

A. W. OLDS.
Rotary Harrow.

No. { 3,003, }
 { 34,007. }

Patented Dec 24, 1861.

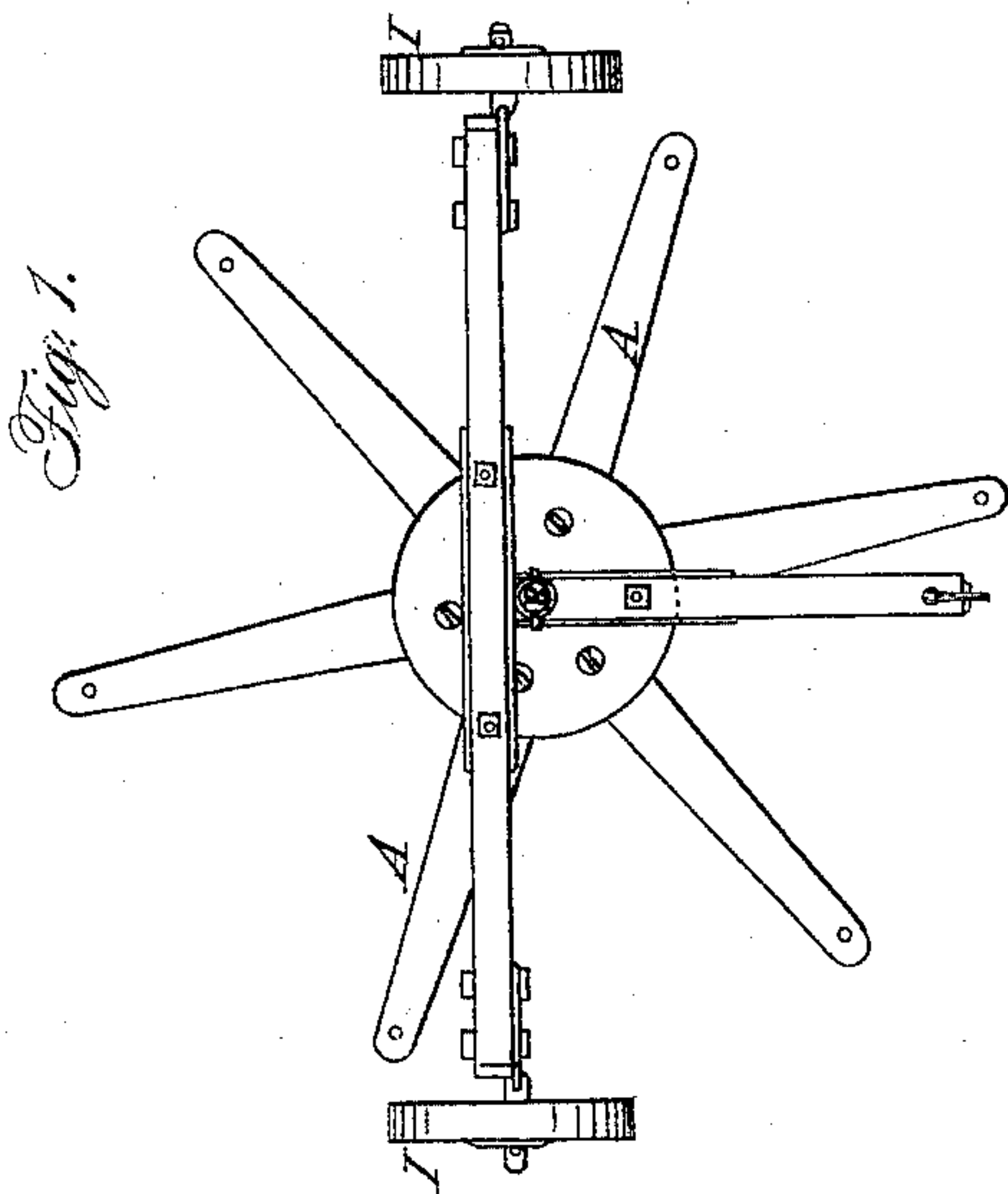


Fig. 1.

