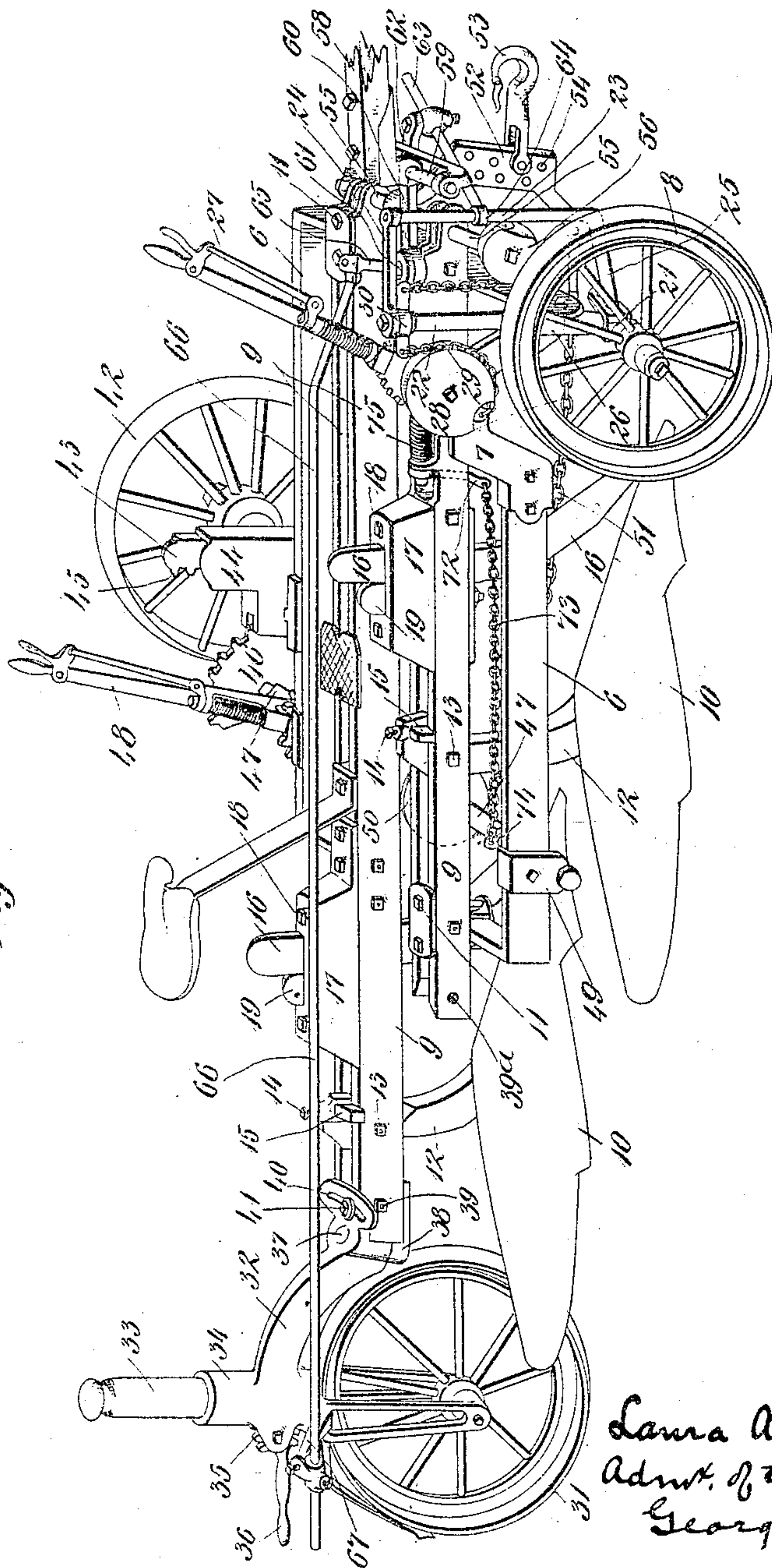
L. A. ROSS, ADMINISTRATRIX.

