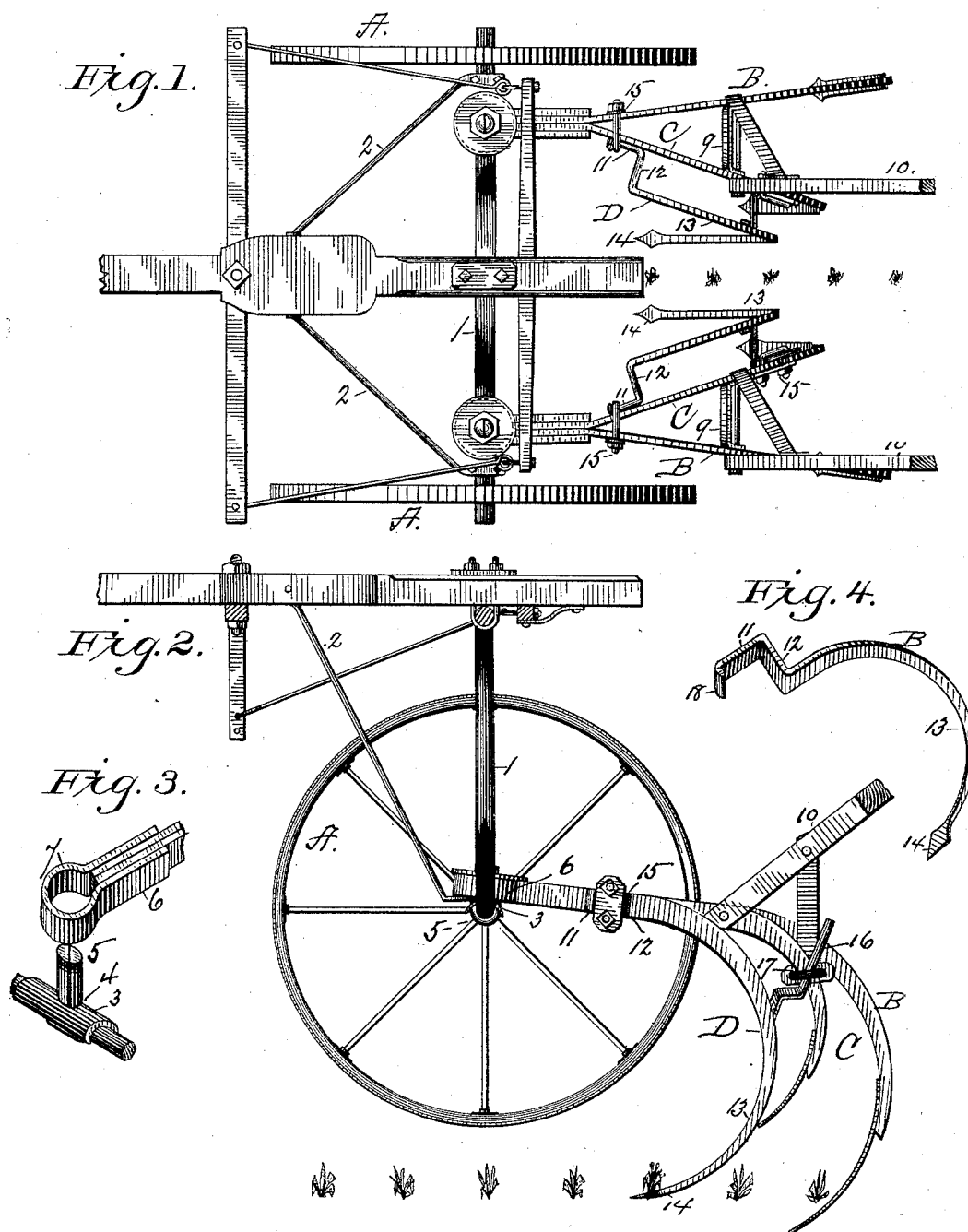


(No Model.)

L. M. REED.  
ATTACHMENT FOR CULTIVATORS.

No. 422,973.

Patented Mar. 11, 1890.



WITNESSE

*Wm. Musser.*  
*A. G. Kaufman*

INVENTOR

*Lewis M. Reed.*  
*By J. M. Yznaga,*  
Attorney

# UNITED STATES PATENT OFFICE.

LEWIS M. REED, OF PATTERSON, KANSAS.

## ATTACHMENT FOR CULTIVATORS.

SPECIFICATION forming part of Letters Patent No. 422,973, dated March 11, 1890.

<sup>1</sup>Application filed August 31, 1889. Serial No. 322,529. (No model.)

