2 Sheets—Sheet 1.

J. C. McCLURKIN.

Ditching Plow.

No. 231,598. Patented Aug. 24, 1880.

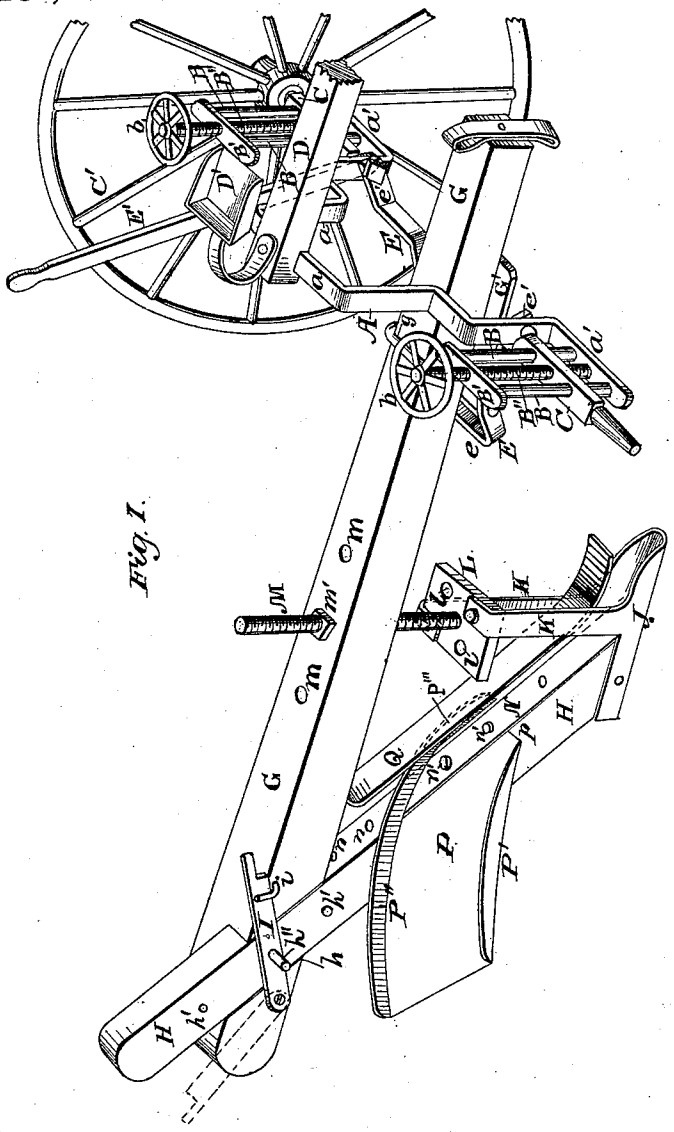

Fig. 1.

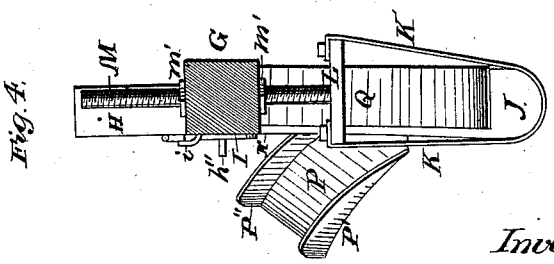

Fig. 4.

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2 Sheets—Sheet 2.

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Fig. 2.