PLOW.

APPLICATION FILED AUG. 12, 1907.

4 SHEETS—SHEET 1.

Fig. 1.



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Witnesses

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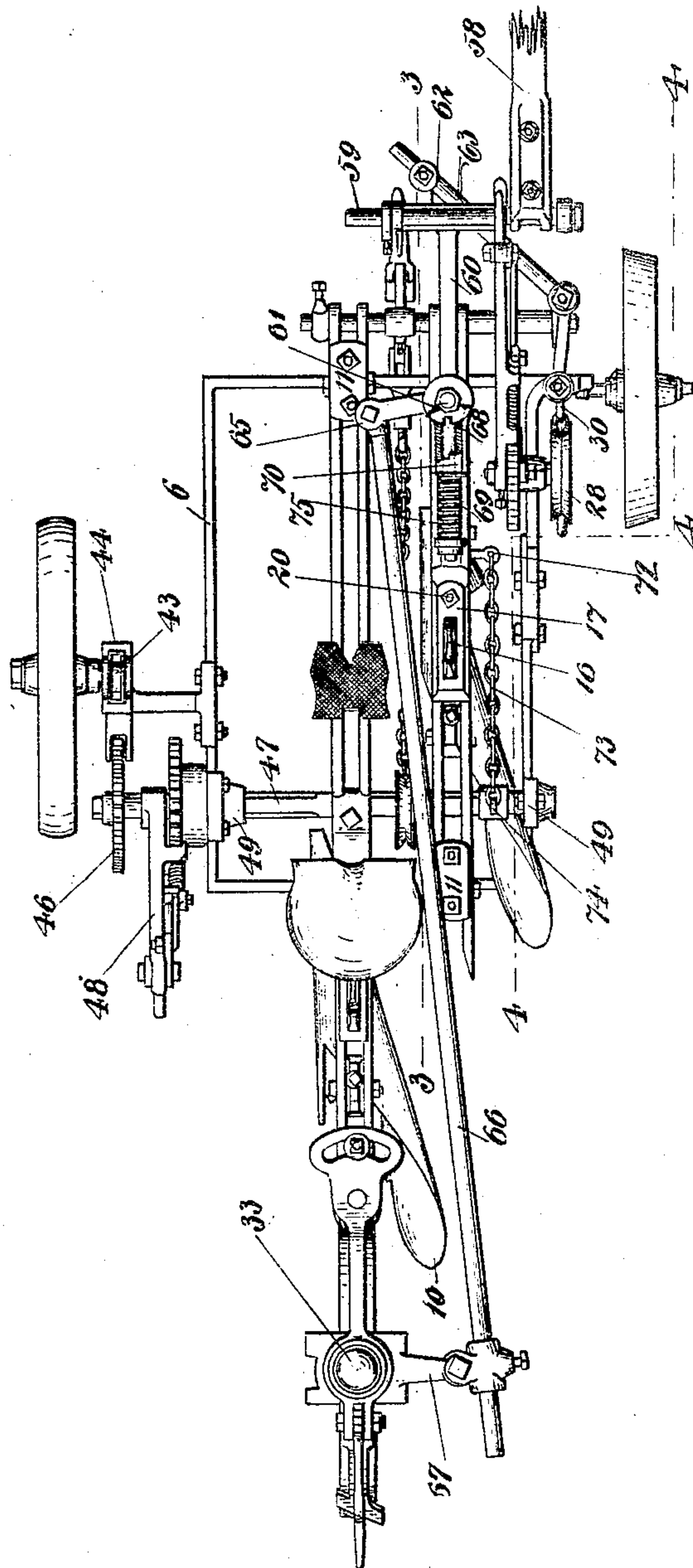
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4 SHEETS—SHEET 2.

Fig. 2.



