

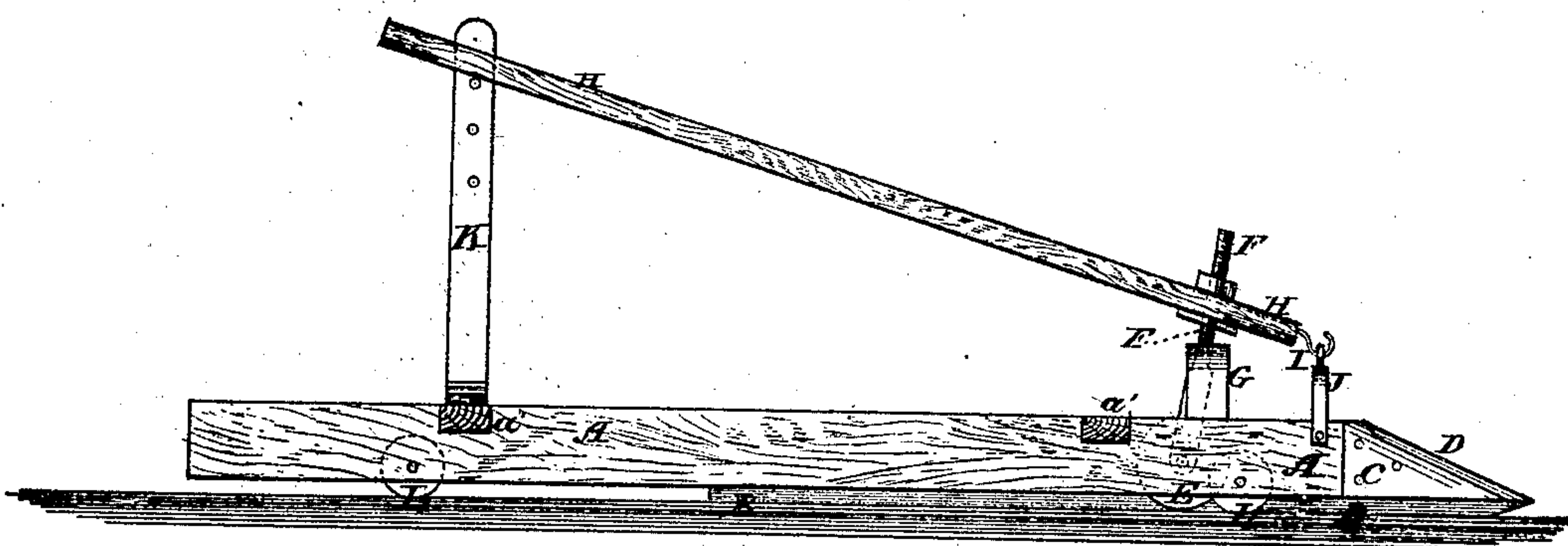
*H. A. Winter,*

*Ditcher.*

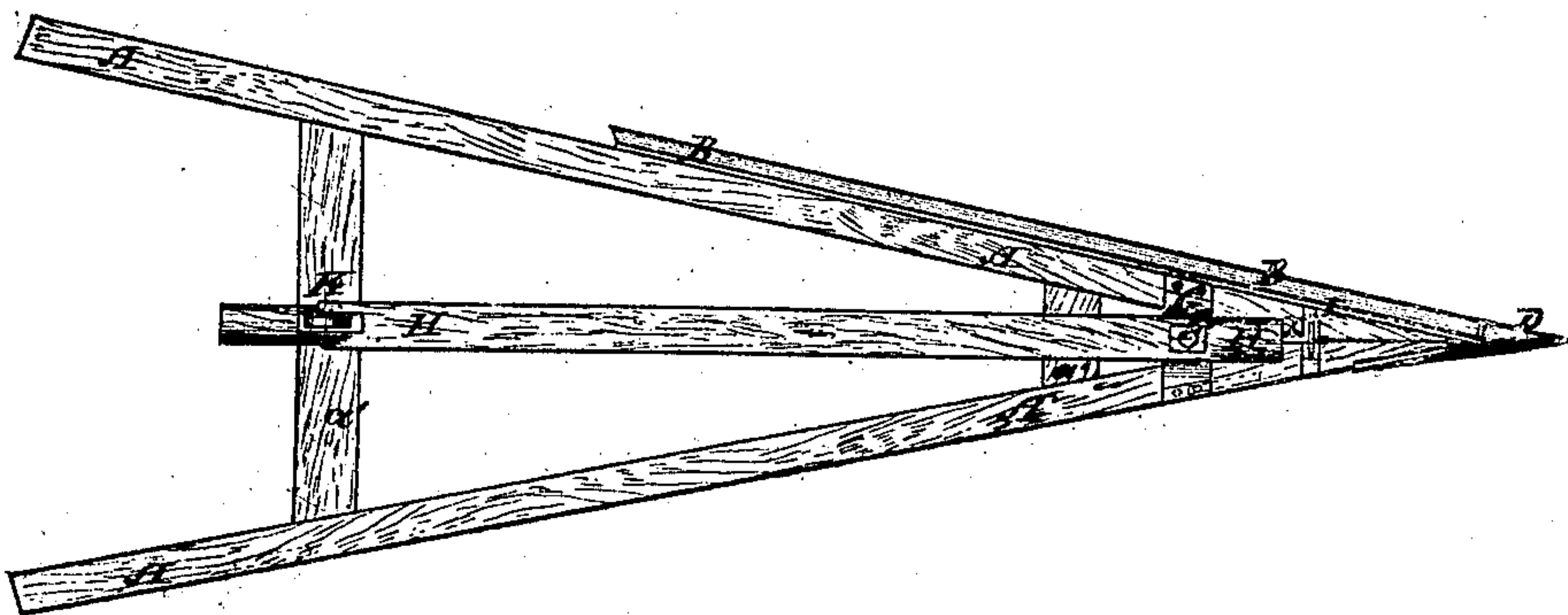
*No. 109091.*

*Patented Nov. 8, 1870.*

*Fig. 1.*



*Fig. 2.*



**Witnesses:**

*P. C. Dieterich.*  
*W. S. Maber*

**Inventor:**

*H. A. Winter*

**PER**

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# UNITED STATES PATENT OFFICE.

HIRAM A. WINTER, OF WINDSOR, ILLINOIS.

## IMPROVEMENT IN DITCHING AND GRADING MACHINES.

Specification forming part of Letters Patent No. **109,091**, dated November 8, 1870.

*To all whom it may concern:*

Be it known that I, HIRAM A. WINTER, of Windsor, in the county of Shelby and State of Illinois, have invented a new and useful Improvement in Ditching and Grading Machines; 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—

Figure 1 is a side view of my improved machine. Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for opening ditches, and for grading roads and other places, which shall be simple in construction, inexpensive in manufacture, and effective in operation; and it consists in the construction and arrangement of the various parts of the machine, as hereinafter more fully described.

A are the side bars of the frame of the machine, the forward ends of which meet at an angle, and are securely attached to each other. The bars or beams A are connected and held in their proper relative positions by one or more cross-bars, *a'*.

B is the share, which is attached to the outer side of the forward part of one of the side bars or beams A. The extreme forward end of the other bar or beam A should be faced with a metal plate, C, which may be a continuation of the share B or a separate piece, as may be desired or convenient.

