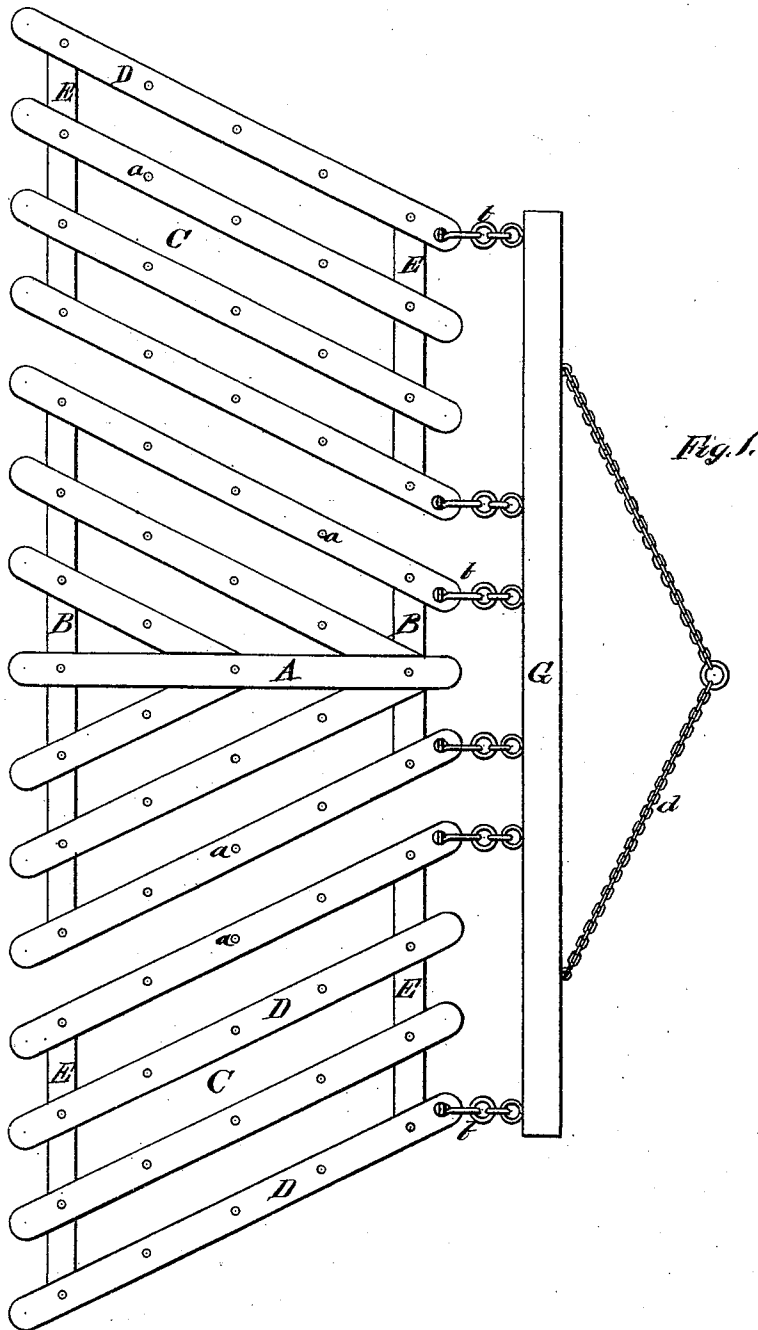


J. E. PERKINSON.
HARROW.

No. 178,461.

Patented June 6, 1876.



WITNESSES

M. J. Utley
Robert Smith

INVENTOR,

Jno. E. Perkinson.
Gilmore & Smith & Co.
- ATTORNEYS -

UNITED STATES PATENT OFFICE.

JOHN E. PERKINSON, OF SANTA ROSA, CALIFORNIA.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **178,461**, dated June 6, 1876; application filed April 22, 1876.

To all whom it may concern:

Be it known that I, JOHN E. PERKINSON, of Santa Rosa, in the county of Sonoma and State of California, have invented a new and valuable Improvement in Flexible Harrows; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a plan view of my flexible harrow.

The nature of my invention consists in the construction and arrangement of a harrow, as will be hereinafter more fully set forth.

My harrow is composed of three distinct and separate harrows, the center one of which is composed of a center beam, A, with a cross-bar, B, near each end, passing through a mortise therein. These bars also pass through mortises in side beams C C, which are set at an angle toward both sides, as shown, and teeth *a* are passed through the beams at suitable distances apart. The side harrows are composed each of a series of parallel beams, D, connected by bars E, passing through mor-

tises therein, the beams being set inclined, so as to correspond with the inclination of the side beams C of the center harrow. Teeth *a* are also passed through the beams of the side harrows. All the harrows are connected by links *b*, with an equalizing-bar, G, to which the ends of a chain, *d*, are secured, and the double-tree is attached in the center of said chain.

By means of the equalizing-bar and chains, as described, the harrow will work equally as well on side-hill as on level ground.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of the reversed outer harrows D E D E and the corresponding center harrow A B C, connected, by chains *b*, to the evener G, having the draft applied by a chain, *d*, substantially as described, and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN EMMET PERKINSON.

Witnesses:

GREENE SPURRIER,
S. W. METCALF.