2 Sheets—Sheet 1.

D. C. TANNER.

CULTIVATOR.

No. 177,666. Patented May 23, 1876.

Fig. 1.

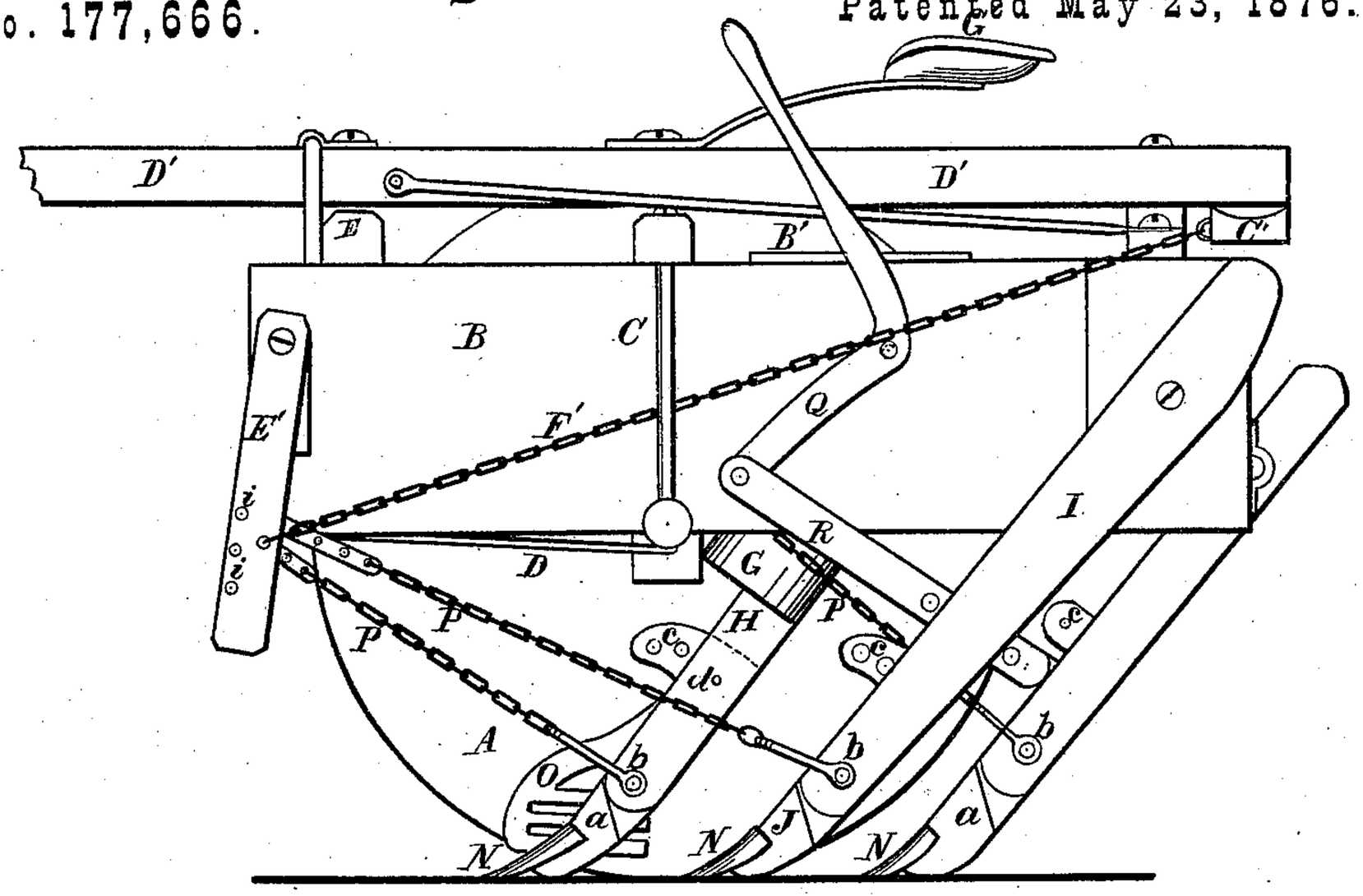
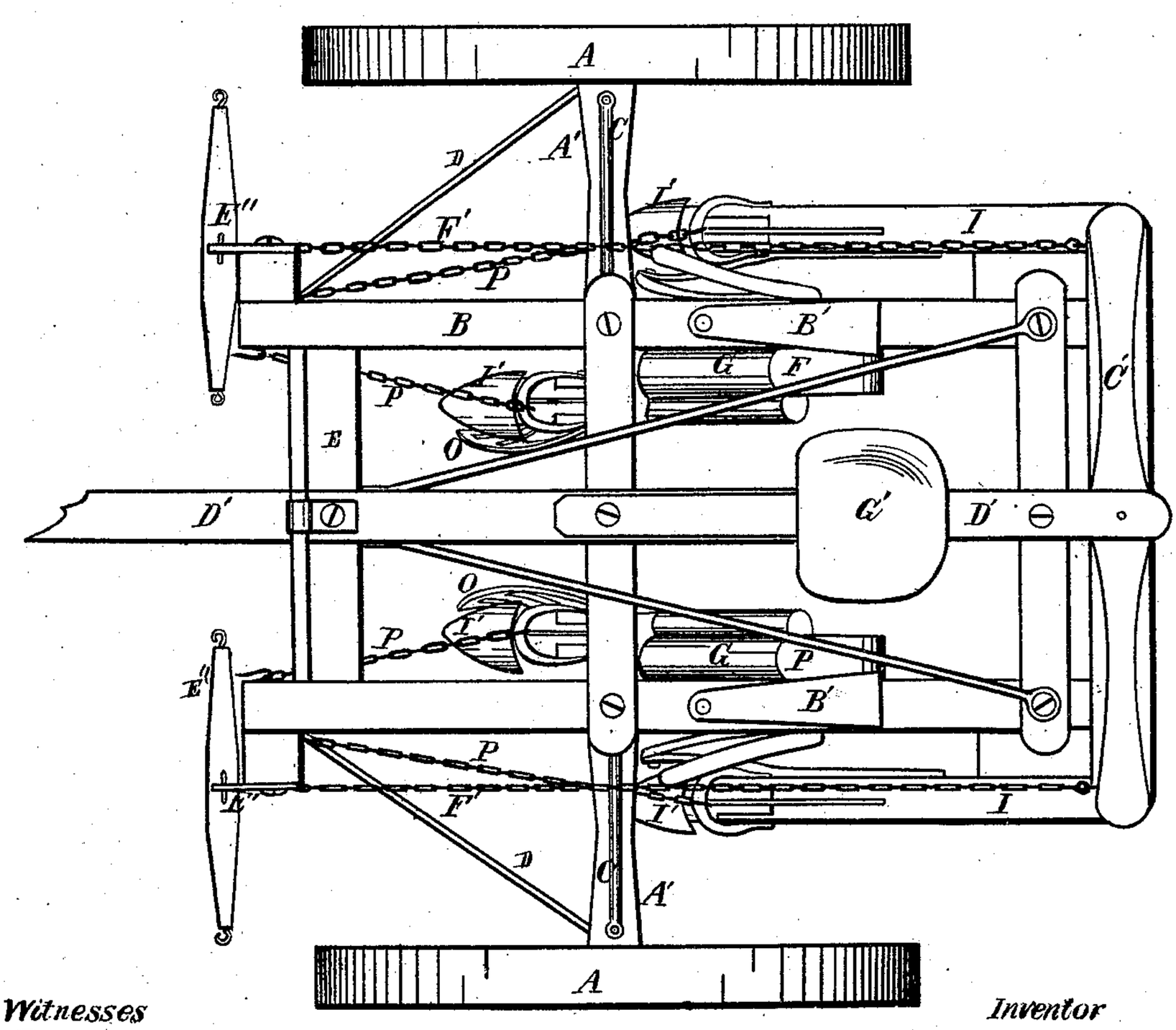


