No. 725,445. PATENTED APR. 14, 1903.

F. HORNE.

LAND ROLLER.

APPLICATION FILED JULY 26, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

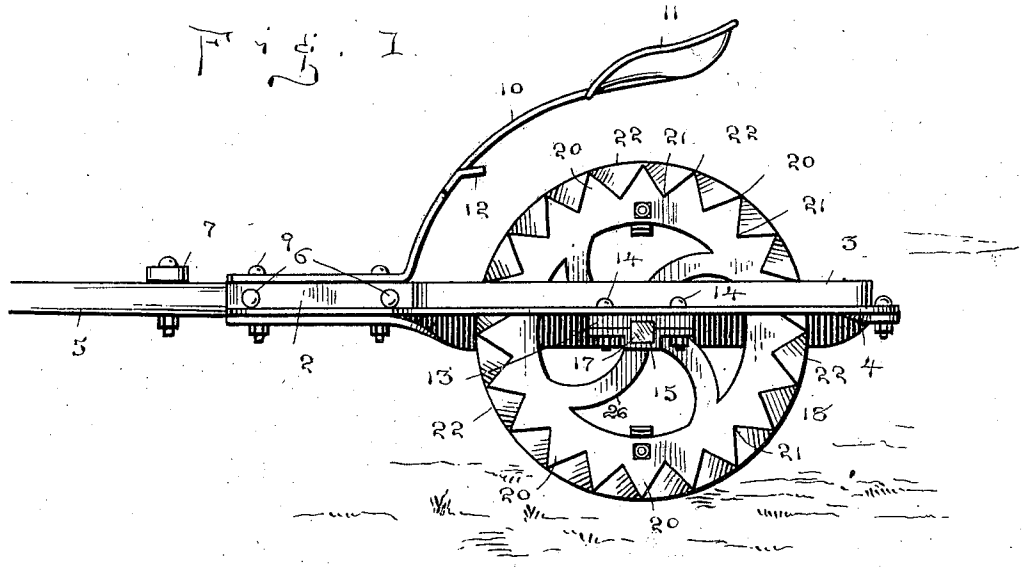
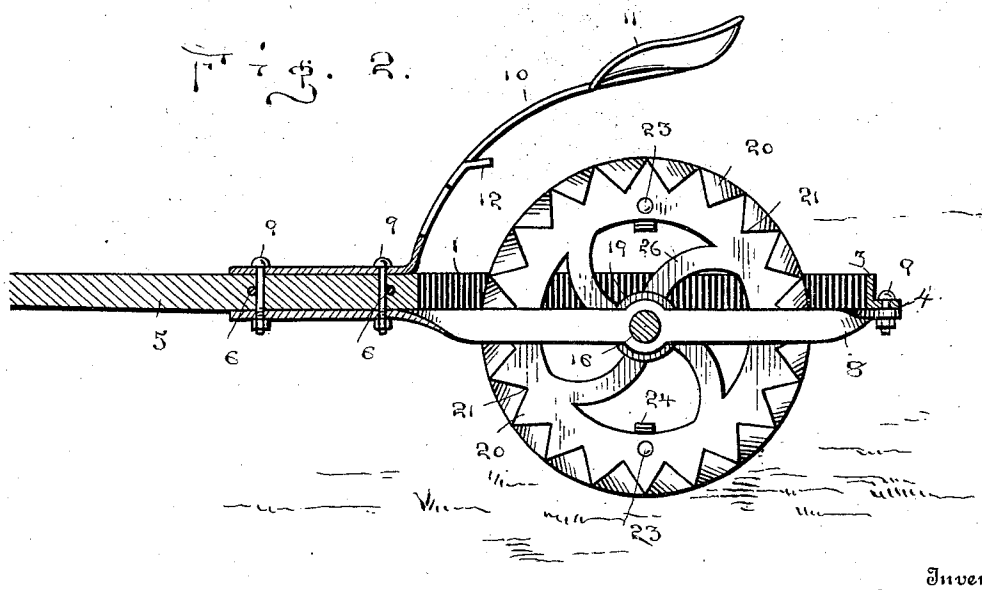


Fig. 2.



