

No. 647,460.

Patented Apr. 17, 1900.

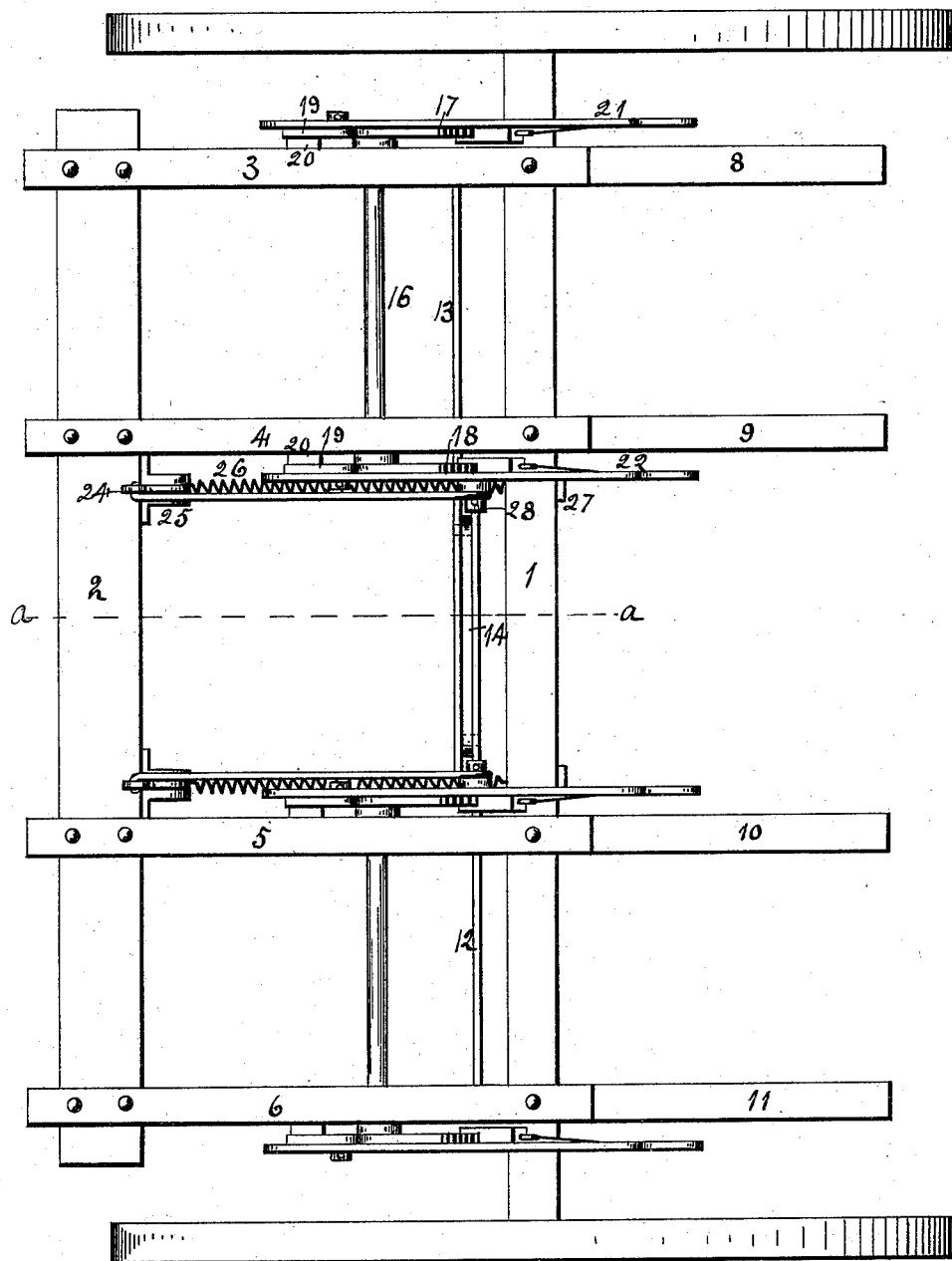
W. G. ATWOOD.  
CULTIVATOR.

(Application filed Aug. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.

