

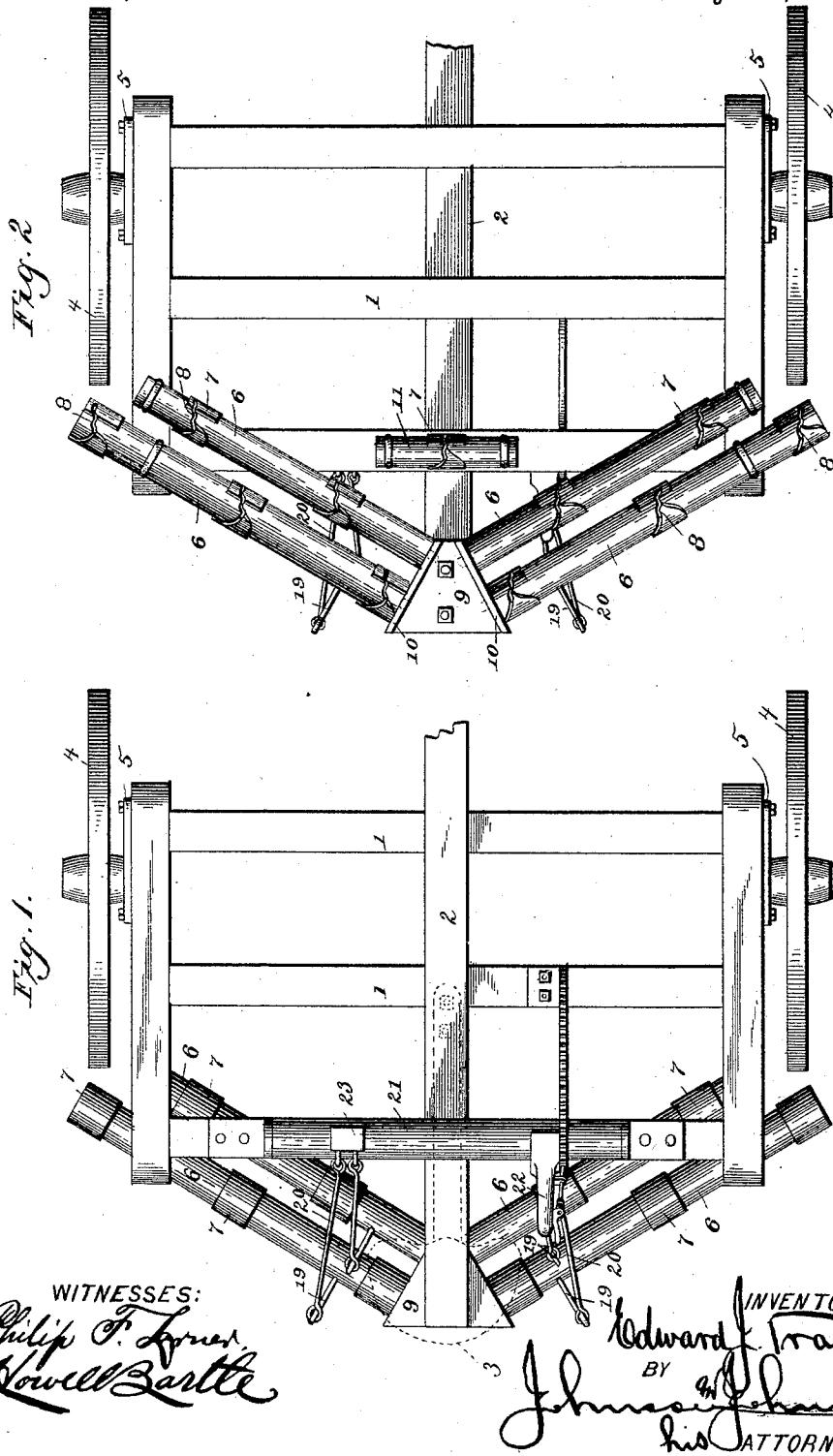
(No Model.)

2 Sheets—Sheet 1.

E. J. TRAVIS.
CULTIVATOR AND HARROW.

No. 453,027.

Patented May 26, 1891.