Fig. 2.



Witnesses

Geo. H. Graves
E. W. Cross.

Inventor

D. C. Tanner.
Per Burridge & Co.
Attys

2 Sheets—Sheet 2.

D. C. TANNER.

CULTIVATOR.

No. 177,666. *Fig. 3.* Patented May 23, 1876.

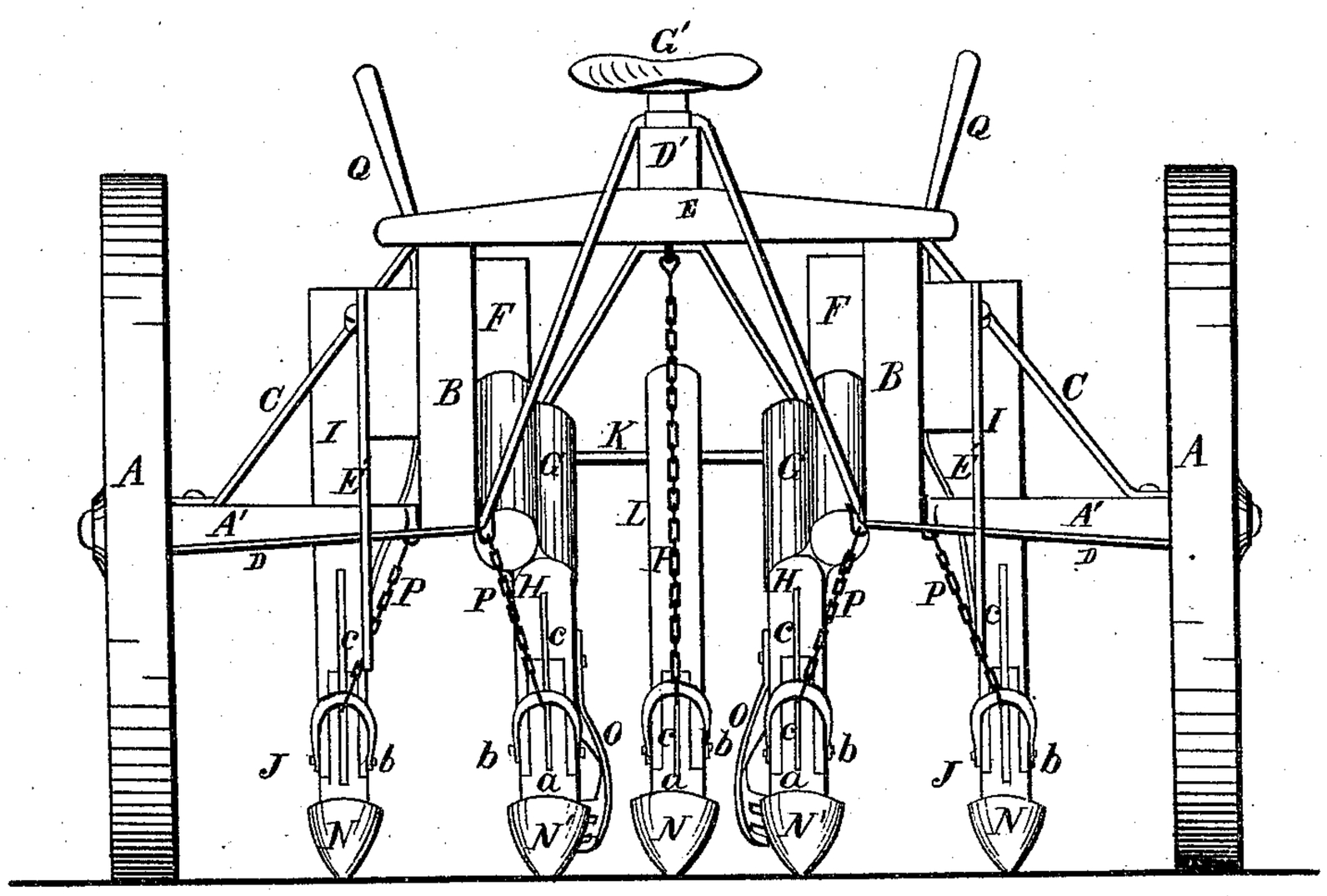
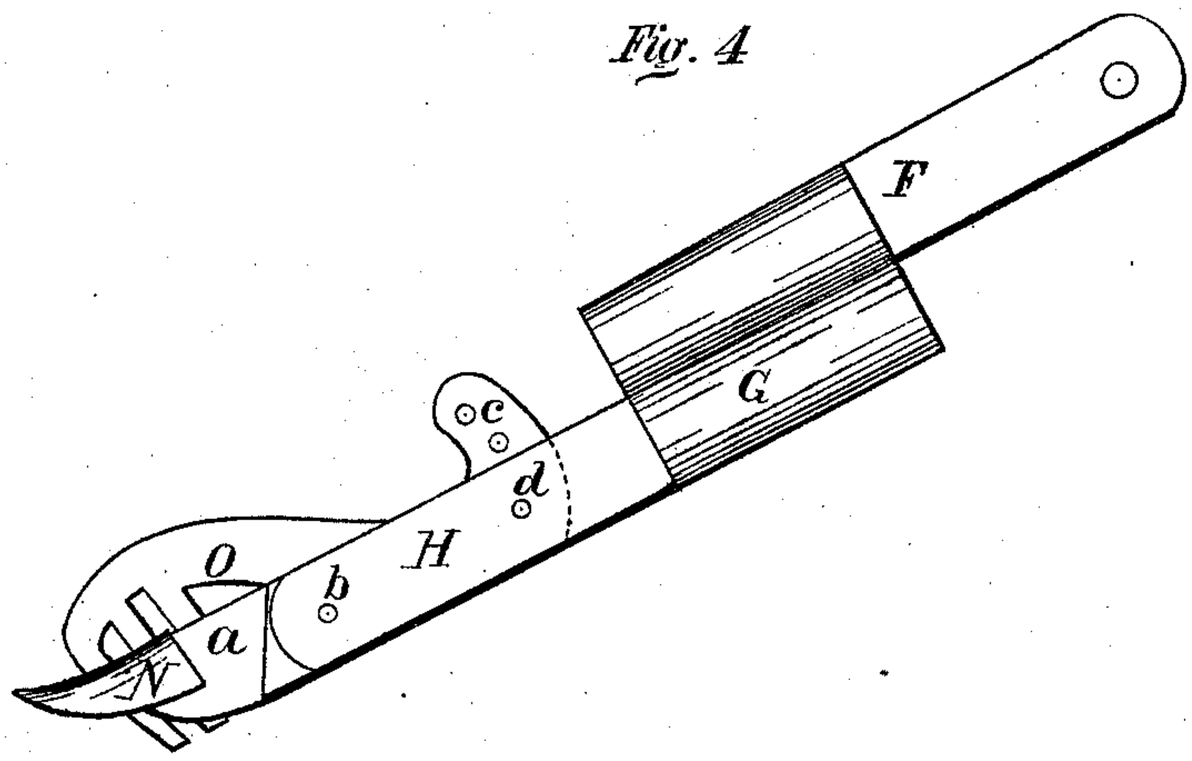


