

J. N. THOLL.

WHEELED PLOW.

APPLICATION FILED APR. 10, 1911.

997,102.

Patented July 4, 1911.

Fig. 1.

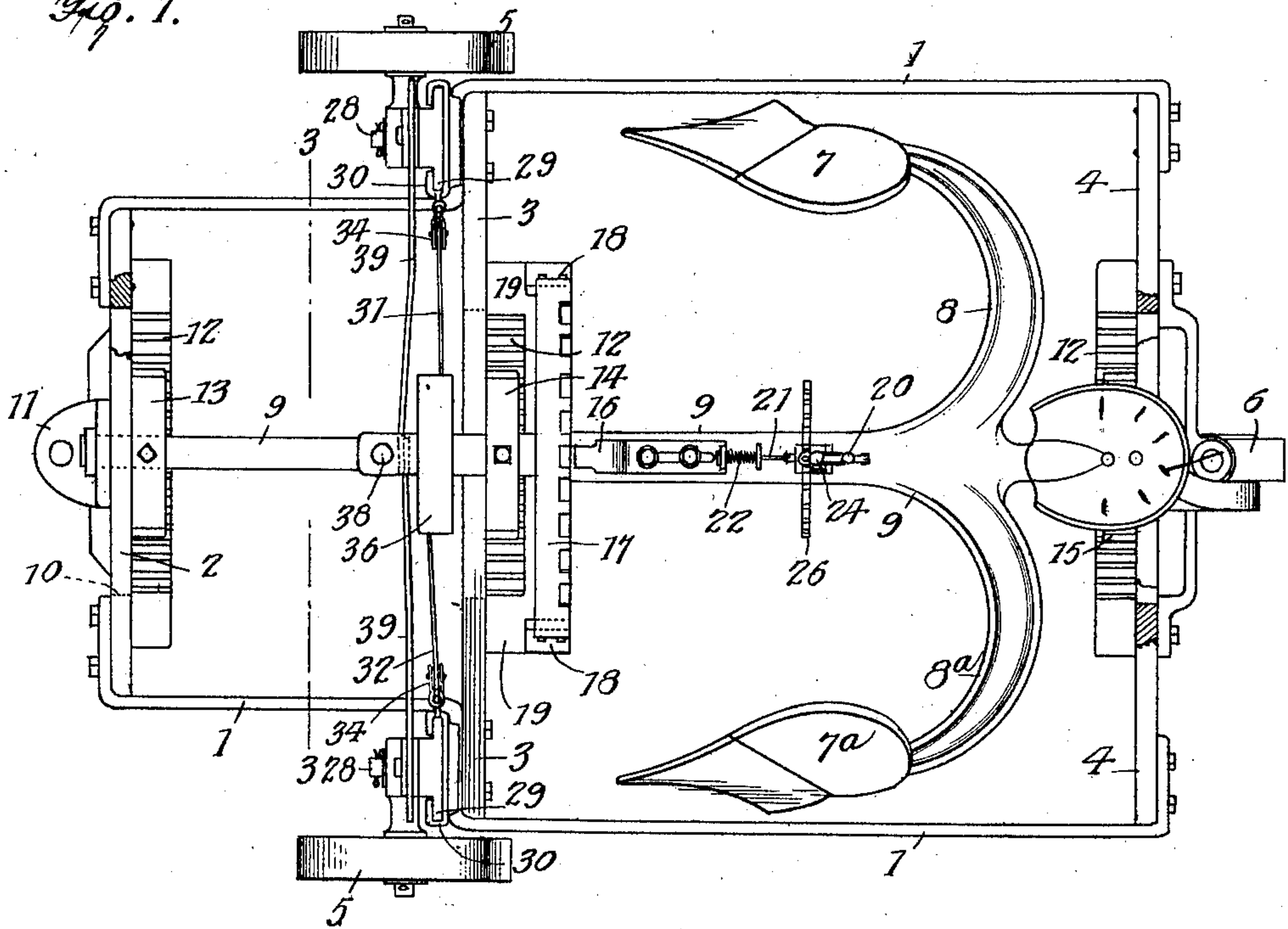


Fig. 2.

