

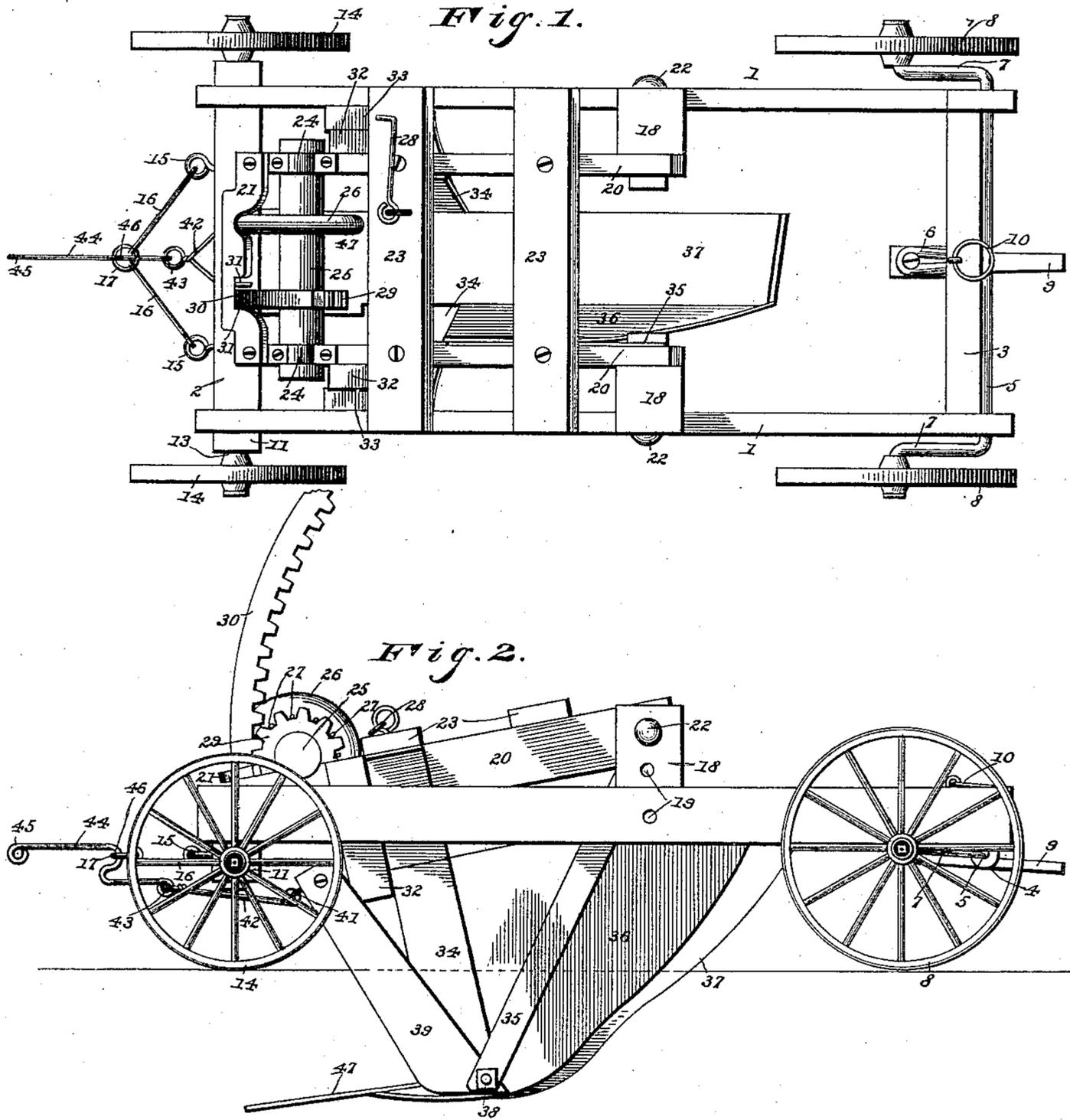
(No Model.)

2 Sheets—Sheet 1.

M. WILSON.
DITCHING MACHINE.

No. 444,118.

Patented Jan. 6, 1891.