Witnesses

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NO MODEL. 2 SHEETS—SHEET 2

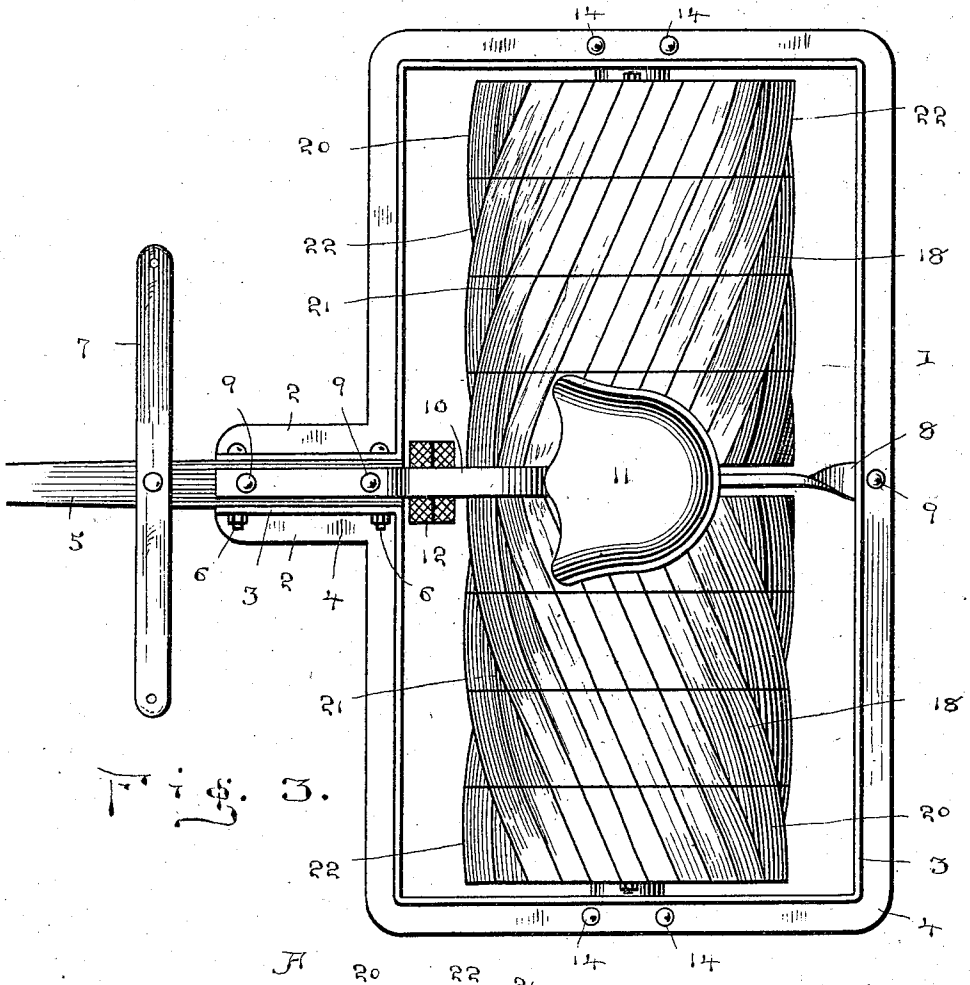


Fig. 3.