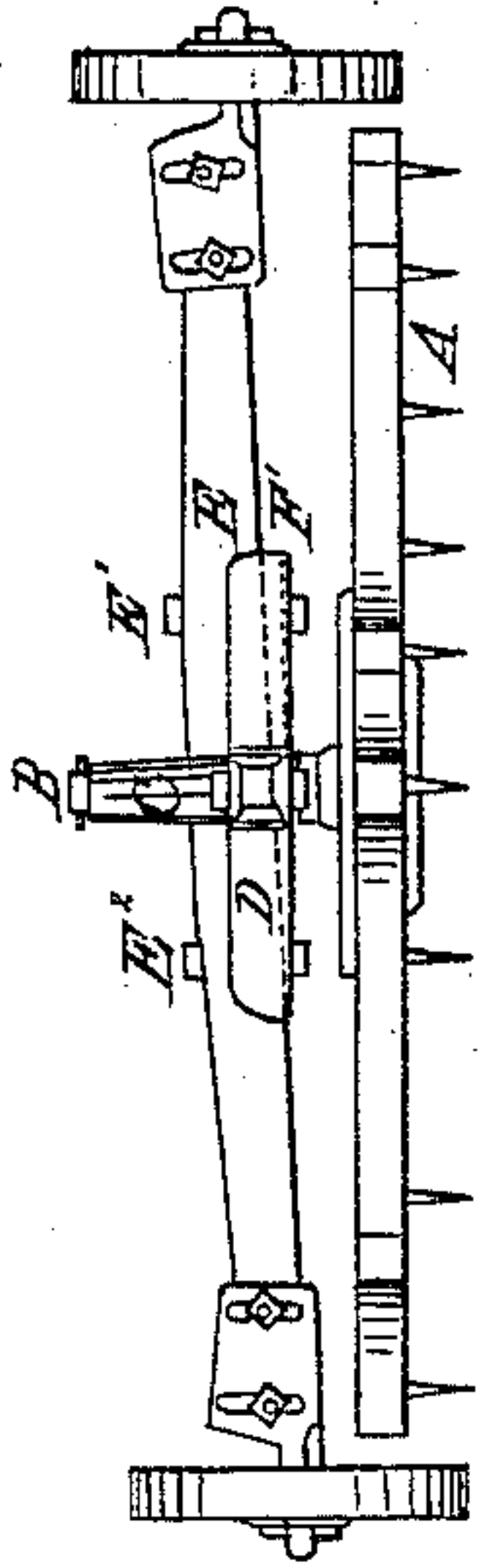


Fig. 2.

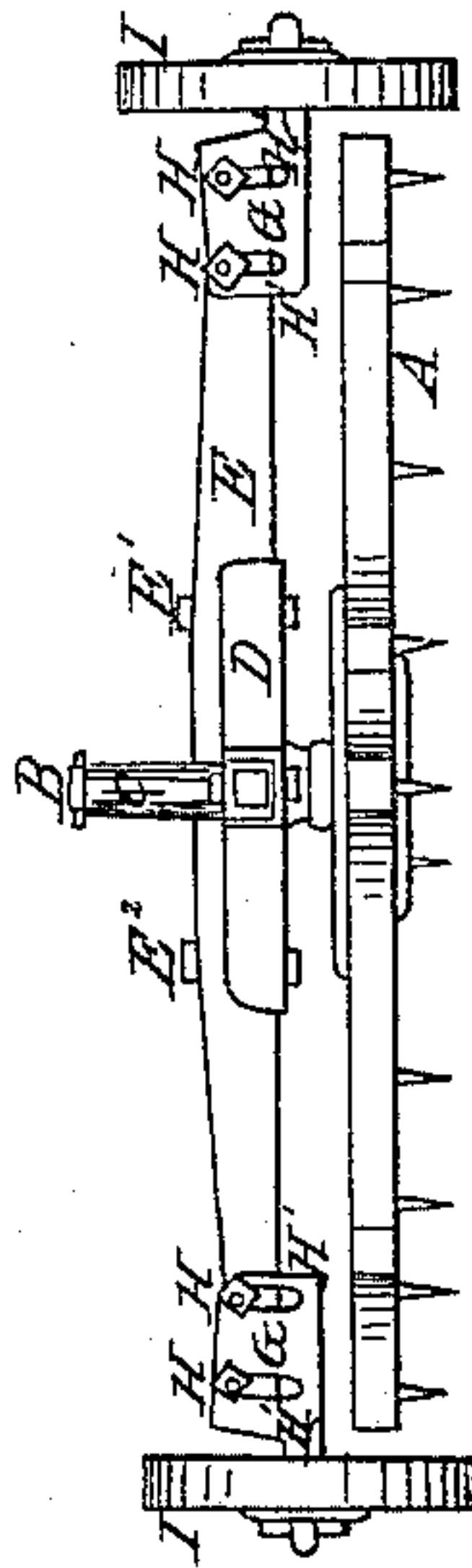


Fig. 3.

