

G. W. STAVER.
Cultivator.

No. 209,780.

Patented Nov. 12, 1878.

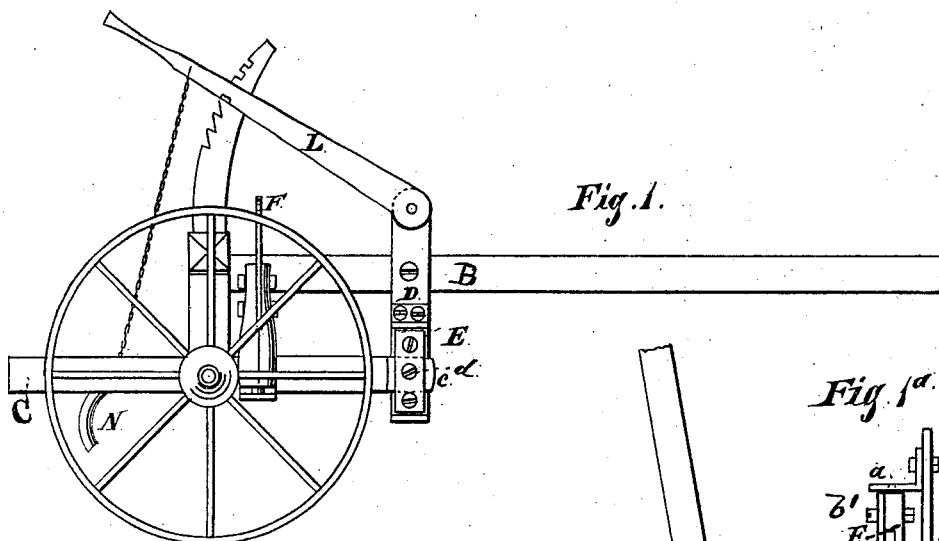


Fig. 1.

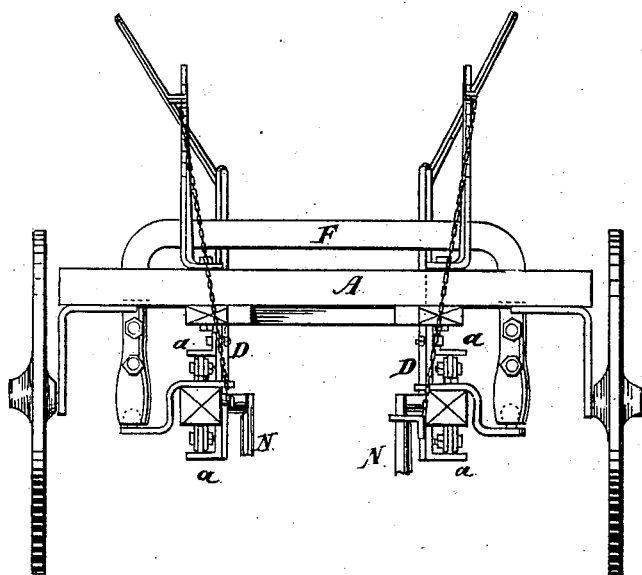


Fig. 2.

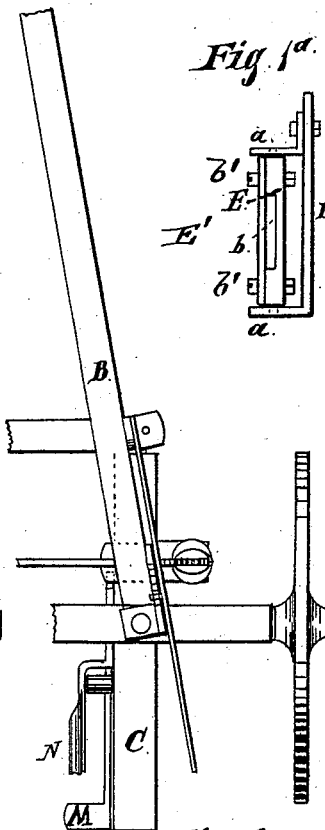


Fig. 3.

Witnesses:
Hiram L. Barnes.
C. Bond.

Inventor:
Geo. W. Staver.
By West & Bond
Attys.

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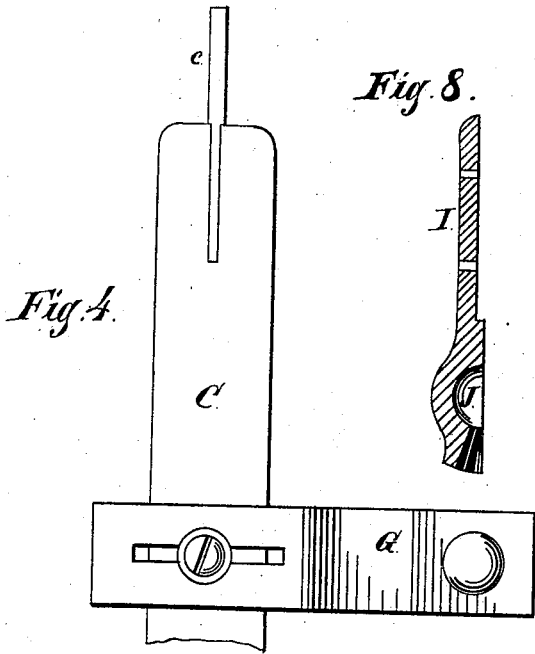


Fig. 8.



Fig. 9.