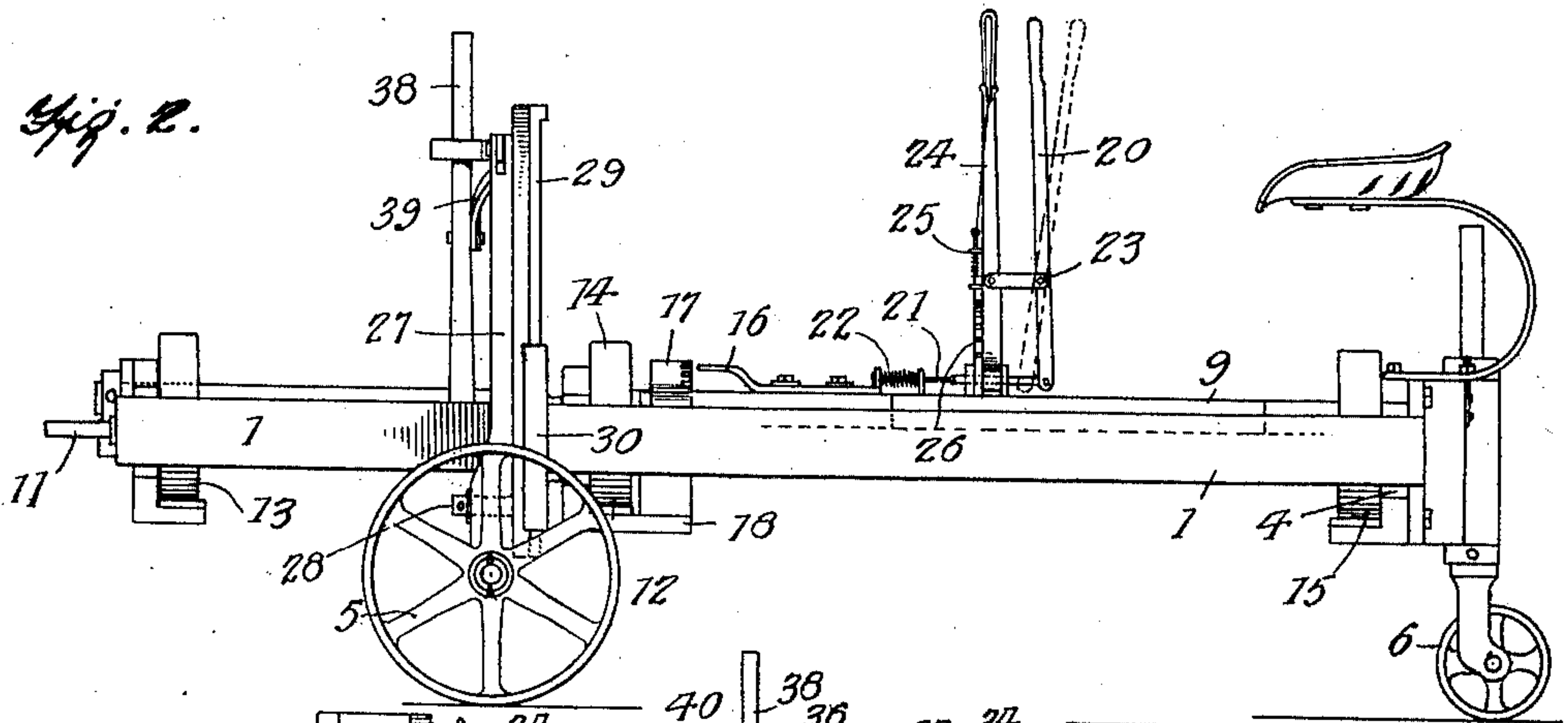
