

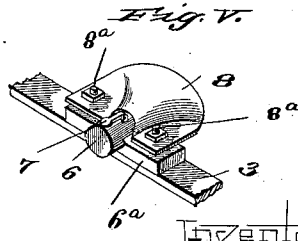
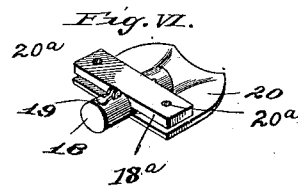
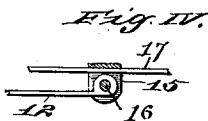
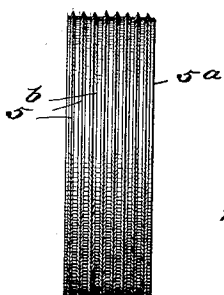
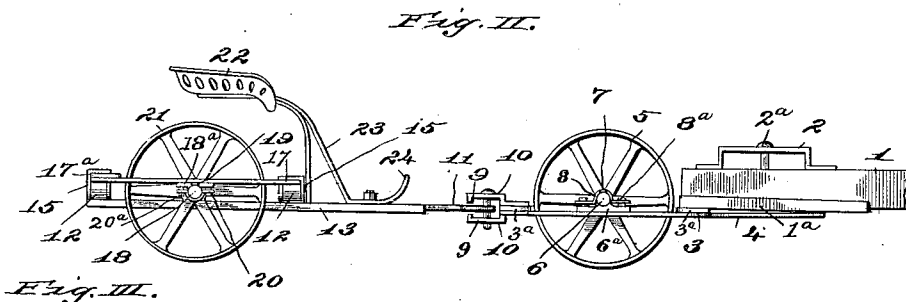
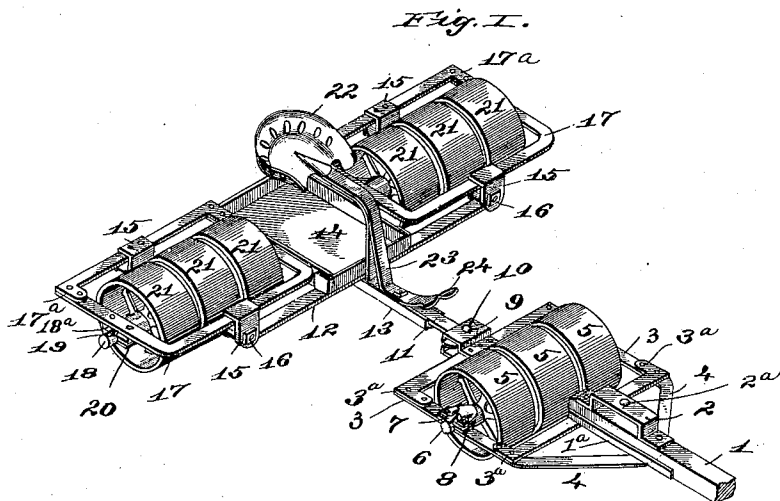
No. 651,655.

Patented June 12, 1900.

H. F. DETERDING.
TRICYCLE LAND ROLLER.

(Application filed May 20, 1899.)

(No Model.)



WITNESSES

G. A. Paulsen
E. Kruger

INVENTOR
Henry F. Deterding
By Wm. B. Ford
Attorneys

UNITED STATES PATENT OFFICE.

HENRY F. DETERDING, OF COMMERCE, MISSOURI.

TRICYCLE LAND-ROLLER.

SPECIFICATION forming part of Letters Patent No. 651,655, dated June 12, 1900.

Application filed May 20, 1899. Serial No. 717,537. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. DETERDING, a citizen of the United States, residing at Commerce, in the county of Scott and State of Missouri, have invented certain new and useful Improvements in Tricycle Land-Rollers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to land-rollers, and comprises, essentially, a rear frame, to which frame roller-carrying frames are pivotally connected, so that different sets of rollers may be permitted to swing or oscillate with relation to the rear frame in the practical use of the device.

In the process of breaking up land for cultivation it is impracticable to cause plows to run so true that there is not a variation in the depth and width of the furrows made, and the consequence is that an uneven surface of plowed ground results, composed of ridges and depressions. The common practice is to level the plowed ground by the use of a harrow or similar implement, which is scraped thereover in order to smooth it and fill up the depressions. The ground is then rolled by the use of a roller having its axis journaled in a fixed frame. In such method of procedure the roller fails to operate with uniform action on the ground composed of the ridges and depressions between them referred to. The roller presses upon the ridges and renders them more compact than before, while it fails to operate upon the depressions between the ridges and they receive no benefit from the rolling action.

In line with the foregoing it is the object of this invention to so improve the construction of a land-roller that it will contain independent sections that are capable of adjusting themselves to the inequalities of the land being rolled, and thereby equalize the weight of the roller over the entire surface traversed to secure the essential benefits and bring positive results by acting upon all of the soil alike.