Witnesses:

J. M. Withers

W. S. Duwall

Inventor

Matthew Wilson,

By his Attorneys,

C. A. Snow & Co.

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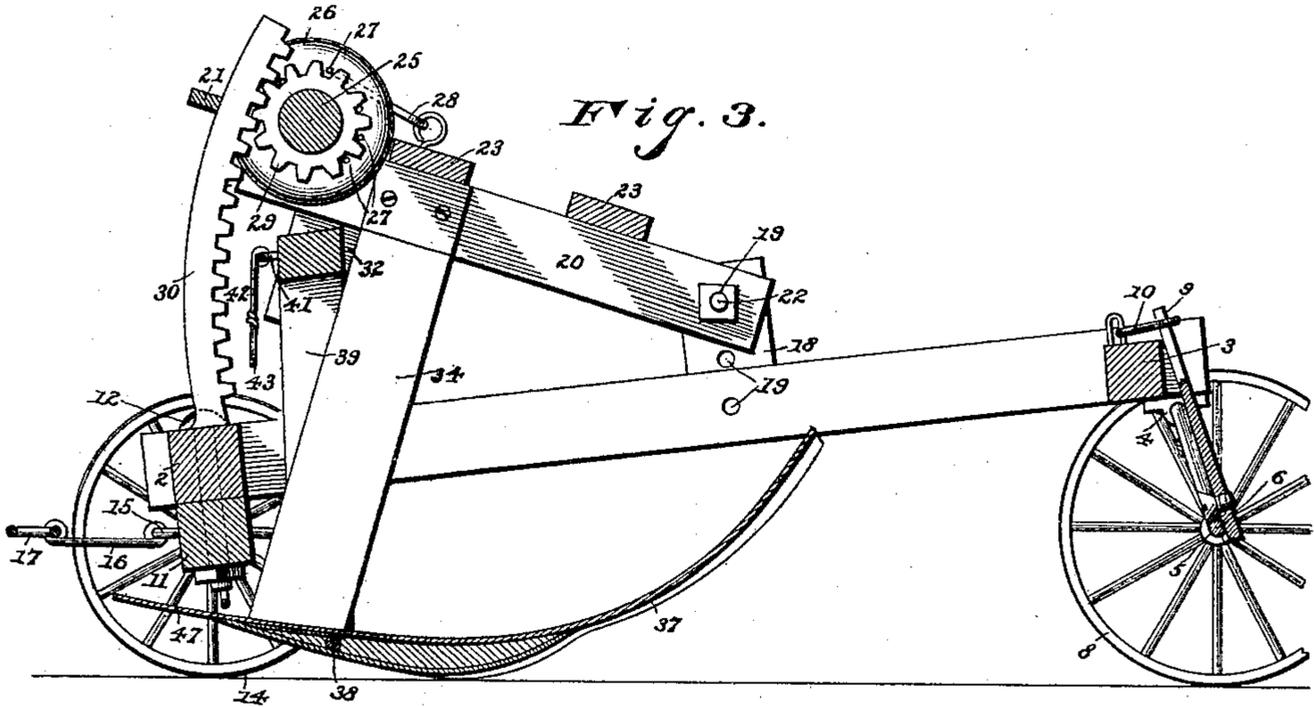


Fig. 3.

Fig. 4.

