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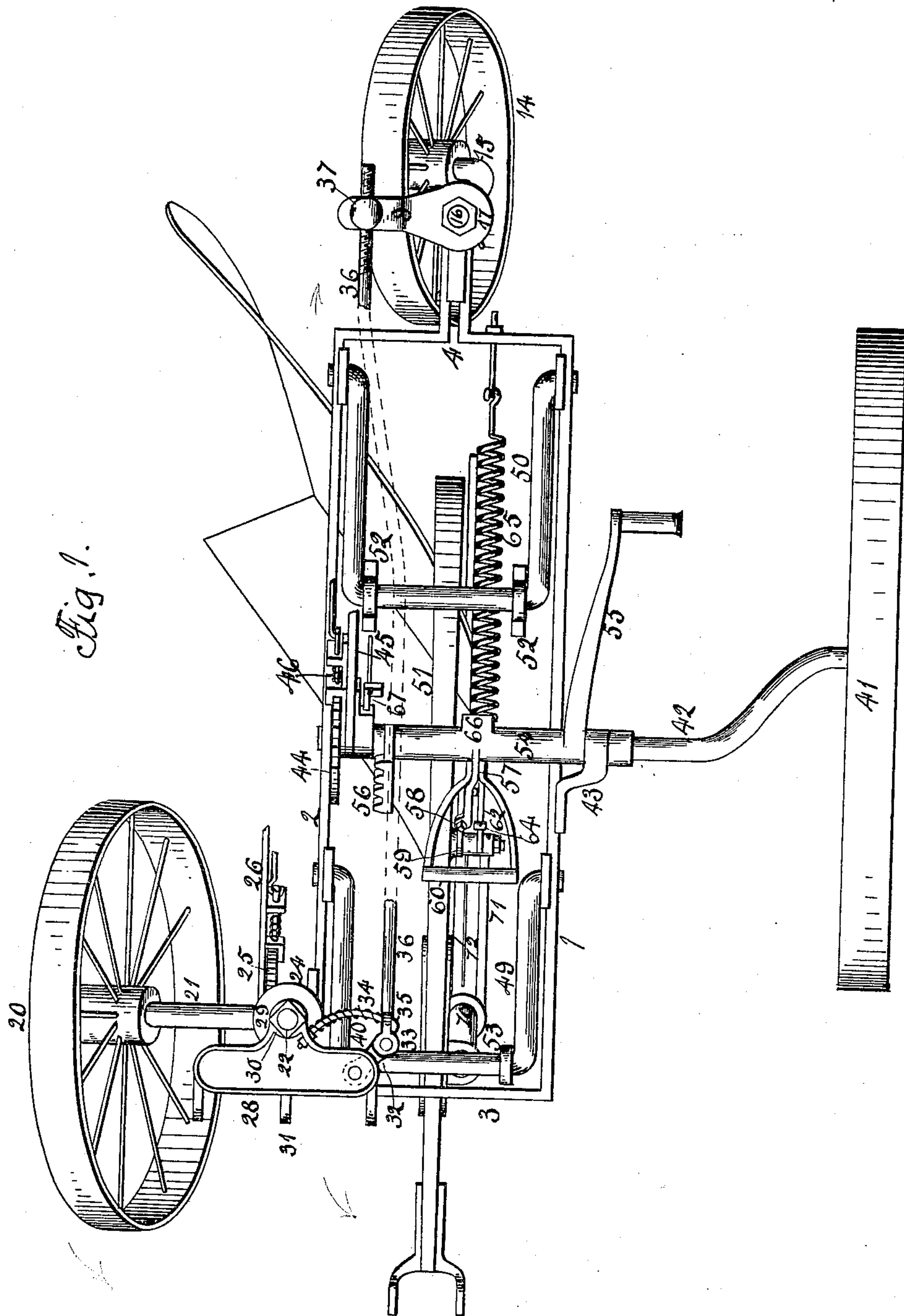
Patented July 25, 1899.

L. E. WATERMAN.
WHEELED PLOW.

(Application filed Mar. 29, 1899.)

(No Model.)

