J. H. YAGER.

Harrow.

No. 213,024. Patented Mar. 4, 1879.

Fig. 1

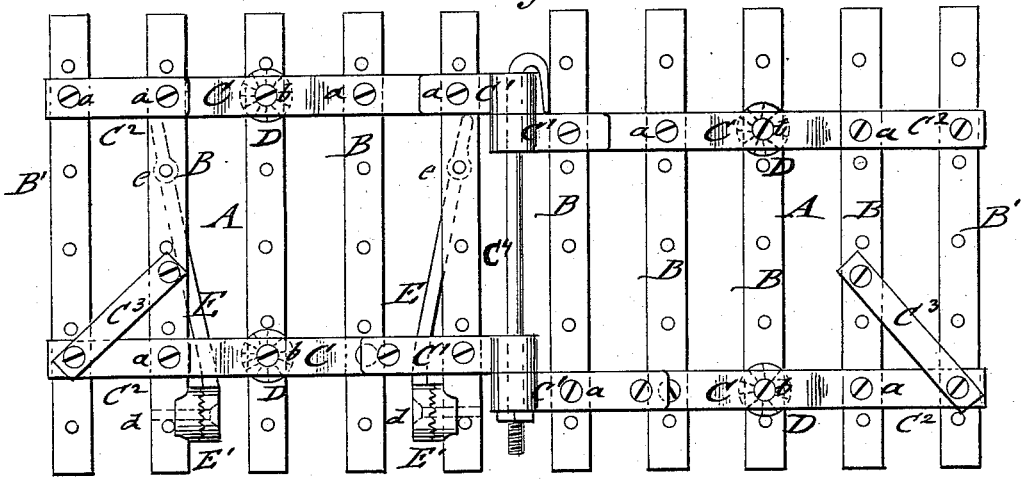


Fig. 2

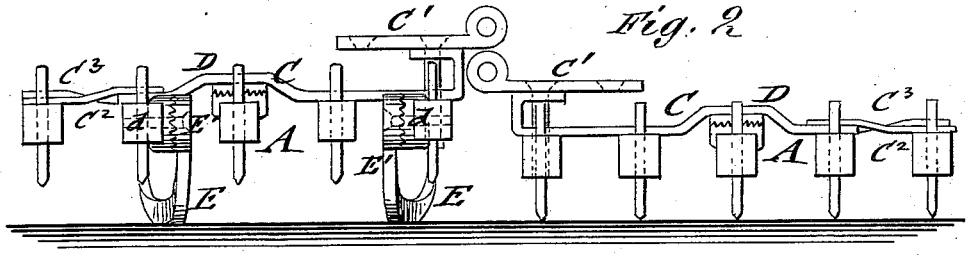


Fig. 3

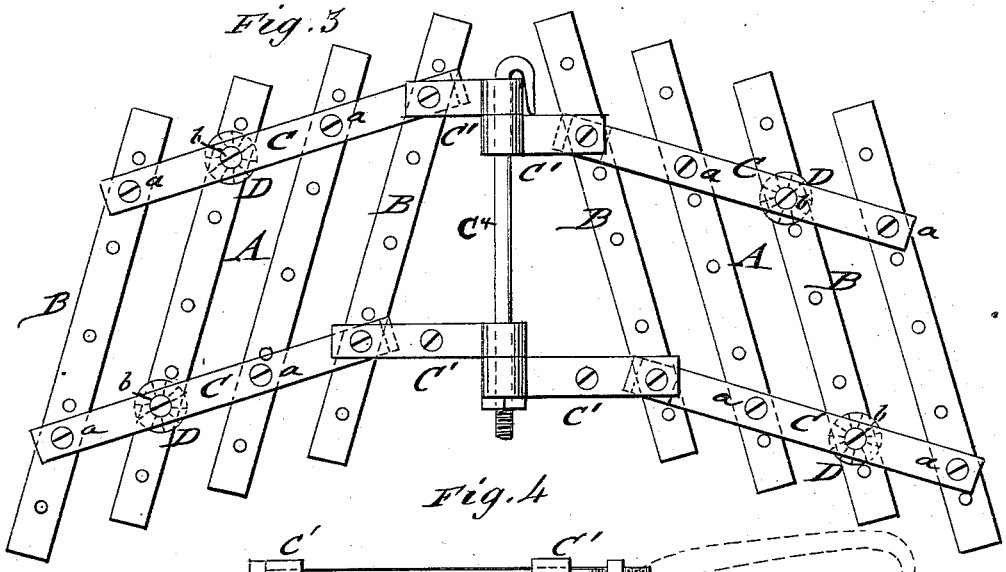
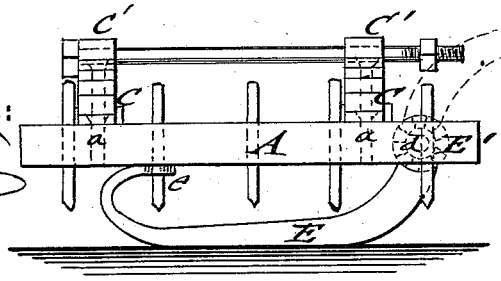


