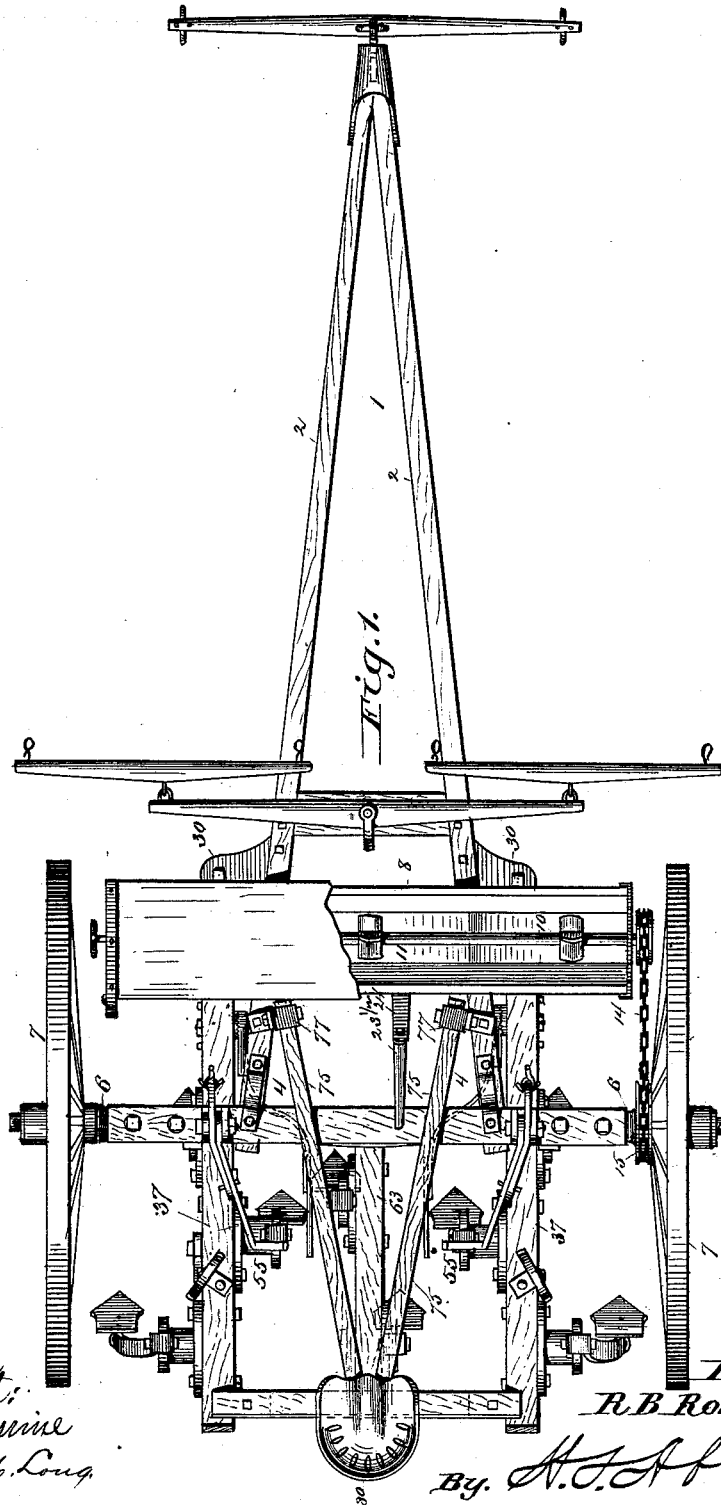


R. B. ROBBINS.
Cultivator.

No. 218,454.

Patented Aug. 12, 1879.



