

(No Model.)

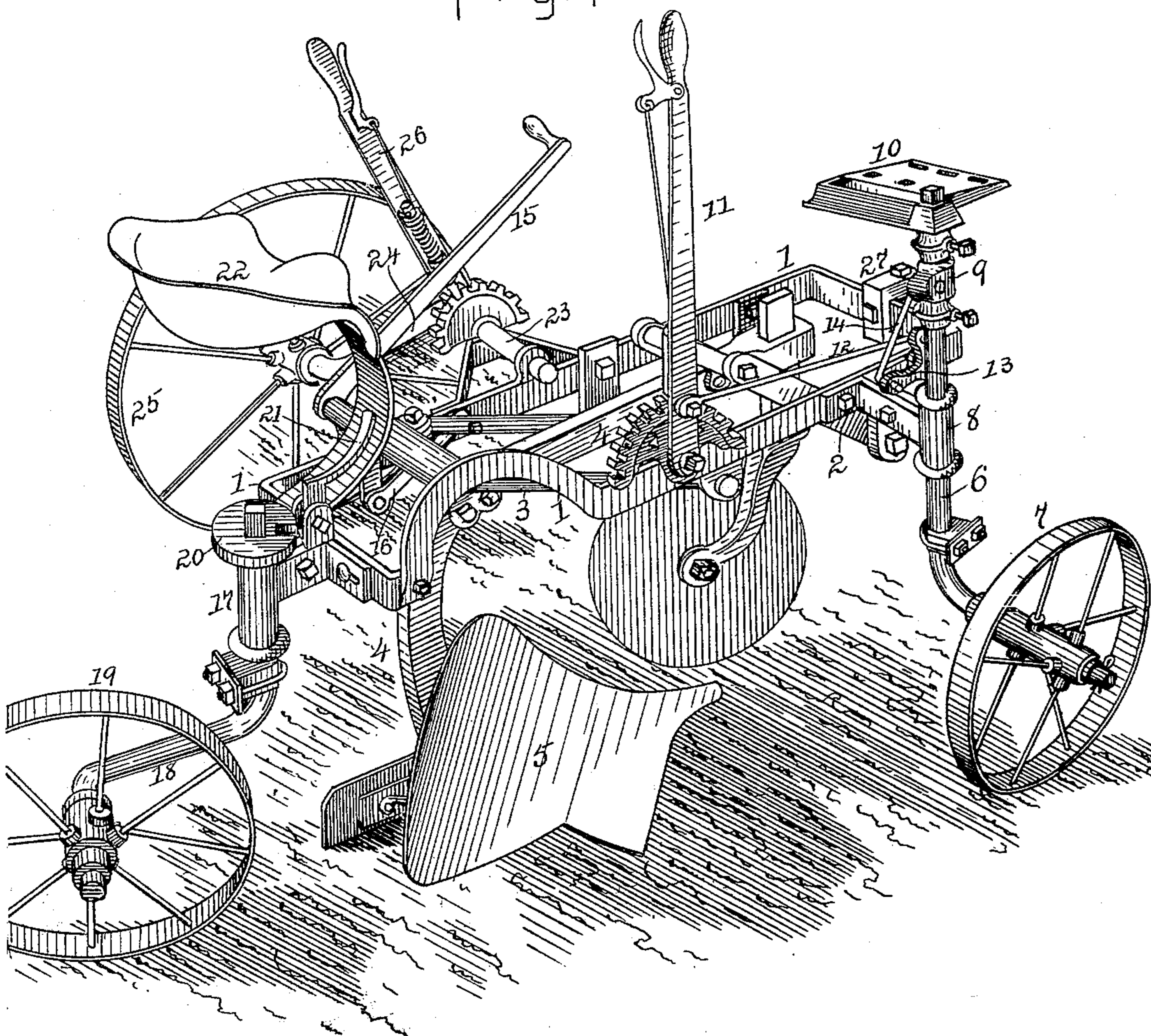
2 Sheets—Sheet 1.

M. SATTLEY.
THREE WHEEL PLOW.

No. 462,454.

Patented Nov. 3, 1891.

