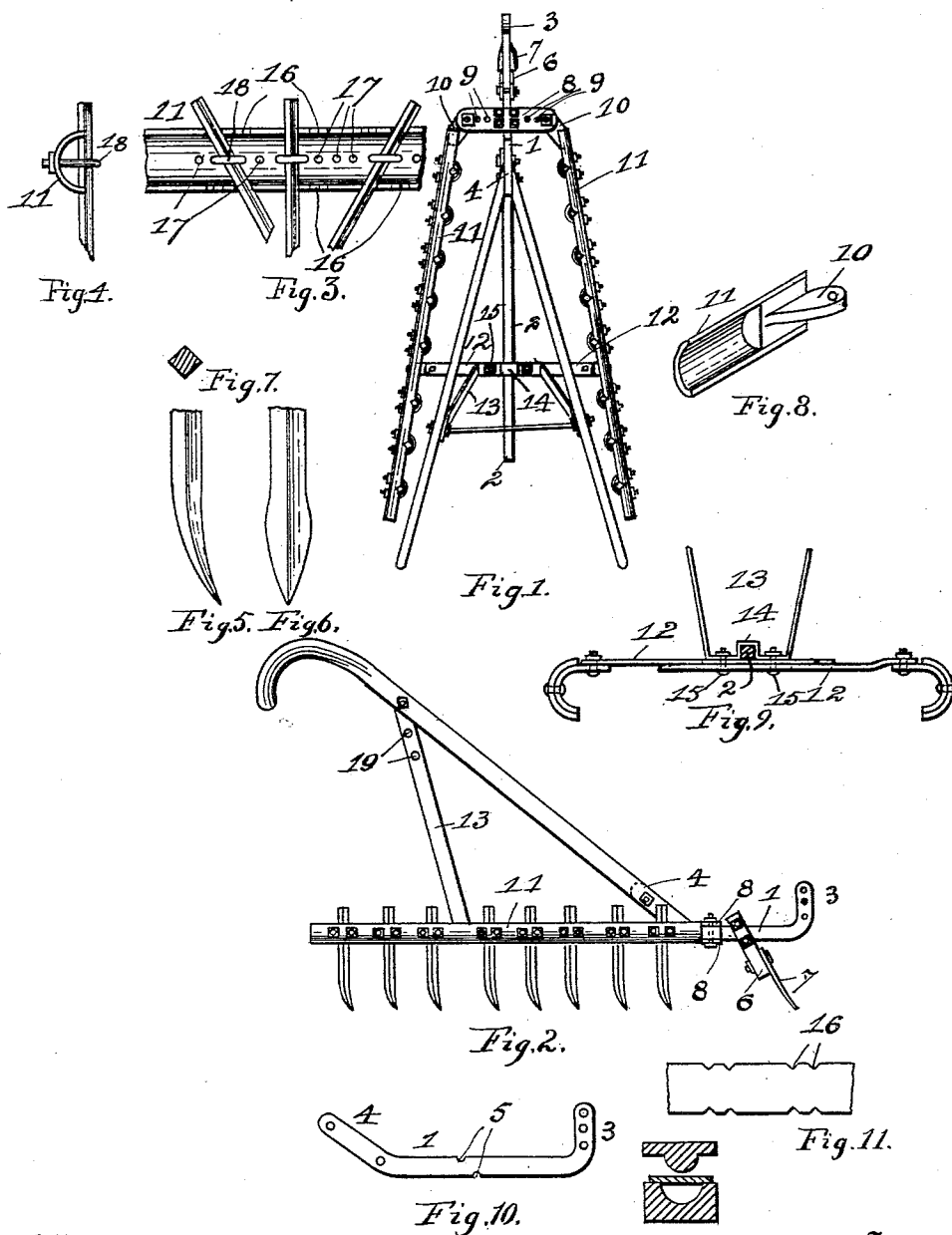


(No Model.)

S. LANDAUER
CULTIVATOR.

No. 476,659.

Patented June 7, 1892.



Witnesses
L. A. Hayden
Edward Wood

Inventor
Sigmund Landauer,
By his Attorneys,
Adams & Co.

UNITED STATES PATENT OFFICE.

SIGMUND LANDAUER, OF ATLANTA, GEORGIA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 476,659, dated June 7, 1892.

