

J. W. Roberts,

Ditcher.

No. 109251.

Patented Nov. 15. 1870.

fig. 1.

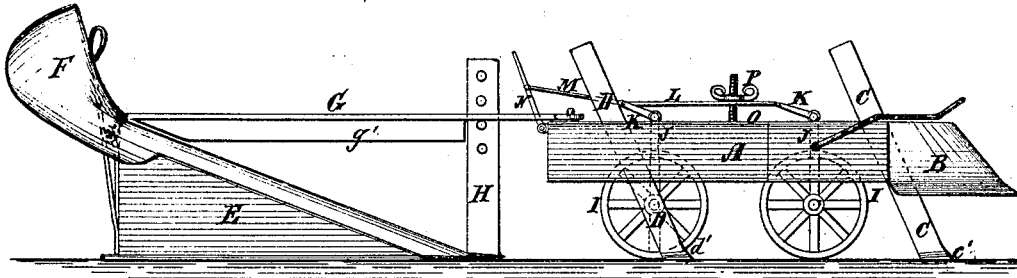
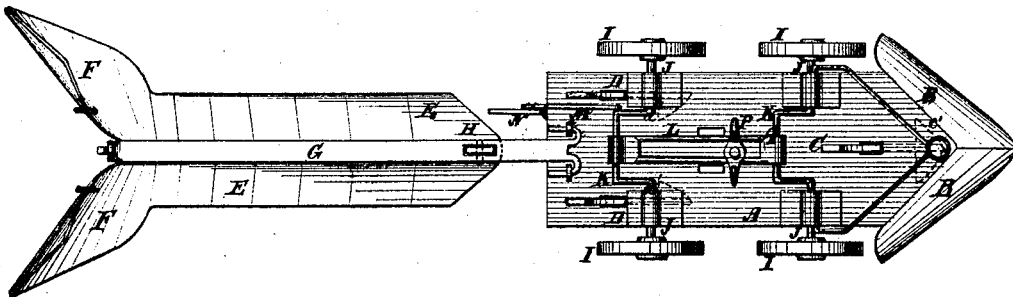


fig. 2.



Witnesses.

*A. Bennekenhoff
L. S. Mabee*

Inventor.

J. W. Roberts

per

Wm. S. C.
Attorneys.

United States Patent Office.

JOHN WESLEY ROBERTS, OF HARTFORD CITY, INDIANA.

Letters Patent No. 109,251, dated November 15, 1870.

IMPROVEMENT IN DITCHING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN WESLEY ROBERTS, of Hartford city, in the county of Blackford and State of Indiana, have invented a new and useful Improvement in Ditching-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side view of my improved machine.

Figure 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for opening ditches, which shall be so constructed as to open the ditch, raise the dirt, and deposit it at the sides of the ditch; and

It consists in the construction and combination of the various parts of the machine, as hereinafter more fully described.

A is a solid block or frame-work, from six to ten feet long, from two to four feet wide, and from one to two feet high, which is designed to be drawn along the ground to level it off.

The forward end of this leveler A is made somewhat in the shape of a double mold-board plow, and is provided or faced with steel mold-boards B.

Through the center of the forward part of the leveler A passes, and is adjustably secured the cutter C, which splits the center of the ditch, and to the lower end of which is attached, or upon it is formed, a horizontal plate or cutter, *c'*, which projects upon both sides to such a distance as to cut half the bottom of the ditch.

In each side of the rear part of the leveler A are adjustably secured the two cutters D, which cut the two sides of the ditch, and which may be adjusted to cut said sides straight or inclined, as may be desired.

Upon the inner sides of the lower ends of the cutters D are formed, or to them are attached, horizontal plates or cutters *d'*, which project to such a distance as to each cut one-quarter of the bottom of the ditch.

I are wheels, the axles J of which are bent at right angles, so as to extend up along the sides of the block A.

At the upper edge of the block A the axles J are again bent at right angles, to pass across the top of said block, and work in bearings attached to the said top of the said block.

The middle parts of the axles J are bent four times at right angles, to form cranks K.

The cranks K of the forward and rear axles are connected by the slotted connecting-rod or bar L, the ends

of which are pivoted to said cranks, so that the two cranks may always move together, to raise or lower the wheels, as may be required.

M is a connecting-rod, the forward end of which is pivoted to the rear crank K, and its rear end is pivoted to the lever N.

The lower end of the lever N is pivoted to the rear end of the block A, as shown in figs. 1 and 2.

By this construction by operating the lever N, the wheels may be lowered, as may be desired, to adjust the block A, at any required distance from the ground.

O is a rod, the lower end of which is secured to the block A between the cranks K of the axles J, and which projects upward through the slot of the rod or bar L, and has a screw-thread cut upon it to receive the hand-nut P, against the lower side of which the rod or bar L is held by the downward pressure of the block A, to hold the said block in place, when adjusted.

E is the plow, which is made of such a size and shape as to fit the ditch, and the top or upper side of which is made inclined to raise the dirt cut out by the cutters C *c'* and D *d'*.

The inclined upper side of the plow E, upon which the dirt slides is plated with steel or iron, and the upper parts of said plates are extended to form wings or mold-boards F, to guide the dirt to and upon the top of the ground, at the sides of the ditch.

G is the beam by which the plow E is drawn, the rear end of which is pivoted to the rear end of the plow E, and the forward part of which is connected with the forward end of the plow E by the bar H, the lower end of which is rigidly attached to the middle of the forward end of the plow E, so that as the plow is drawn forward, the bar H may follow the track of the cutter C.

The upper end of the bar H passes through a hole in the forward part of the beam G, to which it is secured by a pin or bolt, several holes being formed in the said bar to receive the said pin or bolt, so that the plow may be adjusted to work deeper or shallower, as may be desired.

Upon the under side of the beam G is formed, or to it is attached, a downwardly-projecting flange, *g'*, which follows the track of the cutter C and bar H, and divides or separates the dirt being raised, so that half of said dirt may pass out at each side of the ditch.

The forward end of the beam G is attached to the rear end of the leveler A, as shown in figs. 1 and 2, so that the plow may be drawn by the said leveler.

The beam G should be from six to eight feet long, and may have a gauge-wheel, adjusted by a set-screw, connected with its end.

The bottom or bottom and sides of the plow E

should be plated with steel or iron, and the bottom may have low ridges, flanges, or runners formed upon it, to diminish friction as the machine is drawn forward.

The leveler and the plow may be run through the ground together or separately, as the character and hardness of the ground may render advisable.

Having thus described my invention,

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

An improved ditching-machine, consisting of the

leveler A B and its adjustable cutters C c D d, and the plow E F, and its adjustable beam G g, and adjusting-bar H, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

JOHN WESLEY ROBERTS.

Witnesses:

JOHN CANTWELL,

JAMES L. MARTIN.