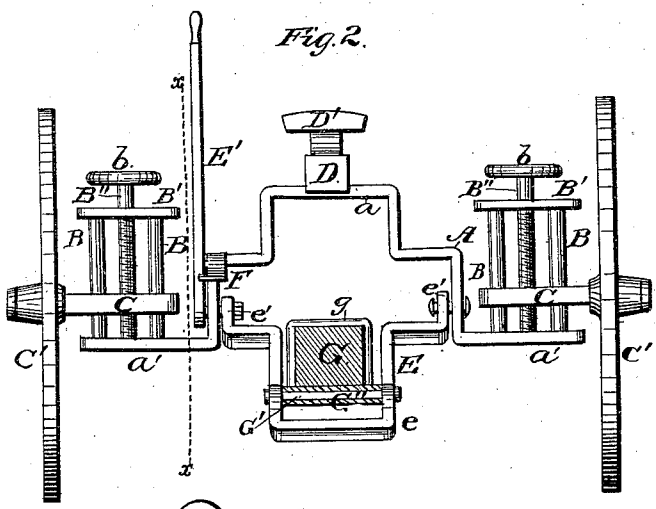
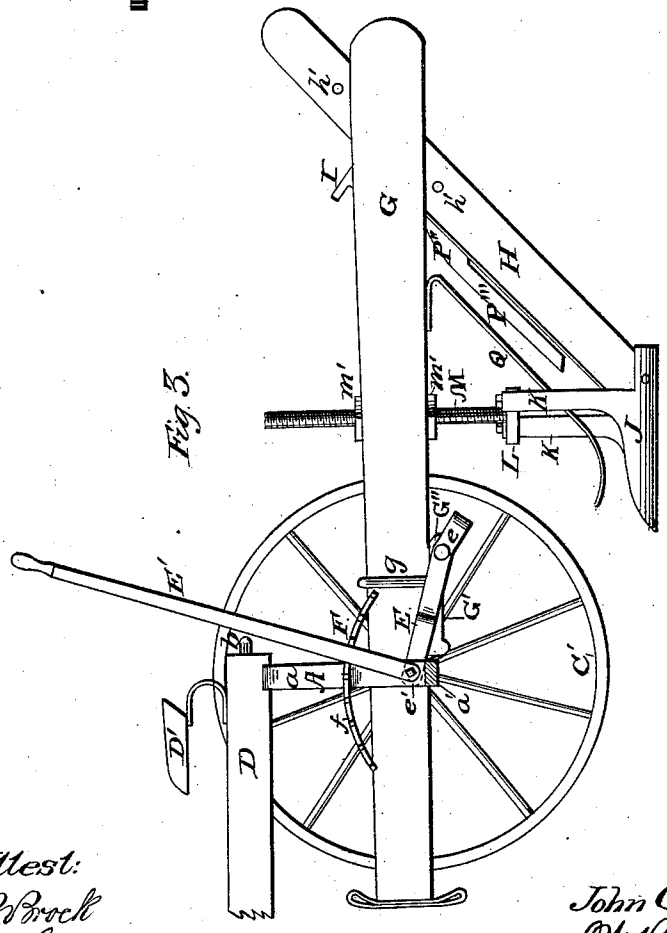


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN C. McCLURKIN, OF MORNING SUN, IOWA.

DITCHING-PLOW.

SPECIFICATION forming part of Letters Patent No. 231,598, dated August 24, 1880.

Application filed January 30, 1879.

To all whom it may concern:

Be it known that I, JOHN C. MCCLURKIN, of Morning Sun, in the county of Louisa and State of Iowa, have invented certain new and useful Improvements in Ditching-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a perspective view of a machine embodying my invention, the near wheel removed to show parts back of it. Fig. 2 is a rear elevation of the wheel-frame. Fig. 3 is a vertical sectional view of the machine in the line *x x* in Fig. 2. Fig. 4 is a front view of the plow.

This invention relates to machines for cutting ditches for draining wet land; and it consists in a dirt cutting and elevating plow and wheel-frame in which both wheels are vertically adjustable, the plow-beam being secured to the wheel-frame by means of a yoke or bail which is raised or lowered by a lever. The standard and scoop and the mold-board secured thereto are also adjustable.

It also consists in a compressing-plate arranged in front of the scoop. The devices enumerated enable the scoop or plow to run gradually deeper at successive passages of the machine, and to lift and deposit at one side of the ditch the earth excavated at each passage.

It further consists in details of construction hereinafter set forth and claimed.

Referring to the drawings by letters, the same letter indicating the same part in the different views, A represents an axle with an elevated central part, *a*, and lateral horizontal ends *a'*. B B are vertical standards fixed to the ends *a'* of the axle, and are connected at their upper ends by a fixed bar, B'. B'' is a vertical shaft, journaled at its upper end in the bar B', and its lower end journaled in the axle end *a'*, and has a hand-wheel, *b*, on its upper end.

C is a horizontal bar, with a spindle on its outer end for a wheel, C', and has three holes, through which pass the standards B and shaft B''. The central portion of the shaft B'' is screw-threaded, and passes through a threaded hole in the bar C, so that by turning the hand-wheel *b* the shaft B'' may be turned to raise and lower the end of the axle A relatively to the bar C and wheel C'.

D is the guide-pole or tongue fixed on the axle A, and a driver's seat, D', fixed above it. E is a yoke, bent so as to have a rear central part, *e*, and ends *e' e'*, which ends are journaled in the vertical parts of the axle A, and one of which extends through the axle, and has a hand-lever, E', fixed upon its end, so that the yoke E becomes a crank to the lever E', and can be raised and lowered and held at different elevations by engaging the lever E' with notches *f* in a segment-bar, F. The central part, *e*, of yoke E serves the purpose of raising and sustaining the plow out of the ground in transporting it from one place to another.