Fig. 4



Witnesses

E. W. Cross.

Geo. H. Hemmer

Inventor

D. C. Tanner

Per Burridge & Co

Attys

UNITED STATES PATENT OFFICE.

DANIEL C. TANNER, OF KIRTLAND, OHIO.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **177,666**, dated May 23, 1876; application filed December 27, 1875.

To all whom it may concern:

Be it known that I, DANIEL C. TANNER, of Kirtland, in the county of Lake and State of Ohio, have invented a certain new and Improved Cultivator; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

Figure 1 is a side elevation of the cultivator. Fig. 2 is a plan view. Fig. 3 is a front elevation. Fig. 4 is a detached section.

Like letters of reference refer to like parts in the several views.

This invention relates to that class of cultivators which cultivate both sides of a row of corn or other crop at one and the same time, and avoid the necessity of traversing the length of the row more than once; and it consists in the combination and arrangement of some of the parts of which the machine is composed, as will be more fully set forth hereinafter.

A A represent a pair of wheels, whereon is mounted a frame consisting of the sides B B. It will be observed that the axles A′ of the wheels do not extend across the frame, but terminate at the sides of the frame, to which they are secured and supported by the braces C D. By this means is left between the sides B B a wide space uninterrupted by the axle or axles of the wheels, and of considerable height from the ground to the cross-pieces E of the frame. To the inside of each of the sides B B is hinged an arm, F, Fig. 3, a detached view of which is shown in Fig. 4. To said arm is attached, by a sleeve, G, a standard, H, Fig. 1. To the lower end of said standard is pivoted a foot, *a*, at the point *b*, forming a joint for elevating the foot. The joint is made rigid, and retained in position by a tongue, *c*, fixed firmly in the foot, and extending therefrom into the standard loosely in a slot, which is therein secured by a pin, *d*, passing through the standard and tongue, as will be seen in Fig. 4. To the rear end of the outside of the sides B B is hinged a standard, I, one on each side of the frame. Each standard is provided with a foot, J, which in like manner is pivoted thereto, and held in position by a tongue, as are the feet *a* of the standards H referred to. Across the rear end of the frame is secured a shaft, K, Fig. 3, to which is attached a standard, L, which is also provided with a jointed foot and tongue, as are the other standards. All of the feet are alike furnished with a share, N, of the shape shown in the drawings. To the lower end of each of the standards H is attached a guard, O, Fig. 4, the purpose of which will presently be shown. P are chains, whereby the standards are fastened to the frame of the machine to hold them in working position. To each side of the frame is pivoted a bell-crank lever, Q, Fig. 1, to one arm of which is attached, respectively, the standards I by a link, R. The elbow of the crank is firmly fixed to the pivotal pin, whereby the arms F of the standards H are attached to the sides B B of the frame.