3 Sheets—Sheet 1.



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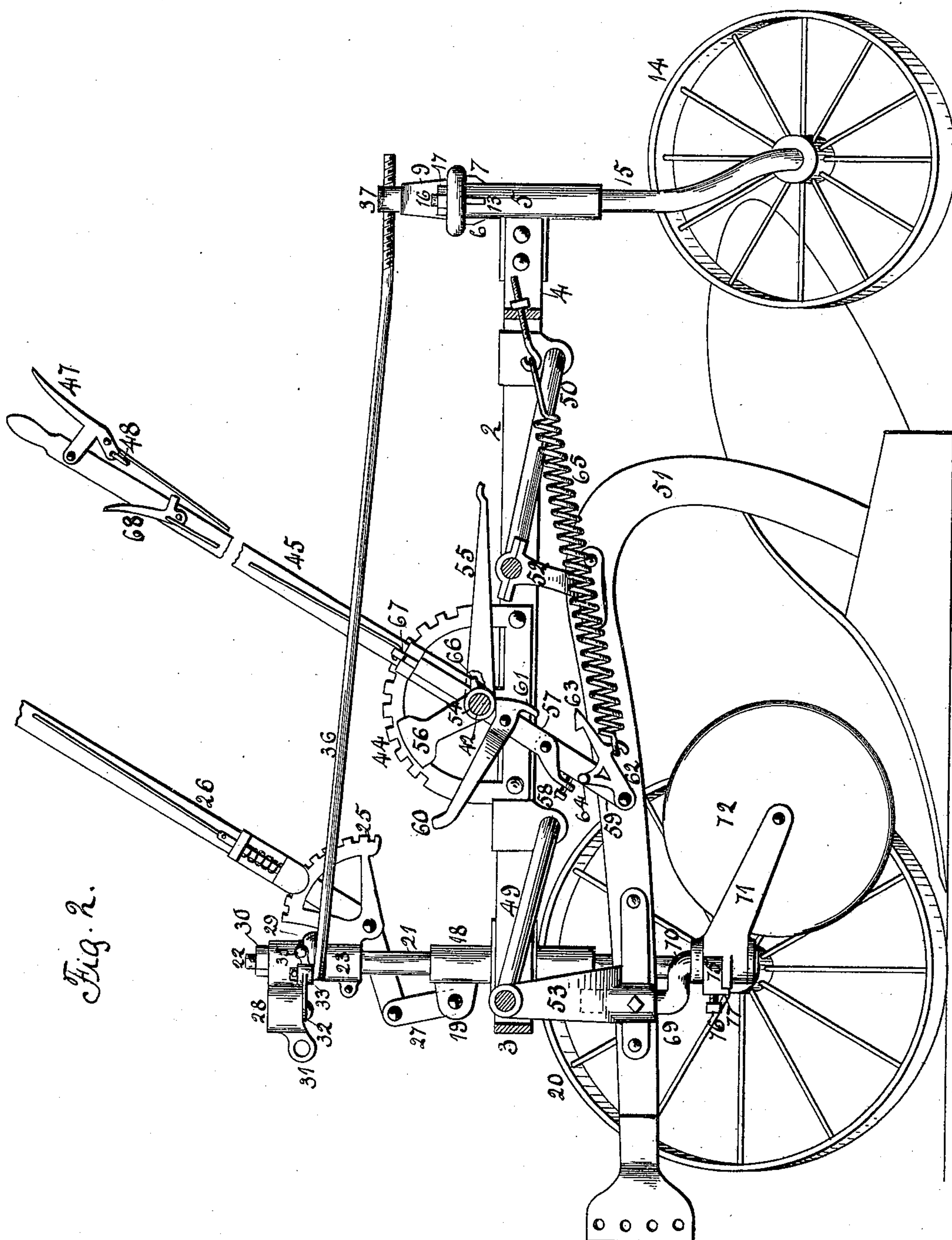
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3 Sheets—Sheet 2.



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Fig. 3.