Fig. 1



ATTEST
Helen Graham
William Graham

INVENTOR
M. SATTLEY.
by his attorney
L. P. Graham

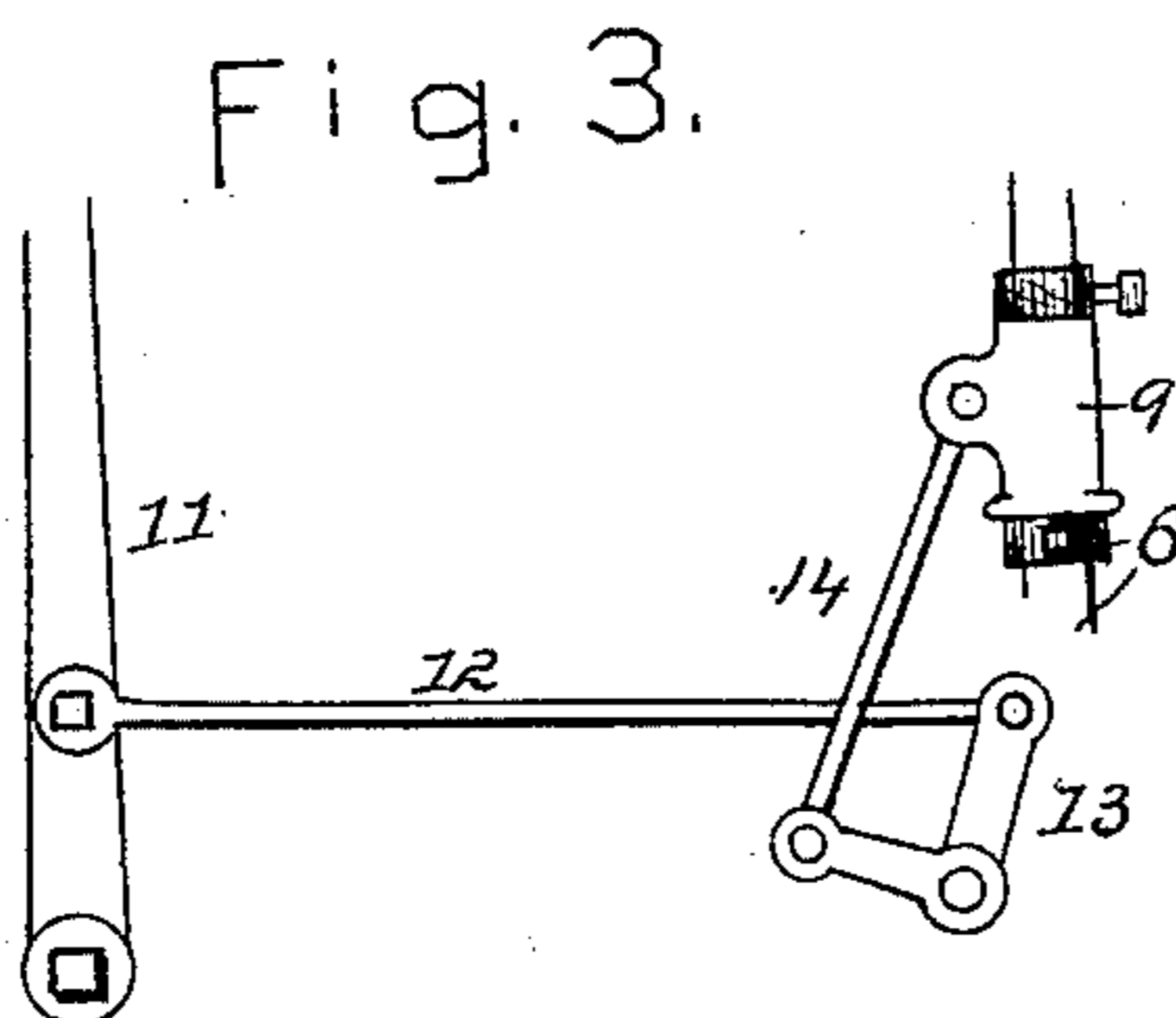
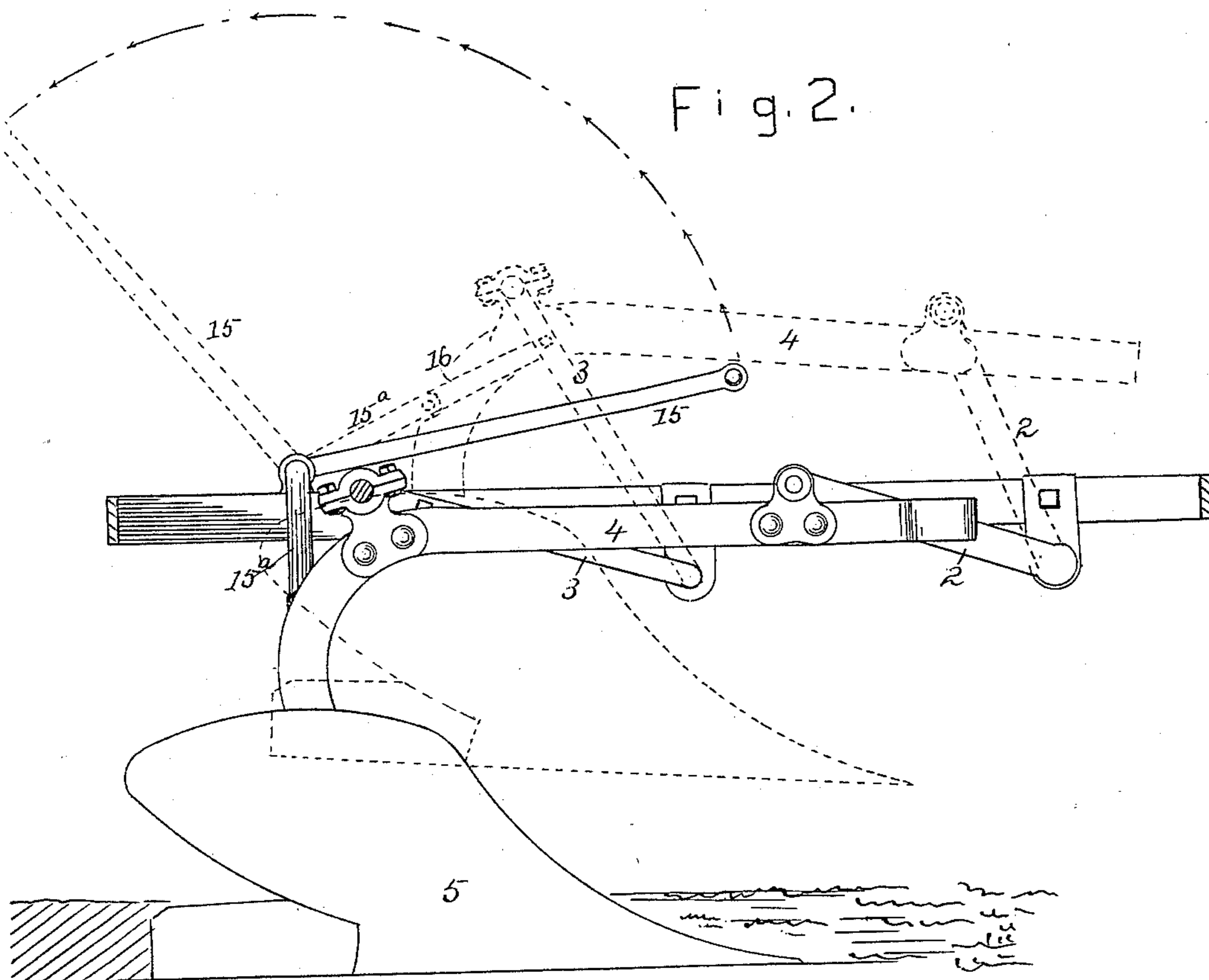
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UNITED STATES PATENT OFFICE.