*Fig. 1.*



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2 Sheets—Sheet 2.

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Fig. 2.

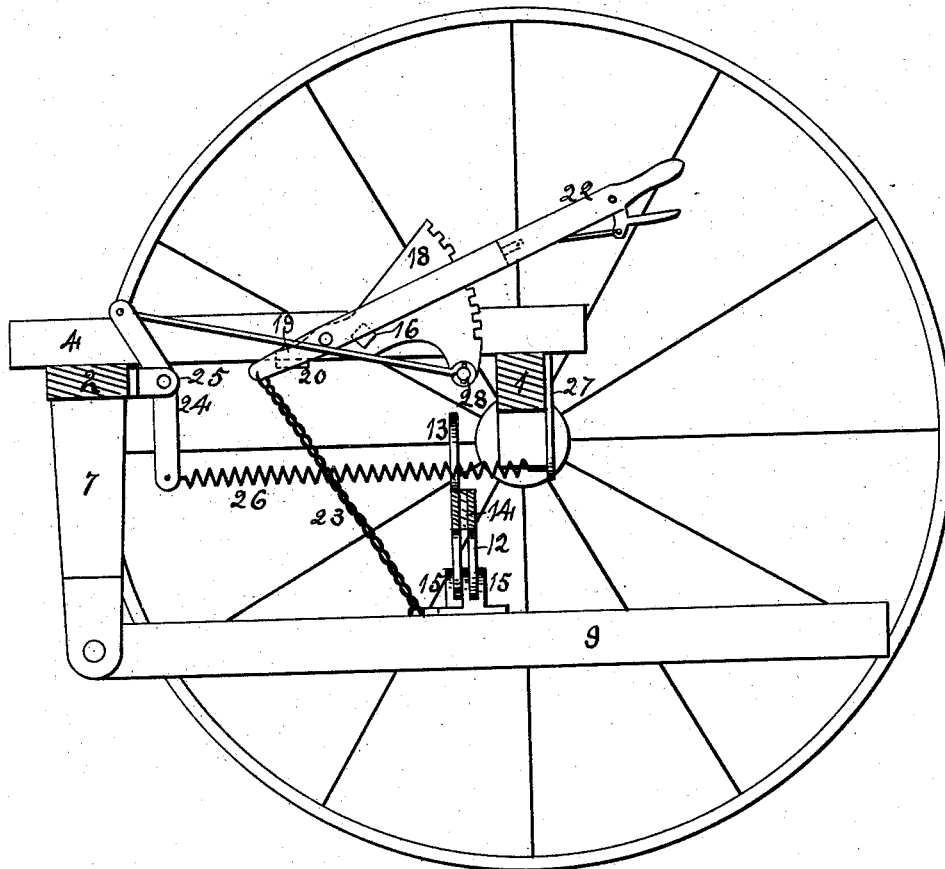
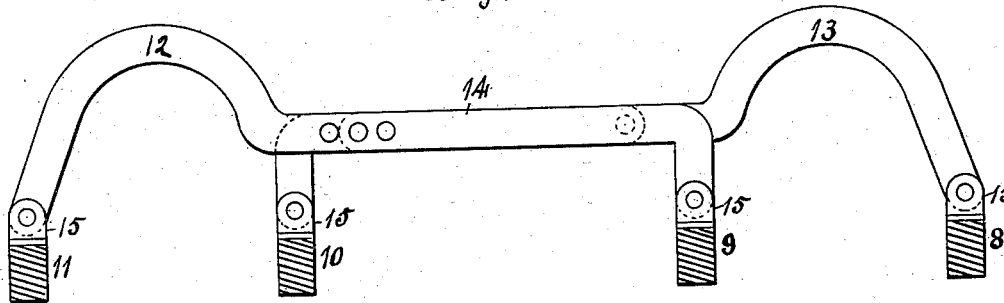


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 647,460, dated April 17, 1900.

Application filed August 7, 1899. Serial No. 726,392. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM G. ATWOOD, a citizen of the United States, residing at Harlem, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

One object of this invention is to construct a two-row cultivator in which a sway-bar connects the four drag-bars.