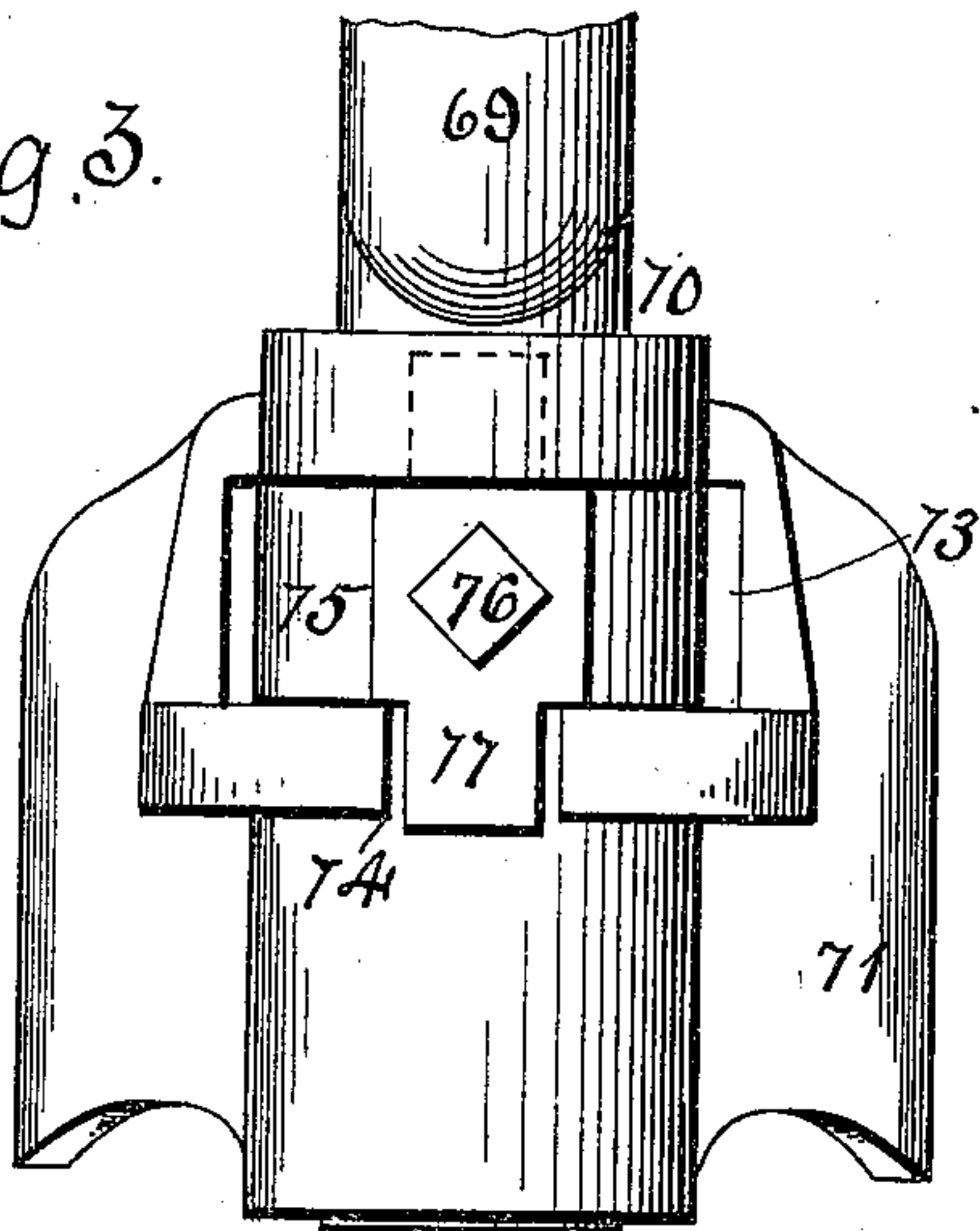


Fig. 4.