MARSHALL SATTLEY, OF SPRINGFIELD, ILLINOIS.

THREE-WHEEL PLOW.

SPECIFICATION forming part of Letters Patent No. 462,454, dated November 3, 1891.

Application filed July 23, 1891. Serial No. 400,383. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL SATTLEY, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Three-Wheel Plows, of which the following is a specification.

This invention consists, first, in certain details of construction whereby the plow is but little affected by abrupt rising and falling of the frame and is easily and simply raised clear of the ground when desired; second, in specific mechanism for raising or lowering the tongue-wheel with relation to the frame, and, third, in the general arrangement and combination of parts whereby the specific improvements are embodied in the plow.

In the drawings accompanying and forming a part of this specification, Figure 1 is a perspective representation of my complete device. Fig. 2 is a longitudinal section through a detached frame, showing the manner in which the plow-beam is secured therein and the mechanism for raising or lowering such beam. Fig. 3 is a detached representation of the mechanism employed to raise or lower the tongue-wheel.

The frame 1 is a parallelogram in plan, and it connects with the various parts of the device either directly or by means of brackets, &c. The link-bar 2 extends upward and backward from brackets near the front end of the frame, it extends across the plow-beam above the same, and it is pivotally connected both with the plow-beam and with the brackets. Link-bar 3 is longer than link-bar 2, and it extends upward and backward from brackets near the center of the frame, crosses the plow-beam near the rear end thereof, and connects pivotally with the beam and with the brackets. Beam 4 is connected with link-bars 2 and 3, as before described, and it carries plow 5 and the customary colter. Shaft 6 is bent at its lower end to form a spindle for wheel 7. It has both sliding and rotary motion in sleeve 8. It carries plate 10, with which the tongue connects, and it has bracket-sleeve 9, rigidly connected near its upper end. Lock-lever 11 has pivotal bearings on the frame. Rod 12 connects lever 11 with bell-crank lever 13, which also has pivotal bearings on the frame, and rod 14 connects