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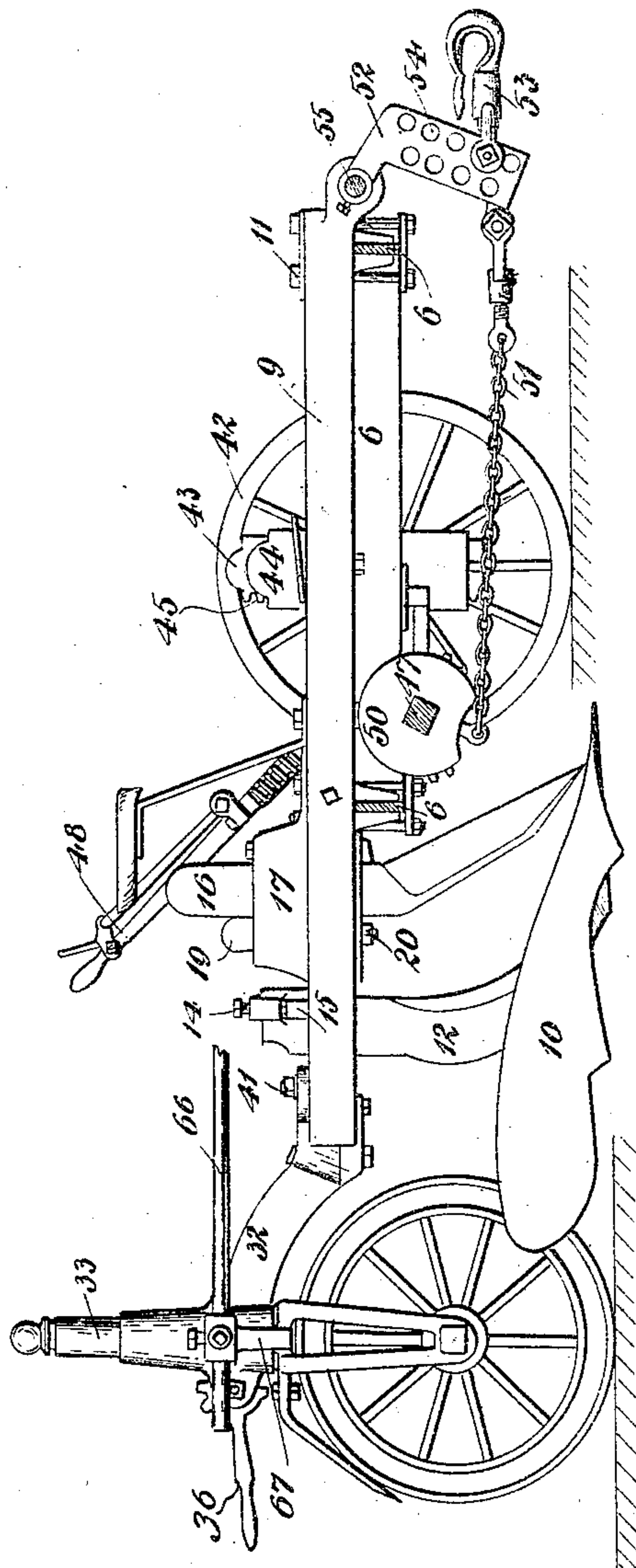
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4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

Fig. 4.

