

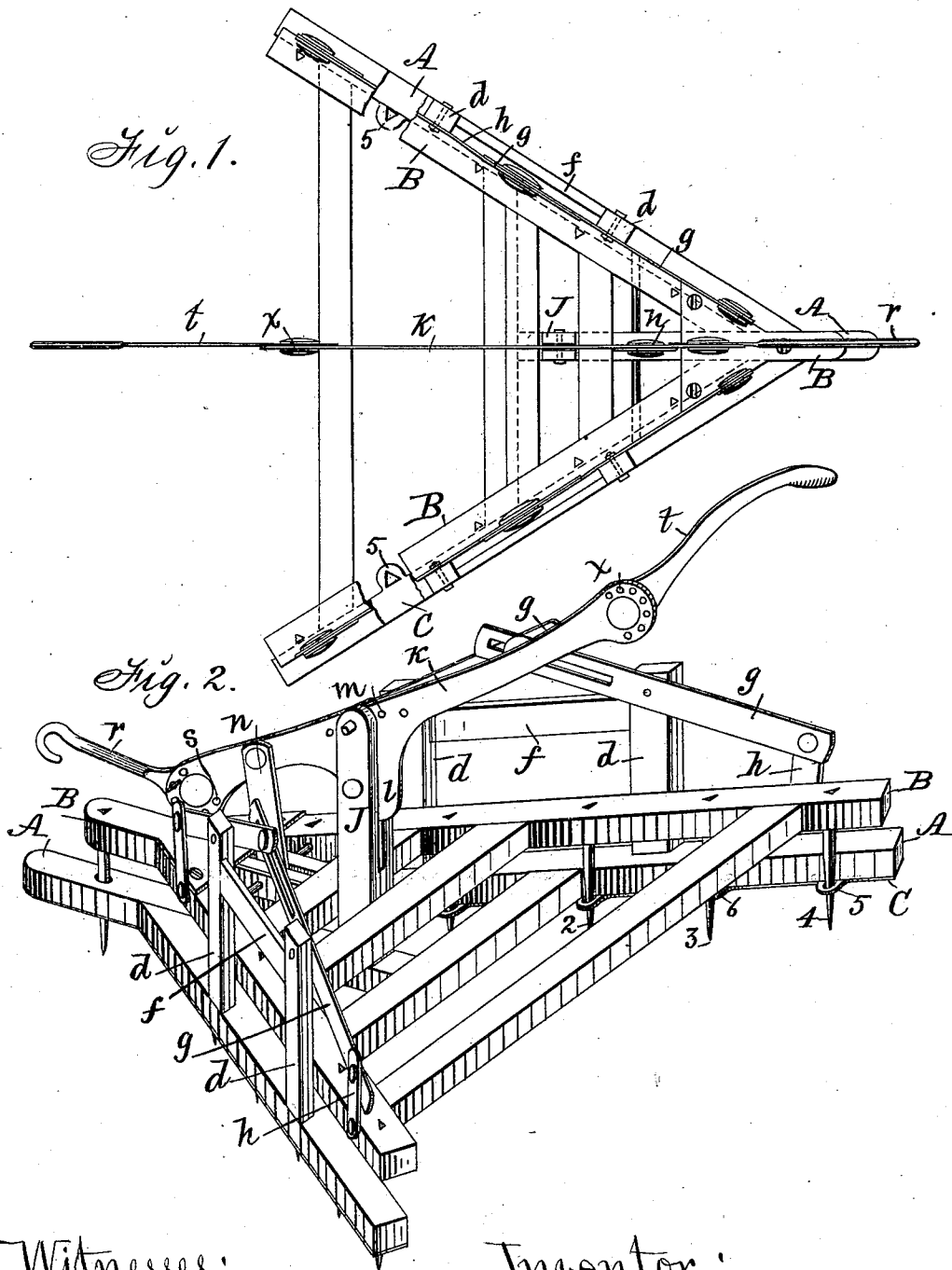
(No Model.)

W. F. DODGE.

HARROW.

No. 273,479.

Patented Mar. 6, 1883.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM F. DODGE, OF BLOOMFIELD, IOWA.

## HARROW.

SPECIFICATION forming part of Letters Patent No. 273,479, dated March 6, 1883.

