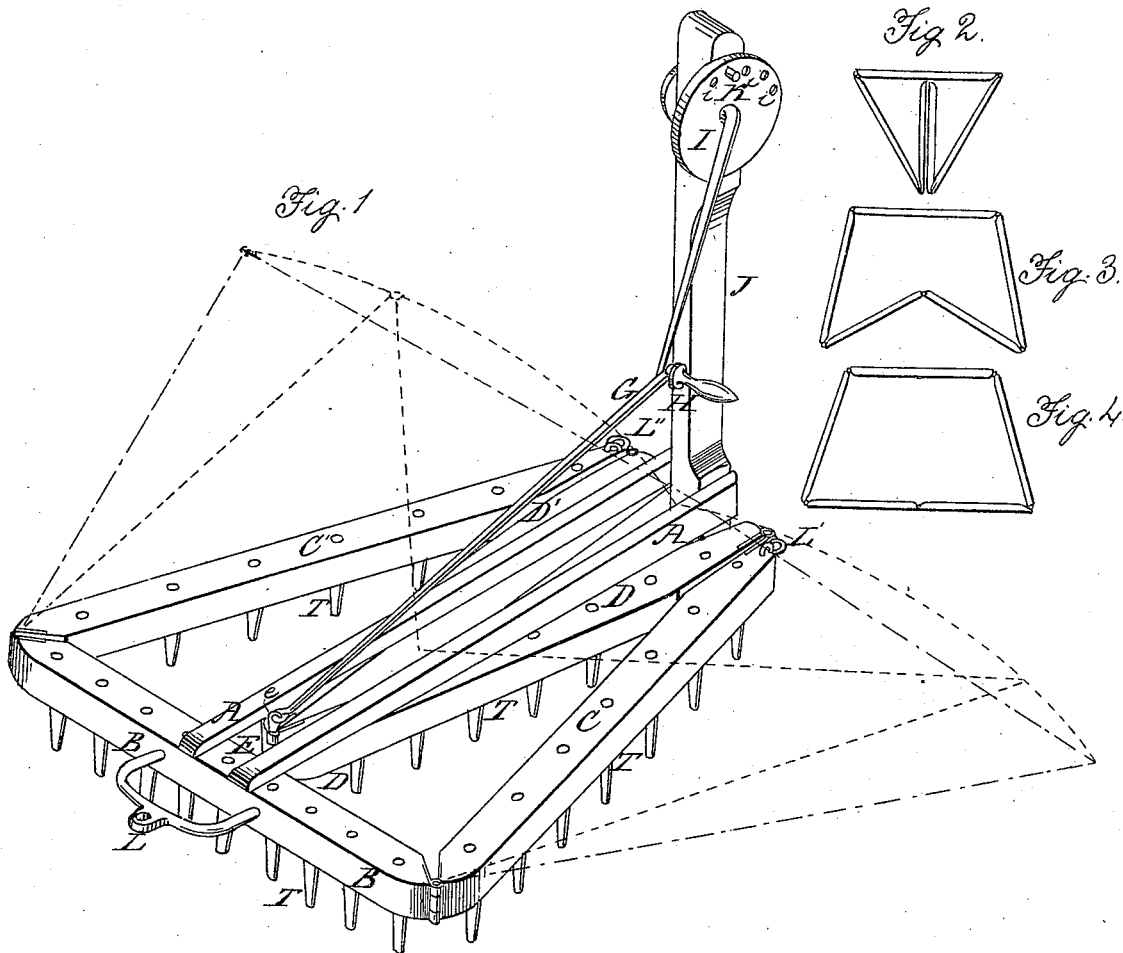


H. PULSE.

Harrow.

No. 51,750.

Patented Dec 26, 1865.



Witnesses:

James Mc Layman
Samuel Knight

Inventor:

Hiram Pulse
By Knight & Co
attys

UNITED STATES PATENT OFFICE.

HIRAM PULSE, OF ST. PAUL, INDIANA.

IMPROVEMENT IN ADJUSTABLE HARROWS.

Specification forming part of Letters Patent No. 51,750, dated December 26, 1865.

To all whom it may concern:

Be it known that I, HIRAM PULSE, of St. Paul, Decatur county, Indiana, have invented a new and useful Adjustable Harrow; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My improvement relates to the class of harrows made capable of expansion and contraction to suit different widths of cultivation and kinds of work; and it consists of an arrangement whereby the implement may be made to assume a triangular or a trapezoidal or other form.

Figure 1 is a perspective view of a harrow embodying my invention. Figs. 2, 3, and 4 are diagrams illustrating the different forms of my harrow.

A longitudinal frame, A, has secured to it at one end a transverse beam, B, to whose extremities are hinged winged beams C C', to whose free extremities are further hinged two other winged beams, D D', which in turn are united to each other by a hinge, E, whose bolt *e* is restricted to a longitudinal path by a longitudinal slot in the beam A. The beams B C C' D D' are armed with customary harrow-teeth, T.

A rod, G, connects the bolt *e* with crank H, provided with a collar, I, and journaled in a standard, J, rising rigidly from the frame A. The collar I is traversed by a series of apertures, *i*, to receive a pin, K, which, entering a suitable hole in the standard, retains the harrow to whatever form it may be adjusted.

L L' L'' are rings or clevises for the attachment of the draft.

I have selected for illustration the arrangement practically adopted by me; but the device is susceptible of various modifications. For example, the rod G may be replaced by a block adapted to slide to and fro in the slot *a* and to be held in any desired position by means of a pin made to pass through the block and enter any one of a series of holes in the frame; or a bar or rod may replace the slot *a*.

I claim herein as new and of my invention—

The arrangement of frame A, fixed and folding harrow-beams B, C, C', D, and D', and retaining devices G H I *i* K, or their equivalents, for the purpose set forth.

In testimony of which invention I hereunto set my hand.

HIRAM PULSE.

Witnesses:

ERWIN W. MADISON,
JAMES A. PURDY.