J. H. DOLAN.

HARROW.

No. 188,871. Patented March 27, 1877.

Fig. 1.

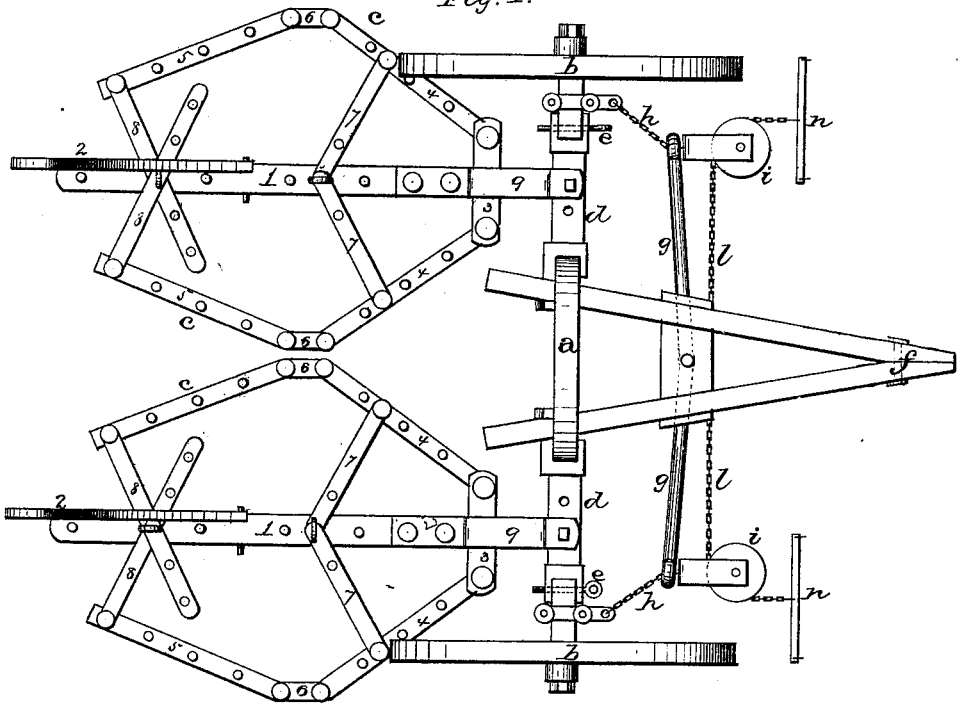
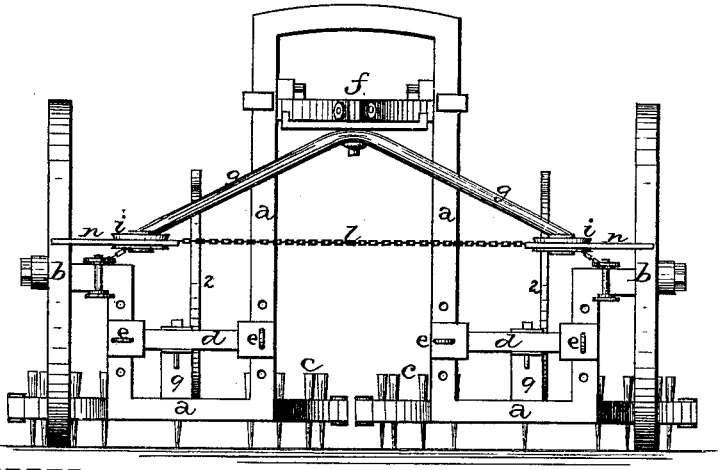


Fig. 2.



WITNESSES:

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INVENTOR:

Jno. H. Dolan

per

F. A. Lehmann, Atty.

UNITED STATES PATENT OFFICE.

JOHN H. DOLAN, OF GENESEO, ILLINOIS.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **188,871**, dated March 27, 1877; application filed March 8, 1877.

To all whom it may concern:

Be it known that I, JOHN H. DOLAN, of Geneseo, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Harrows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in cultivators and harrows; and it consists in the arrangement and combination of devices, that will be more fully described hereinafter, whereby a cheap, simple, and effective machine is produced.

The accompanying drawings represent my invention.

a represents a double U-shaped beam, and *b* the driving-wheels of the frame, to which the harrows *c* are fastened. *d d* are bars, sliding up and down upon each of the U-shaped portions of the beam, which are perforated, as shown, the ends of bars *d* being forked, so as to straddle over the edges of the beam, to receive the bolts *e*, by means of which they are held in any desired position. By moving these bars up or down their height can be adjusted to suit different implements that may have to be attached to the frame. Through the bars are made a series of holes, by means of which the implements can be moved nearer to or farther from each other, as may be desired. The tongue *f* is fastened to the beam *a* by means of the hooked screw-bolts, whereby the tongue can be adjusted up or down to suit different-sized animals. To the under side of the tongue is fastened the bar *g*, which has loops formed on its ends, through which pass the draft-chains *h*. To the front ends of the chains are fastened the pulleys *i*, around which the chain *l* is passed, and to the ends of which chain are fastened the single-trees *n*. The chain, being free to move back and forth, forms a two-horse equalizer.

The harrows consist of the beam 1, running through the center, and to which the single handles 2 are rigidly secured. Pivoted to the front end of this beam, by means of the plates 3, are the side beams 4, which have other beams, 5, secured to their rear ends, by means of the pivoted plates 6. Pivoted to the beams 4 are the plates 7, through which are made a series of holes, so that they can be fastened to the central beam at any desired point, and thus hold the beams 4 rigidly in any fixed position. To the rear ends of the beams 5 are fastened similar plates 8, which are also perforated, so that the ends of the beams can be drawn inward toward the central beam, and fastened thereto, or forced as far outward as may be desired. Thus it will be seen that the side beams can be forced as far outward as may be desired, or brought close up along the central beam. These harrows are fastened to the sliding bars *d* by means of the L-shaped plates 9. which are forked at their front ends, so as to straddle the sides of the bars.

Having thus described my invention, I claim—

The combination of the central beam 1, handles 2, plates 3 6, side beams 4 5, and adjusting-plates 7 8, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of March, 1877.

JOHN H. DOLAN.

Witnesses:
E. C. GRAVES,
W. H. OWEN.