(No Model.) 2 Sheets—Sheet 1.

H. C. MOORE.

REVERSIBLE ROAD AND DITCHING MACHINE.

No. 377,041. Patented Jan. 31, 1888.

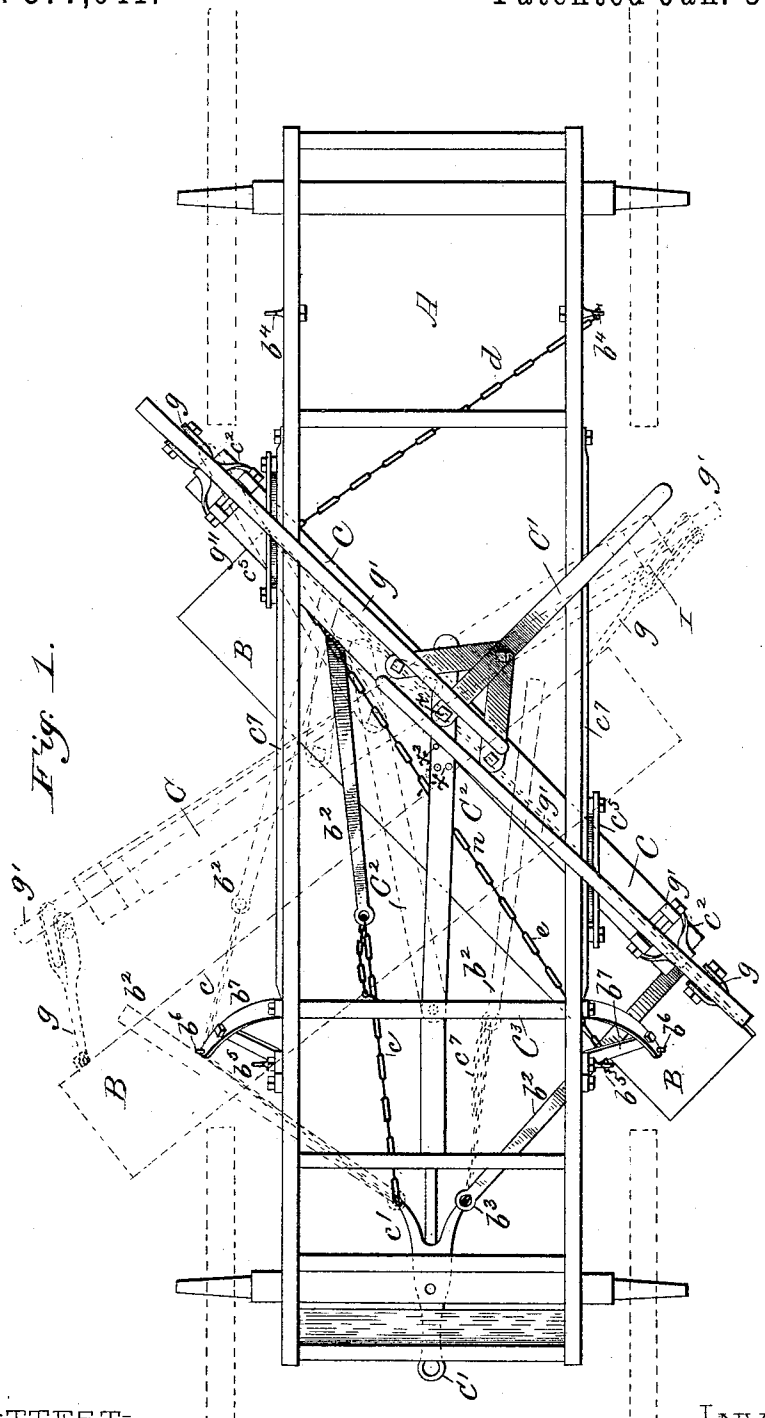


Fig. 1.

ATTEST:

J. Henry Kaiser.

Percy C. Bowen.