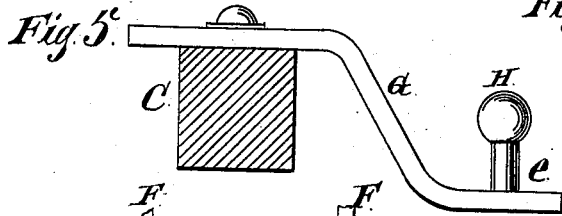
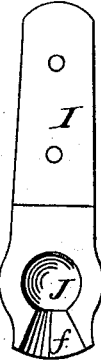


Fig. 6.

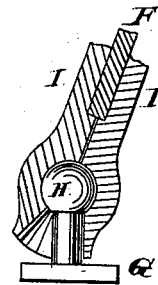
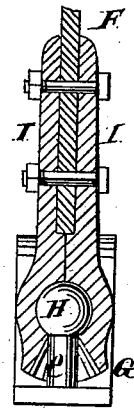


Fig. 7.

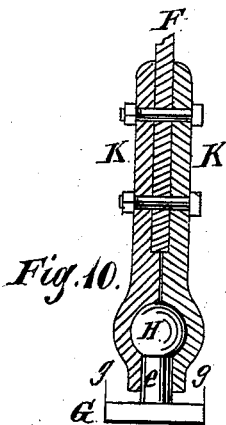


Fig. 11.

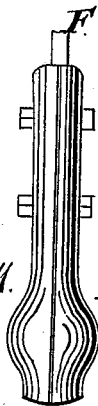


Fig. 12.

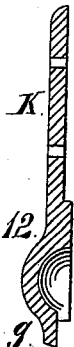
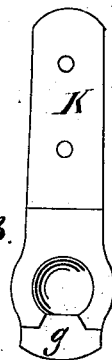


Fig. 13.



Witnesses:

Henry L. Bond.
O. W. Bond.

Inventor:

Geo. H. Staver
By H. L. Bond
Atty.

UNITED STATES PATENT OFFICE.

GEORGE W. STAVER, OF MONROE, WISCONSIN.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **209,780**, dated November 12, 1878; application filed January 9, 1878.

To all whom it may concern:

Be it known that I, GEORGE W. STAVER, of Monroe, Green county, State of Wisconsin, have invented new and useful Improvements in Cultivators, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying my invention; Fig. 2, a rear view; Fig. 3, a plan view of the parts represented. The remaining figures are details. Fig. 4 is a top view of the beam with the plate G attached; Fig. 5, an end view of the same. Figs. 6 and 7 are sections of Fig. 2, showing the means of connecting the sway-bar with one of the beams; Fig. 8, a vertical section of one of the plates I; Fig. 9, an inside view of the same. Figs. 10, 11, 12, and 13 represent the mode of connecting the sway-bar to the other plow-beam.

My improvements relate to devices by means of which a rigid sway-bar is connected with the machine.

In the drawings, A represents a bent axle; B, a split tongue; C, the plow-beams, which are connected with the machine as follows: D represents two hangers, which are secured to the split tongue, one upon each side. *a* represents lugs or projections at right angles to the hangers D, and permanently secured thereto. E is a plate, which is pivoted at the top and bottom in the projections *a*. This plate is provided with a recess, *b*, and a plate, E', is secured to it by bolts *b'*, covering said recess, so as to form an opening for the passage of the plate *c* at the forward end of the plow-beam.

c is a metal plate, one end of which is secured in the forward end of the beam, and the other end of which extends out from the beam some distance and enters the slot *b*, and is pivoted therein at *d*, Fig. 1, so that the plow beams have a vertical movement on the pivot *d*, and a lateral movement by turning the plate E in its bearings.

F is a rigid sway-bar, which is connected with the plow-beams by means of a ball-and-socket joint, one of which permits the free

movement in all directions, and the other of which is so constructed as to support the sway-bar and prevent it from tipping forward and back.

The devices by means of which the sway-bar is connected with the beam are as follows: G represents plates, one of which is secured to each of the beams C, and can be adjusted thereon. *e* is a short post, secured to the plate G near its outer end, upon the upper end of which post is a ball, H. I I are two plates, which are secured to one end of the rigid sway-bar F. Each plate is provided with an ear, J, the two ears forming a socket for the ball H. The opening in these plates for the post *e*, below the socket for the ball, is enlarged, as shown at *f* in Fig. 9, and also in Figs. 6, 7, and 8, so as to permit a free movement of the sway-bar upon the ball in all directions. The other end of the sway-bar is connected with the other plow-beam in the same manner, except that the plates K, which correspond with the plates I, are not provided at their lower ends with the enlargement *f*; but these ends *g* extend down along the side of the post *e* upon the front and back thereof, so as to support the sway-bar and prevent it from tipping forward or back, and at the same time permit a sufficiently free movement of the ball-joints.

By means of this sway-bar F the two beams are maintained at the same distance apart, and by means of the joints connecting it with the plates G the two plow-beams can be moved laterally, and either one can be moved vertically independently of the other.

L is a hand-lever. M is a foot-lever, and N represents curved plow-standards.

What I claim as new, and desire to secure by Letters Patent, is—

The plates I I and sway-bar F, said plates clamping the sway-bar and inclosing the balls H, in combination with plates G, post E, and the beams C, substantially as set forth.

GEORGE W. STAVER.

Witnesses:

W. W. WRIGHT,
WM. M. WRIGHT.