No. 687,640. Patented Nov. 26, 1901.

W. MATTHEWS.

EARTH SCOOP.

(Application filed June 7, 1900. Renewed Oct. 23, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

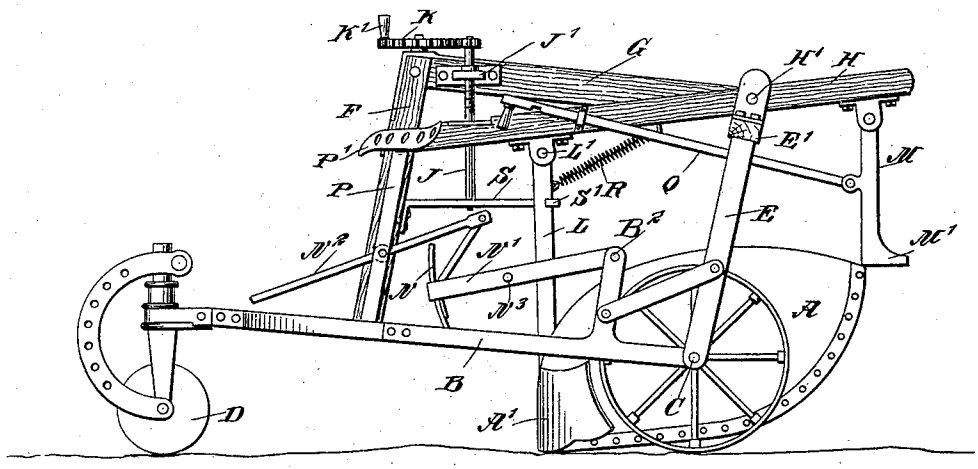


Fig. 5.

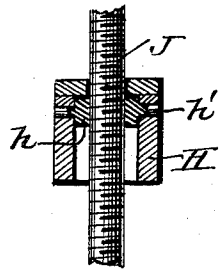


Fig. 2.

WITNESSES:

Edward Thorpe

J. L. McCauliffe

INVENTOR

William Matthews.

BY Munn & Co.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 3,

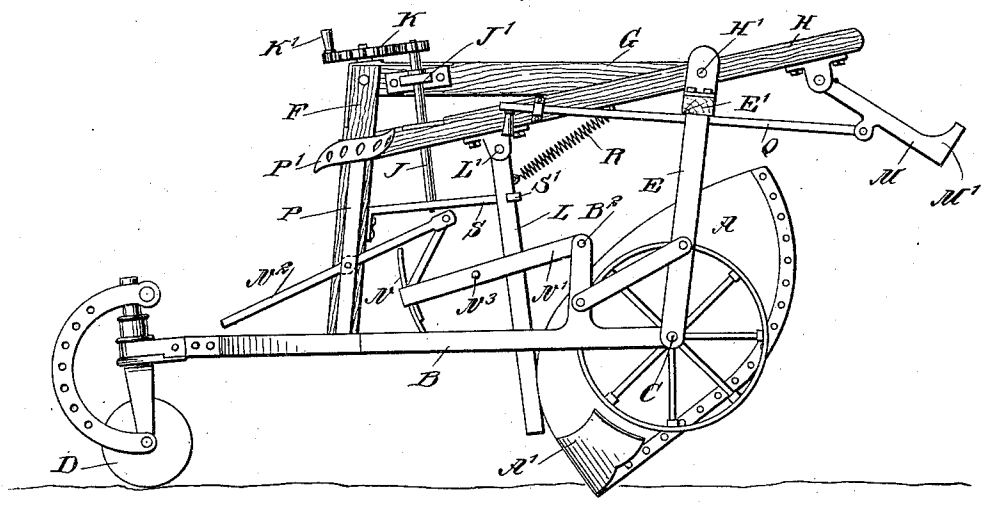
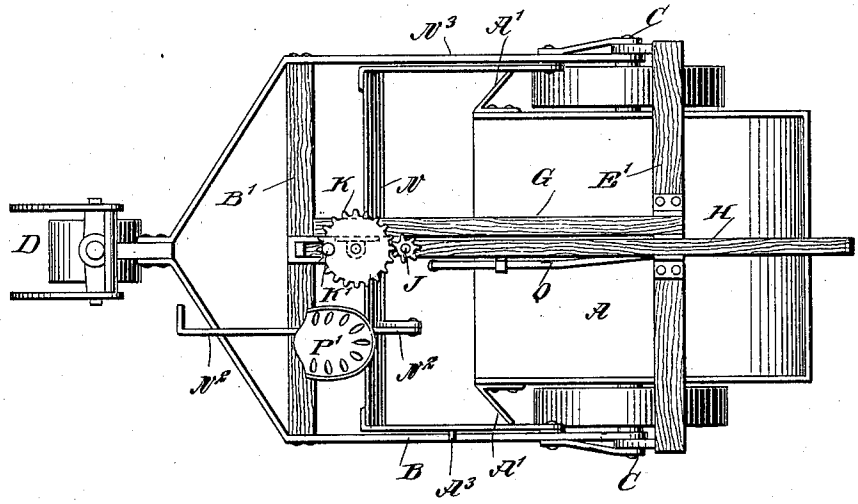


