

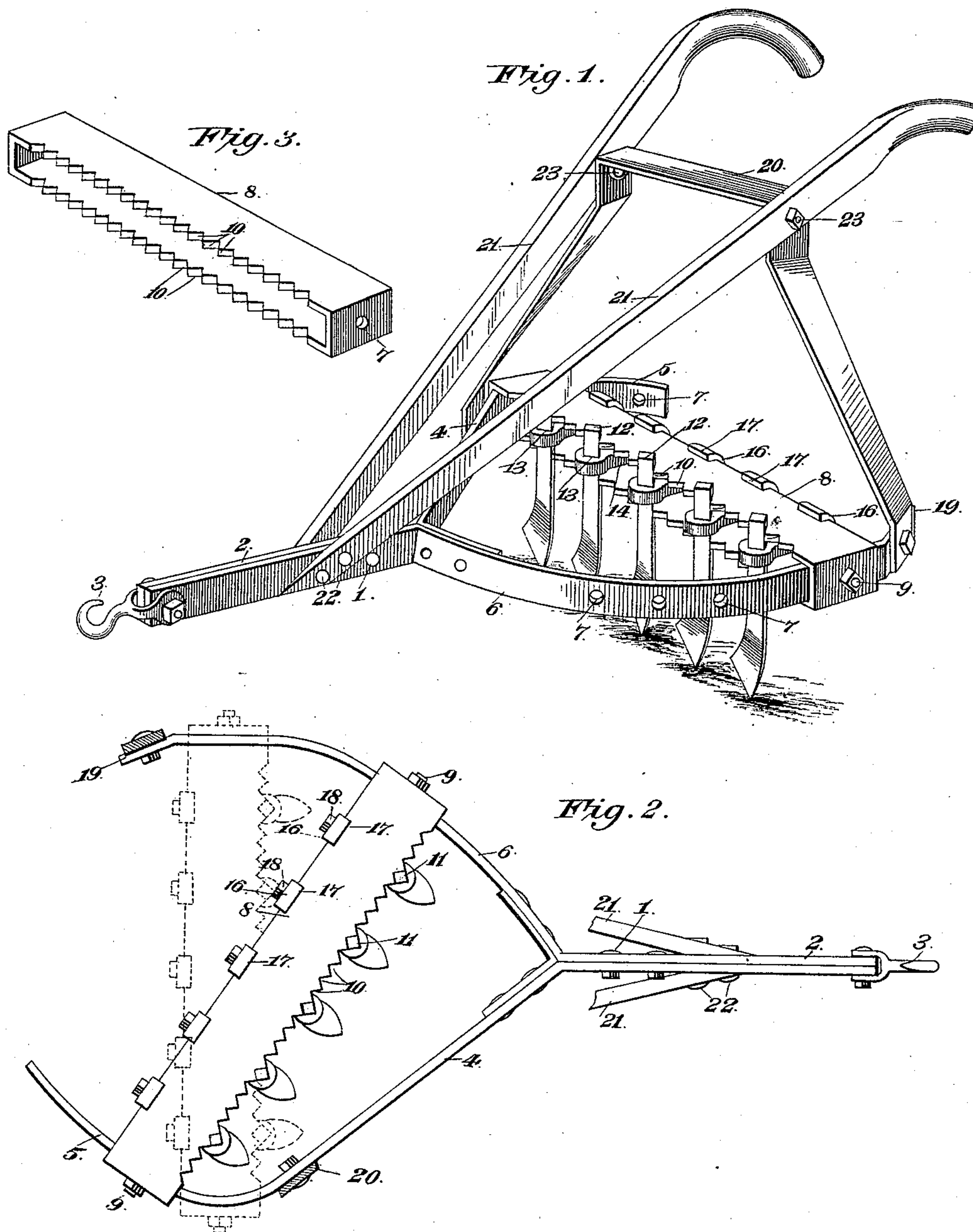
(No Model.)

2 Sheets—Sheet 1.

C. S. CURTIS & C. BOGGS.  
CULTIVATOR.

No. 465,165.

Patented Dec. 15, 1891.