G is a plow-beam. G' is a plate fixed to the beam G near its mid-length by a stirrup, *g*. G'' represents an enlargement at the rear end of plate G', which carries the pivotal pins of the yoke E, so as to permit oscillating the beam G in a vertical plane, and to permit raising and lowering the beam by adjusting the lever E' to raise and lower the rear end of the yoke E.

H is a standard seated in a groove, *h*, in the beam G, and it has a series of holes, *h'*, near its upper end, either of which may receive a pin, *h''*, which projects from the beam G, to adjust the standard higher or lower in relation to the beam.

The standard is retained in the groove *h* by a latch, I, pivoted at one end to the beam G, and its other end resting in a catch, *i*, on said beam, so that it may be thrown back, as shown by dotted lines at Fig. 1 of the drawings, to remove and replace the standard. The standard H fits loosely in the groove *h*, so as to permit adjusting its angularity with the beam G.

J is the bottom cutter, its forward end scoop-shaped and its rear portion curved in its cross-section and bolted to the lower end of the standard H, as shown in the drawings.

K K are side cutters or colters, one at each side of the cutter J, and from which they extend upward, one placed farther in advance than the other, as shown in the drawings, so that they will not compress the dirt between

them so much as when opposite each other, and will thereby reduce the friction and the power required to draw the machine.

L is a plate fixed to the lower end of a rod, M, which passes upward through either of holes *m* in the beam G, and is threaded and provided with suitable nuts *m'*, by which the rod M may be adjusted. The plate L is longer in one direction than in the other, and is pierced with holes *l*, to which the upper ends of the side cutters, K, are attached. This plate may be adjusted to hold the side cutters closer together, or turned in an opposite direction to fix them farther apart at their upper ends, and thus incline them outwardly.

N is a plate bolted to the front side of the standard H, fitted neatly to the bottom of the cutter J, and has a series of holes, *n*.

P is a mold-board with a point, *p*, which may be placed beneath the plate N, and adjusted and held at higher or lower positions on the standard H by bolts *n'* through the holes *n* in the plate N, and through suitable holes in the point *p*. The mold-board P has a flange, P', on its lower side, and another, P'', on its upper side or edge. The flange P'' has an extended end, P''', which extends across the plate N and some distance down its side.

Q is a compressor plate placed parallel with and a little above the plate N, its upper end attached to the beam G and its central part and lower end free, and its lower end curved outward, as shown in the drawings.

In operation the wheels C' run one on each side of the ditch, and the draft-animals are attached to the forward end of the beam G. The axle may be kept horizontal by the hand-wheels *b*, and the plow lowered and adjusted to cut, say, six to eight inches depth at its first passage by the lever E', and at following passages adjusted by same means to cut each time some six to eight inches deeper. The dirt will pass upward between the plates N and Q and be carried to one side and deposited by the mold-board P. The mold-board P may be adjusted, as described, on the standard H, for cutting deeper or shallower ditches. The standard H may be adjusted on the pin *h''* and the rod M in the series of holes *m*, and in higher or lower planes to adjust the apparatus to cut deeper or shallower ditches. By simply adjusting the rod M lower the nose of the cutter J may be lowered to cause it to draw down when desired.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a ditching-machine mounted upon a wheel-frame, the combination of the following instrumentalities, viz: the adjustable dirt cutting and elevating plow, the crank axle or yoke E, having the rocking saddle or plate G' and operated by the lever E', and the arch A, carrying the vertically-adjustable wheel-spindles C, whereby the plow may be adjusted to cut at the surface or at the bottom of a ditch at its successive passages, substantially as shown and described.

2. The scoop J and side cutters, K, adjustable by rod M, in combination with a mold-board, P, adjustable vertically by means of the perforated plate N and movable standard H, substantially as and for the purposes set forth.

3. The plate L, constructed as described, and arranged to operate with the side cutters, K, to adjust their lateral inclination, substantially as and for the purpose specified.

4. Scoop-cutter J, provided with side cutters, K, in combination with a plate, L, constructed substantially as set forth.

5. The adjusting-rod M, connecting-plate L, and cutters K, in combination with the standard H, adjustable on the beam G by a series of holes, for adjusting the machine to cut deeper or shallower ditches, substantially as described.

6. The latch I, in combination with beam G, pin *h''*, and standard H, substantially as and for the purpose specified.

7. Spring-plate Q, plate N, and mold-board P, in combination with scoop cutter J, provided with side cutters, K, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN C. McCLURKIN.

Witnesses:
W. B. RICHARDS,
H. A. ALLEN.