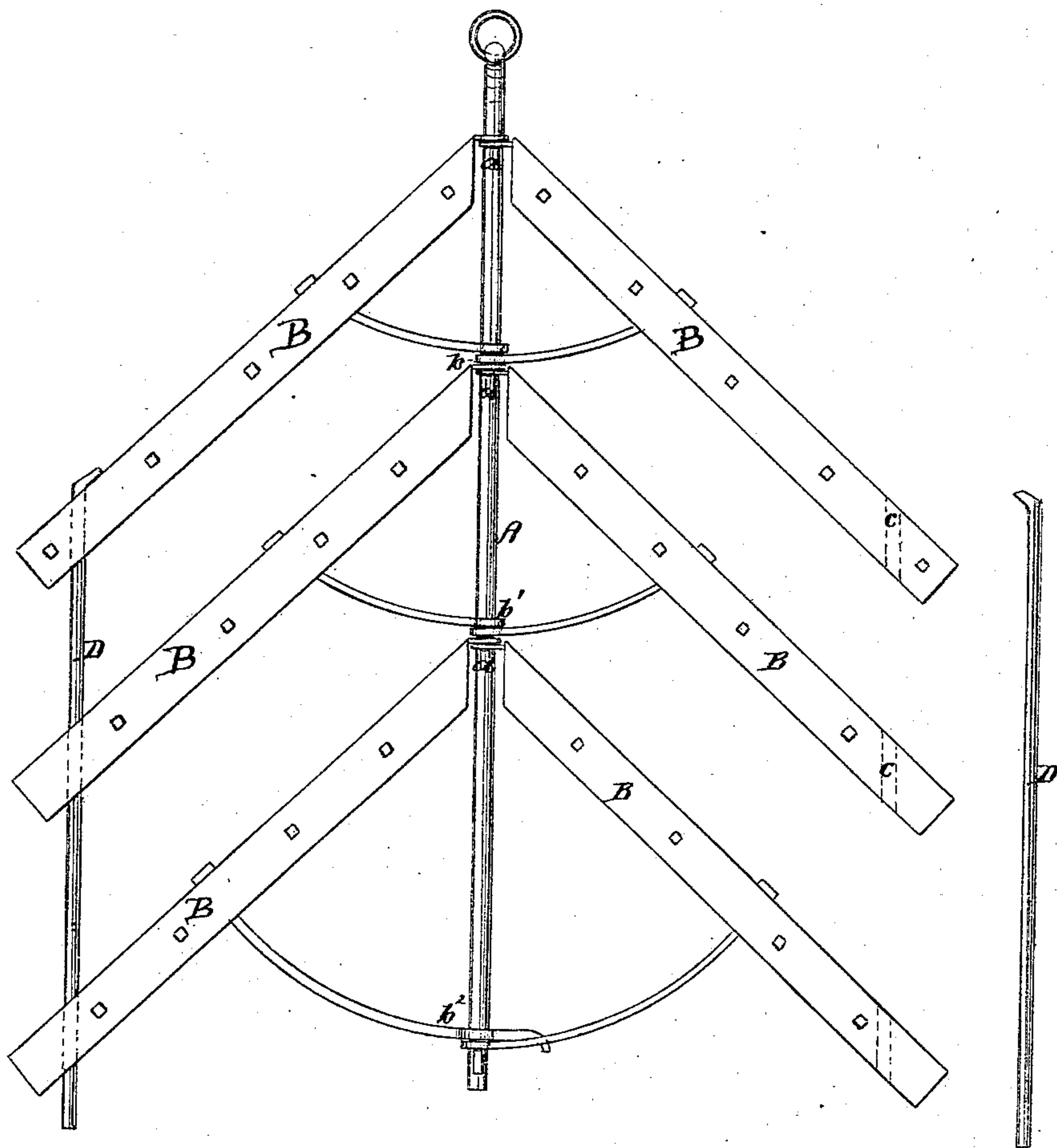


B. T. MARTIN.

Harrow.

No. 84,956.

Patented Dec 15, 1868.



Witnesses

W. C. Ashkett  
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# UNITED STATES PATENT OFFICE.

B. T. MARTIN, OF CHARLOTTE, MICHIGAN.

## IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **84,956**, dated December 15, 1868.

*To all whom it may concern:*

Be it known that I, B. T. MARTIN, of Charlotte, in the county of Eaton and State of Michigan, have invented a new and useful Improvement 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 make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which the figure represents a plan view of my improvement.

Similar letters of reference indicate like parts.

The nature of my invention relates to improvements in harrows, whereby it is designed to provide an arrangement which will admit of a better adaptation of the same to uneven ground, and whereby also it may be adjusted to a condition for leveling uneven ground.

It consists in hinging the arms which support the teeth to a central shaft, so that each arm may oscillate on the said central shaft independently of the others, for use on stony or uneven ground, and in providing means for locking the outer ends of the arms together, so as to prevent them from oscillating separately when it is to be used on ground that it is desired to level down and smooth as much as possible by the harrow, as will be more fully described on reference to the accompanying drawings.

A represents a central shaft, provided with a ring on the front end for hitching to, and keys *a a*, by which the traction is communicated to the arms.

B represents the arms, which are hinged to the shaft A at *b* and *b*<sup>1</sup>, the parts *b*<sup>1</sup> of the hinges being prolonged with curved braces, whereby the arms B are maintained in their proper position. By this arrangement each

arm is free to act independently of all the other arms, and will always maintain its contact with the ground, no matter how uneven it may be.

The outer ends of the arms are provided with holes *c*, parallel with the central shaft A; and when it is desired to level the ground by the harrow I insert within the said holes the rods D, whereby the arms of each side are locked together, by which the desired effect will be in a greater measure produced, as will be readily understood.

The brace *b*<sup>2</sup> is provided with an extension on the opposite side of the shaft A, which is curved under the brace of the arm on that side, by which the action of the arms on both sides is to some extent governed by each other, which effects a still more uniform leveling action, as will also be readily understood.

The keys *a* may be driven out of the shaft A, when the arms may be slipped off the shaft, for convenience in packing away, or for loading upon a wagon for transportation, or any other purpose.

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

1. The arms B, in combination with the central shaft A, when hinged thereto, as described, whereby each arm is capable of oscillating on the said shaft independently of the others, substantially as and for the purpose described.

2. The brace *b*<sup>2</sup>, provided with the curved extension, in combination with the shaft A and the brace upon the opposite side of said shaft, as and for the purpose described.

B. T. MARTIN.

Witnesses:

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