A further object of this invention is to connect two toothed segments so that the hand-lever of either segment will oscillate both segments and raise both drag-bars.

In the accompanying drawings, Figure 1 is a plan view of a two-row cultivator embodying my improvements. Fig. 2 is a section on dotted line *a*, Fig. 1. Fig. 3 is a vertical section of the drag-bars, showing the sway-bar connection.

The main frame consists of the axle 1 and beam 2, connected by cross-bars 3, 4, 5, and 6. From the under face of the beam 2 depend hangers 7, four in number, and to the hangers are pivotally connected drag-bars 8, 9, 10, and 11. The drag-bars are connected by means of a sway-bar composed of two sections 12 and 13, joined by a link 14 in a pivotal manner. One end of this link has an adjustable connection with one of the sections. The ends of the sections have a pivotal connection with the drag-bars by means of the brackets 15, secured to their upper faces.

The raising and lowering mechanism for the two pairs of drag-bars are the same, and a description of the right-hand devices will be given. A rod 16 is supported by the cross-bars 3 and 4, the ends of the rod being squared, and to which are secured the toothed segments 17 and 18, so that both segments and rod move in unison. The forward end of each segment has an arm 19, which rests upon a stop 20, secured to the cross-bars.

Hand-levers 21 and 22 have a pivotal connection with the toothed segments in advance of the rod 16. The hand-levers have the usual thumb-lever and spring-actuated plunger which engage the teeth of the segments. The forward ends of the hand-levers have connections with the drag-bars by the chains 23.

A bell-crank lever 24 is pivotally supported by the bracket 25, connected to the beam 2.

A spring 26 has one end connected to the longer arm of the bell-crank lever and its other end connected to a bracket 27, secured to the axle 1.

From the lower edge of the toothed segment 18 extends a projection 28, to which is connected a rod, its other end connected to the upper arm of the bell-crank lever.

By means of the hand-levers, one for each drag-bar, the drag-bar can be adjusted to hold the shovels at the proper depth for the work they have to do, and without changing the position of the levers with respect to their toothed segments by depressing upon either lever of a set both toothed segments of that set are rocked through the connection of the rod 16, so that both drag-bars of that set are raised, and upon releasing the pressure on the hand-lever both toothed segments will assume their former position of rest. The spring 26, acting through the bell-crank lever, exerts its influence upon both toothed segments, thereby assisting the raising of both drag-bars of a set.

By the formation of the bell-crank lever as the spring loosens its force the leverage is increased, so that a uniform force is exerted upon the toothed segments at all times.

It is essential that the notches in the toothed segments be square in order that the hand-levers will be securely locked in connection therewith, so that the segments may be rocked by means of the hand-levers.

I claim as my invention—

1. In a cultivator, the combination of a main frame, two toothed segments connected together and capable of a rocking movement, and a hand-lever for each segment having a connection with a drag-bar so that by the movement of one hand-lever both drag-bars can be raised.

2. In a cultivator, the combination of a main frame, two toothed segments connected together and capable of a rocking movement, a hand-lever for each segment having a connection with a drag-bar, and a spring assisting the raising of the drag-bars.

3. In a cultivator, the combination of a main frame, two toothed segments connected together and capable of a rocking movement, a hand-lever for each segment having a connection with a drag-bar, a bell-crank lever, a

connection between the lever and segment and a spring connecting the bell-crank lever with a stationary support.

4. In a two-row cultivator, the combination  
5 of two sets of drag-bars, a two-part sway-bar, one section of the sway-bar connecting the outer drag-bar of one set with the inner drag-bar of the other set.

5. In a two-row cultivator, the combination  
10 of two sets of drag-bars, a two-part sway-bar, one section of the sway-bar connecting the outer drag-bar of one set with the inner drag-

bar of the other set, and the sections having a linked connection.

6. In a two-row cultivator, the combination 15  
of two sets of drag-bars, a two-part sway-bar, one section of the sway-bar connecting the outer drag-bar of one set with the inner drag-bar of the other set, and the sections having  
a linked connection in an adjustable manner. 20

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