Fig. 4



WITNESSES:

C. Neveux

C. Bedgwick

INVENTOR:

J. H. Yager

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN H. YAGER, OF JACKSONBOROUGH, OHIO.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **213,024**, dated March 4, 1879; application filed September 20, 1878.

To all whom it may concern:

Be it known that I, JOHN H. YAGER, of Jacksonborough, in the county of Butler and State of Ohio, have invented a new and Improved Harrow, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a top view of my improved harrow; Fig. 2, a rear view of the same; Fig. 3, a top view of the harrow with the sections arranged at an angle of inclination to the center; and Fig. 4 is a side view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish for farming purposes an improved harrow the sections of which may be adjusted at any angle to the central axis and conveniently carried to and from the fields; and the invention consists of two centrally-hinged harrow-sections, which are made of toothed pieces that are pivoted to cross-bars, and adjusted at any suitable angle of inclination to the longitudinal axis by means of interlocking ratchets and clamp-screws of the cross bars and pieces.

The harrow-sections are jointed by hinge-straps of different length. The handles are applied to the harrow-sections by locking-ratchets and clamp-screws, and may be locked into position below the harrow-sections to serve as runners.

Referring to the drawings, A A are two harrow-sections, which are connected by a central hinge-joint composed of rod C^1 and hinged straps C^1, so as to fold one on the top of the other. Each harrow-section A is made in the customary manner of toothed pieces B, which are connected by pivot-bolts *a* to metallic cross-straps C. The cross-straps are firmly attached to the hinged straps C^1, of which the two front straps are shorter than the rear straps for the purpose of admitting the connection of the harrow-sections when adjusted symmetrically at an angle to the longitudinal axis, as shown in Fig. 3. The cross-straps C are bent up at their middle portions, and interlocking ratchet-wheels D, with radial teeth, interposed between the straps and the pivoted pieces B.

Through the straps, ratchets, and toothed pieces pass clamp-screws *b*, which, when loosened, disengage the ratchets, so that the pivoted pieces B may be set to any angle with the cross-straps.

By tightening the clamp-screws *b*, the toothed pieces are rigidly locked in the desired position, either at right angles or any other angle to the cross-straps.

The outermost toothed pieces B′ may be detached when it is desired to make the harrow smaller, as when changed to assume an angle of inclination to the center axis, as in Fig. 3. The outer pieces B′ are attached by separate straps C^2 and by diagonal braces C^3, so as to be firmly connected to the harrow-sections.

The handles E are attached by means of interlocking ratchets E′ and clamp-screws *d* to the rear ends of the pieces B. The harrow-sections are controlled by the handles, which are then rigidly clamped in raised position thereto, as indicated in dotted lines in Fig. 4. By applying both harrows to one harrow-section, swinging the handles below the harrow-sections, so that the eyes *e* of the bent-down rear ends engage teeth of the pieces B, and finally locking the handles firmly in this position by the ratchets and clamp-screws, the handles serve as runners to convey both sections, one folded upon the other, to and from the place of work.

To the front part of the harrow-sections are attached the usual clevises and draft-chains, to which the horses are hitched.

The harrow-sections may be adjusted with their toothed pieces parallel to the center line and at right angles to the cross-straps, or symmetrically to and at an angle to the center lines, as in Fig. 3, as required, the adjustment being quickly and easily accomplished, and the harrows moved with great facility on the ground to any place of work.

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

1. The harrow herein described, consisting, essentially, of the hinged sections A A, composed of toothed bars B, cross-straps C, hinged straps C^1, rod C^4, and interlocking ratchet-wheels D, as and for the purpose specified.

2. The handles E, provided with holes or eyes in their bent-down rear ends, and adjustably secured to the rear ends of the toothed bars B of one section of a hinged harrow by interlocking ratchets D, substantially as and for the purpose described.

JOHN HENRY YAGER.

Witnesses:
JAMES M. STOKES,
PIERSON BRELSFORD.