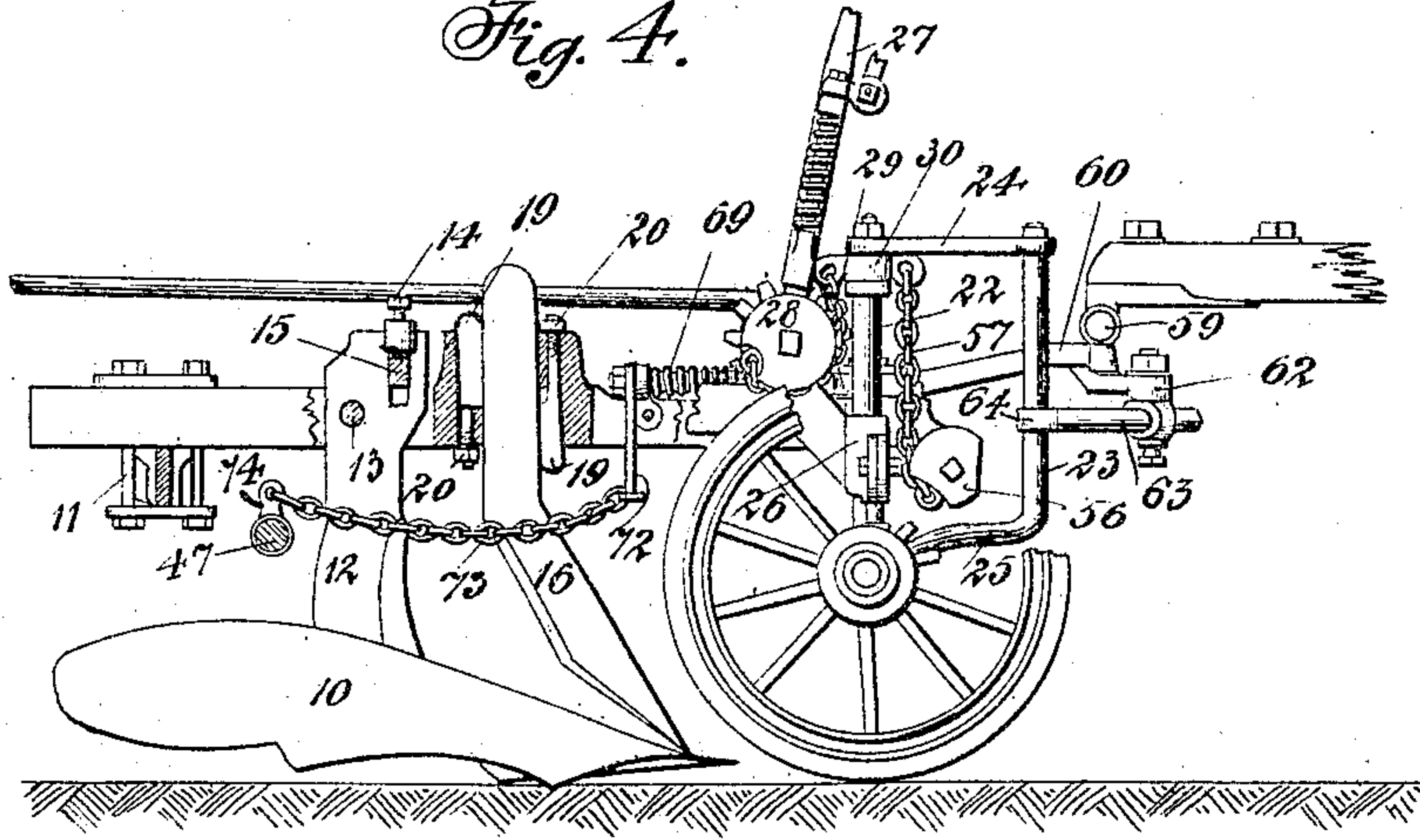