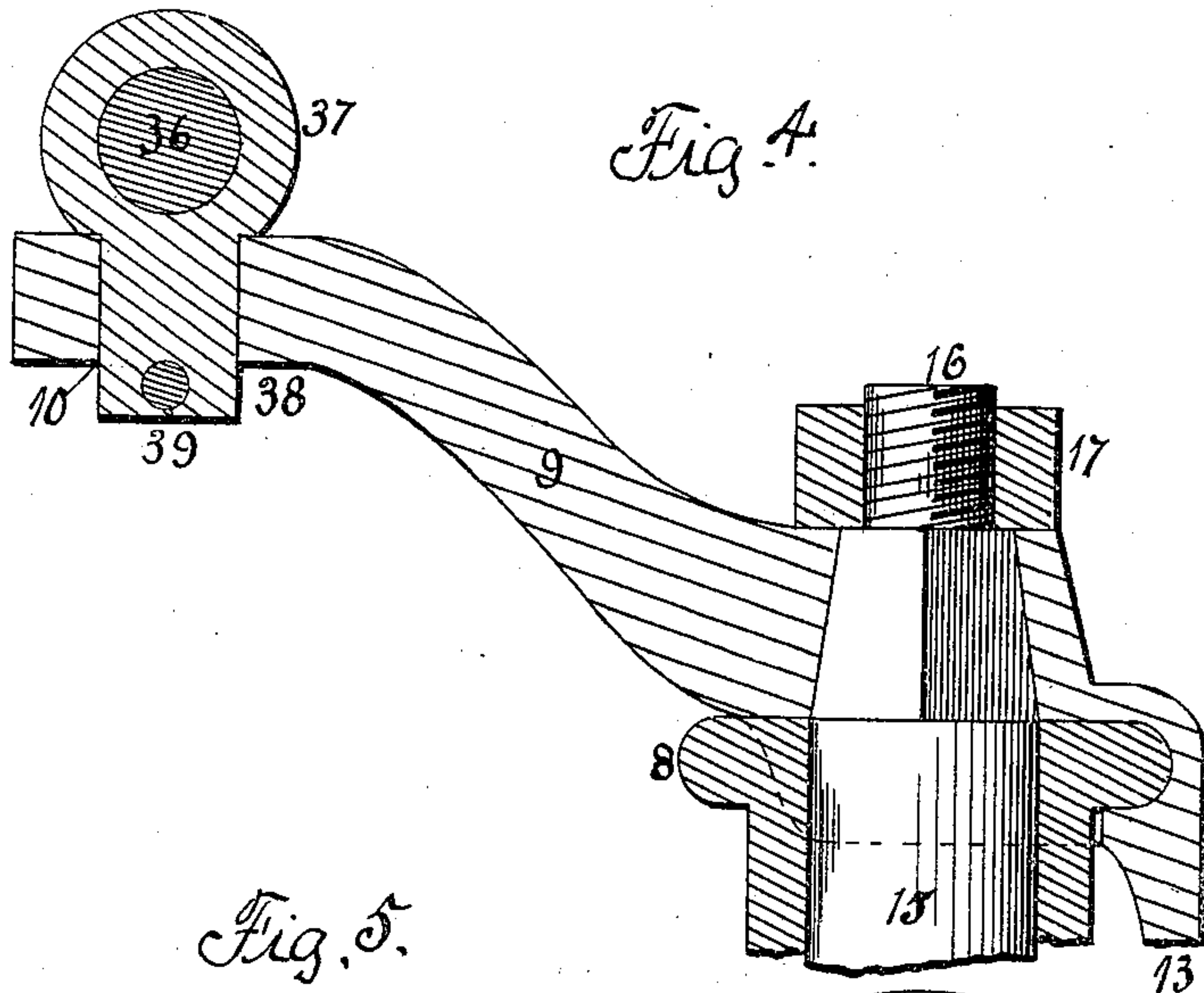