Figure I is a perspective view of my improved roller. Fig. II is a view in side elevation. Fig. III is a face view of one of the individual rollers. Fig. IV is a detail view, part in section, showing the pivotal connection

between the rear frame, one of the roller-carrying frames, and one of the shackles by which the said frames are connected. Fig. V is a detail perspective view of one of the journal-boxes of the axle of the forward set of individual rollers. Fig. VI is a perspective view of one of the journal-boxes of the axle of one of the rear sets of individual rollers.

1 designates the tongue of the roller, provided with a clip 2, adapted to receive the doubletree, which is secured by a pivot-pin 2^a.

3 designates the frame of the forward set of rollers, having front and rear superposed cross-bars 3^a, the said frame being connected to the tongue 1 by a channel-plate 1^a, secured to its front cross-bar and also to the brace-bars 4.

5 designates the individual rollers of the forward set, mounted on an axle (not seen) common to all of them, which axle is mounted in journal-boxes 6, carried by the frame 3. The journal-boxes 6 are closed at their outer ends and provided with oil holes or cups, that are protected by hinged covers 7. (See Fig. V.)

8 designates a shield on the journal-box adapted to project over the hubs of the outer rollers in such a manner as to exclude dust from entering the bearings thereof.

6^a represents bearing-blocks for the journal-boxes 6, secured with the shields 8 to the frame 3 by bolts 8^a.

It will be seen that the oil-holes in the journal-boxes 6 are located at the outer ends of the boxes as near as possible to such ends, which, as stated, are closed to exclude dust. By so locating the oil-holes I am enabled to introduce oil at the extreme outer end of the journals, so that it may be conveyed in the journals inwardly, and thereby carry or work through the open inner ends of the journal-box any dust or dirt that may gain access to the journal at the open inner end. By this means the dust or dirt may be constantly worked out of the journal instead of being allowed to remain therein.

Mounted on the rear cross-bar of the frame 3 are a pair of clip-jaws 9, that contain a pivot-pin 10. These jaws are adapted to receive the forward end of a reach 11, extending from the cross-bars 12 of the rear frame of the rear sets of rollers. A limited amount of space is provided between the clip-jaws 9

(see particularly Fig. II) for the purpose of permitting free oscillation and lateral motion of the roller-carrying frame 3 in the practical use of the machine.

5 The cross-bars 12 are arranged parallel to each other and are connected at their central portions by a channel-bar 13 and a weight-tray 14, the channel-bar being connected to the reach 11. The weight-tray 14 serves as
10 a receptacle for tools or objects that may be put therein to increase the weight of the main frame on the rollers.

15 15 designates shackles, pivoted to the ends of the cross-bars 12 by bolts 16. These shackles are connected to rocking frames 17, having cross-bars 17^a. The frames 17 are provided with journal-boxes 18. (Shown in detail in Fig. VI.) Each of these journal-boxes
20 18 is provided with an oil hole or cup, protected by a hinged cover 19 and a shield 20, adapted to extend under the journal-box 18 and over the hubs of the outer individual rollers 21, mounted within the frames 17 on suitable axles (not seen) journaled in the boxes 18.

25 18^a represents pendent bearing-blocks for the journal-boxes 18, secured with the shields 20 to the under side of the frames 17 by means of bolts 20^a.

30 22 designates a seat the bifurcated support 23 of which is connected to the reach 11 and is provided with a foot-rest 24.

In the practical use of this roller the forward set of rollers 5 are permitted to partake of a limited amount of oscillatory motion by
35 reason of the loose connection between the reach 11 and the clip-jaws 9, and at the same time the rollers 21 are drawn along the ground and oscillate with their carrying-frames 17, according to any unevenness of the ground,
40 each frame 17 swinging on the pivot-pins 16 contained by the ends of the cross-bars 12 and the shackles 15. In this manner the different sets of rollers 5 and 21 move into any depressions in the ground as well as travel
45 on the high places, and thereby exert a uniform pressure over the entire surface traversed.

The end rollers 5 and 21 of each set are preferably loosely mounted on their shafts in
50 order to facilitate their movement in turning from a straight line of travel, while the central rollers may be keyed to the shafts.

The rollers may be of any desired exterior configuration. In Figs. I and II, I have shown
55 them with plain surfaces, while in Fig. III, I have shown a roller (designated by 5^a) provided with circumferential ribs 5^b, this latter form being valuable in that the ribs form clod breakers or cutters. The rollers may,
60 however, be formed with transverse ribs or have surfaces of any other desirable form.

I claim as my invention—

65 1. A tricycle land-roller comprising a rear frame consisting of a pair of parallel cross-bars, having pivot-bearings at their ends on the upper side thereof, rocking frames, shackles straddling the side bars of the

rocking frames, pivot-bolts connecting the shackles with the pivot-bearings of the cross-bars of the rear frame, the pendent journal-
70 boxes secured to the end bars of the rocking frames, the rollers having axles mounted in the journal-boxes of the rocking frames, the forward frame, the journal-boxes surmounting the end bars of the forward frame, the
75 roller having an axle mounted in the journal-boxes of the forward frame, a reach extending from beneath the cross-bars of the rear frame, and means whereby the outer end of the reach is loosely connected with the rear
80 cross-bar of the forward frame; substantially as described.