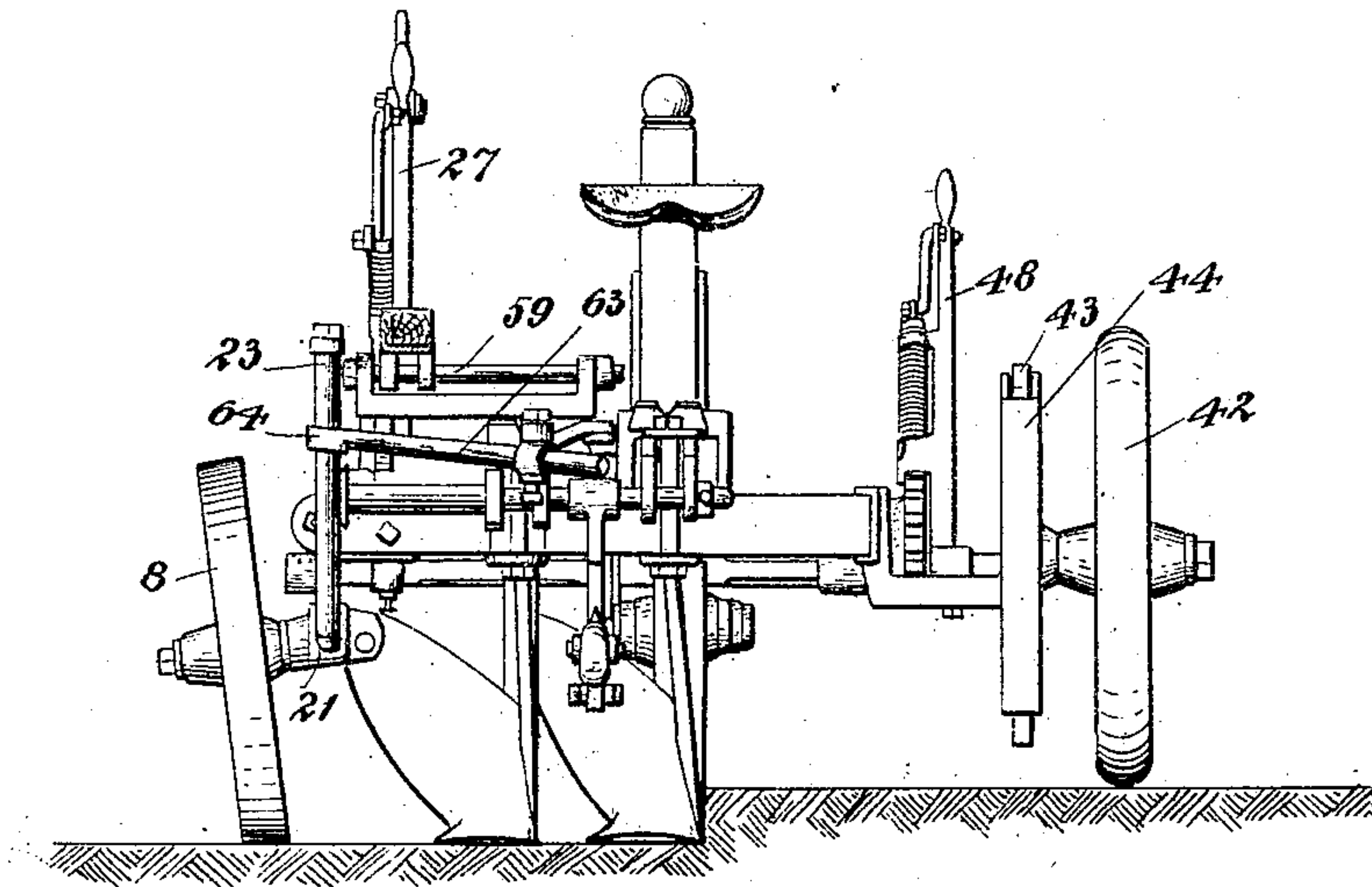