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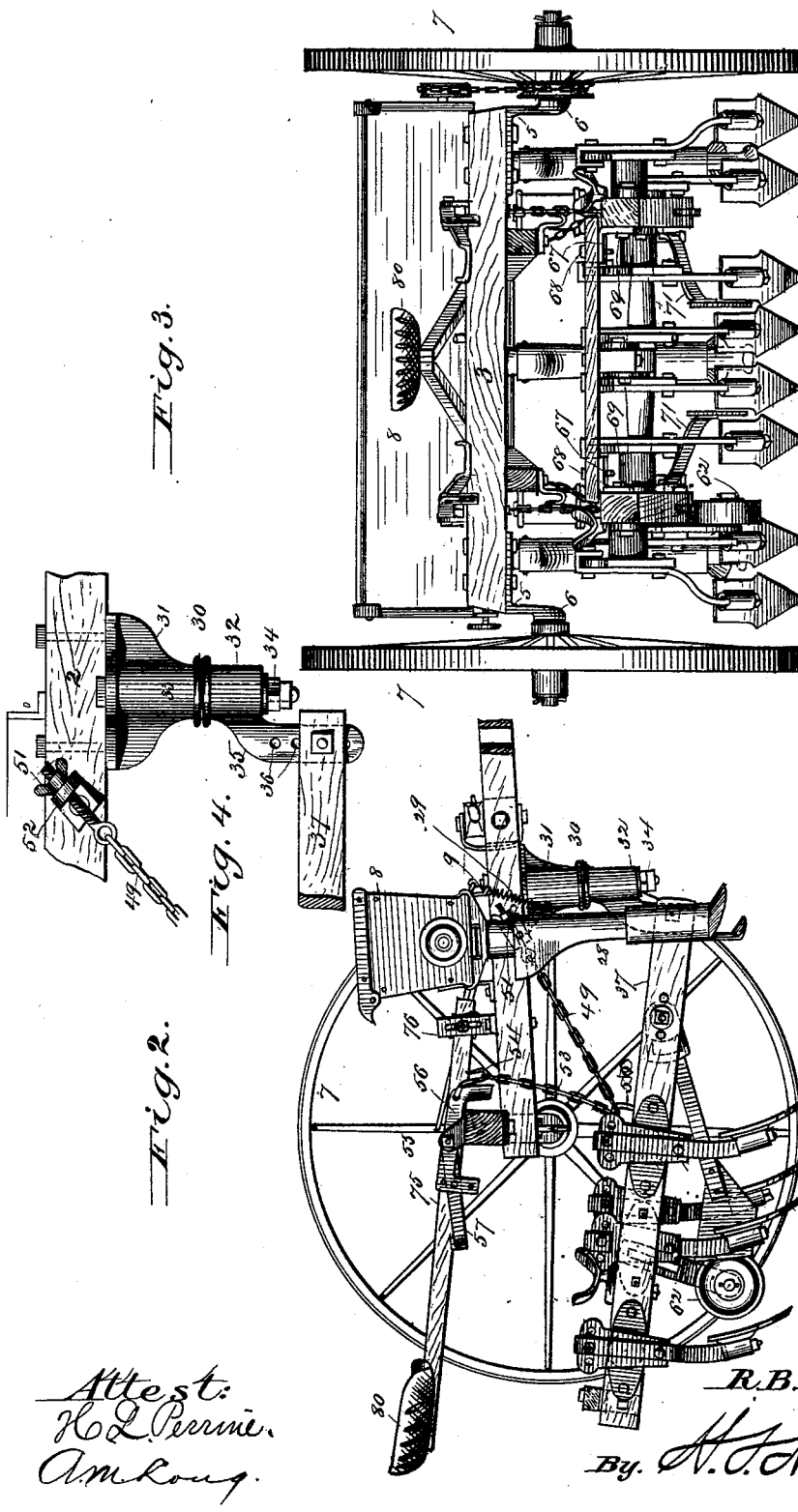
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Atty.