an end of the bell-crank lever with bracket-sleeve 9 of shaft 6. Lever 15 has a crank extension 15^a, (seen in two positions in Fig. 2,) and link 16 connects pivotally with such crank-extension and with link-bar 3. Sleeve 17 is carried by a bracket connected with the frame. Caster-shaft 18 has a bearing in sleeve 18, and provides a spindle for caster-wheel 19. Disk 20 is fixed on the upper end of the caster-shaft, and it has a notch in its periphery adapted to receive lock-bar 21. The seat 22 is supported from the rear end of the frame by means of the curved spring-bar. Shaft 23 has bearings in the frame and in a bracket connected therewith. It is cranked at its outer end and it acts as a spindle for wheel 25. Lock-lever 26 is connected with crank-shaft 23, and provides means for raising or lowering wheel 25 with relation to the frame. Draft-block 27 connects with the front end of the frame and has various adjustments with relation to the frame and to the draft-hitch.

In operation the frame is adjusted nearer to or farther from the ground, according as it is desired to plow deep or shallow, and the lever 15 is thrown forward, permitting the plow-beam to descend and removing all restraint from its action while the plow is in the ground. When the beam has descended to about the relative position shown in Fig. 2, the resistance of the ground, acting through the plow and beam after the manner of a bell-crank lever, tends to depress the forward link-bar to a greater extent than it does the rear link-bar; but as the front link-bar cannot rotate or swing farther downward without extending the rear link-bar a lock or cramp results, which is, for general purposes, practically rigid, as the plow cannot rise without moving toward and increasing the draft, and cannot increase its depth materially on account of the cramp in the link-bars, above described. When the wheels or either of them sink suddenly into a depression, the frame adapts itself to the changed condition while the plow is for the instant unresponsive and maintains its general direction and uniform depth until the wheels shall have risen from the temporary depression. The same is true in a less degree when the wheels ride over a ridge, and so the plow is especially adapted to hug the ground at a uniform depth

regardless of temporary rising and falling of the wheels.

When it is desired to raise the plow clear of the ground, as indicated by dotted lines in Fig. 2, the lever 15 is thrown back until the joint of arm 15^a and link 16 passes the dead-center, at which time the structure of the joint should prevent further motion in that direction, thus supporting the plow-beam without the use of a lock-lever. The bell-crank lever 13 converts the horizontal motion of rod 12 into vertical motion in rod 14, and so enables lever 11 to raise or lower shaft 6. The sleeve 9 has rotary motion on shaft 6 and it is vertically adjustable thereon by means of the collars above and below, and which are held in place by set-screws. The vertical adjustment permits the wheel 7 to be set in different positions with relation to the frame, and the rotation of the shaft in the sleeve permits the plow to be readily turned without affecting the operation of the bell-crank lever on the sleeve.

I claim—

1. In wheel-plows, the combination of draft-frame 1, supported on wheels, plow-beam 4, carrying plow 5, link-bar 2, connecting pivotally with the forward end of the frame and extending upward and rearward to the plow-beam, with which it connects pivotally, link-bar 3, longer than link-bar 2, connecting pivotally with the frame near the center thereof and extending upward and rearward to the rear end of the plow-beam, with which it con-

nects pivotally, lever 15, pivoted on the frame and having crank-arm 15^a, and link 16, connecting crank-arm 15^a with link-bar 3, as set forth.

2. In wheel-plows, the combination of frame 1, shaft 6, carrying wheel 7 and having a sliding bearing on the frame, lever 11, pivoted on the frame, bell-crank lever 13, pivoted on the frame, sleeve 9, vertically adjustable on shaft 6 and adapted to permit rotation of the shaft, rod 12, connecting lever 11 with one arm of the bell-crank lever, and rod 14, connecting the other end of the bell-crank lever with sleeve 9, as set forth.

3. In wheel-plows, the combination of draft-frame 1, seat 22, and caster-wheel 19, connected with the rear end of the frame, draft-block 27, connected with the front end of the frame, levers 11 and 26 on opposite sides of the frame near the center thereof, shaft 6, carrying wheel 7 and adapted to be raised or lowered by lever 11, crank-shaft 23, carrying wheel 25 and adapted to be adjusted by lever 26, plow-beam 4, having plow 5, link-bars 2 and 3, connecting pivotally with the frame and with the plow-beam, lever 15, having crank-arm 15^a, and link 16, connecting arm 15^a with link-bar 3, as set forth.

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

MARSHALL SATTLEY.

Attest:

C. E. BARNES,

M. J. McMURRAY.