WITNESSES:

WITNESSES.
Philip F. Lyman,
Howell Bartle

INVENTOR

INVENTOR
Edward J. Francis
BY
H. C. Johnson
his ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

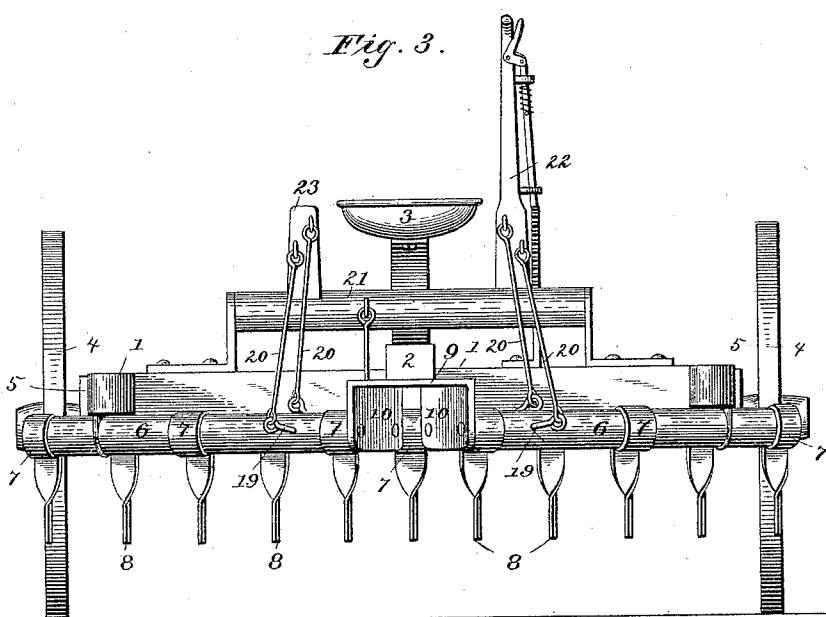


Fig. 4.

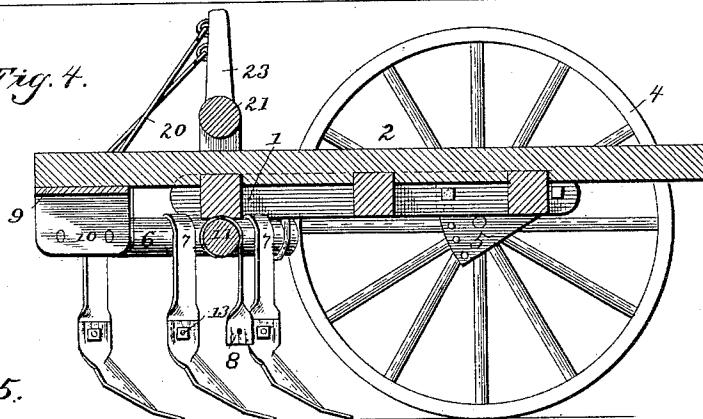


Fig. 5.

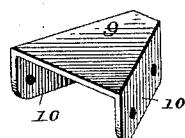
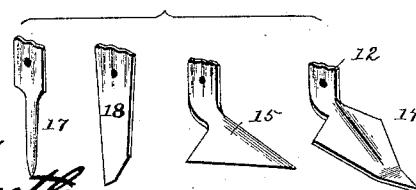


Fig. 6.



Fig. 7.



WITNESSES:

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Edward J. Travis
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UNITED STATES PATENT OFFICE.

EDWARD J. TRAVIS, OF PARIS, TENNESSEE.

CULTIVATOR AND HARROW.

SPECIFICATION forming part of Letters Patent No. 453,027, dated May 26, 1891.

Application filed February 24, 1891. Serial No. 382,531. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. TRAVIS, a citizen of the United States, residing at Paris, in the county of Henry and State of Tennessee, see, have invented new and useful Improvements in Cultivators and Harrows, of which the following is a specification.

My invention relates to wheel cultivators and harrows, and the particular matters of 10 my improvement are directed to the tooth-carrying parts and to special provision for using interchangeable teeth for cultivating, harrowing, or cutting turfed ground, the construction for which will be hereinafter described, and pointed out in the claims, in connection with the accompanying drawings, in which—

Figure 1 is a top view of my improved machine. Fig. 2 is an inverted view of the same. 20 Fig. 3 is a rear end view of the same. Fig. 4 is a vertical longitudinal section of the same. Fig. 5 is the frog-shaped casting which forms the bearings for the oblique spring-arm-carrying bars. Fig. 6 is one of the spring-arms, and Fig. 7 shows the working cultivator and 25 harrow implements used in the combined machine.