Fig 4.



WITNESSES:

Edward Thorpe

J. L. McAuliffe

INVENTOR

William Matthews.

BY Munn & Co.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM MATTHEWS, OF PEAK HILL, NEW SOUTH WALES.

EARTH-SCOOP.

SPECIFICATION forming part of Letters Patent No. 687,640, dated November 26, 1901.

Application filed June 7, 1900. Renewed October 23, 1901. Serial No. 79,681. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MATTHEWS, a subject of the Queen of Great Britain and Ireland, and a resident of Peak Hill, in the Colony of New South Wales, have invented a new and Improved Earth-Scoop, of which the following is a full, clear, and exact description.

The objects of this invention are to provide an earth-scoop, first, which is stronger, more efficient, and simpler of construction than any now in use; second, in which the adjustments are more completely under the control of the driver; third, which obviates any danger of tipping while being filled, and, fourth, in which the load is more simply and effectively retained during its transit.

The invention will be hereinafter particularly described and then defined in the claims.

To make my invention clear I shall now refer to the accompanying drawings.

Figure 1 is a side elevation showing the scoop in position for filling. Fig. 2 is a side elevation showing scoop in position for transit. Fig. 3 is a side elevation showing scoop in position ready for tipping. Fig. 4 is a plan of scoop. Fig. 5 is a detail sectional view taken transversely through the lever H, showing a manner of connecting the screw J therewith.

Similar letters of reference indicate the same parts in the different figures.

A is the body of the scoop.

A′ A′ are shields attached to the sides of the scoop to throw the dirt from in front of the wheel.

B is a frame connecting the trunnions C C on which the scoop revolves and which carry the rear wheels with swivel guide-wheel D. This wheel is preferably made much wider than those generally used for the purpose of preventing it sinking into the loosened clay.

E is an iron frame passing over the scoop and connecting the trunnions, as shown.

E′ is a hardwood girder, which may be secured to the top of frame E for the purpose of lending additional strength and rigidity thereto.

B′ is the cross-bar of the frame.

F is a post, the lower end of which is secured to the center of cross-bar B′, the top being connected by the bar G to the top of frame E.

H is a lever pivoted at H′ to top of the frame E. The forward end of this lever is confined in a slot cut in the center post F. The lever is operated by screw J by means of the spur-gearing K, hereinafter described. The screw J passes through and is supported by a bracket J′ on the bar G. In the lever H a nut *h* is fitted, through which the screw J passes and with which said screw engages, as shown in Fig. 5, and the nut has trunnions *h*′, whereby the lever may move on its fulcrum in response to the turning of screw J.

L is a vertical controlling-arm pivoted to the forward portion of the lever H and extending therefrom into contact with the center of the cutting edge of the scoop. M is a corresponding arm pivoted to the rearward end of the lever H and extending into contact with the top edge of the back of the scoop. This arm is provided with a foot M′ to allow for any play in the parts.