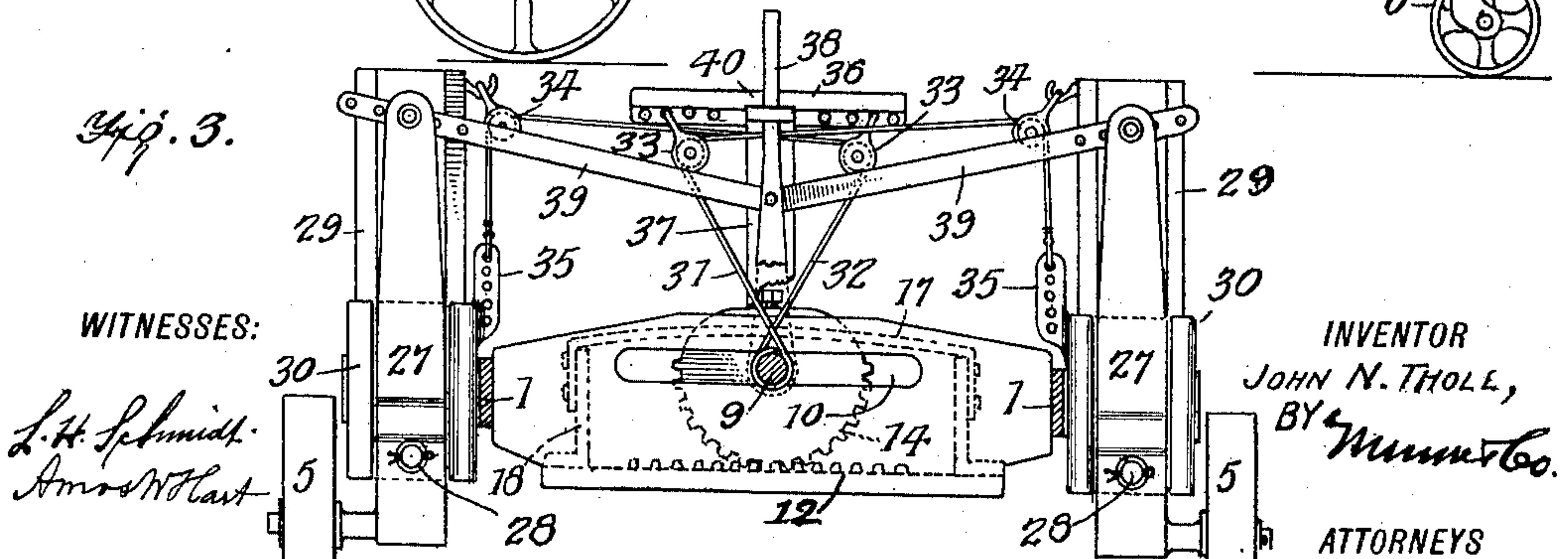