A suitable frame 1 is provided with a tongue 2 and a seat 3, and the supporting-wheels 4 are mounted upon the stub-axles of adjustable pivoted plates 5 at the side timbers of the frame to permit it to be set higher or lower, as shown, and as may be desired to suit the adjustment of the teeth and the work 35 to be done. The tooth-carrying bars 6 are arranged at the rear of the frame in parallel pairs, each pair standing diagonally with the line of the axle and on each side of the longitudinal center of the machine. The pairs 40 of bars are arranged quite close together and are provided with downwardly-standing spring-arms 7, arranged at suitable distances apart, those on the rear bar being between those on the front bar. The lower ends of 45 these spring-arms are twisted so as to form a flat shank 8, which is crimped and stands edgewise in the line of the draft, while the flat arm part 7 stands radial with the bar. The outer ends of these bars are mounted in 50 hangers at the side timbers of the frames, while their inner ends are mounted in a frog-shaped casting 9, securely bolted to the rear

end of the tongue, which is extended for that purpose beyond the frame. This frog-shaped casting stands with its narrowest end toward 55 the front, so that its depending side walls 10 will stand at right angles to the lines of the tooth-carrying bars, so that the journal-pins of the latter will be passed into openings in these frog-walls. This gives a very convenient and durable mounting for the tooth-carrying bars and permits of their oblique arrangement in pairs with a space between their inner ends, so that as a cultivator the machine will straddle the row of young corn. 65

In front of the frog-shaped casting a short tooth-carrying bar 11 is mounted in hangers on the under side of the rear frame-beam, so as to stand at right angles to the line of draft across the space between the inner ends of 70 the oblique tooth-carrying bars. This short bar is provided with a single spring-arm 7, standing downward in the longitudinal center line of the machine and formed with a twisted shank 8, like the spring-arms of the 75 oblique bars. This single tooth-bar is used only when the machine is working as a harrow, and its tooth stands in the space between the teeth on the inner ends of the oblique tooth-carrying bars. 80

As stated, the tooth-carrying arms are each twisted and formed with a flat crimped end, which stands edgewise with the line of draft, as shown in Fig. 6, and it is this construction which permits of the use of interchangeable 85 working implements, such as are shown in Fig. 7. These implements are formed of sheet-steel, each with a crimped flat shank part 12, corresponding with the flat shank of the spring-arms, to which they are secured by a 90 bolt 13, passing through the lapped shank parts and fastened by a nut.

For cultivating I use the shovel 14 and half-shovel 15, each formed with a twisted flat crimped shank 12, and for harrowing I 95 use tooth 17, which has a flat crimped shank 12, and for cutting the turf I use the cutter-teeth 18, which has a flat crimped shank. The crimps of the shanks of the spring-arms and of the implements match with each other, 100 and when fitted together with the proper position of the tooth the bolt will hold them firmly and permit of their removal and replacement, as may be desired for the work.

By this construction a single machine can be used as a cultivator, as a harrow, and as a turf-cutter by simply changing the implements upon the spring-arms, which, it will be understood, are fixed to their carrying-bars and do not form the working implements, but only the holders for them, and this is the construction which constitutes my improvement.

10. Each arm-carrying bar has a crank-arm 19, to which a rod 20 is connected, and on the rear timber of the frame a bar 21 is mounted, which has an upward standing lever 22, to which the rods 20 of one pair of the oblique spring-arm-carrying bars are connected, while the other pair of the oblique spring-arm-carrying bars are connected in like manner to a stud 23 on the frame-bar 21, the single tooth-carrying bar being in like manner connected 15 to said frame-bar. This lever is provided with a spring-dog, which engages with the notches of a quadrant fixed to and rising from the frame for turning the arm-carrying bars to raise or to lower the working implements in a way common to harrows using 20 separate bars having spring-teeth, so that all the working implements will be raised and lowered together.
25. It is common to provide harrows with spring-teeth-carrying bars arranged in parallel and

in oblique relation to the frame and with provision for raising and lowering the teeth simultaneously, and it is common to secure the teeth by corresponding notches to adjust their inclination, and it is not these things that I claim, and my improvement consists in the precise construction and combination which is set out in my claims.

I claim as my improvement—

1. The combination, with the diagonally-arranged spring-arm-carrying bars, of the frame having the frog-shaped casting secured to the rear end of the tongue and forming the inner bearings for the said bars, as shown and described. 40

2. The combination and arrangement of the diagonal spring-arm-carrying bars, the fixed frog-shaped casting, the single arm-carrying bar in front of said casting, the spring-arms formed with twisted flat crimped shanks, and the working implements formed with matching crimped shanks, as shown and described. 50

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD J. TRAVIS.

Witnesses:

A. CHERRY,
W. W. FARABAUGH.