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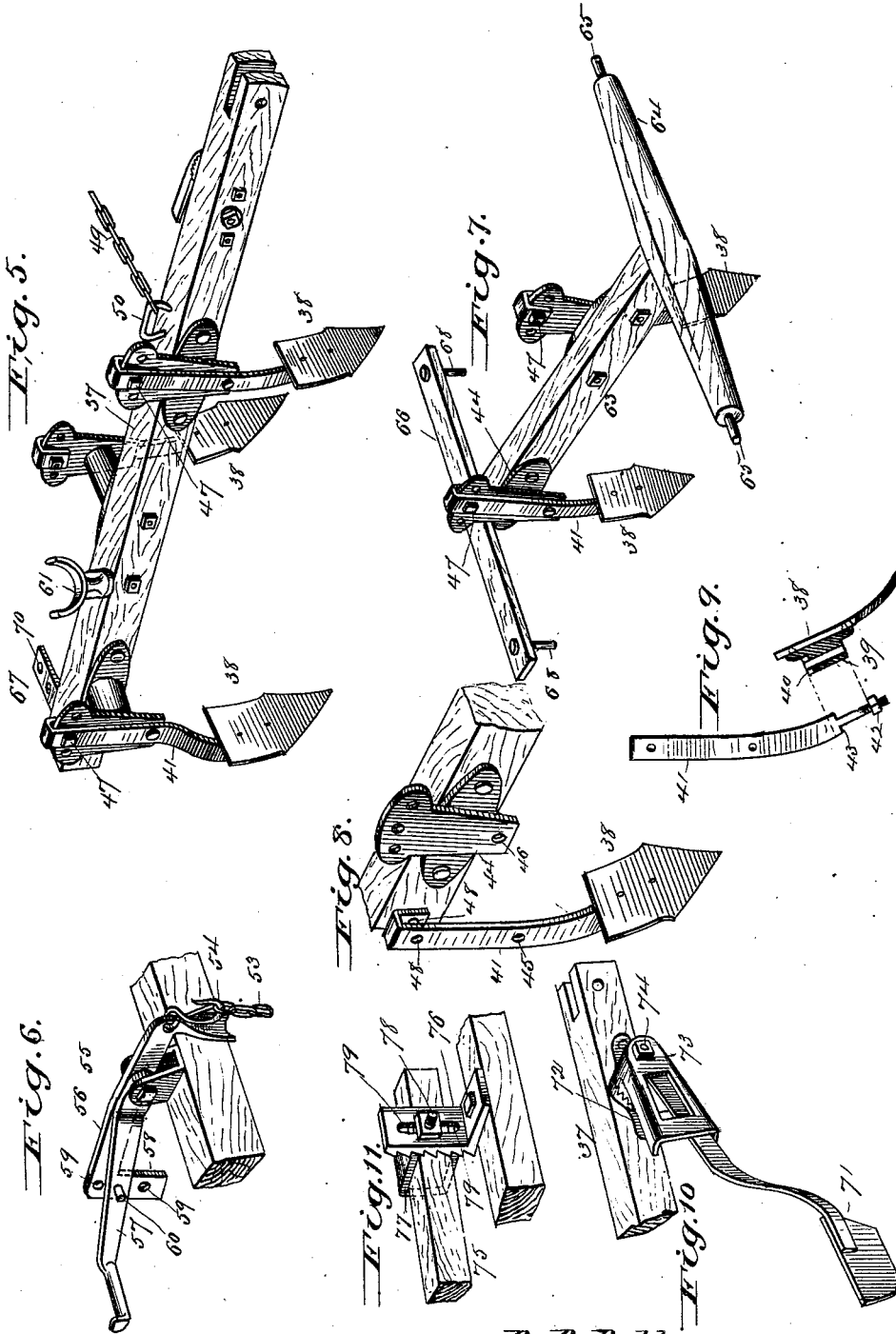
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UNITED STATES PATENT OFFICE.

RICHARD B. ROBBINS, OF ADRIAN, MICHIGAN.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **218,454**, dated August 12, 1879; application filed November 18, 1878.

To all whom it may concern:

Be it known that I, RICHARD B. ROBBINS, of Adrian, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Cultivators; and I do hereby declare that the following is a full, clear, and exact description thereof.

Figure 1 is a plan view of the cultivator; Fig. 2, a side elevation with one of the wheels removed; Fig. 3, a rear elevation; Fig. 4, a side view of one of the pendants to which the rails are connected; Fig. 5, a perspective of one of the rails with the teeth connected thereto; Fig. 6, a perspective of one of the foot-levers by which the rails are operated; Fig. 7, a perspective of the center rail; Fig. 8, a perspective of rail and arm, the latter with its tooth detached from the rail; Fig. 9, a side view of arm and tooth, the latter separated from the arm and being in section to show the sleeve on the back thereof; Fig. 10, a perspective of the shield and its securing arms, and Fig. 11 a perspective of one of the adjustable irons for holding the seat-bars.

My invention relates to cultivators; and it consists in the construction and combination of the parts hereinafter particularly specified.

In the drawings, the figure 1 indicates the tongue, composed of the two poles 2, and secured to the cross-bar 3, and strengthened by the braces 4, bolted thereto and to the cross-bar 3, whereby any uneven strain is prevented from working the parts loose.

To each end of the cross-bar 3 there is bolted or otherwise secured angle-irons 5, formed with the lower horizontally-projecting spindles, 6, upon which are journaled the wheels 7.

To each pole 2 of the tongue 1 there is bolted a cast-iron pendant, 30, the lower section of which is formed with an extension, 35, which is provided with any number of holes, 36, in order that when the teeth become worn the rails 37 may be elevated, so as to keep the cultivator level. This pendant 30 is made in two sections, 31 and 32, vertically through which is passed an iron rod, 33, as shown by dotted lines in Fig. 4 of drawings. The sections 31 and 32 are held together by two jam-nuts, 34, so that when the sections become loose the slack can be taken up by the jam-nuts.

Each blade 38 is provided on its back with a

sleeve, 39, formed with a recess, 40, in the top edge, as shown in Fig. 9 of drawings.

The lower or small end of the arm 41 is passed into the sleeve 39, and the tooth 38 is secured thereto by a nut, 42, screwed onto the end of arm 41, the shoulder 43 of said arm fitting into the recess 40, whereby the tooth is prevented from twisting or getting out of proper position.