Fig. 3.



UNITED STATES PATENT OFFICE.

JOHN NICHOLAS THOLL, OF CASSIA COUNTY, IDAHO.

WHEELED PLOW.

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Specification of Letters Patent.

Patented July 4, 1911.

Application filed April 10, 1911. Serial No. 620,083.

To all whom it may concern:

Be it known that I, JOHN NICHOLAS THOLL, a citizen of the United States, and a resident of the county of Cassia and State of Idaho, have invented certain Improvements in Wheeled Plows, of which the following is a specification.

My invention is an improvement in reversible wheeled plows in which the frame to which the plow bodies are attached is adapted for adjustment relative to the main frame and the wheels, as required for plowing deeper or shallower and for holding the plows vertical or in due position for effective work.

The details of construction, arrangement, and operation of parts are as hereinafter described and illustrated in the accompanying drawing, in which—

Figure 1 is a plan view of my improved plow. Fig. 2 is a side elevation. Fig. 3 is a vertical cross section on the line 3—3 of Fig. 1.

The frame of the machine is essentially rectangular, it being formed of metal side bars 1 and three metal cross bars 2, 3, 4. The front portion or end of the frame is narrower than the body.

The frame and the plow attachment carried thereby are supported on two running wheels 5 and a rear caster wheel 6, the latter being arranged centrally of the rear cross bar 4. The running wheels 5 are located at the junction of the reduced and wider portions of the frame.

A right-hand plow body 7 and left-hand plow body 7^a are attached to the laterally extended forwardly curved arms 8 and 8^a, respectively, of a centrally arranged shaft and draft-bar 9 which extends through and is adapted to rotate and shift laterally in slots 10 which are formed in the several cross bars 2, 3, 4. On the forward end of this shaft 9, there is attached a clip 11 which serves as a point of attachment for the doubletree (not shown) to which the team will be hitched. Thus, although the said shaft and draft bar may be rotated and shifted laterally in the aforesaid slots 10 of

the cross bars, the draft is always applied so as to be in direct line therewith.

The rotation and shifting movement of the shaft and draft-bar 9, which is made for the purpose of shifting the plow bodies 7 and 7^a up or down, is effected by the following means. Three rack bars 12 are arranged horizontally and attached to the respective cross bars 2, 3, 4, and with them mesh semicircular or mutilated gears 13, 14, 15, the same being bolted or keyed on the shaft 9 so as to rotate therewith. A slotted and slidable locking bolt 16 is attached to the shaft 9 and its forward end is adapted to engage notches in a transverse and slightly curved rack bar 17 whose ends are attached to blocks or short posts 18 which are fixed on a support 19 adjacent to the middle rack bar 12.

For adjusting the sliding bolt 16, I employ a lever 20 whose lower end is connected with the bolt by means of a slidable rod 21 which is guided in brackets and to which a spiral spring 22 is applied between one of the brackets and the bolt 16 and whose obvious function is to hold the bolt normally engaged with the rack bar 17. The aforesaid lever 20 is pivoted between arms 23 which are secured at their front ends to a second lever 24. The latter is pivoted on the rod 21 and provided with a spring-actuated locking dog 25 which is adapted to engage a segmental rack 26 that is bolted or otherwise rigidly secured to the shaft 9 so as to move with it. If, now, the driver desires to rotate the shaft 9 for the purpose of shifting the plow bodies 7 and 7^a up or down, the lever 20 is pressed toward the lever 24, which withdraws the locking bolt 16 from the rack 17 and then pushing laterally on the lever 24, its dog 25 being engaged with the segmental rack 26, it is obvious the shaft, together with the plows, will be rotated and also shifted laterally owing to the coöperation of the several semicircular gears 13, 14, 15 with the rack bars 12. When the required movement has been made, the lever 20 is released and the spring 22 then forces the bolt 16 into reengagement

with the rack 17 and thus locks the shaft and plows in the position to which they have been adjusted.

Since it is desirable that the levers 20 and 24 shall be vertical or directly in front of the driver when the machine is in operation, after the shaft has been thus locked by the bolt 16, the lever 24 is unlocked from the segment 26 and swung to the vertical position, while the bolt 16 remains engaged with the rack 17. In this operation, the lever 20 necessarily follows the lever 24, or, in other words, both are adjusted together.

Each of the front running wheels 5 is mounted upon a short axle which is rigidly connected with the lower end of a lever 27 and the latter is in turn pivoted at 28 to a vertical slide 29, the same consisting of a wooden bar having a metal back whose edges project laterally and work, that is to say, slide vertically, in metal guides 30 which are bolted to the middle cross-bar 3 of the frame. It is apparent that since the bars 27 and 29 are pivoted together and the latter adapted to slide vertically, the plow bodies will be shifted up or down corresponding to the adjustment of these bars; also the wheels 5 may be shifted so as to run at different vertical angles.

