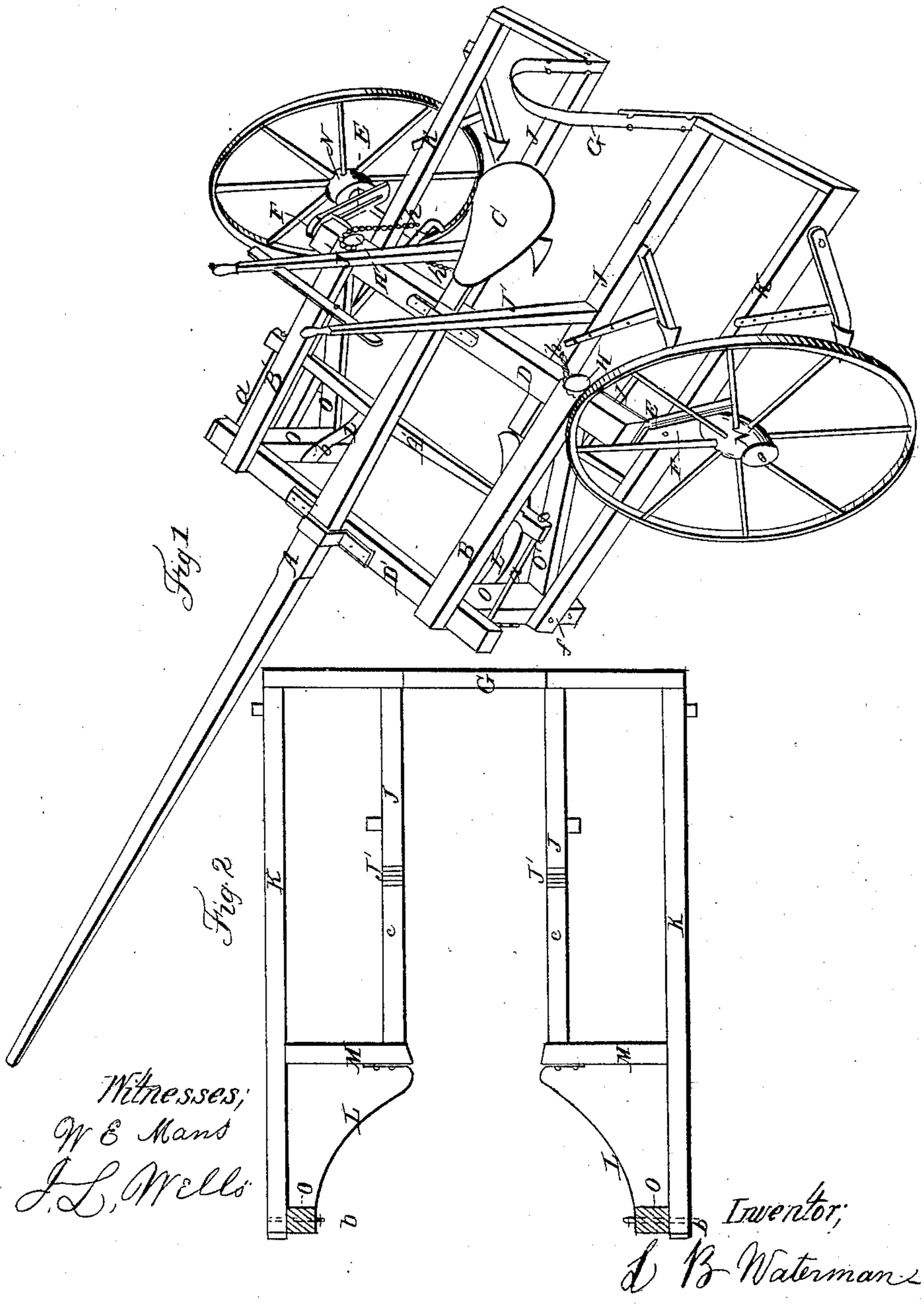
L. B. WATERMAN.

Wheel Cultivator.

No. 37,019. Patented Nov. 25, 1862.



UNITED STATES PATENT OFFICE.

L. B. WATERMAN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **37,019**, dated November 25, 1862.

To all whom it may concern:

Be it known that I, L. B. WATERMAN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Two-Horse Wheeled Cultivators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures marked thereon, which form a part of this specification.

In the aforesaid drawings, Figure 1 represents a perspective view of my improved cultivator; and Fig. 2, a plan view of the lower frame thereof, to which the plows or shares are attached, the upper part being removed.

