W. S. ROWLAND.

Harrow.

No. 167,359. Patented Aug. 31, 1875.

Fig. 1.

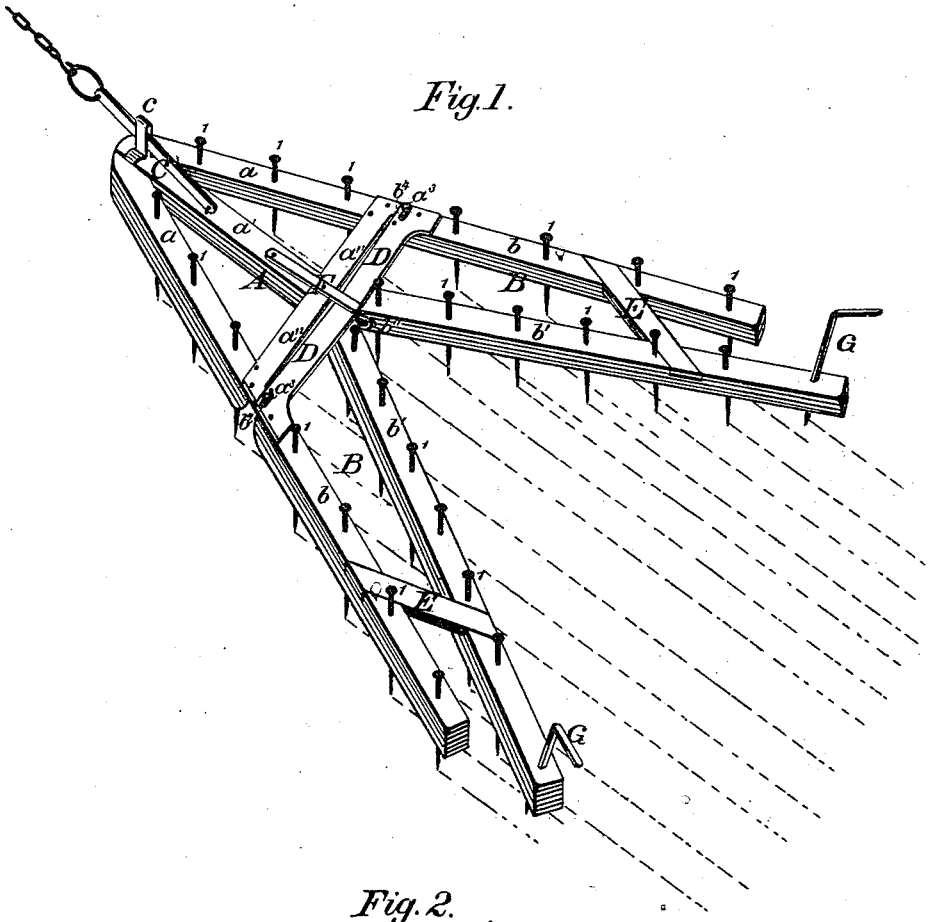
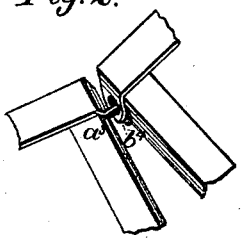


Fig. 2.



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WILLIAM S. ROWLAND, OF PLUMVILLE, PENNSYLVANIA.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **167,359**, dated August 31, 1875; application filed July 14, 1875.

To all whom it may concern:

Be it known that I, WILLIAM S. ROWLAND, of Plumville, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Harrows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective. Fig. 2 is a detail, showing one of the hook-hinges.

The present invention relates to an improvement in hinged harrows; and it consists more particularly in such details of construction as will present a cheap and most efficient device, all as will now be more specifically and in detail set forth.