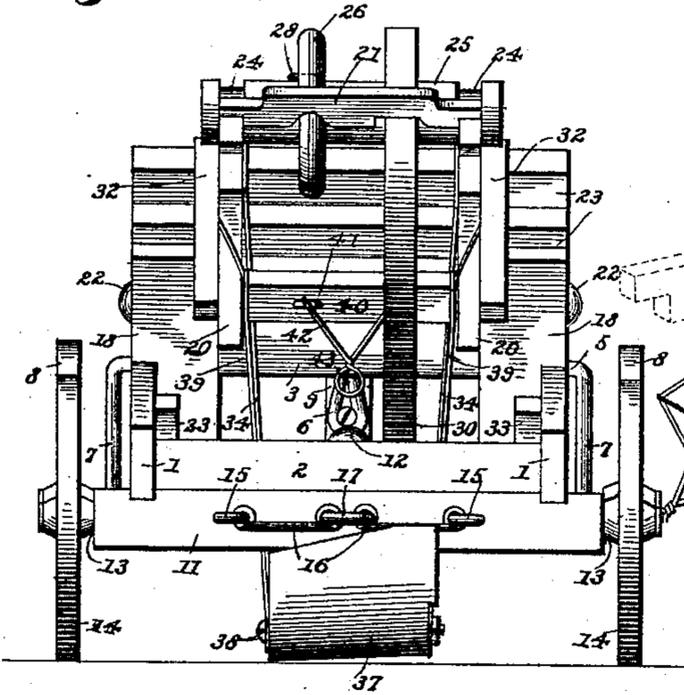
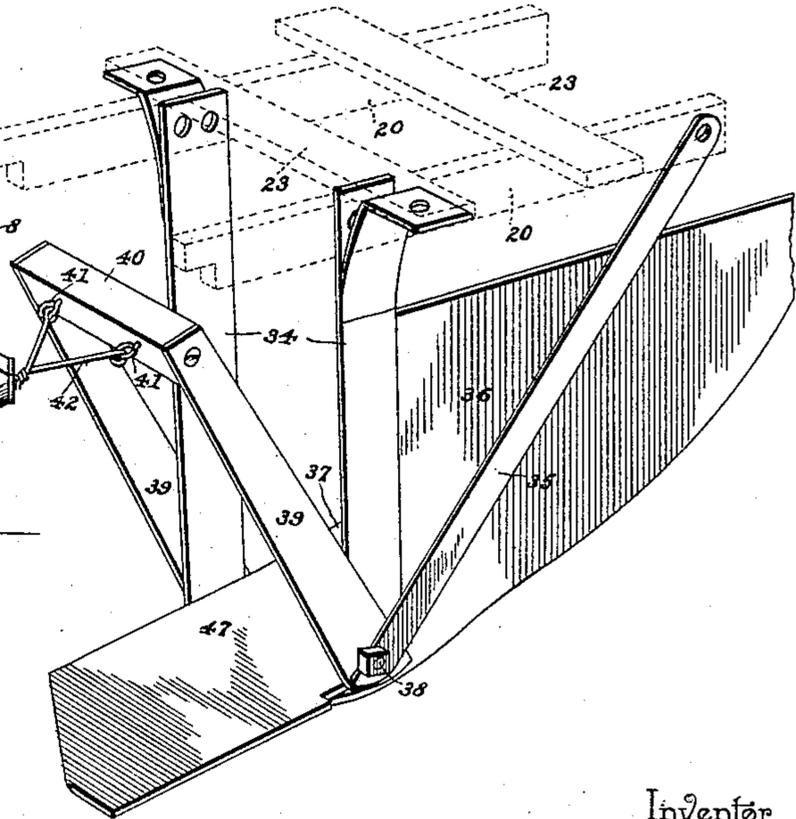


Fig. 5.



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UNITED STATES PATENT OFFICE.

MATTHEW WILSON, OF GARRISON, IOWA.

DITCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,118, dated January 6, 1891.

Application filed September 5, 1890. Serial No. 363,990. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW WILSON, a citizen of the United States, residing at Garrison, in the county of Benton and State of Iowa, have invented a new and useful Ditching-Machine, of which the following is a specification.

This invention has relation to ditching-machines, the objects in view being to provide a machine adapted to be drawn by any suitable power and to form a ditch ready for the reception of tiling; furthermore, to provide for an equalization or distribution of the draft between the mold-board and the machine proper, to provide for a raising and lowering of the mold-board and the locking of the same in either position, and also for an adjustment for raising and lowering of the rear end of the frame.

With the above and other objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of a machine constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal section. Fig. 4 is a front elevation, and Fig. 5 a detail in perspective of the shovel-supporting frame.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ an oblong frame consisting of opposite longitudinal side bars 1 and front and rear end bars 2 and 3, respectively let into the side bars. The side bars 1 have their rear ends extended beyond the end bar 3 and provided at those points with bearings 4, in which is mounted an axle 5, centrally cranked, as at 6, and provided with end cranks 7, and upon the latter are mounted for rotation ground-wheels 8. The central crank 6 has secured thereto a lever 9, by which the axle may be swung either to a horizontal position under the frame or to a vertical position in rear of the frame, and may be locked in the former position by means of a link 10, loosely connected to the end bar 3 and adapted to be thrown over the upper end of the lever. When the lever is lowered and the axle under the frame, the frame is lowered, and when the axle is raised

likewise is the frame, and in the latter position the cutting apparatus, hereinafter described, is given a proper inclination.

11 designates the front axle, which by a king-bolt 12 is pivoted to the front cross-bar 2. The ends of the axle 11 have bearings 13, and upon said bearings are mounted ground-wheels 14. At each side of the center of the axle are secured draft-eyes 15, in which are loosely connected draft-rods 16, connected at their front ends by a draft-link 17.

Rising from the opposite side bars 1 at about their centers are a pair of vertical standards 18, each provided in this instance with perforations 19 in line with a similar perforation 19 formed in the side bars 1. In any pair of these perforations there is removably pivoted an opposite pair of side bars 20 of an upper swinging frame, the connection being made by means of a pair of bolts 22.

