No. 669,679. Patented Mar. 12, 1901.

L. D. BUTLER.

COMBINED HARROW AND ROLLER

(Application filed May 5, 1900.)

(No Model.)

Fig. 1.

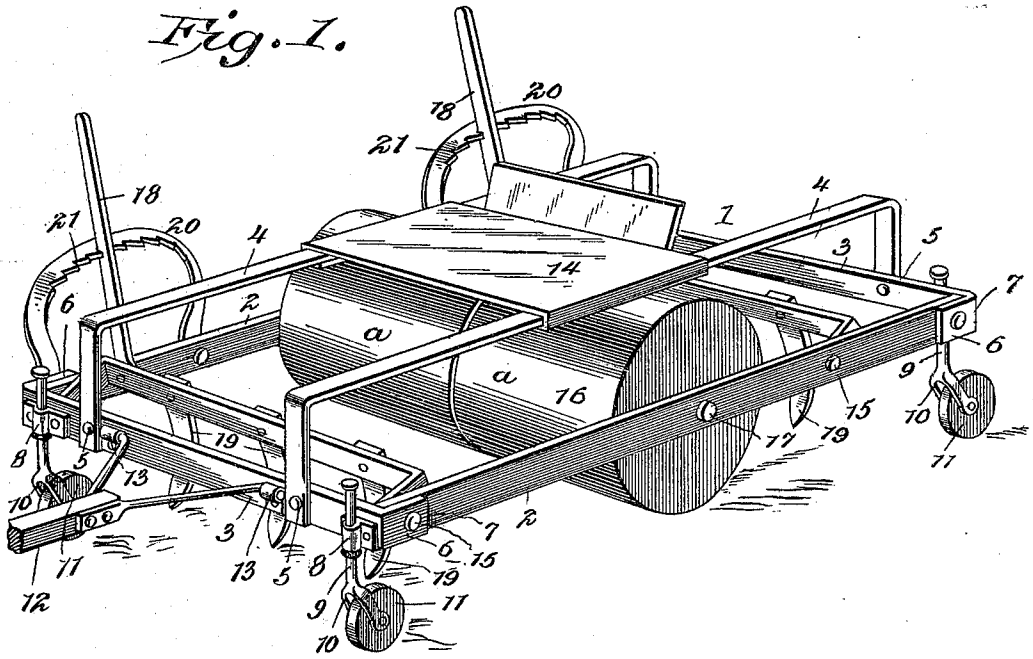
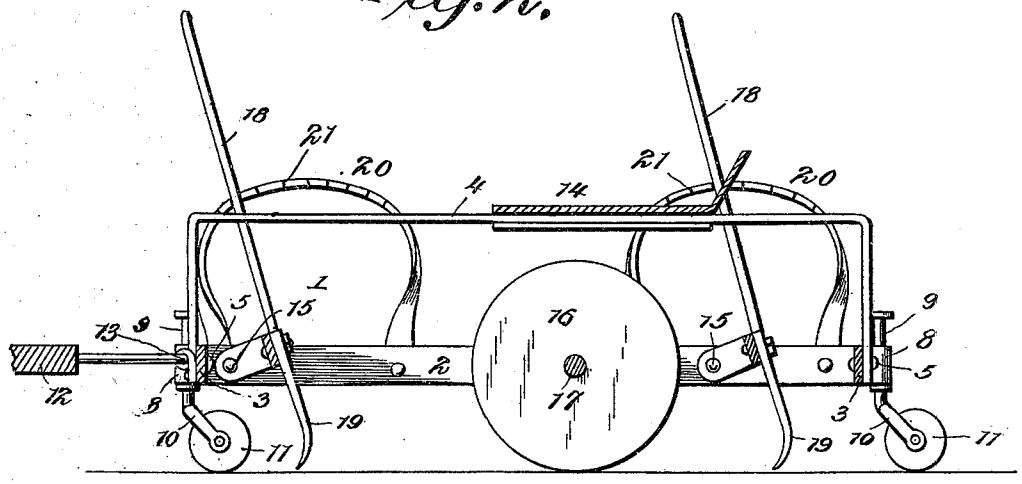


Fig. 2.



Witnesses
Howard D. Orr.
J. W. Garner

Lorenzo Dow Butler, Inventor
by C. A. Snow & Co.
Attorneys

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

UNITED STATES PATENT OFFICE.

LORENZO DOW BUTLER, OF CRANDON, WISCONSIN.

COMBINED HARROW AND ROLLER.

SPECIFICATION forming part of Letters Patent No. 669,679, dated March 12, 1901.

Application filed May 5, 1900. Serial No. 15,615. (No model.)