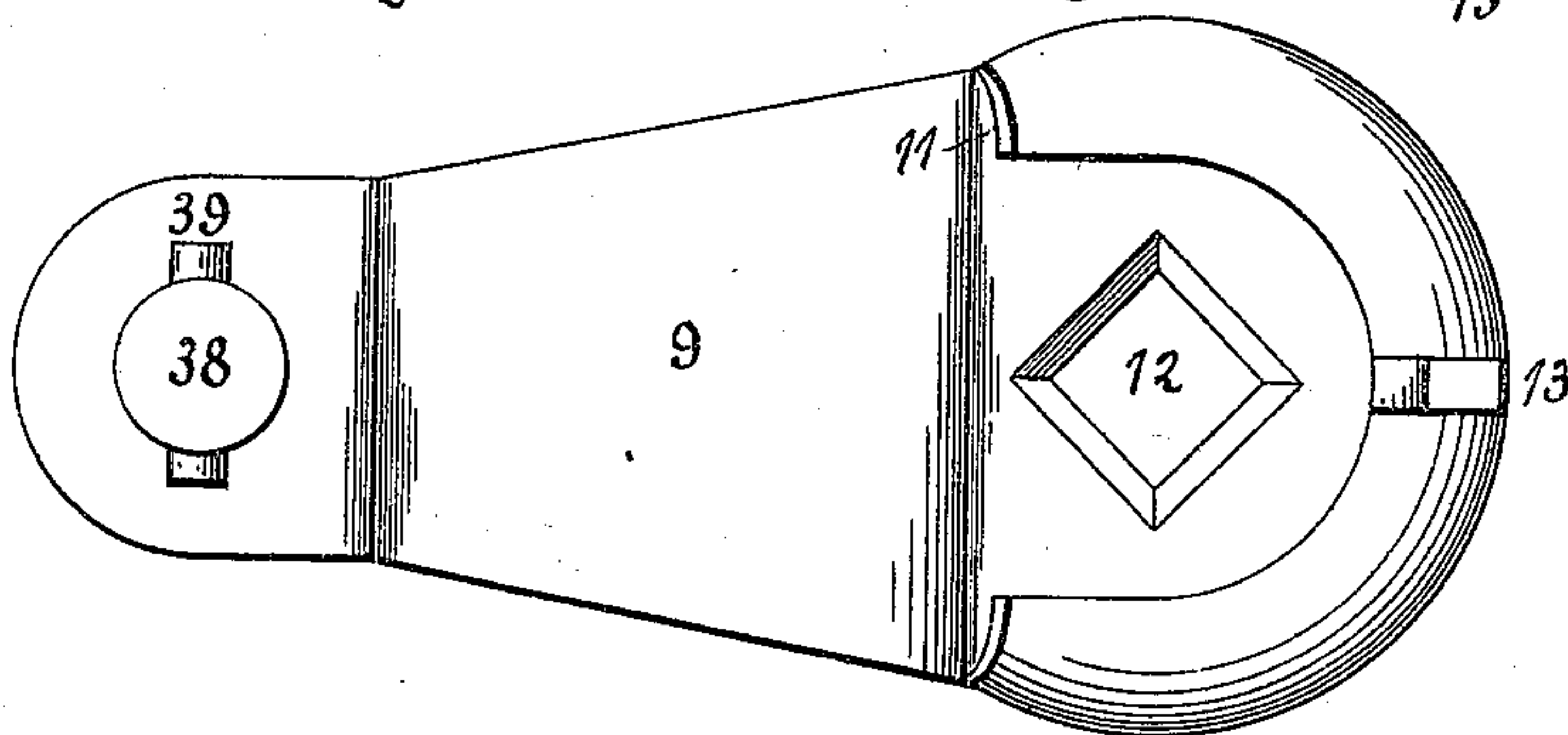