INVENTOR:

Henry Clarke Moore

By Marble & Mason,

His Attys

N. PETERS, Photo-Lithographer, Washington, D. C.

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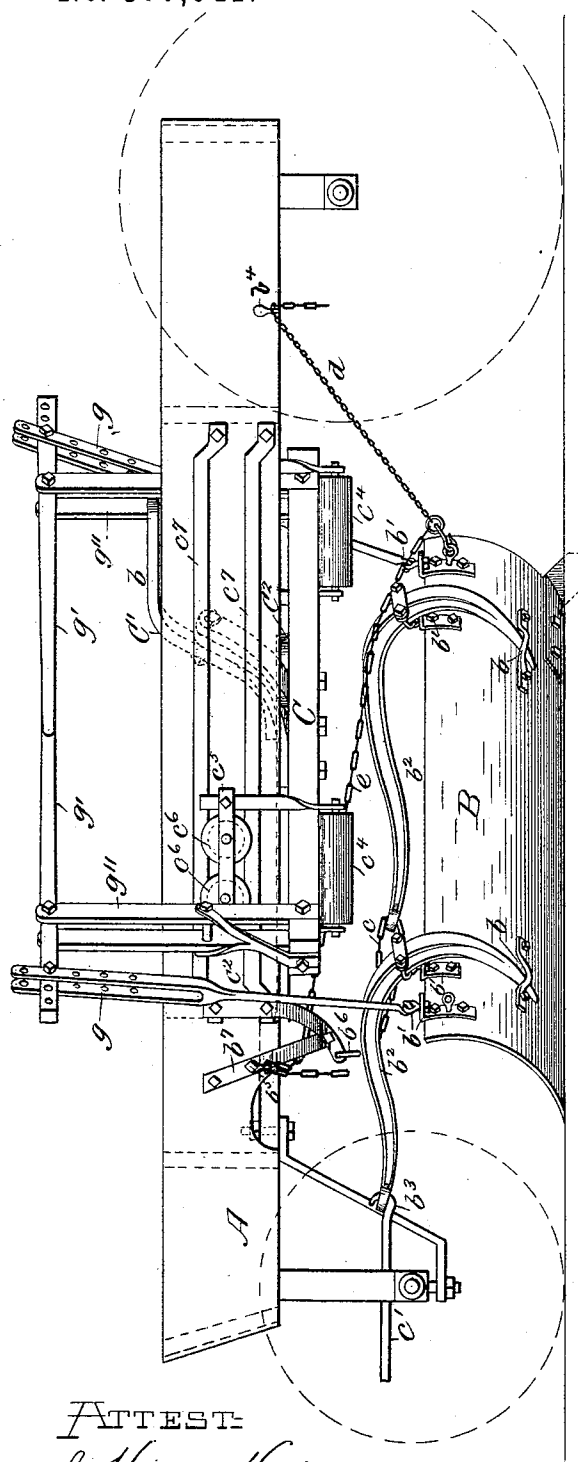


Fig. 2.

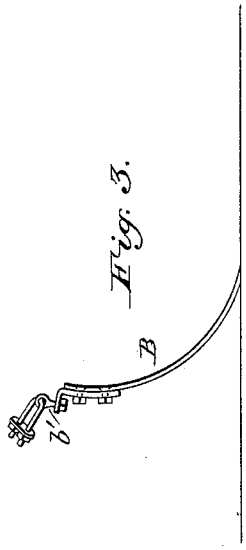


Fig. 3.

ATTEST:

J. Henry Kaiser

Percy C. Bowen

INVENTOR:

Henry Clarke Moore

By Marble & Mason,

His Atty's

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY CLARKE MOORE, OF TAMA CITY, IOWA.

REVERSIBLE ROAD AND DITCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 377,041, dated January 31, 1888.

Application filed July 6, 1886. Serial No. 207,251. (No model.)

To all whom it may concern:

Be it known that I, HENRY CLARKE MOORE, a citizen of the United States, residing at Tama City, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in Road or Ditching Machines, of which the following is a description.