Two $\frac{3}{8}$ inch wire cables 31, 32, are wound on the shaft 9 in front of the middle cross bar 3 and, crossing each other directly above the shaft, they pass through sheaves 33, then through sheaves 34, and are connected adjus-
tably to arms 35 projecting from the guides 30 which are bolted solid to the frame. The sheaves 33 are provided with hooks by which they are suspended from a cross bar 36 that is fixed on the top of a vertical post or standard 37 forming an attachment of the middle frame cross bar 3. The sheaves 33 may be shifted along this bar 36 which is provided with a series of holes for the purpose and which enables the main frame to be adjusted for leveling it for deeper or shallower plowing. The pulleys 34 are similarly provided with hooks and attached to the top portion of the bars 29. The pivoted bars 27 to which the journals or stub axles of the wheels 5 are rigidly attached are automatically shifted on their pivots laterally by rods 39 and a vertical bar 38. The latter is journaled on the draft-bar 9 and its upper portion passes through a guide 40. Thus the lower end of bar 38 shifts laterally along with the draft bar and consequently slides and oscillates correspondingly in the guide 40. This causes due adjustment of the wheels 5 so that when the right-hand plow body 7 is in the soil, the right-hand wheel will be in the furrow and stand at an angle of about 60°. When the machine is turned around and the left-hand

plow body 7^a is in the soil, the left-hand wheel will of course be in the furrow. 65

The connection and arrangement of the cables with the other parts is such that when the axle and draft-bar 9 is shifted, that is to say, rotated and adjusted laterally, one cable 31 slackens as the other, 32, is taken up, and vice versa, with the effect that one wheel is adjusted higher or lower than the other, and vice versa, whereby the level of the plow frame is preserved while one wheel runs in the furrow and the other on the unbroken 75 land.

What I claim is:—

1. The combination with the wheeled frame and cross bars forming part thereof and provided with rack bars, of a plow-
carrying shaft having semicircular gears se- 80
cured thereto and adapted to mesh with the rack bars, and means for locking the shaft in different lateral and rotative adjustments, substantially as described. 85

2. The combination with a main frame having a series of cross bars provided with longitudinal slots, of a plow-carrying shaft and draft bar which extends through the said slots and is provided with semicircular 90
gears, rack bars fixed on the several cross bars of the frame and adapted for engagement with the aforesaid gears, and means for adjusting the shaft with the plows attached and for locking it in any required adjust- 95
ment, substantially as described.

3. The combination with the main frame having a series of cross bars provided with longitudinal slots and rack bars fixed there-
to, of a rotatable shaft and draft bar carry- 100
ing plows and having semicircular gears which mesh with the rack bars, a transverse rack bar fixed to the middle cross bar of the frame and having a series of notches or sockets, a slidable locking bolt adapted to 105
engage any of the sockets, a spring tending to force and hold the bolt in engagement, a pivoted lever connected with the bolt for retracting it, and another lever for rotating the plow carrying shaft, substantially as de- 110
scribed.

4. The combination with the main frame, of a plow-carrying shaft and gearing where-
by it is operatively connected with the main frame so that it may be rotated and at the 115
same time shifted laterally, a locking bolt and a curved rack bar with which it is adapted for engagement, a spring for holding the locking bolt normally in engagement, a pivoted lever for retracting the bolt, a 120
toothed segment fixed to the shaft, and a second lever pivoted to and adapted for shifting engagement with such segment, the two levers being connected so that both may be shifted laterally together, substantially 125
as described.

5. The combination with the main frame and a combined rotatable shaft and draft bar, of front running wheels and pivoted levers to which their journals are rigidly
5 connected, such levers being adjustable vertically, and means operatively connecting them with the shaft, whereby the rotation of the shaft effects a corresponding shifting of the wheels, substantially as described.

JOHN NICHOLAS THOLL.

Witnesses:

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J. S. McQUISTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