Fig. 5.



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UNITED STATES PATENT OFFICE.

LAURA A. ROSS, OF CLEVELAND, OHIO, ADMINISTRATRIX OF GEORGE ROSS, DECEASED.

PLOW.

No. 886,412.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed August 12, 1907. Serial No. 388,247.

To all whom it may concern:

Be it known that GEORGE ROSS, deceased, late a subject of King Edward VII of Great Britain, formerly residing at Cleveland, in the county of Cuyahoga and State of Ohio, invented certain new and useful Improvements in Plows, of which the following is a specification.

This invention relates to plows and has especial reference to improved means for adjusting and regulating the depth of the plow. It is also characterized by improvements with respect to the draft devices, whereby the draft is communicated from the whiffletree to the plows through the rear of the frame, instead of through the front of the frame, which gives a steadier and lighter draft.

A further feature of the invention is that the plow point upon manipulation of a suitable lever will be drawn out of the ground by the draft animals. Means are provided for using the frame with a gang of plows, and also for varying the width as well as the depth of the furrow. The draft is not applied to the pole, and the pole is free to rise and fall, thereby avoiding pressure on the horses' necks. The pole is locked, to insure a straight travel when the plows are in the ground, but when the plows are lifted the pole is automatically unlocked, to allow a turn to be made.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a perspective view of the implement. Fig. 2 is a top plan view. Fig. 3 is a sectional elevation on the line 3—3 of Fig. 2. Fig. 4 is a similar elevation on the line 4—4 of Fig. 2, with some parts also in section. Fig. 5 is a front elevation.

The main frame 6 is substantially rectangular in outline, being preferably formed of a wrought metal bar, and having an arch 7 at the front end of one side to allow the furrow wheel 8 to turn under. The beams which support the plows consist of parallel bars 9. Two sets of these bars, as well as two plows 10, are shown. The bars 9 extend lengthwise of and rest upon the frame and are fastened by clips and bolts indicated at 11. This permits the two sets of bars to be spaced apart any desired distance, in order to vary the width of the furrows by loosening the clips and bolts and moving the sets laterally to desired position. The plow standards 12 are held at the upper ends between the respective pairs of bars, by means of bolts 13,

and the tilt of each plow point may be varied by means of a set-screw 14 which is tapped through the head of the standard and bears at its point upon a cross-piece 15 which rests upon the opposite bars 9, extending through a recess formed in the head of the standard. This recess is of greater size or length than the width of the cross-piece 15, (see Fig. 4) and consequently by turning the set-screw in or out the plow standard is turned on its bolt 13 as a pivot thereby varying the elevation of the plow point and consequently the tilt of the plow. The fastenings 11 are located at the front and rear bars of the frame and consequently hold the plow beams 9 securely at the places where they are set.

The shanks of the colters 16 are each fitted in a casting or block 17 which fits between the bars 9 where it is held by bolts 18. The shank of the colter extends up through a recess in the block and is fastened by wedges 19 which extend in opposite directions through the block and bear against the opposite edges of the shank of the colter, at the front and rear; and the wedges are held in place and caused to bind against the shank of the colter by means of nuts 20 screwed on the threaded ends or bolts formed integral with the wedges. It is obvious that this gives a very tight bind for the colters, but still allows them to be readily adjusted by loosening the nuts 20.

The front wheel 8 is carried by a knuckle 21 at the lower rear corner of a frame consisting of front and rear rods 22 and 23 which are connected at the top and bottom by cross bars 24 and 25 respectively. The rod 22 is free to move up and down in a sleeve 26 which is formed integral with the arch 7 and bolted to the front and side bars of the main frame 6. The height of the furrow wheel, or rather the height of the frame with respect thereto, is adjusted by means of a lever 27, which is connected to a rock-shaft having a chain-wheel 28 connected by a chain 29 to a bracket 30 at the top of the bar 22. Obviously by manipulation of the lever the furrow side of the frame may be raised or lowered.

The rear caster wheel 31 is carried by an arm 32 at the rear of the frame, and the spindle 33 is free to turn in the sleeve 34 at the end of the arm. Said spindle is also provided with a rack engaged by a toothed segment 35, at the end of a lever 36, whereby the rear end of the frame can be raised if and

when desired. The arm 32 is pivotally mounted upon a stud 37 forming a part of the bracket 38 which is fixed between the rear ends of the bars 9 by a bolt 39, and a segmental slot 40 in the front end of the arm 32, with a bolt 41 extending through said slot, allows the rear caster wheel to receive a fine adjustment with respect to its line of travel, so as to correct any tendency of the plow to drift or run out of line. The land-wheel 42 is carried by a stub axle projecting from a sliding block or plate 43 which is slidable up and down in a boxing 44. The rear edge of the plate 43 has a rack 45 which is engaged by the teeth of a segment wheel 46 carried by a stout cross rock-shaft 47 which is provided with a latch lever 48 whereby it may be turned. And when the shaft is turned the land-wheel is raised or lowered accordingly.