Application filed August 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. DODGE, of Bloomfield, in the county of Davis and State of Iowa, have invented an Improved Harrow, of which the following is a specification.

My invention relates to that class of harrows in which a frame carrying teeth is vertically adjustable relative to a base-frame, through which the teeth must extend to enter the ground.

It consists in forming perforated ears integral with a metal plate adapted to be fixed to a wooden frame to serve as a bearing and cleaning device for the teeth, and also as a wearing-surface to protect the wood when the teeth are elevated, and the complete harrow dragged to scrape and level the surface of the ground, or moved from one field to another in an inoperative condition.

Figure 1 of my accompanying drawings is a top view, and Fig. 2 a perspective view, of my harrow. Together they clearly illustrate the construction and operation of my complete invention.

A represents the lower frame, preferably made of wood, and V-shaped.

B represents the upper and suspended frame, corresponding in shape and size with the lower, and carrying a series of fixed teeth, 1 2 3 4. These teeth are of triangular shape in cross-section, and are so set in the frame that they will always present a sharp edge to the front, and a flat side against the lower frame whenever they come in contact with said lower frame.

C C are flat metal plates, fixed on the under sides of the frame A. Each plate has a series of perforated ears or eyes, 5 6 7 8, formed integral therewith, to project inward, immediately under the points of the teeth 1 2 3 4, in such a manner that the points of the teeth will pass through them as the upper frame is lowered. (When the frame A is made of wood, staples may be fixed in the wood to project inward in lieu of the perforated ears 5 6 7 8.)

d d are posts fixed to the sides of the frame A and connected with bracing-pieces f.

g g are compound levers, pivoted to the tops of the posts d. The two pieces in each pair of levers are flexibly connected with each other, between the posts d, and with the upper frame,

B, at their ends, by means of pivoted links or bars h.

J is a post fixed to the center piece of the lower frame to serve as a fulcrum for my adjustable beam and lever k, by means of which the upper frame, B, is suspended and operated, and also as a guide to direct the movements of the suspended frame.

l is a projection on the under side and central portion of the beam, that is pivoted in the bifurcated top end of the post J. A series of perforations, m, in the beam, immediately over the projection l, adapt the beam to be locked and held stationary on the post at various angles relative to the post, as required, to retain the suspended frame at various points of elevation relative to the lower frame and the ground.

n is a bar or link pivoted to the front end and short arm of the lever k and flexibly connected with the frame B, as required, to suspend the upper frame over the lower frame, A, by means of the post J and lever k.

r is an adjustable hook or clevis, pivoted to the front end of the beam k, to serve as a hitching device that can be set and retained at various angles relative to the beam, by means of a series of perforations, s, in the beam, and a pin or bolt, as required, to raise and lower the line of draft applied to the harrow.

t is a handle pivoted to the rear end of the beam and lever k in such a manner that it can also be adjusted and fixed to extend at various angles by means of a series of perforations, x, in the rear end of the beam, as required, to be adapted for men or boys or tall and short persons.

In using my harrow as an attachment to a wheel-cultivator, I hitch it to the cultivator-carriage in such a manner that it will drag in rear of and in a central position relative to the two cultivators that advance on opposite sides of a row of plants to loosen the soil and turn it toward the plants. As my attachment follows the teeth 1 2 3 4, presenting their sharp edges to the front, will cut through the soil close to the plants and loosen and mellow the ground, while the flat plates C will press it smooth, and, in combination with the inclined side bars of the lower frame, will push clods

and rubbish in opposite directions and away from the row of plants to deposit the same midway between the rows and out of the way.

To raise or lower the suspended frame, as required to regulate the depth of the teeth in the ground, or to clean them by drawing them upward through the perforations 5 6 7 8, I simply adjust the beam and lever *k* on the post *J*.

To use my harrow independently, I attach horses direct to the hitching device *r* at the front end of the beam and then drag it in the manner harrows are usually operated.

I claim as my invention—

The combination of the V-shaped harrow-frame *A*, having metal plates *C*, from which extend perforated ears, and a vertically-adjustable frame of corresponding form, carrying teeth that extend through said perforated ears, bearings, and scrapers, substantially as and for the purposes set forth.

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Witnesses:

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