My invention relates to improvements in the class of road or ditching machines which are mounted upon four-wheeled vehicles having a direct front draft; and it consists in the construction and combination of parts hereinafter described and claimed.

The object of my improvements is to so construct and arrange the parts of the machine as to combine the advantage of a direct draft with the reversibility and angular adjustment of the position of the scraper or plow, whereby the machine is adapted to a wider range of work than those heretofore employed. I attain this object by the mechanism illustrated in the accompanying drawings, in which the same letters of reference indicate the same parts, and in which—

Figure 1 represents a plan view of my machine, showing the scraper, the devices for regulating the position of the same, and the draft-beams in full and dotted lines. Fig. 2 represents a side elevation of the machine, and Fig. 3 shows a detail end view of the scraper and one of the swivel-connections.

In the drawings, A represents the frame of the machine, which is of any ordinary or suitable construction and mounted upon the bolsters of the vehicle. Arranged beneath this frame, between the front and rear wheels, is the steel scraper B, which is of a length somewhat greater than the general width of the machine, and is provided longitudinally with a straight face and transversely with a curved face, as shown in Figs. 2 and 3 of the drawings. Upon the rear side of this scraper, below its center and near its ends, are open brackets b b, and at its upper edge and near its ends are secured supports b' b', in which are swivelingly secured the bent or curved draft-beams b^2 b^2. At their forward ends these draft-beams are provided with apertures, through which pass the grab-hook b^3 and chain c, for connecting them to the draft-iron c', to which the team is attached.

The letters d and e represent two guy-chains, attached, respectively, to the rear or discharge end of the scraper and to grab-hooks b^4 b^4 and b^5 b^5, attached to the frame A, the chain d extending rearwardly and upwardly from the scraper to one of the hooks b^4, and the chain e extending forwardly over said scraper to one of the hooks b^5. These chains are all detachably secured and adjustable as to length, and the grab-hooks are arranged on both sides of the frame, so that together they hold the scraper securely when reversed, or in whatever position it may be adjusted.

Suitably secured to the front and rear ends of the scraper and projecting upwardly therefrom are vertically-adjustable rods or bars g g, which are pivotally and adjustably secured at their upper ends to the outer ends of the operating-levers g' g', the latter being fulcrumed in the upper ends of the standards g^2 g^2. These standards are secured to the ends of the reversible or traverse bar C and braced from the ends thereof by the forked supports c^2 c^2. This traverse-bar is arranged beneath the frame and above and parallel with the scraper, and is also of a length somewhat greater than the width of the machine, and is longitudinally movable across the same. It is mounted upon rollers c^4 c^4, journaled in the lower ends of the traversing or movable frames or carriages c^5 c^5, which are arranged on both sides of the machine and provided at their upper ends with grooved disks c^6 c^6. These disks rest between and are adapted to run upon the iron tracks or bars c^7 c^7, which are bolted to the sides of the frame.

Attached to the traverse-bar C at its center is a hand or operating lever, C'; also, the rear end of a rod or bar, C^2, is pivotally attached to the center of said traverse-bar at the point x, the front end of said rod or bar being pivotally secured to a cross-bar, C^3, of the main frame. Near the rear end of bar C^2 is formed a series of holes, x', in one or the other of which a pin, x^2, is to be placed. In changing the angle of the traverse-bar by the movement of the hand or operating lever C', said bar impinges upon the pin x^2, and its ends are moved to the desired position outside of the frame to the rear or front. By turning the hand-lever C' to the right or left the traverse-bar, the traversing frames or carriages, the standards, the levers, and the rods will

be moved to the right or left, and with them the scraper, first having disconnected the chains *c*, *d*, and *e* and the draft-beam b^2, which is attached to the draft-iron. By transferring the draft-chain to the opposite draft-beam and to the opposite shank of the draft-iron, and again attaching the chains under the proper or desired adjustment as to length, the scraper or plow may be arranged at any desired angle; or, when desired, it may be moved to and secured in the reversed position shown by the dotted lines in Fig. 1 of the drawings, the other parts also assuming the corresponding positions shown in dotted lines.

