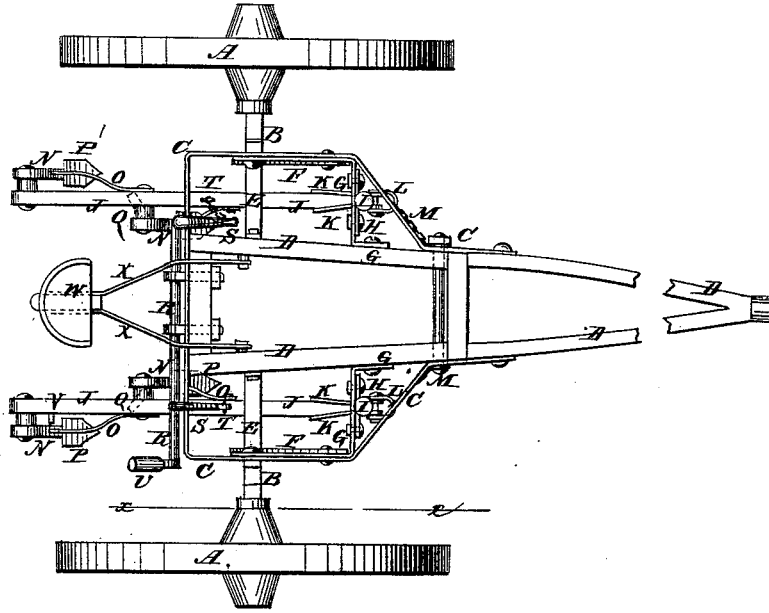


P. STUDER.  
CULTIVATOR.

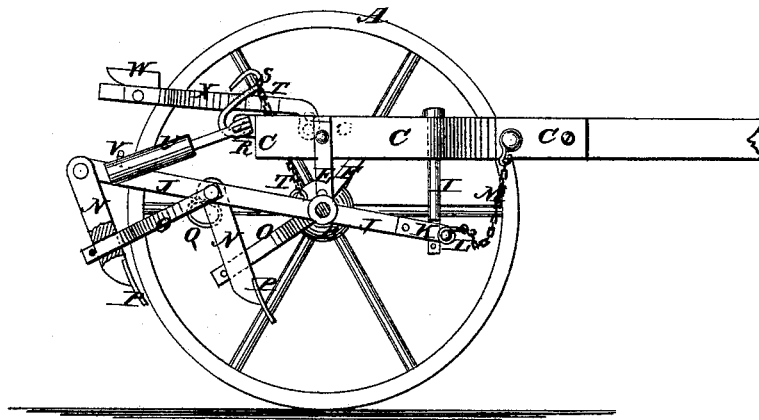
No. 186,065.

Patented Jan. 9, 1877.

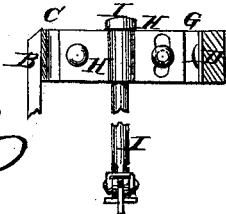
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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*J. H. Scarborough*

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# UNITED STATES PATENT OFFICE.

PHILIP STUDER, OF MECHANICSVILLE, IOWA.

## IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **186,065**, dated January 9, 1877; application filed October 14, 1876.

*To all whom it may concern:*

Be it known that I, PHILIP STUDER, of Mechanicsville, in the county of Cedar and State of Iowa, have invented a new and useful Improvement in Cultivators, of which the following is a specification:

Figure 1 is a top view of my improved machine. Fig. 2 is a side view of the same, partly in section, through the line *x x*, Fig. 1. Fig. 3 is a detail view of the adjustable keeper and the pin.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved machine for cultivating corn and other crops planted in hills and drills, which shall be so constructed that the plows may be readily adjusted toward or from the plants, and raised from the ground for passing from place to place.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

A are the wheels, which revolve upon the journals of the axles B. The axles B are bent at right angles at the inner ends of their journals, and their inner arms are bolted to the iron bar C. The bar C, a little in the rear of each axle B, is bent at right angles, and its middle part is securely bolted to the rear cross-bar of the tongue D. The bar C, a little in front of the axle-arms B, is bent inward at an obtuse angle, and its ends are securely bolted to the tongue D. The axles B are further strengthened in position by the braces E F. The outer ends of the braces E are bolted to the upright arms of the axles B, and their inner ends are bolted to the tongue D. The rear ends of the braces F are bolted to the upright arms of the axles B, and their forward ends are bolted to the forward parts of the bar C.

To the opposite sides of the tongue D are bolted the inner ends of the bars G, which bars are bent outward and then rearward, and their outer parts lie along and are bolted to the bar C.

H are two keepers, the end parts of which are slotted transversely to receive the bolts by which they are secured to the middle parts of the bars G. I are two pins, which pass

down through the keepers H, and their lower parts pass down through the space between the forward ends of the plow-beams J, the straps K, attached to the sides of said ends, and the bolts of the clevises L, to which the ends of the draft-chains M are attached. The forward ends of the draft-chains M are attached to the tongue D.

The plow-beams J are provided with standards N, braces O, and plows P, in the usual way, and to them are attached stirrups Q, so that the plows can be guided by the driver with his feet.

The tongue D is made forked to give it strength and lightness, and the rear parts of its branches are connected by cross-bars, as shown in Fig. 1.

In keepers or eyebolts attached to the rear cross-bar of the tongue D slides a rod, R, upon which are formed, or to which are attached, arms S, which are curved to pass over the bar C, and have hooks formed upon their ends to receive the chains T, which are attached to the plow-beams J.

To the rod R is rigidly attached a lever, U, so that by operating the lever U the plows may be raised from the ground for convenience in turning, and in passing from place to place.

The plows are secured in place, when raised from the ground, by passing the end of the lever U beneath a hook, V, attached to the plow-beam J, as shown in Fig. 2.

W is the driver's seat, which is attached to the rear end of the standard X, the forward part of which is forked, and its forward ends are curved downward and have several holes formed in them, to receive the bolts by which they are secured to the tongue D, so that by adjusting the said bolts the seat may be raised and lowered, as desired. The standard X rests upon the rear cross-bar of the tongue D. Several holes may also be formed in the parts of the tongue D, to receive the bolts by which the seat-standard X is secured to them, so that the seat W may be moved forward and back, as may be desired.

By this construction, by adjusting the straps or keepers H, the lower ends of the pins I may be inclined inward or outward, to adjust the plows toward or from each other, as cir-

cumstances may require. The pins I also allow the plow-beams J to move up and down upon them, as may be required.

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

The combination of the bent bar C and the

braces E F with the tongue D and the axles B, substantially as herein shown and described.

PHILIP STUDER.

Witnesses:

G. A. EAYERTY,  
JAMES BAYLES.