

No. 674,921.

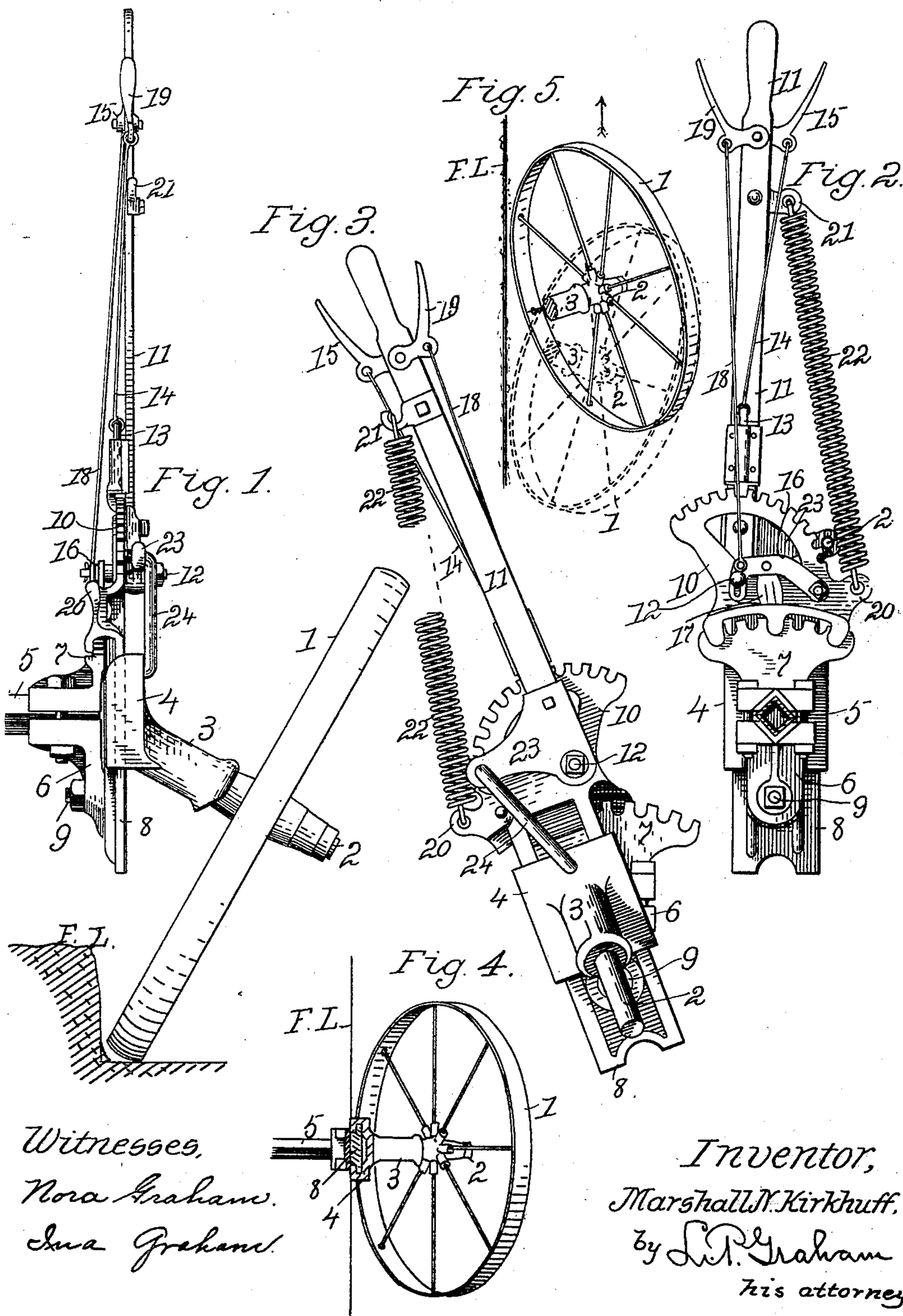
Patented May 28, 1901.

M. N. KIRKHUFF.

WHEEL PLOW.

(Application filed Mar. 14, 1901.)

(No Model.)



Witnesses,
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UNITED STATES PATENT OFFICE.

MARSHALL N. KIRKHUFF, OF CANTON, ILLINOIS, ASSIGNOR TO PARLIN & ORENDORFF CO., INCORPORATED, OF SAME PLACE.

WHEEL-PLOW.

SPECIFICATION forming part of Letters Patent No. 674,921, dated May 28, 1901.

Application filed March 14, 1901. Serial No. 51,061. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL N. KIRKHUFF, of the city of Canton, county of Fulton, and State of Illinois, have invented certain new and useful Improvements in Wheel-Plows, of which the following is a specification.

The invention relates to mechanism for controlling the side furrow-wheel of wheel-plows; and it provides means for raising and lowering the wheel with relation to the frame, or the reverse, and for inclining the wheel so as to give a lead to or from the vertical wall of the furrow.

The invention is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a rear elevation of the side furrow-wheel and its controlling mechanism, the weight-balancing spring being omitted for the purpose of more clearly showing details of the controlling-lever. Fig. 2 is an elevation showing the inner side of the controlling mechanism. Fig. 3 is an elevation of the outer side of the controlling mechanism, showing the spindle of the wheel set to give the wheel a lead toward the vertical wall of the furrow. Fig. 4 is a detail plan of the wheel and the slide therefor. Fig. 5 is a diagram plan illustrative of the manner in which the lead or inclination of the wheel to and from the vertical wall of the furrow is varied.