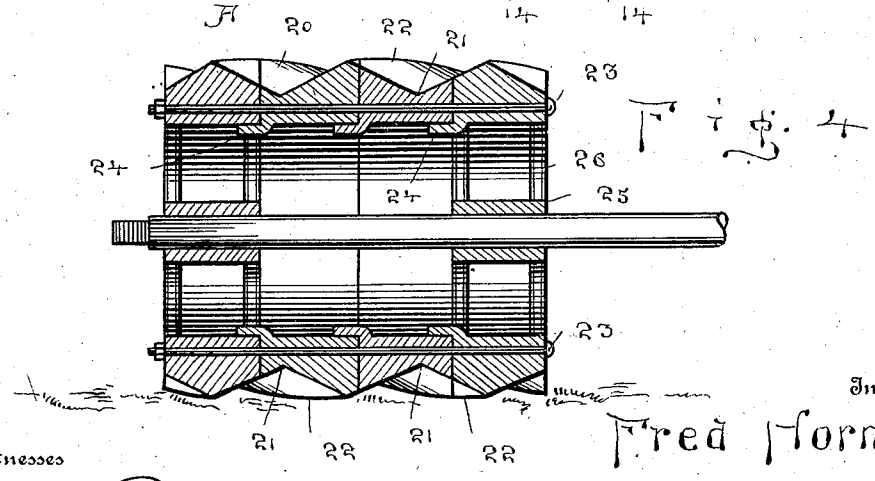


Fig. 4.

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UNITED STATES PATENT OFFICE.

FRED HORNE, OF NORTH MANCHESTER, INDIANA.

LAND-ROLLER.

SPECIFICATION forming part of Letters Patent No. 725,445, dated April 14, 1903.

Application filed July 26, 1902. Serial No. 117,104. (No model.)

To all whom it may concern:

Be it known that I, FRED HORNE, a citizen of the United States, residing at North Manchester, in the county of Wabash and State of Indiana, have invented new and useful Improvements in Land-Rollers, of which the following is a specification.

My invention relates to land-rollers; and the primary object thereof is to produce a new and improved device of this character having the peripheries of the rollers thereof so constructed that they will have a shearing, pulverizing, and packing effect upon the soil and also a tendency to evenly distribute the soil laterally from a central point of the machine, whereby all liability of a clod becoming forced into the loose soil without becoming crushed or the periphery of the rollers becoming clogged and rendered useless is obviated.

A further object of the invention is to produce a new and improved land-roller which will be cheap, durable, and efficient.

The invention consists of the construction, combination, and arrangement of parts hereinafter fully described and claimed, and clearly illustrated in the accompanying drawings, forming a part of this specification.

In the drawings, Figure 1 is a side elevation of a land-roller constructed in accordance with my invention. Fig. 2 is a central longitudinal sectional view of the same. Fig. 3 is a top plan view of the land-roller. Fig. 4 is detail central longitudinal sectional view of one of the rollers and also a fragmentary view of the shaft.

1 designates a frame preferably constructed of a single piece of angle-iron bent to form a rectangular frame and centrally-disposed forwardly-extending arms 2. The construction of the frame from angle-iron provides the same with vertically and horizontally disposed flanges 3 and 4, respectively. The arms 2 are adapted to receive therebetween, to give to the land-roller a central draft, a tongue 5, which is secured in applied position by any suitable fastening means, such as bolts 6, passing through the vertical flange 3, the tongue being supplied with a suitable draft device 7. The frame is divided into compartments of equal size for the reception of land-rollers to space them apart by means of a vertically-disposed partition 8, having the ends thereof horizontally disposed and provided with perforations, through which pass fastening means 9 to secure the forward and rearward ends thereof to the tongue 5 and the horizontal flange 4, respectively.

A seat-post 10 is secured to the tongue 5 by the fastening means 9 and extends rearwardly to place a seat 11 carried thereby over the longitudinal center of the frame 1, whereby the weight of the occupant of the seat is borne by the longitudinal center of the rollers to assist in the shearing, pulverizing, and packing effect thereof. The post 10 is provided between the ends thereof with suitable foot-rests 12.

13 designates bearing-boxes secured to the horizontal flange 4 of the frame 1 by fastening means 14 to place the rectangular bearings 15 thereof in the longitudinal center of the frame and which also aline with a perforation 16 in the partition 8. The bearings have rigidly mounted therein the rectangular ends of a shaft 17, having journaled thereon rollers 18, situated at each side of the partition 8 and which are suitably spaced from the bearing-blocks 13 and the partition 8 by collars 19, carried by the shaft 17.

The peripheries of the rollers 18 are formed with spirally-arranged inverted-V-shaped ribs 20 and intervening grooves 21, inclined in opposite directions from the center of the frame, whereby the rollers have a tendency to evenly distribute the soil, which will follow the inclinations of the grooves and be carried from the center of the machine to the opposite ends thereof. The vertices of the ribs 20 provide pulverizing edges 22, which will when brought into contact with the soil effectually pulverize the same and cause it to follow the inclination of the grooves and be conveyed from the center of the machine to the opposite ends thereof.