2. A tricycle land-roller comprising a rear frame consisting of a pair of parallel cross-bars, having pivot-bearings at their ends
85 on the upper side thereof, rocking frames pivoted to the pivot-bearings of the cross-bars, the pendent journal-boxes secured to the end bars of the rocking frames, the rollers having axles mounted in the journal-
90 boxes of the rocking frames, the forward frame, the journal-boxes surmounting the end bars of the forward frame, the roller having an axle mounted in the journal-boxes of the forward frame, a reach extending from
95 beneath the cross-bars of the rear frame, a pair of clip-jaws secured to the rear cross-bar of the forward frame and a pivot-bolt whereby the outer end of the reach is loosely connected with the clip-jaws; substantially as
100 described.

3. A tricycle land-roller comprising a rear frame consisting of a pair of parallel cross-bars, having pivot-bearings at their ends on
105 the upper side thereof, rocking frames pivoted to the pivot-bearings of the cross-bars, the pendent journal-boxes secured to the end bars of the rocking frames, the rollers having axles mounted in the journal-boxes of the rocking
110 frames, the forward frame, the journal-boxes surmounting the end bars of the forward frame, the roller having an axle mounted in the journal-boxes of the forward frame, a reach extending from beneath the cross-bars
115 of the rear frame, a channel-bar extending beneath and bracing the reach, and means whereby the outer end of the reach is loosely connected with the rear cross-bar of the forward frame; substantially as described.

4. A tricycle land-roller comprising a rear
120 frame consisting of a pair of parallel cross-bars, having pivot-bearings at their ends on the upper side thereof, rocking frames pivoted to the pivot-bearings of the cross-bars, the pendent journal-boxes secured to the end bars
125 of the rocking frames, the rollers having axles mounted in the journal-boxes of the rocking frames, the forward frame, the journal-boxes surmounting the end bars of the forward frame, the roller having an axle mounted in
130 the journal-boxes of the forward frame, a reach extending from beneath the cross-bars of the rear frame, means whereby the outer end of the reach is loosely connected with the

rear cross-bar of the forward frame, and a weight-tray, mounted on, and secured to, the cross-bars of the rear frame between the rocking frames; substantially as described.

5 5. A tricycle land-roller comprising a rear frame consisting of a pair of parallel cross-bars, having pivot-bearings at their ends on the upper side thereof, rocking frames pivoted to the pivot-bearings of the cross-bars, the
10 pendent journal-boxes secured to the end bars of the rocking frames, the rollers having axles mounted in the journal-boxes of the rocking frames, the forward frame, the journal-boxes surmounting the end bars of the forward
15 frame, the roller having an axle mounted in the journal-boxes of the forward frame, a reach extending from beneath the cross-bars of the rear frame, means whereby the outer end of the reach is loosely connected with the
20 rear cross-bar of the forward frame, and a seat, located over the cross-bars of the rear frame between the rocking frames, having a support secured to the reach adjacent to the front cross-bar of the rear frame; substan-
25 tially as described.

6. A tricycle land-roller comprising a rear frame consisting of a pair of parallel cross-bars having pivot-bearings at their ends on the upper side thereof, rocking frames pivoted
30 to the pivot-bearings of the cross-bars, the pendent journal-boxes secured to the end bars of the rocking frames, the rollers having axles mounted in the journal-boxes of the rocking frames, the forward frame, the journal-boxes
35 surmounting the end bars of the forward frame, the roller having an axle mounted in the journal-boxes of the forward frame, a reach extending from beneath the cross-bars of the rear frame, means whereby the outer
40 end of the reach is loosely connected with the rear cross-bar of the forward frame, a weight-

tray mounted on and secured to the cross-bars of the rear frame, between the rocking frames, and a seat located over the tray having a support secured to the reach adjacent
45 to the front cross-bar of the rear frame; substantially as described.

7. A tricycle land-roller comprising a rear frame consisting of a pair of parallel cross-bars having pivot-bearings at their ends on the upper side thereof, rocking frames pivoted
50 to the pivot-bearings of the cross-bars, the pendent journal-boxes secured to the end bars of the rocking frames, the rollers having axles mounted in the journal-boxes of the rocking
55 frames, the forward frames having converging brace-bars, the front and rear cross-bars located on the forward frame, the journal-boxes surmounting the end bars of the forward frame, the roller having an axle mount-
60 ed in the journal-boxes of the forward frame, a reach extending from beneath the cross-bars of the rear frame, means whereby the outer end of the reach is loosely connected to the rear cross-bar of the forward frame, a
65 channel-plate mounted on and secured to the front cross-bar and brace-bars of the forward frame, a tongue having a clip and fitted in the channel-plate, and a doubletree pivot-bolt secured to the clip and to the tongue;
70 substantially as described.

8. A land-roller comprising a roller, an axle on which the roller is mounted, the journal-boxes in which the axle is seated; said journal-boxes being closed at their outer ends
75 and provided with oil-holes located at the extreme outer ends thereof; substantially as described.

HENRY F. DETERDING.

In presence of—

R. W. FINLEY,
M. W. CAMPBELL.