The arms 41 are attached to the casting 44 (which are secured to the rails) by a bolt passed through an aperture, 45, in about the middle of the arm, (shown in Fig. 8 of the drawings,) and an aperture, 46, in the lower part of the casting 44. The upper end of the arm is formed into a hook, which is set over the top of casting 44, and secured thereto by a wooden or equivalent safety-pin, 47, passed through holes 48 and any one of the perforations in the upper part of the casting, as is plainly shown in Figs. 5 and 7 of drawings.

The rails 37 are supported by chains 49, extending from a staple, 50, driven into the rail, as shown in Fig. 5 of the drawings, unto a thumb-screw, 51, held by iron 51, secured to poles 2 of the tongue, as shown in Figs. 2 and 4 of drawings.

The rails 37 are connected to the foot-levers 55 by means of chains 53, joined to the staples 50 and to hooks 54, as shown in Fig. 2 of drawings, in order that the teeth 38 may be raised free of the ground. These foot-levers are constructed of two parts, 56 and 57, which are fulcrumed as shown in Fig. 6 of drawings, the part 56 being constructed with a right-angle extension, 58, having any number of perforations, 59, while the part 57 is adjustable with reference to the parts 56, and is held thereto by a pin, 60, passed through one part into the other. These foot-levers are made in two parts, in order that they may be adjusted so as to elevate or lower the rails 37, for the purpose of accommodating the foot-stirrups 61 to the length of the driver's legs.

To the outside of each rail 37 there is adjustably held a caster, 62, for the purpose of regulating the depth of the teeth when the machine is used as a fallow-cultivator only. By unhooking the chains 49 the cultivator is allowed to fallow uneven surfaces.

Between the rails 37 there may be arranged a center rail, 63, as shown in Fig. 1 of draw-

ings. This rail is formed with a cross-head, 64, (shown in Fig. 7 of drawings,) which has pivots 65, that enter the side rails, 37, from the inside.

The rear end of the center rail is provided with a cross-bar, 66, which is adjustably and detachably held to the side rail by angle-irons 67 and bolts 68, as shown in Figs. 3 and 5 of drawings.

The angle-irons 67 are secured to the inside of the side rails by bolts 69, as shown in Fig. 3 of drawings, and are provided with two or more holes, 70, for adjusting the side rails, 37, nearer or farther apart, as desired.

On the inside of rails 37 there is secured a shield, 71, which is held between two serrated irons, 72 and 73, bolted to the rail 37. The serrations of the two irons fit between each other, as shown in Fig. 10, and the iron 73 is flanged, so as to support the shield and limit its upward movement, the shield having a vertical play between the two irons, the angle of its inclination being regulated by loosening the bolt which holds the two irons to the rail, so as to allow the teeth or serrations to be freed from each, and subsequently, after the iron 73 has been adjusted to the proper angle, again brought together, and there held by tightening the nut on bolt 74. This vertical play of the shield prevents it from becoming clogged.

The ends of the seat-bars 75 are adjustably held by means of serrated angle-irons 76, iron clasps 77 on the end of the bars, and bolts 78, passed through the bars and a longitudinal slot, 79, of the angle-iron 76, as shown in Fig. 11 of drawings. By this construction the seat 80 can be adjusted either up or down, as desired.

The foregoing description relates to the cul-

tivator. The other parts and letters or figures of reference used in the drawings relate mostly to seeding devices, which are not claimed herein, but will be made the subject of another application.

Having described my invention, what I claim is—

1. The pendant 30, consisting of the parts 31 and 32, the parts 32 having extension 35, provided with graduating-holes, the whole held together by rod 33 and jam-nut 34, substantially as and for the purpose set forth.

2. The combination of casting 44 and arm 41, the latter bent over the casting, as shown and described, and secured by a wooden safety-pin, substantially as shown.

3. The combination of the perforated angle-iron 67, cross-bar 66, cross-head 64, and rails 37 and 63, as set forth.

4. The foot-lever 55, consisting of one part, 56, having an extension, 58, and another part, 57, hinged and adapted to operate in connection with part 56, substantially as and for the purpose set forth.

5. The combination of the irons 72 and 73, serrated and flanged, as described, with the shield 71, the shield having a free up-and-down motion between the flanges independent of the serrated irons, substantially as set forth.

6. The combination of the seat-bars 75, angle-irons 76, serrated and slotted, as described, clasp 77, and bolt 78, all constructed and adapted to operate substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

RICHARD B. ROBBINS.

Witnesses:

WM. L. GREENLY,

THOMAS M. HUNTER.