The outer ends of the bars 20 are connected by a transverse bar 21, and in rear of said bar are located two or more connecting-bars 23. In rear of the bar 21 there is located upon the upper sides of the bars 20 a pair of opposite bearings 24, in which is mounted a loose shaft 25, carrying a hand-wheel 26, by which the shaft may be revolved, and said wheel being provided with numerous perforations 27, into which is designed to be inserted the hook end of a rod 28, pivoted or otherwise loosely mounted upon the front transverse bar 23. The shaft 25 is also provided with a pinion 29, the teeth of which engage those of a curved upwardly-disposed rack-bar 30, mounted upon the cross-bar 2 and passing up through the front end of the swinging frame and through guides 31, formed in the inner edge of the bar 21. Guide-arms 32 depend from the side bars 20 and are guided by blocks 33, secured to the inner faces of the side bars 1.

From the opposite side bars 20 there depend a pair of hangers 34, one of which is braced by a brace rod or strap 35, connected to the lower end of the hanger and to the side bar above. A wall 36 is secured to the said hanger 34 and has its lower curved edge secured to a mold-board 37, curved and having its rear upper end at the side opposite said wall shared. A bolt 38 passes through the lower end of the mold-board, the hangers, and the wall, and also through a pair of draft-straps

39, which are connected at their front ends by a transverse draft-bar 40, having eyes 41, in which are loosely suspended a draft-link 42, terminating in an eye 43. A rod 44, loosely
 5 connected with the eye, is passed up through the eye 17 of the upper draft-rod and terminates in a draft-hook 45, which near its middle is provided with an offset or shoulder 46, for engaging the draft-links 17. This com-
 10 pletes the construction with the exception of the shovel 47, which is secured to the front end of the mold-board and is designed to penetrate the ground at a suitable depth and remove the earth, which latter rides up the
 15 curved and inclined mold-board and is delivered to one side of the machine.

The operation of my invention is as follows: By rotating the hand-wheel to the rear the pinion operates in the teeth of the rack-bar
 20 and the swinging frame is raised until the shovel is above the surface of the ground. The machine may now be conveniently transported to any point of operation. When the point of operation has been reached, the wheel is
 25 rotated in a reverse direction or toward the front and the shovel consequently lowered. When in either its raised or lowered positions, the hook of the locking-rod may be inserted
 30 into any one of the openings of the hand-wheel, and thereby lock the wheel against further rotations in either direction.

Having thus described my invention, what I claim is—

1. In a machine of the class described, the
 35 combination, with the frame-work, a front axle, a draft-bail terminating in a central link, and a king-bolt pivoting the frame to the axle, of a depending shovel suspended from the frame, a U-shaped bail connected to the
 40 shovel, a draft-bail connected to the U-shaped bail and terminating at its center in an eye, and a draft-rod connected to the eye and passed through the eye of the draft-bail of the axle and terminating at its front end in a hook
 45 and in rear of the latter-mentioned eye in an offset or shoulder, substantially as specified.

2. In a machine of the class described, the combination, with the main oblong frame provided with opposite standards, each having a series of perforations, of the swinging frame
 50 removably mounted in the perforations, a shaft journaled at the front of said swinging frame, a pinion and perforated hand-wheel mounted on the shaft, a guide-bar secured in front of the pinion, an upwardly-disposed
 55 rack-bar rising from the main frame, passing through the guide-bar, and engaged by the pinion, means for locking the shaft at any point upon the rack bar, and a shovel suspended from the frame and depending below
 60 the main frame, substantially as specified.

3. In a machine of the class described, the combination, with the oblong main frame, the front and rear axles and ground-wheels, the standards located upon the opposite side bars,
 65 a swinging frame adjustably pivoted in the standards, a transverse shaft having a pinion and perforated hand-wheel, a guide-bar located in front of the shaft, a toothed rack-bar rising from the main frame, passing through
 70 the guide-bar, and engaged by the pinion, and a hooked rod loosely connected to the swinging frame and adapted at its free end to engage the perforations in the wheel, of opposite hangers depending from the swinging frame,
 75 a curved and at its rear end shared mold-board terminating at the front end in a point or shovel supported by the hangers, a vertical wall located at the land side of the shovel, a draft-bail leading from the shovel, a draft-bail
 80 leading from the front axle, and a draft-rod loosely connecting both bails and terminating at its front end in a draft-hook, substantially as specified.

In testimony that I claim the foregoing as
 85 my own I have hereto affixed my signature in presence of two witnesses.

MATTHEW WILSON.

Witnesses:

MARTIN F. KERNER,
 JOHN G. CHRISTIAN.