N is a door, and N′ is a frame carrying same, pivoted at B^2 B^2.

N^2 is a foot-lever, by means of which the door is opened and closed.

P is a frame carrying driver's seat P′ and to which the lever N^2 is pivoted.

Q is a governing-rod pivoted to lever-arm M.

R is a spring, and S a retaining-bar provided for the purpose of controlling the movement of the pivoted lever-arm L, as hereinafter described.

The method of operating my invention is as follows: In Fig. 2 the scoop is shown with its cutting edge raised from contact with the ground and with the door closed—that is to say, in the position the scoop would take during transit. To put it into position for filling, the driver sitting on his seat rotates the gear-wheel K by means of the handle K′, thus depressing the forward end of the lever H and causing the arm L to in turn depress the cutting edge of the scoop until it arrives at the position for filling, as shown in Fig. 1. At the same time the driver depressing the forward end of the foot-lever N^2 lifts the door clear away from proximity with the cutting edge of the scoop into position shown in Fig. 1. The team is then driven forward and the scoop filled, the forward and rearward lever-arms L and M retaining the scoop firmly in position meanwhile. When the scoop is full, the driver rotates the gear-wheel K in the re-

verse direction, thus depressing the rearward arm M and with it the back portion of the scoop, which movement of course raises the cutting edge from contact with the ground. He also releases the foot-lever, thus allowing the door to drop till the stud N^3 rests on the frame B—that is, till the lower edge of the door meets the cutting edges of the scoop. The parts have now resumed the position for transit, as shown in Fig. 2. The scoop is then drawn to the place where it is desired to unload. In order to bring it into position for this purpose, the door is again raised, the cutting edge forced into contact with the ground, and rearward lever-arm thrown out of gear by the bar Q being shoved backward, as shown in Fig. 3. The forward movement of the team continuing the cutting edge catching in the ground causes the scoop to "tumble," and thus throw out its load. As during this movement the back of the scoop will come into contact with the forward lever-arm L the latter is pivoted at L', so that it does not obstruct the rotation of the scoop. The spring R is provided to draw the arm back to its original position against the stop S' on the bar S. During the time this movement is taking place the driver adjusts his lever to the position shown in Fig. 2, thus putting the parts once more into the position for transit. The scoop is so constructed that when empty, the rearward portion being the heavier, the cutting edge will always rise clear of the ground when not depressed by the lever.

It will be seen that the distance between the axis of the scoop and the front cutting edge is greater than the height of the axis of the wheels, so that the front edge may be caused to dig into the ground in such a manner that the forward movement will overturn the scoop.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination of an earth-scoop with a door operated by a foot-lever, a centrally-placed lever, a pair of controlling-arms pivoted thereto, and a hand-screw mechanism for the purpose of operating the lever, substantially as described and as illustrated.

2. The combination with a scoop mounted to turn, of a lever fulcrumed intermediate of its ends, and members pendent from the lever and adapted to bear respectively on the front and rear of the scoop.

3. The combination with a wheeled frame of an earth-scoop mounted to have a complete rotary movement in the frame, the distance between the axis of the scoop and its front edge being greater than the height of the axis of the wheels from the ground, so that the front edge may be caused to so enter the ground as to overturn the scoop.

4. The combination with frame, of a scoop mounted to turn, a lever above the scoop, a pivoted member pendent from the lever to bear on the rear end of the scoop, and a rod for moving the said pivoted member out of the path of movement of the scoop.

5 The combination with a frame, of a scoop mounted to turn completely over, a pivoted member pendent in the frame and normally bearing on the front of the scoop, and a spring exerting a rearward tension on the pendent member.

In witness whereof I have hereunto set my hand at Sydney, New South Wales, this 12th day of April, 1900, in the presence of two witnesses.

WILLIAM MATTHEWS.

In presence of—
WALTER SIGMOND,
T. C. ALLEN.