My improvements have reference to that class of two-horse cultivators which are mounted upon wheels, and which are designed to stride the rows of corn or other plants which are being cultivated.

The nature and object of my several improvements will fully appear from the descriptions thereof as hereinafter given.

To enable those skilled in the subject-matter of my invention to make and use the same, I will now proceed to describe it with particularity.

As will appear from examination of the drawings hereinbefore referred to, my improved cultivator is composed of two parts. The upper part, to which the seat for the driver and the draft-pole are attached, and which is supported upon the wheels, consists of the four bars or beams B B′ D D′, arranged horizontally and bolted firmly together, and the upright arms O at the front, extending down to the lower part, or the frame to which the plows are attached, at the lower end of which arms O the lower frame is attached by the front end by means of the rod or bolt *b*, which forms a joint or hinge, whereby the rear end of the said lower frame may be elevated or depressed, while the front thereof remains stationary at *b*. This joint or hinge forms the sole means of attachment of the lower to the upper frame. The aforesaid arms O are strengthened and supported by the braces O′.

The draft is applied to the double-tree A′ by means of the draft-rods *a*, which pass through an adjustable bar, whereby they may be raised or lowered, as the case may require. C represents the driver's seat, which is attached to the upper frame, and is therefore supported by the wheels.

The lower part, or the frame to which the plows or shares are attached, is itself composed of two parts, being designed to stride the rows. These two parts consist respectively of the beams J K M and the bar L, arranged as shown particularly in Fig. 2. These parts are respectively attached by the front to the arms O, hereinbefore described. They are also connected at the rear end by the adjustable bow G, which is so constructed as to be raised or depressed as the height of the corn may require.

The beams J, to which the plows nearer the corn are attached, are provided with gudgeons at each end, so that by means of the handles J′ the driver, by a lateral motion imparted to said handles, can throw the said plows attached to J from one side to the other, and thus adjust the said plows to any abrupt curve or other species of inequality or irregularity in the position of the hills composing the row.

There is attached to J in the lower frame the chain or cord *h*, which, passing over the pulleys H on the upper frame, goes down and is fastened to the lever I in such a manner that pressure upon the end of the lever will raise in a corresponding degree the lower frame from the ground. These levers I are readily operated by the feet of the driver.

It will be seen by examining the drawings hereunto attached, and forming a part of this description, that that part of the axle upon which the wheels revolve are separate pieces. To the axle D, at each end thereof, there is fastened the grooved attachments marked E, into which the slide F, forming the continuation of the support or axle upon which the wheel turns, is fitted with great accuracy. This slide F moves up and down in the aforesaid groove, and may be adjusted to the desired height, where, by means of the set-screw *e*, it may be firmly fixed.

Having now given a general description of my improved cultivator, I will now proceed to point out what I consider as my invention, and also the object and purpose of the same.

I consider as new the peculiar arrangement or construction of the lower frame in this respect—namely, the arrangement of the beams

J K and the bar L. The object of this arrangement is to guard and provide against breaking down the hills when they happen to be a little out of the direct line of the row. Without this widening of the space between the two wings of the lower frame there would be in front a square abutment, which would necessarily break down all the corn which should stand without the line of the beam J, whereas by shortening J and joining the end thereof with K by means of the inclined surface L the corn, instead of being broken down, is pressed gradually within the space between the two beams J, when by giving the lateral motion to the handles J′ the plows are adapted to the hill, and so it is neither broken down by the front of the cultivator nor turned up by the plows. By this arrangement, also, the connection or hinge which unites it with the upper frame is made at a single point, which renders it much simpler and cheaper.

I also consider as new the arrangement of the chain *h*, the pulley H, and the lever I with the hinged lower frame. The object of this arrangement is to enable the driver readily to raise the plows from the ground when turning around at the end of each row, which he can do by simply pressing his foot upon the lever.

I also consider the construction of the adjustable bow G as novel, as also the arrangement for raising and depressing the upper frame by means of the groove and slide E F in the axle.

I claim as my invention—

1. The peculiar arrangement of the beams J K M and the bar L, in combination with the upper frame work, when operating substantially as described, and for the purposes specified.

2. The arrangement of the lever I, the chain *h*, and the pulley H, when the same are used in connection or combination with the grooved axle attachment E and the slide F, the whole being arranged and operating as and for the purposes set forth.

3. The adjustable bows G, when arranged with the bar J, as and for the purposes set forth and delineated.

L. B. WATERMAN.

Witnesses:
W. E. MARRS,
J. A. HOISINGTON.