

(No Model.)

A. J. OSBORNE.
DITCHING MACHINE.

No. 296,872.

Patented Apr. 15, 1884.

Fig. 1.

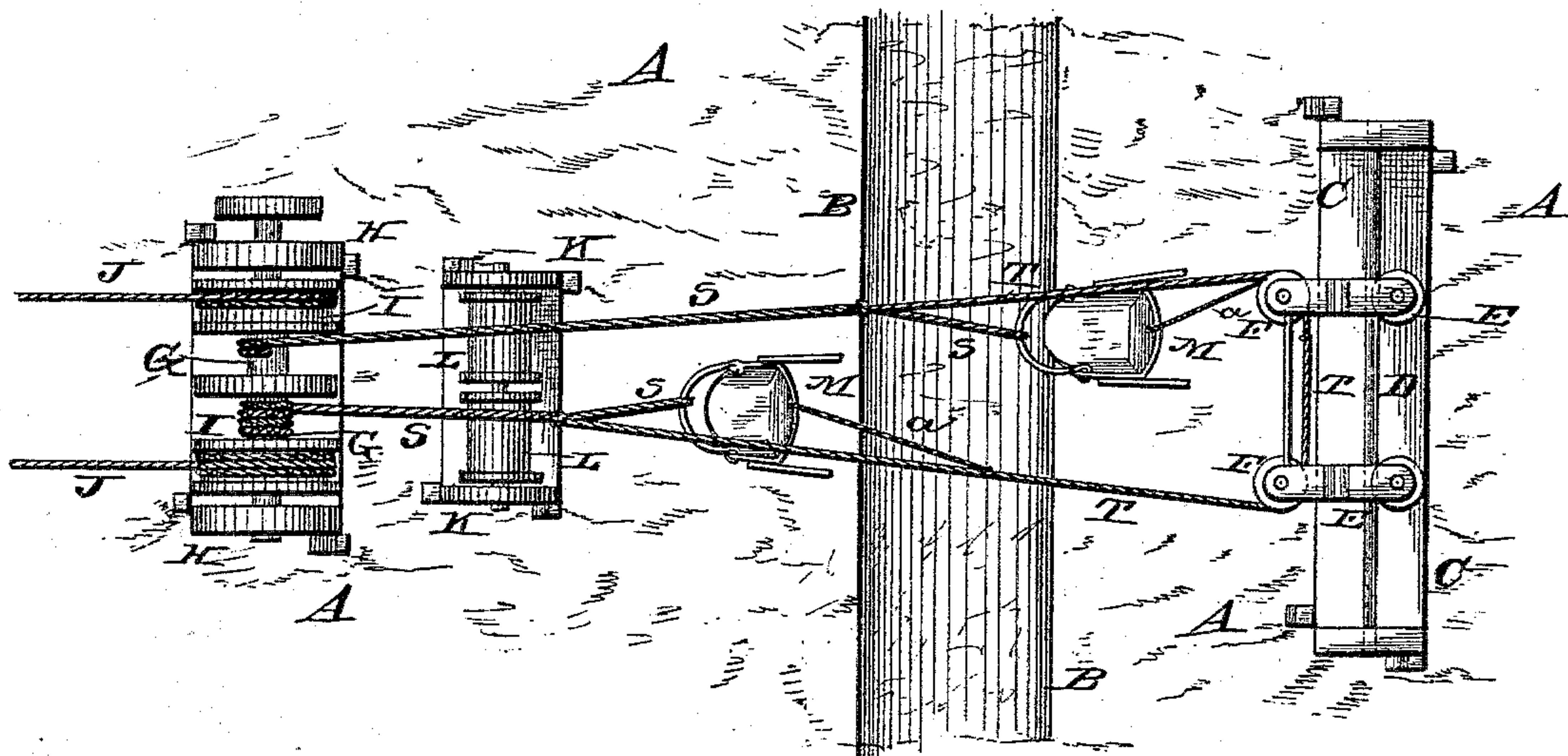
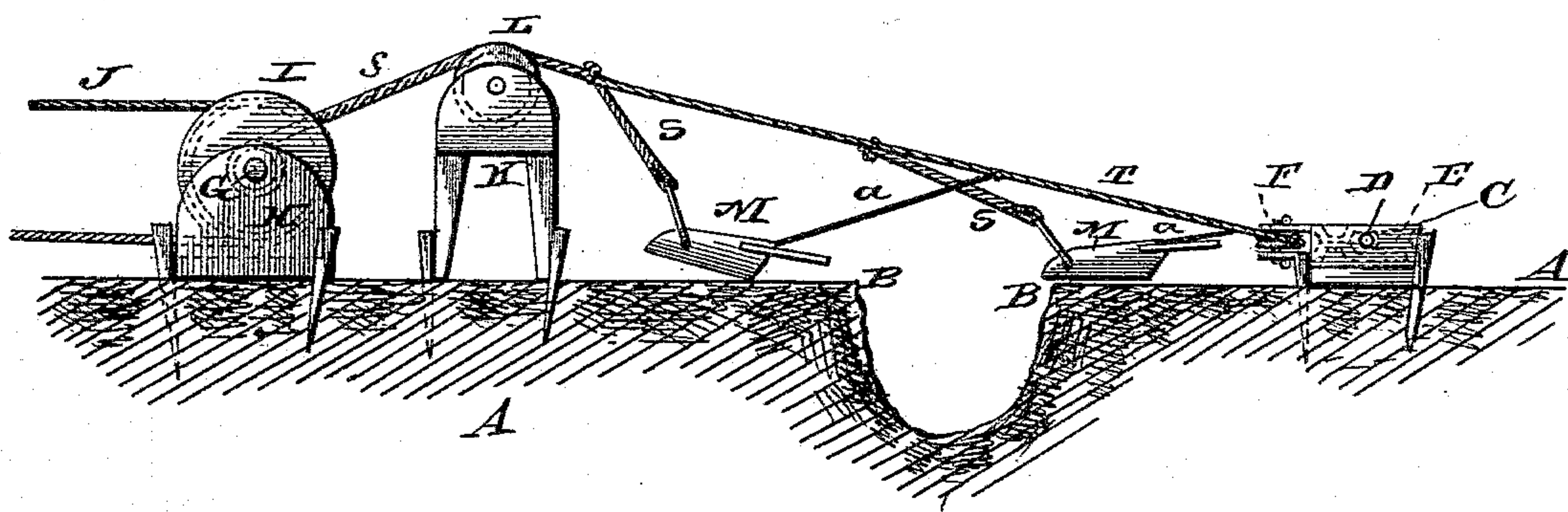