D is the nose or point, which should be made separate, and should be bolted securely to the angle of the bars A. One edge or flange of the nose or point D should slightly overlap the forward end of the landside bar or beam A, and its other side or flange should overlap

the forward end of the other bar or beam, and should be grooved and jointed to the share. This construction allows the nose or point D to be conveniently detached when worn and replaced by a new one.

E is a caster-wheel, the standard F of which passes up between the forward parts of the bars A, passes through a guide-bar, G, attached to the upper edges of the said bars A, and its upper end passes through and is adjustably secured to the lever H by a nut or nuts screwed upon the said standard F. The forward end of the lever H is connected by a swivel-connection, I, to the bar J, attached to the forward ends of the bars A. The lever H passes back to the rear part of the machine, and is connected with a guide-bar, K, attached to the rear cross-bar, *a'*, of the frame A. The guide-bar K has several holes formed through it to receive a pin to hold the lever H securely in any position into which it may be adjusted. By this construction the forward end of the machine may be raised from the ground for convenience in turning. In recesses in the lower edge of the landside-bar A are pivoted revolving cutters L, which enter the ground and resist the side pressure upon the other bar or side of the machine, holding the machine to its work and causing it to move straight forward.

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

1. The share B, nose D, and plate C, combined and attached to a supporting-frame, A A, as and for the purpose described.

2. The device B C D, combined on a frame, A A, with the revolving cutters L L, as and for the purpose described.

HIRAM A. WINTER.

Witnesses:

WM. MIDDLESWORTH,  
M. HAWK.