Fig. 4.



Witnesses:

J. S. Raymond
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Inventor:

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UNITED STATES PATENT OFFICE.

ALONZO W. OLDS, OF GREEN OAK, MICHIGAN.

IMPROVEMENT IN ROTARY HARROWS.

Specification forming part of Letters Patent No. 31,007, dated December 24, 1861.

To all whom it may concern:

Be it known that I, ALONZO W. OLDS, of Green Oak, in the county of Livingston and State of Michigan, have invented new, useful, and additional Improvements in a Rotary Harrow, for which Letters Patent were granted to me under date of September 3, 1861; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a top view. Fig. 2 is a front view with the axle-tree adjusted. Fig. 3 is a front view with the axle-tree not adjusted, and Fig. 4 is a view of the adjusting-wedges.

Like letters refer to like parts in the several views.

The nature of my improvement relates to the position of the axle-tree, to its adjustment, and to the mode of attaching the axles and to their adjustment, together with the wheels.

The harrow-frame A may be constructed with radial arms, as in Fig. 1, or in any other convenient form. A stem, B, rises from the top of the frame at right angles from the surface, and forms a vertical axis for the sleeve or pipe C. On the back side of this pipe is cast a flange, D, to which is bolted the axle-tree E by the bolts E' E². The axle-tree E consists of one piece of timber, and is equal in length to the whole diameter of the harrow-frame. The flange D is situated at right angles to the pipe C, and the axle-tree is bolted directly to it, as seen in Fig. 3, or it may be adjusted, as seen in Fig. 2, by means of a wedge or key F, Fig. 4, inserted at F', Fig. 2, for purposes hereinafter described.

The axles G are attached to the ends of the axle-tree by means of the bolts H H. The shank of the axle where it meets the axle-tree is expanded upward, having two vertical slots, H' H', through which the bolts H H pass, and by means of which the axles can be adjusted vertically at pleasure. The axles can also be interchanged and inverted, and by this means a still greater latitude given to the vertical adjustment of the wheels I. The object of this vertical adjustment of the wheels I is to wholly support the weight of the har-

row, or to let it rest in part upon the soil and to regulate the depth to which the teeth are allowed to penetrate the soil. In heavy soils one of the wheels may be so adjusted that it will but lightly touch the ground, or it may be wholly removed. In ordinary work the wheels are adjusted alike, as seen in Fig. 3. In this case, in order to give a positive rotation, the wedge F, Fig. 4, is introduced, as shown at F' in Fig. 2, by which means the bearing-wheel upon that side supports less of the weight of the harrow than the wheel upon the opposite end of the axle-tree. This wedge F, Fig. 3, has a slot in the thick end, as seen at F², Fig. 4, through which the bolt E' passes to hold it in place. This wedge may be reversed so that the bolt E² will pass through the slot in the head, and thus change the direction of rotation. In moving to and from the field the wedge F is removed and both wheels adjusted to their lowest point, as seen in Fig. 3, in which case the harrow-teeth will not touch the ground, the weight of the harrow being supported upon the sleeve C by means of a pin through the top of the stem B.

I am aware that harrows have been caused to have a positive rotation by depressing one side deeper into the soil than the other by means of a weighted roller upon the periphery of a circular harrow-frame, or by a weight suspended over the periphery by means of an arm from a central spindle. Therefore I do not claim either of these devices, nor a modification of them; but

What I do claim as my improvement, and desire to secure by Letters Patent, is—

1. The vertical and interchangeable adjustment of the wheels I I by means of the axles G, bolts H H, and slots H' H', as and for the purpose specified.

2. Placing the flange D in such position in relation to the sleeve C that the axle-tree E may be of one entire piece, as described.

3. The wedge F, when placed between the bottom of the flange D and axle-tree E, as and for the purpose herein set forth.

A. W. OLDS.

Witnesses:

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