It will be obvious that in throwing the traverse-bar C by the hand-lever C′ toward either side of the frame the degree of the angle of said traverse-bar with respect to the frame is only controlled, as far as the range of its movement will permit, by the vertical rods or bars *g g* and the sides of the frame A; also, that when the scraper or plow is raised by the rods *g g* and levers *g′ g′* it will be sustained by the traverse-bar C, and that when the chains *c*, *d*, and *e* and the draft-beams b^2 b^2 are disconnected it falls by its own weight into line with said traverse-bar B; also, that the change of the angle of the scraper or plow relative to the draft-beams b^2 b^2 and levers *g′ g′* and rods *g g* is permitted by the swivel-connections *b b* and *b′ b′* of said draft beams and rods with the scraper. It will also be noticed that by means of the guy-chains *d* and *e*, attached to the delivery end of the scraper, and the freedom of play of its various connections, an increased acuteness of the angle of said scraper can be effected by the adjustment of the chains in their respective grab-hooks; also, that the scraper, when at work, is held firmly in any desired position or adjustment by the connections between the same and the draft-iron *c′* and the frame A.

The dotted lines in Fig. 1 show the reversed position of the scraper or plow and its draft-connections with the adjustable draft-chain *c* shortened, whereby the scraper is brought farther forward or more at right angles with respect to the frame than it is as shown in full lines; also, the positions of the draft-beams, as arranged at the delivery end of the scraper or plow, are shown in dotted lines in said figure, and also the adjustable draft-chain *c*, as passed through the loop b^6, attached to the lower end of the guy-brace b^7 on the right side of the machine.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a road or ditching machine mounted upon wheels, of a reversible scraper or plow, a traverse-bar, movable frames provided with grooved disks journaled therein, and the tracks or bars, substantially as described.

2. In a road or ditching machine, the combination, with a reversible scraper, of the tracks or bars, the movable or traversing frames, the traverse-bar, the operating or hand lever, the pivoted bar C^2, and the cross-bar C^3, substantially as described.

3. The combination, in a front-draft road or ditching machine mounted upon wheels, of a reversible scraper, the vertical rods or bars, the traverse-bar longitudinally movable across the frame and provided with the standards at each end, and the operating-levers, substantially as described.

4. In a front-draft road or ditching machine mounted upon wheels, the combination of the reversible scraper, means for operating the same, the swiveled draft-beams, the adjustable chains *c*, *d*, and *e*, and devices for attaching them to the frame, substantially as described.

5. In a front-draft road or ditching machine mounted upon wheels, the combination, with the scraper and the draft-beams provided with swiveled connections, of the traverse-bar, the traversing frames, and means for operating said bar and frames, substantially as described.

6. In a front-draft road or ditching machine, the combination of the reversible scraper, the traverse-bar, the traversing frames, the draft-beams, the adjustable draft-chain, the guy-chains, and the projecting guy-braces provided with loops, substantially as described.

7. The combination of the movable traverse-bar and the traversing frames provided with rollers and the grooved disks with the tracks or bars, substantially as described.

8. In a front-draft road or ditching machine mounted upon wheels, the combination of the reversible scraper, the traverse-bar, the traversing frame provided with rollers and grooved disks, means for operating said parts, and the tracks or bars, substantially as described.

9. In a front-draft road or ditching machine, the combination of the frame A, the reversible scraper B, the traverse-bar C, the bar C^2, pivoted to said frame and provided with the pin x^2, and the operating-lever C′, substantially as described.

10. In a road or ditching machine, the combination of the frame mounted upon wheels and provided with a direct-draft attachment for the team, a reversible scraper suspended from said frame, and the adjusting-chains, by which said scraper may be placed and held to work outside of the track of the wheels, and in other positions, substantially as described.

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

HENRY CLARKE MOORE.

Witnesses:
F. A. MANGOLD,
GEO. H. SPAHR, Jr.