To all whom it may concern:

Be it known that I, LORENZO DOW BUTLER, a citizen of the United States, residing at Crandon, in the county of Forest and State of Wisconsin, have invented a new and useful Combined Harrow and Roller, of which the following is a specification.

My invention is an improved combined harrow and roller, one object of my invention being to provide a combined harrow and roller which is adapted to perform the operations of harrowing and rolling the ground either simultaneously or separately.

A further object of my invention is to provide means whereby the combined harrow and roller may be readily turned in a field.

A further object of my invention is to simplify the construction of the frame.

My invention consists in the peculiar construction and arrangement of parts hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a combined harrow and roller embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same.

The frame 1 of the combined harrow and roller comprises the pair of side bars 2, the cross-bars 3 at the ends thereof, and the seat-bars 4, the latter having their ends downturned and bolted to the cross-bars 3, as at 5. The ends of the cross-bars are bent at right angles to form the portions 6, which bear against the outer sides of the side bars 2 and are bolted thereto, as at 7. Bearing-blocks 8 are bolted to the cross-bars 3 at the ends thereof, said bearing-blocks forming bearings for the vertical shanks 9 of caster-frames 10, in which are journaled caster-wheels 11. Hence the frame 1 is provided with supporting caster-wheels located at its corners and is adapted to be readily turned. A draft-tongue 12 is connected to the cross-bar 3 at the front end of the frame, as at 13. A seat 14 is mounted on the seat-bars 4 and is adapted to slide longitudinally thereon.

U-shaped harrow-frames (two or more) are pivotally mounted between the side bars 2, as at 15, and said harrow-frames are disposed in front and rear of the roller 16, which is transversely disposed within the frame 1 and has its shaft 17 journaled in bearings formed in the side bars 2. As here shown the roller is formed in two sections *a*, which are independent of each other; but the roller may be composed of any suitable number of sections as may be required. Each harrow-frame is provided with a lever 18, whereby it may be turned on its pivots and caused to move upward or downward with relation to the frame 1, and harrow-teeth 19 have their upper ends attached to the transversely-disposed portions of said U-shaped harrow-frames. The length of the said harrow-teeth is such that by moving the levers 18 rearward, the harrow-frames being thereby depressed or lowered, said harrow-teeth are caused to engage and operate in the soil in front and rear of the roller, hence adapting the combined roller and harrow to perform the operations both of rolling and harrowing the ground at the same time. When by means of the levers 18 the harrow-frames are moved upwardly, so as to disengage the harrow-teeth from the soil, the machine is adapted to be used solely for the purposes of rolling the ground. In order to secure the harrow-frames at any desired adjustment, I provide sector-frames 20, which are secured to one side of the frame 1 and have engaging teeth 21 on their inner edges which are adapted to engage the levers 18 and lock the same, and hence the harrow frames and teeth, when adjusted.

When the harrow-frames are turned downward to the full limit of their movement, the harrow-teeth sustain the weight of the machine, and the frame, together with the roller, is raised, whereby the weight of the roller is imposed upon the harrows and the latter caused to operate deeply in the soil. The harrows may be adjusted so as to cause the roller to bear upon the soil to any desired extent as may be necessary to produce the best results when using both the harrows and the rollers to stir and pulverize the soil. The roller being disposed in the center of the frame and the seat being adapted to be moved forward or rearward, the weight of the driver may be imposed upon either the front or the rear harrow, as may be desired. Another function of the caster-wheels is to support the corners of the frame 1 and distribute the

weight of the combined harrow and roller throughout the length and breadth of its frame, and thereby cause the harrows to operate smoothly and evenly in the ground.

Having thus described my invention, I claim—

1. In a combined roller and harrow, the combination of the main frame, the centrally-disposed roller having its bearings therein, the vertically-movable supporting caster-wheels, the harrow-frames, said caster-wheels and harrow-frames being in front and rear of said roller, levers to raise and lower the harrow-frames, independently of each other, the seat, and means to shift the same forward and rearward of the roller, substantially as described.

2. In a combined harrow and roller, the combination of the main frame, the roller disposed centrally with relation thereto, the vertically-movable caster-wheels at the front and rear ends of said frame, the U-shaped harrow-frames, at the front and rear ends of said main frame and having the front ends of their arms pivoted to the sides thereof, and to the transverse portions of which U-shaped harrow-frames the upper portions of the harrow-teeth are directly attached, levers attached directly to said harrow-frames, means to lock said levers at any desired adjustment, and the longitudinally-movable seat supported on the main frame and adapted to be disposed in front or rear of the roller, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LORENZO DOW BUTLER.

Witnesses:

WILLIAM MILLS,

JOSEPH SCOTT.