Fig. 5.



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UNITED STATES PATENT OFFICE.

LEWIS E. WATERMAN, OF MOLINE, ILLINOIS, ASSIGNOR TO THE EMERSON MANUFACTURING COMPANY, OF ROCKFORD, ILLINOIS.

WHEELED PLOW.

SPECIFICATION forming part of Letters Patent No. 629,733, dated July 25, 1899.

Application filed March 29, 1899. Serial No. 711,010. (No model.)

To all whom it may concern:

Be it known that I, LEWIS E. WATERMAN, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Wheeled Plows, of which the following is a specification.

This invention relates to improvements in wheeled plows in which the rider is carried by the main frame and from his seat can raise and lower the plow and adjust the various parts.

The object of this invention is to adjust the land-wheel by a hand-lever located at the right-hand side of the implement.

The further object of this invention is to raise and lower the plow by means of a foot-lever and by means of which the plow is locked down to its work or held elevated for transportation.

The further object of this invention is to form a connection between the plow-beam, so that the plow can be raised and lowered jointly or separately.

The further object of this invention is to turn the caster-wheel by the movement of the tongue and to permit a further movement of the tongue after the caster-wheel comes to a standstill in either direction.

The further object of this invention is to provide a collar in connection with the colter which when in one position will allow the colter a slight lateral movement and when reversed will allow the colter a greater lateral movement.

The further object of this invention is to allow the land-wheel a floating movement by holding its controlling-lever disengaged from its toothed segment; and the further object of this invention consists in the various details of construction pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a wheeled plow embodying my improvement. Fig. 2 is a lengthwise vertical section. Fig. 3 is a face view of the colter-support. Fig. 4 is a vertical section through the caster-wheel support. Fig. 5 is an under face representation of the caster-wheel support.

The main frame consists of a bar of rectan-

gular form forming the sides 1 and 2, front end 3, and two rearward projections 4. A tubular bracket 5 is supported by the rearward projection 4, its upper portion having two projections 6 and 7 extending in the lengthwise direction of the main frame and its upper end provided with a circular flange 8. An arm 9 has one end provided with a vertical opening 10, and its other end has a grooved recess 11, a square tapered vertical opening 12, and a depending lug 13.

A caster-wheel 14 has a vertical support 15, its upper end being squared and tapered and having a screw-threaded extension 16.

The recess 11 of the arm above referred to receives the circular flange 8 of the bracket 5, and the caster-wheel support is passed up through the bracket 5 until its screw-threaded upper end projects above the arm 9, which will seat the tapered square upper end of the support within the tapered square opening of the arm, and a nut 17 on the upper end of the support binds the parts together. The depending projection 13 is located between the two projections 6 and 7 of the bracket 5, and the arm and caster-wheel have an oscillatory movement between the projections 6 and 7.

To the forward end and right-hand side of the main frame is secured a tubular bracket 18, having perforated ears 19 extending from its front face. A furrow-wheel 20 has a support 21, which is guided in the tubular bracket 18, and the upper end of the support has a tapered square section and a screw-threaded section 22. A collar 23, with a circular flange 24 at its upper end and a toothed segment 25, extending from its rear portion, is placed on the furrow-wheel support 21 and clamped in connection therewith. A hand-lever 26 has a pivotal connection with the collar 23 and a connection with the bracket 18 through the link 27. This hand-lever is provided with the usual plunger and thumb-lever. The connection of the furrow-wheel support with the tool-box is the same as the connection between the caster-wheel support and the arm extending from its upper end, and I do not consider it necessary to show the connection in duplicate.

A tool-box 28 has a depending recessed projection 29 cut away on its front face and receives the circular flange of the collar 23. A tapered square opening is formed vertically through the rear wall of the tool-box and receives the tapered square upper portion of the furrow-wheel support, and a nut 30, turned on the upper screw-threaded end of the furrow-wheel support, clamps the parts together, and by means of the hand-lever 26 the forward end of the main frame can be raised and lowered. From the forward face of the tool-box extend lugs 31, to which is pivotally secured the tongue. To the under face of the tool-box is pivoted a link 32, its free end having a perforated eye 33. A rod 34 is supported by the tool-box and curved concentrically with the pivot of the link, passes through the free end of the link, and has a headed end 35. A coiled spring surrounds the rod between the free end of the link and tool-box. A rod 36 has a pivotal connection with the link 32 between its ends and extends rearward to and connects with the arm 9, controlling the movements of the caster-wheel, the connection consisting of a screw-threaded eye 37, having a depending projection 38, located in the opening 10 of the arm 9 and held in place by a pin 39. The rear end of the rod is screw-threaded and receives the eye 37.

As a connection is formed between the tongue and caster-wheel, a lateral movement imparted to the tongue will turn the caster-wheel in the reverse direction, and when the depending portion of the arm 9 comes in contact with either of the stops 6 and 7 the movement of the caster-wheel will be arrested, and should the tongue move farther laterally the coiled spring 40 will allow of such movement, thereby preventing the breakage of the parts, and as there is a connection between the tongue and furrow-wheel the furrow-wheel will be turned in the same direction as the tongue when it is moved laterally, as in turning corners.

