

S J. NEWELL.

Improvement in Harrows.

No. 132,853.

Patented Nov. 5, 1872.

Fig. 1.

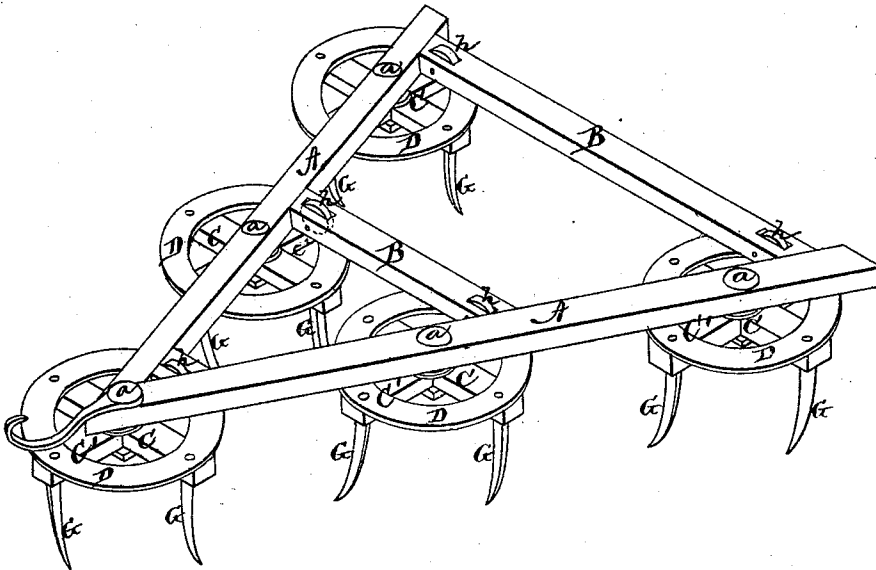
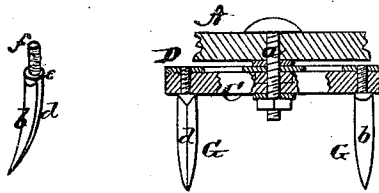


Fig. 2.



Witness:

Henry N. Miller  
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Inventor.

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Attorneys.

# UNITED STATES PATENT OFFICE.

SAMUEL J. NEWELL, OF SOUTH CHINA, MAINE.

## IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. 132,853, dated November 5, 1872.

*To all whom it may concern:*

Be it known that I, SAML. J. NEWELL, of South China, in the county of Kennebec and in the State of Maine, have invented certain new and useful Improvements in Harrows; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a series of circular revolving harrows on a V-shaped frame, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my entire harrow, and Fig. 2 is a section through one of the revolving harrows.

A represents a V-shaped frame of any suitable dimensions, provided with cross-bars B B framed in, as shown in Fig. 1. Under this frame are pivoted five harrows, one at the front end and two on each side. Each of these harrows is composed of two cross-pieces, C C', mortised into each other at the center, with a metal ring, D, on top, and a bolt, a, passing through the center of the cross-frame, pivots the same to the under side of the frame A. In each harrow are placed four teeth, G G. These teeth are made in triangular form, with a flat front, b, curved forward down to the lower end. On the back side of each tooth is

a sharp edge, d, extending up to the shoulder e, from which projects a screw, f, that connects it firmly to the frame C D, one at each end of each cross-piece C C', so that their curyes are in opposite directions. The teeth are placed in the frame in such a position that while it is being hauled along they plunge into the ground; consequently they cause the harrow to freely revolve, thus enabling it, as every revolution sets the teeth standing backward, to discharge all obstructions that come in its way, rendering the harrow free to level and pulverize the ground in a satisfactory manner.

To make it a complete and easy-working machine I place a friction-roller, h, in the cross-bars of the main frame over the ring or circular plate D of each harrow, so that when it moves around its pivot it bears against the roller, thus avoiding all friction and making it an easy-working, self-clearing, and powerful pulverizer.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the rotating frames, composed of the mortised cross-bars C C', ring D, and teeth G G G G, attached to the ends of each cross-bar and curving in opposite directions, with the triangular frame A B, with friction-rollers h, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of August, 1872.

SAMUEL J. NEWELL.

Witnesses:

C. L. EVERT,  
WM. PERCIVAL.