This harrow, in its general outline, is triangular, the apex being in front, and is made of three sections—viz., the front A and the wings B B, which are detachably hinged to A, and also to each other. A is wedge-like in shape, and composed of outside beams or bars *a* and center beams or bars *a'*, which are united at the front ends, and constitute the point or nose of the harrow, and they are connected together at their rear by a metallic or other suitable tie or bar, *a''*. Upon the center beam or bar *a'* is hinged the draft bar or tongue C, which extends forward and over the point of the harrow, and can have a vertical movement in guides *c*. By means of this regulation of the said bar or tongue the harrow will at all times be made to draw level over the field. The said wings B B are each made of bars or beams *b* and *b'*, set a little distance apart, and united at their forward ends by a metallic or other bar or tie, D, and near their rear ends by tie or bar E, and they are hinged to each other at their inner upper corners by means of hook *b''* on one wing engaging in a slot, *b'''*, on the other. The said wings are hinged in like manner at the forward and outer corners of each by a hook, *a'''*, at each rear corner of the front section, engaged in a slot, b^4, on said wings, or in its connecting tie or bar. The several sections so hinged and connected are firmly and securely bound together, and will allow to the harrow, as a whole, when in operation, all the motion of the most flexible device of the kind, while, when occasion demands, the several parts can be readily disengaged each from the other by simply unhooking said connection. Thus there is required no delay in the removal of bolts, bars, nuts, or screws. To the rear of the central bar *a'* of the front section is fixed, by bolts or otherwise, a metallic or other arm, F, which extends outwardly over the joint or hooked hinge connecting the inner edges of the two wings. The purpose of this arm is to prevent any undue or irregular rising of the said inner ends, as, for instance, when a pressure comes against the outer edges of said wings. Thus, while I lose none of the advantages of the most complete flexibility of the several parts of my said device by means of this projecting arm, which I call the "stiffener," my device has all the advantages of a stiff harrow. This is an end of great consequence and value, as all who are conversant with the use and operation of these devices will readily understand. At the rear end of the bars or beams *b'* of the wings, and now shown at G, are the usual handles, made and affixed in any usual or convenient way. They are so placed that the driver can easily raise either wing of the harrow, to ease it over any obstruction, or otherwise move it. The outer lines of my harrow, on each side formed by the bars or beams *a* and *b*, are suitably provided with the usual teeth 1 1, and likewise the inner bars or beams *a' b' b'* have like teeth 1; but I set or place those in the outer line at a wider distance apart than those in the inner line *b'* and *b'*, for I find it very advantageous to have the outer line break up partially the clods and large lumps, while the inner line will more efficiently complete the work.

The adjustment of the several parts of the front section leaves sufficient spaces between them for the free working of the same, while the bars or beams of the wing-section are also set sufficiently far apart for like purpose, and there is left at the rear of each wing-section between its bars a clear space or passage, through which all clods, stones, or other obstructions may readily pass. Between the in-

ner sides of the said wings there is a large free space.

By having these large open spaces between the rear wings, and placing the outside hinges well to the front, it will be seen that, in use, the device can be easily operated in fields where there are stumps, rocks, or like obstructions, so as to thoroughly harrow the ground all about them.

In my device so made and combined I have a very simple and cheap harrow, which can be constructed by almost any farmer, and, in use, one that cannot readily get fouled up or out of order, while it combines all the valuable and essential features found in the ordinary flexible or hinged harrow, as well as those of a stiff harrow.

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

1. In a harrow, substantially as herein described, the front wedge-section A, provided with hinged and vertically-movable tongue C, and connected at the rear outer corners by hooked hinges with wing-sections B B, said wing-sections being likewise hinged to each other at their inner front corners, and all combined and operating substantially as set forth.

2. The combination of the front wedge-shaped section, having the stiffening-arm F, with the rear wing-sections, detachably connected therewith, and with each other, by hooked hinges, the several bars or beams suitably provided with teeth, and all operating substantially as set forth.

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

WILLIAM S. ROWLAND.

Witnesses:

RALPH SHIELDS,

JOHN JEWART.