A land-wheel 41 is supported on an axle 42, and the axle is supported in a bracket 43, secured to the side bar 1 of the main frame, and a toothed segment 44 is secured to the axle-bar 2 of the main frame. A hand-lever 45 is keyed to the axle 42 and is provided with the usual spring-actuated plunger 46 and thumb-latch 47. A link 48 has a pivotal connection with the thumb-latch and by means of which the spring-actuated plunger can be held disengaged from the toothed segment 44. By means of this hand-lever the main frame can be raised or lowered by rocking the axle, and by locating the hand-lever at the right-hand side of the main frame it is within reach of the right hand of the driver, leaving his left hand free to control the team.

To the side bar of the main frame are pivoted two bails 49 and 50. The rear bail has a pivotal connection with the rear portion of the plow-beam 51 through the brackets 52,

and the front bail 49 has a pivotal connection with the front portion of the plow-beam 51 through the brackets 53.

Upon the axle 42 between the side bars of the main frame is located a sleeve 54, from which a foot-lever 55 extends rearward, a toothed quadrant 56 and a forwardly-extending arm 57 supporting a set-screw 58 in its free end. To the arm 57 is pivoted a link 59, its other end having a pivotal connection with the plow-beam, and a foot-lever 60 has a pivotal connection with the arm 57 in a manner to permit of a slight oscillatory movement. A cam extension 61 depends from the lower end of the foot-lever 60. A latch 62 has a pivotal connection with the plow-beam and extends rearward, having a hooked catch 63 and a transverse extension 64. A coiled spring 65 has a connection with the catch 62 at one end and its other end connected to the rear portion of the main frame in an adjustable manner. From the rear surface of the sleeve 54 extends a rib 66.

By depressing the foot-lever 55 if the plow is down the plow can be raised through the sleeve 54, arm 57, and link 59, with the aid of the spring 65, until the hooked catch engages the rib 66, extending from the sleeve, and the coiled spring 65 will hold the catch in engagement with the rib, thereby carrying the plow elevated. By forcing forward on the foot-lever 60 its slight oscillatory movement will be sufficient to force its cam-surface 61 against the transverse extension 64 of the latch, which will disengage the hooked catch from its engagement with the rib 66, extending from the sleeve, when the foot-lever will move against the sleeve, thereby forming a connection between the lever and sleeve, and through the sleeve 54 and 57 and link 59 with the plow-beam and a continued forced movement of the foot-lever 60 will depress the plow until the set-screw 58 comes in contact with the link, which will cause the pivotal point of the link in its connection with the arm 57 to pass slightly below a line between the pivotal point of the link and its connection with the plow-beam and the center of the sleeve 54, and the extent of lock is regulated by the set-screw.

The hand-lever 45 on its inner face is provided with a spring-actuated plunger 67 and a thumb-lever 68. The thumb-lever is adapted to be thrown past its pivotal center and holds the plunger out against the action of its spring, and when desired the hand-lever can be moved and the plunger 67 allowed to enter one of the notches of the toothed quadrant 56, thereby forming a connection between the hand-lever and plow-beam and by means of which the plow-beam can be raised and the leveling of the frame by moving the axle of the land-wheel can be accomplished in unison. By this arrangement of foot and hand levers the driver has the plow under his control. It can be raised and lowered by the foot-lever or hand-lever separately or conjointly.

By holding the plunger hand-lever out of its toothed segment the main frame can have a floating movement.

To one of the brackets 53, connecting the forward bail 49 with the main frame, is adjustably connected a colter-support 69, having a vertical section 70. A colter 72 has a yoke 71 connected thereto. The forward end of the yoke is in tubular form, having a cut-away portion 73. The lower section has a notch 74. A collar 75 is placed in the cut-away portion 73, and a set-screw 76 secures it to the colter-support. This collar has a depending lug 77, which is located in the notch 74, thereby limiting the swinging movement of the colter to the extent the notch will allow. By reversing the collar and turning the lug 77 up the extent of the movement of the colter will be increased.

