L. S. TYLER.

Rotary Harrow.

No. { 337. / 31,341. }

Patented Feb. 5, 1861.

Fig. 1.

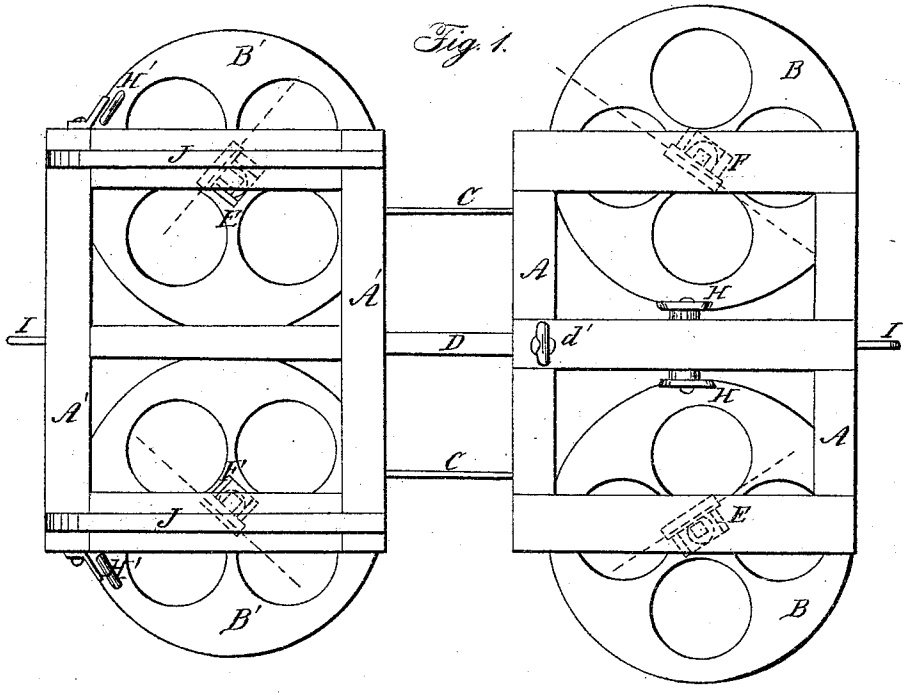
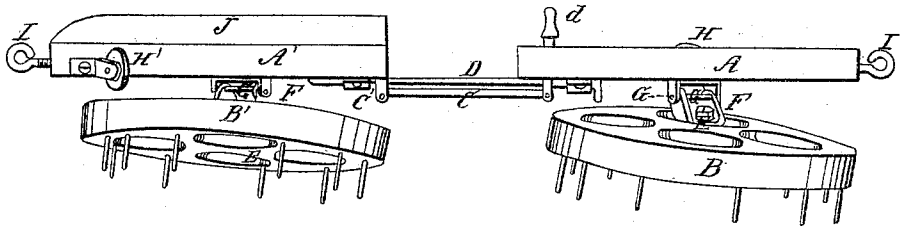


Fig. 2.



Witnesses:

Samuel H Dorsey

Arthur L McIntire

Inventor:

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By E B Ferbush
atty.

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

LEVI S. TYLER, OF LINESVILLE, PENNSYLVANIA.

IMPROVEMENT IN ROTARY HARROWS.

Specification forming part of Letters Patent No. **31,341**, dated February 5, 1861.

To all whom it may concern:

Be it known that I, LEVI S. TYLER, of Linesville, Crawford county, State of Pennsylvania, have invented certain new and useful Improvements in Rotary Harrows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon, in which—

Figure I is a plan of my improvements, and Fig. II a side elevation of the same.

Letters of like name and kind refer to like parts in each of the figures.

A and A′ are two rectangular frames, to which the rotary harrow-wheels B B and B′ B′ are connected. These frames are connected together by the hinged bars *c* and bolt D. The bars *c* are hinged to the frames at both ends, as represented at *c′*. The sliding bolt D makes a stiff connection between the frames. It is held in place by the set-screw *d′*.

B B are two rotary harrow-wheels connected to the forward frame, A. B′ B′ are two similar wheels connected to the after frame A′. These wheels are connected to the side pieces of the frames A A′ by the spindle-bolts E, upon which they revolve, swivel-bows F, and axis-bolts G. These axis-bolts G and swivel-bows F make an angle of thirty degrees, or nearly so, with the side pieces of the frames, the angle of the forward ones being the reverse of the after ones, as represented in the drawings. The spindle-bolts E of the forward wheels pass through the swivel-bows on the outside of the axis-bolts G of the swivel-bows, thus bringing the axis of rotation upon the outside of the axis of suspension and causing the planes of the wheels to make angles with the plane of the frame. This will give the outside teeth of the forward wheels a stronger hold in the earth and cause them to rotate outwardly. The axis of rotation of the after wheels is on the inside of the axis of suspension, which causes them to rotate inwardly, or in the opposite direction to the forward wheels.

H H′ are friction-wheels connected to the frames A A′, and which prevent the harrow-wheels from striking and rubbing against the frames.

I are the draft-hooks.

As the forward and after wheels revolve in different directions, it is evident that the ground passed over by the harrow must be finely cut up and the work accomplished in the most perfect manner.

J J are sled-runners placed upon the upper side of the after frame A′.

By drawing back the bolt D, turning the harrow over onto the runners, and folding the forward frame over onto the other, which the hinged connecting-bars C will allow to be done, the harrow may be carried from place to place upon the sled-runners J J with the greatest ease and facility.

I claim—

1. Connecting the harrow-wheels B B and B′ B′ to the frames A A′ by means of the spindle-bolts E, swivel-bows F, and axis-bolts G, as and for the purposes herein set forth.

2. The described arrangement of parts, whereby the harrow-wheels B B are connected to the frame A, and the harrow-wheels B′ B′ are connected to the frame A′, and the said frames are connected together by the hinged bars *c c*, for the purpose set forth.

L. S. TYLER.

Witnesses:
W. H. FORBUSH,
E. M. DAVIS.