The rock-shaft 47 is quite heavy and in fact sustains practically all of the draft of the machine. It is carried in heavy hangers 49 bolted to the side bars of the main frame 6, and the middle portion thereof is squared to receive a chain wheel 50 to which the draft-chain 51 is connected. This chain extends forwardly from the wheel, under the main frame of the machine, at a slight distance above the ground, and it is connected at its front end to a hanger 52 to which the clevis 53 may be attached at any one of a series of holes 54. The whiffletree or draft appliances are connected to the clevis as usual.

When the lever 48 is latched the strain or draft is communicated from the clevis through the chain and wheel to the rock-shaft 47, and thence to the main frame and consequently to the plow shares. This gives a very low line of draft which makes a steady and easy running plow, and avoids any tendency to tip or tilt the implement.

The hanger 52 is fixed to a rock-shaft 55 carried in brackets at the front end of the beams 9. This rock-shaft has on the end adjacent the furrow wheel a chain wheel 56 which is connected by a chain 57 to the bracket 30 heretofore referred to. Now, when the draft chain 51 is slacked off by swinging the lever 48 rearwardly, which raises the frame, or at least the land side of the frame, the pull of the draft animals swings the hanger 52 forwardly. This turns the rock-shaft 55 and winds up the chain 57 on the wheel 56, the effect of which is to lift the front end of the frame and consequently tilt the plow points up so that they quickly run out of the ground. This very desirable feature relieves the operator of the labor of lifting the plow shares without assistance of the pull of the team. The lever 27 can then very easily be thrown forward to catch the frame in its raised position and thereafter support the plow shares in raised position out of the ground.

The tongue 58 is set on a cross-bar 59 which is supported by brackets at the outer end of an arm 60 which arm is pivoted at 61 to a main bolt at the front of the machine. The bracket to which the tongue is attached has an arm 62 connected to a rod 63 which extends at an angle to connection with the upright rod 23 of the frame which carries the furrow wheel. The rod 63 has a collar 64 in which the rod 23 is free to work. When the tongue is swung laterally as in making a turn the connection between its brackets and the said frame causes said frame to swing and turns the furrow wheel accordingly. The steering arm 60 also has a lateral arm 65 which is connected by a long rod 66 to a bracket 67 on the frame of the rear wheel, so that said wheel is caused to follow the turn, in a well known manner.

The rear end of the steering arm 60 is provided with a collar which extends around the bolt 61, and in its rear edge said collar has a notch 68 which receives the front end of a latch pin 69, said pin being slidable in a housing 70 on top of the beams 9 and having a depending arm 72 which is connected by a chain 73 to an arm 74 projecting from the rock-shaft 47 as clearly shown in Fig. 4. The front end of the latch pin is normally held in engagement in the notch by means of the pressure of a spring 75 coiled around said pin. This prevents any turn or swing of the tongue and keeps the draft in a straight line.

When the plow shares are lifted out for the purpose of making a turn the rock-shaft 47 is turned backwardly as heretofore explained, by movement of the lever 48, and when this is done the chain 73 pulls the latch bolt 69 and releases the same from the notch 68, thereby freeing the steering arm so that the tongue may be swung in either direction, and accordingly the plow may be turned as desired. As soon as the plows are dropped into the ground the latch re-engages, and so holds the implement to a straight furrow.

The drawings show a double gang plow, but one plow can readily be removed to produce a single plow by taking off the bars 9 nearest the land wheel and removing the rear wheel and its fixtures therefrom and attaching the same to the rear end of the short bars 9 which have a bolt hole 39^a for the purpose of receiving the bolt 39 by means of which the rear wheel bracket is attached. Of course by varying the size of the main frame it may be made large enough to receive three or more plow shares. Various other modifications may be made within the scope of the invention.