I claim as my invention—

1. In a wheeled plow the combination of a main frame, a plow-beam supported by the frame, a land-wheel, an axle supporting the land-wheel, a hand-lever for oscillating the axle, a sleeve supported upon the axle, a foot-lever extending rearward from the sleeve, an arm extending from the sleeve, a link connecting the arm and plow-beam, and a foot-lever having a pivotal connection with the arm.

2. In a wheeled plow, the combination of a main frame, a plow-beam supported by the frame, a sleeve supported by the main frame, two foot-levers connected with the sleeve and a linked connection between the sleeve and plow-beam.

3. In a wheeled plow, the combination of a main frame, a plow-beam supported by the frame, a sleeve supported by the main frame two foot-levers connected with the sleeve, a linked connection between the sleeve and plow-beam, and a stop limiting the lock between the sleeve and plow-beam.

4. In a wheeled plow, the combination of a main frame, a plow-beam supported by the frame, a sleeve supported by the frame, a linked connection between the sleeve and plow-beam, a projection extending from the sleeve, a latch pivotally supported by the plow-beam and a spring connection between the latch and stationary support.

5. In a wheeled plow, the combination of a main frame, a plow-beam supported by the frame, a sleeve supported by the frame, a connection between the sleeve and plow-beam, an arm extending from the sleeve, a hand-lever and a connection between the arm and hand-lever.

6. In a wheeled plow, the combination of a main frame, a plow-beam supported by the frame, an oscillating sleeve, a connection between the sleeve and plow-beam, a land-wheel support, a land-wheel, a hand-lever for moving the land-wheel support and a connection between the hand-lever and the oscillating sleeve.

7. In a wheeled plow, the combination of a

main frame, a plow-beam supported by the frame, an oscillating sleeve, a connection between the sleeve and plow-beam, a toothed quadrant extending from the oscillating sleeve, a land-wheel support, a land-wheel, a hand-lever for moving the land-wheel support, the hand-lever-supporting devices for forming a connection with the toothed quadrant and with the frame.

8. In a wheeled plow, the combination of a main frame, a plow-beam supported by the frame, an oscillating support, a linked connection between the support and plow-beam, a foot-lever having a pivotal connection with the support having a cam-shaped lower end, a rib extending from the support, a latch pivotally connected with the plow-beam, and a spring connected at one end with the latch and its other end with a stationary support.

9. In a wheeled plow, the combination of a main frame, a plow-beam supported by the main frame, a land-wheel, a land-wheel support, a hand-lever moving the land-wheel support, a toothed segment for the hand-lever, an oscillatory support, a connection between the support and plow-beam, a toothed quadrant connected to the support, a hand-lever-supporting means for engaging the toothed quadrant.

10. In a wheeled plow, the combination of a main frame, a tubular socket forming a support for a caster-wheel, the upper end of the support having an enlarged head and two projections, an arm having a cavity receiving the enlarged head and having a tapered-sided central opening and a projection, a caster-wheel shank passing through the support having its upper portion fitted to the opening in the arm and a nut clamping the parts together.

11. In a wheeled plow, the combination of a main frame, a furrow-wheel supported by the main frame, a tongue-support having a connection with the furrow-wheel shank, a collar clamped to the shank having an enlarged head, the tongue-support having a cavity receiving the enlarged head and having a tapered-sided central opening the shank passing through the support having its upper portion fitted to the opening in the support and a nut clamping the parts together.

12. In a wheeled plow, the combination of a main frame, a caster-wheel and a furrow-wheel supported thereby, a connection between the wheels, the end connected to the caster-wheel by a link and a spring acting upon the link.

13. In a wheeled plow, the combination of a main frame, a plow-beam supported thereby, a colter movable with the plow-beam, a reversible block permitting the colter to have a slight lateral movement when in one position and a greater movement when in its other position.

14. In a wheeled plow, the combination of a main frame, a plow-beam, a land-wheel, a hand-lever having a connection with the land-

wheel, a foot-lever having a connection with the plow-beam, and a connection between the foot and hand levers.

15. In a wheeled plow, the combination of a
5 main frame, a plow-beam, a latch pivotally connected with the plow-beam, and a spring connected with the latch and stationary sup-

port, the latch adapted to hold the plow elevated.

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