Application filed November 17, 1891. Serial No. 412,227. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND LANDAUER, of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Cultivators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates, as above stated, to cultivators, special reference being had in the invention to providing a harrow which shall be stiff and strong and at the same time as light and inexpensive as possible; and to this end the invention consists of a peculiarly-formed tooth-carrying bar and to novel bracing devices and details of construction, all of which will be hereinafter fully described.

In the accompanying drawings, Figure 1 is a plan of the device, showing same at its innermost point of adjustment as to width of cut. Fig. 2 is a side elevation thereof, showing a standard and blade in front. Fig. 3 is a detail of the side bars in side elevation, showing three positions in which each tooth may be placed. Fig. 4 is an end view of Fig. 3, further illustrating the attachment of the teeth to the side bar. Figs. 5, 6, and 7 are respectively side, front, and sectional views of the tooth which it is preferable to employ. Fig. 8 is a detail perspective view of the front end of a side bar, showing the pivoting-block therein. Fig. 9 is a detail in back elevation of the braces and means for adjusting the side bars relatively wider or narrower and of holding some stationary when adjusted relative to the beam. Fig. 10 is a side elevation of the front section of the beam, showing the upward extensions for whiffletree and handle attachment. Figs. 11 and 12 are details.

In the figures like reference marks are employed in the designation of corresponding elements of construction in all the views.

The beam is composed of two parts, a front portion 1 and a backwardly-extending portion 2, which is secured to said part 1 by bolts or otherwise, as desired. At the extreme front of the part 1 is an upturned extension 3, as

usual, employed for attachment of the whiffletree and having several holes for effecting said attachment at varying heights. The back end 4 of said part 1 is turned upward at an angle of about forty-five degrees, and the handles are bolted on each side thereof. A short distance back of the part 3 two notches 5 are cut, as shown in Fig. 10, into which fit the bolts of the standard 6, which carries a blade 7, as seen in Figs. 1 and 2.

Two plates 8 are clamped upon the part 1 of the beam by four bolts passing through said plates, two bolts on each side of the beam. Several holes 9 are punched in these plates 8, and in the desired one of which on each side of the beam is a bolt, upon which the arm 10 of the side bar 11 is pivoted. These side bars are of metal curved to about a half-circle in cross-section, which, besides certain hereinafter-mentioned advantages, possess the advantage of lightness and strength. Obviously these side bars have motion to and from each other upon their pivotal point, and to preserve them at their proper positions links 12 are pivoted to them, said links overlapping at their ends under the horizontal portion of the bar 13, which bar extends in a continuous piece downwardly from the handle-rung to the links 12, passing horizontally a sufficient distance to provide a bearing therefor, and then again upwardly to the opposite end of the rung, an upwardly-bent portion 14 inclosing and clamping the part 2 of the beam, and two bolts 15 passing through the horizontal portion of the bar 13 and the links 12. By means of this construction a great degree of rigidity is obtained and all strains are more equally distributed than were the two constructions different. The handle may so be raised and lowered, according to the stature of the user, by simply moving the braces 12 and the bar 13 along the part 2 of the beam, the slots in said braces being sufficiently wide to permit of a small adjustment, and by omitting one of the bolts 15 a large adjustment may be had. Holes 19 in the braces also provide for adjustment.

Notches 16 are cut in a plate intended, as shown in Fig. 11, for a side bar 11, and said bar is then bent into the proper cross-sectionally-curved form by the use of dies in a

drop-hammer or otherwise. A series of holes 17 are punched down the center of the bars 11 either before or after curving at such distances as will admit the clips 18, which are screw-threaded on their ends to receive nuts.

To attach a tooth, it is placed in the desired notches 16, said notches having been brought into position by the curvature of the plate, and a clip is placed over it through the proper holes 17 and tightened. Obviously the tooth may be caused to lean forward or backward by placing the tooth in notches not forming a vertical series, the said different positions being indicated in Fig. 3.

This form of side bar, besides being light and capable of resisting great strains, has the additional advantage of being quickly and hence cheaply finished.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

In a device of the class specified, a beam composed of two parts, the front portion being secured to the back portion and having an upturned portion at each end for attachment of the handles and draft device, a cross-piece secured to said beam, side pieces pivoted thereon, and means for holding said side pieces apart and for bracing the rear ends of the handles, substantially as and for the purpose specified.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

SIGMUND LANDAUER.

Witnesses:

A. P. Wood,
Edw. P. Wood.