What is claimed is—

1. The combination with a wheeled plow frame, of a rock shaft provided with an operating lever and extending across the frame and having an operative connection with the

land wheel to raise or lower the frame, a draft chain having a connection to the shaft constructed to slacken the chain when the frame is raised and to tighten the same when lowered, and means actuated by the pull on the slackened chain to lift the front end of the frame and draw the plow from the ground.

2. The combination with a plow frame having land and furrow wheels, of a rock shaft provided with an operating lever and extending across the frame near the rear thereof, said shaft having a chain wheel thereon and also having an operative connection to the land wheel to raise or lower the same, a draft chain connected to said chain wheel and extending forwardly under the frame, the connection being such that the chain is slackened when the shaft is turned to lower the land wheel and tightened when turned to raise the same, and means actuated by pulling on the draft chain, when so slackened, to lift the frame and draw the plow from the ground.

3. In a wheeled plow, the combination with draft devices connected to the plow, of means to slacken the same when desired, and means actuated by pull on said devices when so slackened to draw the plow from the ground.

4. In a wheeled plow having a frame and furrow wheel, the combination of lifting devices operatively connected to the furrow wheel to raise or lower the frame supported thereon, a draft device connected to the plow and also to said lifting devices, and means to tighten or slacken said draft connection to the plow, the connection to the lifting devices being operative when said shaft connection is slackened.

5. The combination of a wheeled frame having a plow at the rear and a furrow wheel at the front lifting devices between the front of the frame and the furrow wheel including a rock shaft having a depending hanger arm, a draft device connected to the plow and intermediately to the hanger, and means to slacken said connection to the plow, whereby the pull will swing the hanger and turn the shaft, to lift the plow from the ground.

6. The combination of a plow frame having a land wheel at one side and a furrow wheel at the other, a rock shaft extending across the frame and having lifting devices operating on the land wheel to raise or lower that side of the frame, other lifting devices between the front of the frame and the furrow wheel to raise or lower the other side of the frame, a draft chain connected to the

rock shaft and intermediately to said other lifting devices, the connection to the rock shaft being such that the chain is slackened or tightened when the shaft is turned to raise or lower the land side of the frame, the draft being operative, when the chain is slackened, upon said other lifting devices to raise the furrow side of the frame.

7. The combination with a plow frame and land wheel, of a lifting device between the frame and the land wheel, a tongue and steering arm pivoted to the frame, a latch normally engaged with the steering arm to prevent turn thereof, and a connection between said latch and the lifting device constructed to release the latch when the frame is lifted.

8. The combination with a plow frame and land wheel, of a lifting device between the frame and the land wheel including a rock shaft having a crank arm, a tongue and steering arm pivoted to the frame, the arm having a notch, a spring pressed latch bolt normally engaged in the notch and a connection between the crank arm and the latch bolt adapted to release the bolt when the rock shaft is turned to lift the frame.

9. The combination of a main plow frame having a vertical sleeve, a furrow wheel, a swinging frame located at one front corner of the main frame having parallel upright rods one of which extends loosely through the sleeve and carries the furrow wheel at its lower end, and the other of which is located in front of said rod, a tongue pivotally connected to the main frame, and a connection between the tongue and the swinging frame, including a rod having a collar through which the front upright rod extends.

10. A plow frame comprising a frame having front, rear and side bars, and parallel beams clamped to the front and rear bars and extending lengthwise over the frame, with a plow standard fixed between the beams.

11. The combination of parallel spaced beams, a plow standard pivotally mounted between the beams, a cross piece resting on the beams, and a set screw in the top of the standard and bearing on the cross piece to adjust the tilt of the plow.

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

LAURA A. ROSS,

Administratrix of the estate of George Ross.

Witnesses:

JOHN A. BOMMARDT,
EDITH D. COMER.