It will be obvious that by attaching the two standards to the lever, as above described, they can both be elevated at the same time, and when elevated may be retained thus by the check B′, Fig. 2, which is pushed out from the side, as indicated by the dotted line *a′*, so that it may engage the handle of the lever, and thereby sustain the elevated standards above the ground. The machine is drawn from the top of the rear end by a sway-bar, C′, Fig. 2, pivoted to the end of the tongue D′. The ends of said bar are attached, by chains F′, respectively, to a pendent vibratory arm, E′, Fig. 1, pivoted to the side of the frame, Fig. 2. To each of said arms is attached a whiffletree, E″, to which the team is hitched, one horse to a whiffletree, E′, respectively, on each side of the tongue D′, to which they are geared by a neck-yoke, in the ordinary way.

The practical operation of the above-described machine is as follows: In order to use the machine for cultivating corn, potatoes, &c., the standard L must be removed, or, if the corn be not very high, it can be lifted up and secured to the under side of the frame. The machine is so adjusted in respect to a row of corn that said row will lie between the standards H H; hence, there will be a horse on each side of the row. The operator takes his place on the seat G′. As the machine moves forward, the shares N′ N′ will run along each side of the row, stirring up the earth, and casting it against the plants on either side.

In the event the plants are small and likely to be buried by the dirt, the guards O are used; which being between the plants and the share, the earth is thrown against the guards by the share, and enough will pass through them to properly cover the plants without breaking them down.

It will be seen that both sides of a row of corn or other plants will be cultivated at the same time, the dressing of dirt being thrown against the plant from both sides of the row at once. More or less earth can be cast against the plants by turning the standards H H in the sleeves G, thereby turning the face of the shares more or less toward the plants, which will throw an amount of dirt against the plants in proportion as they are turned in that direction. While the shares N′ N′ are casting the earth about the plants, the shares N N are loosening up the earth between the rows, so that it can be all the more readily and freely cast about the plants by the shares N′. The depth that the shares are to run in the ground is regulated by the chains P, whereby the standards are attached to the frame. By lengthening or shortening said chains the shares will run more or less deep in the ground. The purpose of the foot *a* and tongue *c*, hinged to the standard, as above described, is to allow the share to be adjusted more or less horizontally in respect to the surface of the ground, so that it may cut into the earth rather more than drag therein, as they would do if held vertically toward the ground. In consequence of the elevated character of the frame, the machine can be used in the cultivation of corn when it is quite tall, as it will pass under and between the sides of the frame without being broken down.

The cultivator can be used for working fallow land by employing, in connection with the standards N and N′, the standard I and share, thereby making the fallow-cultivator.

In drawing the machine from behind by means of the sway-bar C′, attached to the arms E′ by the chains, as above described, the effect in the draft will be the same as it would be if drawn from the front by a double-tree, with the advantage of its not being in the way of the standing corn or plants being cultivated; also with the further advantage that it can be made to run more or less deep in the ground by shifting the whiffletrees in the holes *i*, as the case may be, and which, also, may lighten the draft of the machine.

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

1. The combination of the side pieces B B of the frame, constructed as described, the chains F′ and P, the standards I I, and the pendent vibratory arms E′, the parts being constructed and arranged to operate as shown and described.

2. The combination of the standard H, adjustable in the sleeve G, with the foot *a*, adjustable in the standard H, substantially as and for the purpose described.

3. In a cultivator, the combination of the standards F and H and the sleeves G, for rendering the shares adjustable, substantially as and for the purpose set forth.

4. The combination of the sway-bar C′, pivoted to the rear end of the machine, the chains F′ and P, the pendent vibratory arms E′, and whiffletrees E″.

DANIEL C. TANNER.

Witnesses:
H. E. JUDSON,
E. W. CROSS.