The wheel is shown at 1. At 2 is shown the wheel-spindle, which is inclined downward and outward. The spindle-bracket is shown at 3, and at 4 is shown a slide, with which the spindle-bracket connects rigidly. The axle-bar 5 extends sidewise from a plow-frame of any suitable construction, and to its end brackets 6 and 7 are rigidly secured. Bracket 6 extends downward from the axle-bar, and at its lower end it provides a pivot 9 for a guide-plate 8, on which the spindle-slide 4 is mounted. The upper extension of bracket 7 is formed into a notched sector the arc of which is concentric with the pivot 9 of the guide-plate 8. An arm 16 is pivoted on the guide-plate above the sector of bracket 7, and a spring-bolt 17 is pivoted on the arm and ar-

ranged to engage the notches of the sector. Above arm 16 the guide-plate is formed into or provided with a notched sector 10. A lever 11 is pivoted to the guide-plate at point 12, which point is concentric with the arc of sector 10, and a spring-bolt 13 on lever 11 is adapted to engage the notches of sector 10. An arm 23 extends backward from lever 11, forming therewith a bell-crank lever, and a link 24 connects the extended end of the arm with the slide 4. The lever 11 has two finger-levers 15 and 19, and a rod 14 connects lever 15 with bolt 13, while a rod 18 connects lever 19 with bolt-arm 16. A lug 20 is formed on the rear edge of the upper end of the guide-plate, a lug 21 is fastened onto the handle 11, near the upper end thereof, and an extension-spring 22 is connected at one end with lug 20 and at the other end with lug 21.

When the bolt 13 is disengaged from sector 10, the lever 11 may be swung on pivot 12, and the motion of the lever applied to slide 4 through arm 23 and link 24 is used to raise and lower the wheel with relation to the plow-frame or to raise and lower the frame with relation to the wheel, according to the view taken of the operation. The wheel rests on the ground, and the lever lifts the weight of that part of the plow-frame adjacent to the wheel by pushing down on the wheel, and so the spring 22 is put in position to aid downward push on the slide.

When the lever is locked to sector 10 and the lock-bolt 17 is raised by force applied through hand-lever 19, the guide-plate and the lever 11 constitute a continuous lever whereby the spindle of the wheel is rocked on pivot 9, as shown in Fig. 3. When it is desired to give the wheel lead toward the furrow-line, which is marked F L in the drawings, the spindle is swung forward, as shown in solid lines in Fig. 5, and if it should be desired to direct the wheel away from the vertical wall of the furrow the spindle may be pointed rearward, as shown in broken lines in Fig. 5. In Fig. 4 the spindle is pointed directly outward, and so the wheel tends to run parallel with the furrow.

The lead of the wheel to or from the furrow may be regulated by setting the bolt 17 in different notches of the sector on bracket

7, and the vertical position of the wheel with relation to the frame may be varied by setting bolt 13 in different notches of sector 10.

The lead of the wheel to and from the furrow-wall facilitates the guiding of the plow, and the adjustment of the wheel with relation to the frame enables the frame to maintain a horizontal or a position parallel with the general lay of the ground under all conditions.

I claim—

1. In a wheel-plow, the combination with a frame, of a plate pivoted to swing vertically forward and back on a side of the frame, a spindle extending outward and downward from the swinging plate, a wheel mounted on the spindle, and a lock-lever to control the swing of the plate.

2. In a wheel-plow, the combination with a frame, of a guide-plate pivoted to swing vertically forward and back on a side of the frame, a slide mounted on the plate, a spindle extending downward and outward from the slide, a wheel on the spindle, means for raising and lowering the slide on the guide-plate and a lock-lever to control the swing of the guide-plate.

3. In a wheel-plow, the combination with a frame, of a guide-plate pivoted to swing vertically forward and back on a side of the frame, a slide mounted on the guide-plate, a spindle extending downward and outward from the slide, a wheel on the spindle, a notched sector fixed on the frame adjacent

to the guide-plate, a lock-bolt on the guide-plate to engage the notches of the fixed sector, a notched sector on the upper end of the guide-plate, a lever pivoted on the plate, a lock-bolt on the lever to engage the notches of the sector on the plate, a connection between the lever and the slide whereby swing of the lever will raise and lower the slide, and means on the lever for disengaging the lock-bolts from their sectors.

4. In a wheel-plow, the combination with a frame, of a guide-plate pivoted to swing vertically forward and back on a side of the frame, a slide mounted on the guide-plate, a spindle extending downward and outward from the slide, a wheel on the spindle, a notched sector fixed on the frame adjacent to the guide-plate, a lock-bolt on the guide-plate to engage the notches of the fixed sector, a notched sector on the upper end of the guide-plate, a lever pivoted on the guide-plate, a lock-bolt on the lever to engage the notches of the sector on the plate, an arm on the lever, a link connecting the arm with the slide, a finger-lever on the main lever connected with the lock on the guide-plate and a second finger-lever on the main lever connected with the bolt on the main lever.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

MARSHALL N. KIRKHUFF.

Witnesses:

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