Fig. 2.



WITNESSES

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ANDREW J. OSBORNE, OF ERIE, ILLINOIS.

DITCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 296,872, dated April 15, 1884.

Application filed January 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. OSBORNE, a citizen of the United States, residing at Erie, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Ditching-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference marked thereon, which form a part of this specification.

My invention has reference to certain improvements in ditching machinery, and has more special application to means for transporting the material excavated sufficiently beyond the margin of the ditch to preclude its being washed back therein.

In the matter of constructing ditches two important things are to be considered.

First. The ditch is dug in the lowest and consequently the wettest land. This is so to such an extent that with the present ditching machinery the operation is possible in some localities for but a few weeks in the dryest portion of the year, and some localities never dry out enough to permit of open ditching. The moist condition of the land renders the latter so soft and sometimes miry that a team cannot traverse it, or, if a team can be wallowed through it, it is at great risk of injury, and with the result of treading the ditch full of irregular holes and destroying its conformation.

Second. It is essential that the earth excavated from the ditch be removed from the margin thereof to such a distance that the disintegration and wash of such removed material may not have the effect of returning it into the channel of the ditch. For this reason the system of ditching by plows and other side-discharging machinery has substantially become obsolete and been superseded by a return to the old mode of digging and scraping. This furnishes a means of sufficiently removing the earth; but there yet remains the difficulty, and in many instances the impracticability, of getting the team upon the line of the ditch.

My invention is intended to utilize the pre-

ferred mode of scraping out the ditch, and at the same time furnish means for doing the same without bringing the team or motor power on or near the line of the ditch, and digging it cheaply when the presence of water or mud would prevent the work of scraping by teams or digging by hand.

In the drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a side elevation thereof.

A represents the ground, and the lines B B the sides or lateral margins of the ditch.

C is a frame, furnished with the rod D, and fastened temporarily to the ground parallel with the line of the ditch, and at a suitable distance therefrom.

E is a pulley-block fitted to engage the outer side of and traverse the rod D. The block E, at its inner end, is provided with twin pulleys, F F, revolving in the same plane, and with an intervening interval sufficient to permit of the convenient working of the scraper, hereinafter mentioned.

S S are ropes or chains fastened at their forward ends, from opposite sides, to the shaft G, and extending backward over the friction-rollers hereinafter described, and at their rear ends are fastened permanently to the bails of the scrapers M M, hereinafter mentioned. At a point on the ropes or chains S S, at the proper distance forward of their point of attachment to the scraper-bail, is attached a lighter rope or chain, T, which passes behind and over the pulleys F F, and from the other sides thereof transversely over the line of the ditch to its proper point of attachment on the other rope or chain, S, in front of the attachment of the latter to the bail of the second scraper, M.

H is a frame, in which is journaled the revolving shaft G, and, like the frame C, is temporarily fastened to the ground, parallel with and at a suitable distance from the side of the ditch, the frames C and H being respectively on opposite sides of such ditch. The shaft G is further furnished with the drums I I, and upon the latter are respectively suitably fastened and wound the draft ropes or chains J J, to the outer ends of which, respectively, the horse or team is attached.

K is a jack or derrick placed intermediate

the side of the ditch and frame H, and provided with horizontal friction-rollers L L, which support and carry, respectively, the rope or chain S.

5 M M are ordinary scrapers attached to the ropes or chains S S, as described, and by means of a small rope or chain, *a*, attached and adjusted from its rear end to the rope T. The relative altitude of the jack K and pulleys F
10 F is such, in connection with the mode of attachment of the scrapers M M, that the latter are depressed at the ditch sufficient to fill, and are guided by the operator to the side of the ditch, from whence they pass unattended to
15 the place of dumping.

The operation of my invention is as follows: Independent teams are attached, respectively, to the outer ends of the draft ropes or chains J J. As one of such teams is moved outward
20 the action of the rope J on the drum I revolves the shaft G, which winds the chain S, and thereby progresses one of the scrapers M, and by the same action returns the other of such scrapers, the other team meanwhile returning with
25 its rope J slackened, which in turn is wound around its attendant drum. One operator stands at the ditch and loads the scrapers M M alternately, which scrapers are then transported by the ropes S S. The second opera-

tor is stationed at the point of deposit of the 30 earth, and discharges alternately the contents of each scraper. The labor of the operators is materially lessened by dispensing with the necessity of their following the scraper. As
35 the ditch is finished the frames H and C and jack K are moved forward along the line thereof.

The motor power may be steam, and in that event may be applied in any suitable manner to the shaft G. 40

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The frame C, provided with pulleys F F, rope or chain S, shaft G, jack K, and scrapers 45 M M, in combination, substantially as shown, and for the purpose described.

2. The shaft G, supporting jack K, pulleys F F, rope or chain S, scrapers M M, and ropes or chains J, or other suitable means of re- 50 volving the shaft G, substantially as shown, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW J. OSBORNE.

Witnesses:

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WALTER N. HASKELL.