It will be perceived that from the pulverizing effect of the edges 22 and the distributing effect of the grooves 21 all liability of clods being forced beneath the surface is obviated and that the soil will be thoroughly and effectively pulverized.

The rollers are composed of a plurality of intermediate tubular sections adapted to be secured between end sections through the medium of rods 23, passing longitudinally

through the fellies of the sections, and mounted upon the outer ends of the rods are nuts which detachably secure the sections in relative position. The intermediate sections and the end section, adjacent to which is an intermediate section, have the inner peripheries thereof provided with downwardly-bent and laterally-projecting lugs 24, concavo-convex in cross-sections to correspond to the inner peripheries of the adjacent sections with which they engage to assist the rods in preventing the sections having any relative movements. The end sections are provided with hubs 25, adapted to receive the axle to journal the rollers thereon. The hubs have radiating therefrom spokes 26, supporting the fellies of said sections.

It will be perceived that the rollers may have their width increased or diminished by removing the rods and adding or removing one or more of the intermediate sections.

The peripheries of the sections have arranged thereon at an acute angle with relation to the transverse center thereof a plurality of inverted-V-shaped ribs A, which when the sections are secured together to form the rollers bring the ribs A into alinement, thereby forming the spirally-arranged ribs 20 and intervening grooves 21. The rollers are of a weight sufficient to give to them a packing effect.

It is obvious from the above description, taken in connection with the accompanying drawings, that I provide a land-roller which will produce the desired results and also one that is cheap, durable, and efficient.

Having thus fully described the invention, what is claimed as new is—

1. In a land-roller, the combination with a frame, of a shaft carried thereby, a roller comprising a plurality of tubular sections provided with ribs adapted to form spirally-arranged ribs and intervening grooves, the end sections being provided with hubs to receive the shaft, and means for securing the sections together.

2. In a land-roller, the combination with a frame, of a shaft secured thereto, a plurality of sections secured together to form a roller adapted to be journaled upon the shaft, and ribs carried by the sections to provide spirally-arranged ribs and intervening grooves.

3. In a land-roller, the combination with a frame, of a shaft secured thereto, a plurality of sections secured together to form a roller adapted to be journaled upon the shaft, means for securing the sections together, and ribs carried by the sections to provide spirally-arranged ribs and intervening grooves.

4. In a land-roller, the combination with a frame, of a shaft secured thereto, a plurality of sections secured together to form a roller adapted to be journaled upon the shaft, and ribs arranged at an acute angle on the sections to provide spirally-arranged ribs and intervening grooves.

5. In a land-roller, the combination with a frame, of a shaft carried thereby, a roller comprising a plurality of sections provided with ribs adapted to form spirally-arranged ribs and intervening grooves, and rods adapted to pass through the sections to secure the sections together.

6. In a land-roller, the combination with a frame, of a shaft carried thereby, a roller comprising a plurality of sections provided with ribs adapted to form spirally-arranged ribs and intervening grooves, rods passing through the sections to secure them together, and lugs carried by the sections and adapted to engage the adjacent sections.

7. As a new article of manufacture, a land-roller comprising a plurality of sections provided with ribs adapted to form spirally-arranged ribs and intervening grooves when the sections are brought together.

8. As a new article of manufacture, a land-roller comprising a plurality of sections provided with angularly-disposed ribs adapted to form spirally-arranged ribs and intervening grooves when the sections are brought together.

9. As a new article of manufacture, a land-roller comprising a plurality of sections provided with ribs, and means for securing the sections together to permit of the ribs forming spirally-arranged ribs and intervening grooves.

10. As a new article of manufacture, a land-roller comprising a plurality of tubular sections provided with ribs adapted to form spirally-arranged ribs and intervening grooves, the end sections being provided with hubs, and means for securing the sections together.

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

FRED HORNE.

Witnesses:
LLOYD HOPKINS,
JOHN ISENBARGER.