### *To all whom it may concern:*

Be it known that I, LEWIS M. REED, a citizen of the United States, residing at Patterson, in the county of Harvey and State of Kansas, have  
5 invented certain new and useful Improvements in Attachments for Cultivators; and I do 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 ap-  
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specifica-  
tion.

15 My invention has relation to improvements in cultivators of that class used in cultivating crops planted in parallel rows, and it is specially adapted for list-corn.

20 The object is to provide an improved cultivating attachment adapted to be readily and conveniently attached, regulated, and adjusted as to depth, and detachable, as may be required or desired.

25 I have clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a plan view of my invention attached to a wheel-cultivator. Fig. 2 is a side view showing the relation of the different  
30 plows to the land and plants. Fig. 3 is a detail of the means for holding the beams to the axle. Fig. 4 is a perspective of the cultivating attachment.

Referring to the drawings, A denotes the wheels of the carriage, of the usual construction, supporting the bailed axle 1. On the  
35 top of the bail of the axle is secured the tongue, supported forward of the bail, by brace-rods 2, extended downward and clipped or otherwise secured to the arms of the axle,  
40 substantially as shown in the drawings. The usual draft attachments are mounted on the tongue, as shown. On each arm of the axle is adjustably secured a bearing-sleeve 3, having a central opening 4. A clip 5 embraces  
45 the axle and has its arms projected up through the opening in the sleeve 3 to form a vertically-arranged bearing for the beams, which swing laterally on a plain thereon.

50 B denotes the main beams, and C the inner main beam. These are arranged with their inner ends together and so secured by a strap-piece 6, formed with a circular head or loop

7, and the side pieces arranged to embrace the inner ends of the beams, and a bolt 8  
8 through the parts secures them firmly to-  
55 gether. The aperture formed by the loop 7 serves as a bearing for the vertical extensions of the clip 5, upon which the beams have limited swinging movements. The beams  
also have a vertical play on this bearing. 60  
Between the main beams is arranged a brace-piece 9, which keeps them rigidly in their position in relation to each other. The inner  
beams C are bent to stand in advance of the  
65 foot of the main beams and are provided with shovels or bits smaller than those used on the main beams. The inner beams are set to take a lighter depth than the main beams. On the main beams are the handles  
10, secured thereto by any of the usual means. 70

D denotes the listing-beams, specially constituting the main element of my invention. These consist of metal bars formed with a flat end portion 11, to set under the clamp,  
an offset 12, from the inner end of which the  
75 beam 13 is carried down, and formed or provided at its land end with a narrow plow 14. The offset of this beam throws the beam portion inward, and the beam is curved so as to throw the point inside of the inner main  
80 beam, and is carried down below the point of the latter, so that the point shall run deeper in advance of the inner main beam, substantially as shown in the drawings. The end of these listing-beams are detachably secured to  
85 the main beams by clips 15, and the "set" of them adjusted by means of a bar 16, secured to the bend of the listing-beams and bent outward to conform to the length of the off-  
90 set in the listing-beams. This bar 16 is held in a clip 17, arranged on the inner main beam, and is held in any determined vertical position by the clamp of the clip. To prevent the listing-beams from withdrawing from the  
95 clips which hold them to the main beams, the end is turned slightly up or formed with a lug, as seen at 18.

The operation is apparent from the premises of the description, but may be rehearsed here. The plows of the outer main beams stir up  
100 the fallow land, and the plows of the inner main beams stir up the land adjacent to the plant-furrow, the blades of the plows being arranged to slightly direct the soil outward

from the row of plants. The listing-plows run with their points close along the row of plants, and, being arranged to throw the soil outward, the plants are not disturbed, except  
5 to loosen up the soil adjacent to their roots. By means of the handles the plows are guided so as to run substantially parallel with the rows of plants.

The listing beam and plow, being detach-  
10 able, may be separate articles, and in the form shown and described be applied to any cultivator.

Having thus described my invention, what  
I claim, and desire to secure by Letters Pat-  
15 ent, is—

The combination, in a cultivator, of the

main beams and the detachable listing-beams D, formed with straight inner ends having lugs 18, an offset 12, projected inward, and a curved beam portion 13, provided with a  
20 fastening-bar 16, bent outward to conform to the offset of the listing-beams, a clip secured about the inner end of the listing-beam and the main beam, and a clip about the fasten-  
ing-bar and the main beam, substantially as  
25 and for the purpose specified.

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

LEWIS M. REED.

Witnesses:

PETER MCGEACHY,  
JOHN MCGEACHY.