Witnesses:

*M. Fowler*  
*M. S. Stull*

By their Attorneys,

*C. A. Snow & Co.*

Inventors

*Charles S. Curtis and*  
*Charles Boggs*

(No Model.)

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Fig. 4.

Fig. 5.

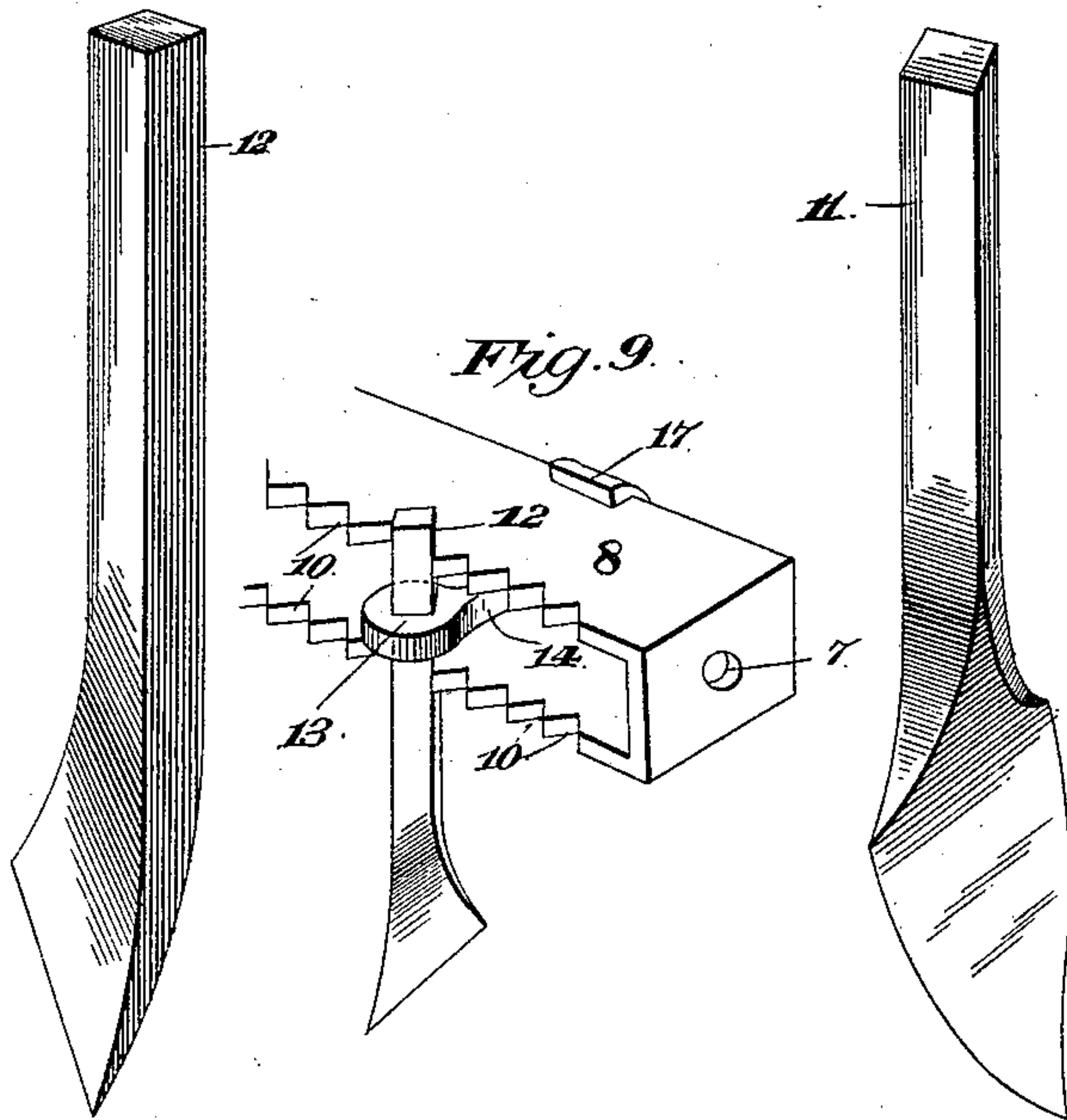
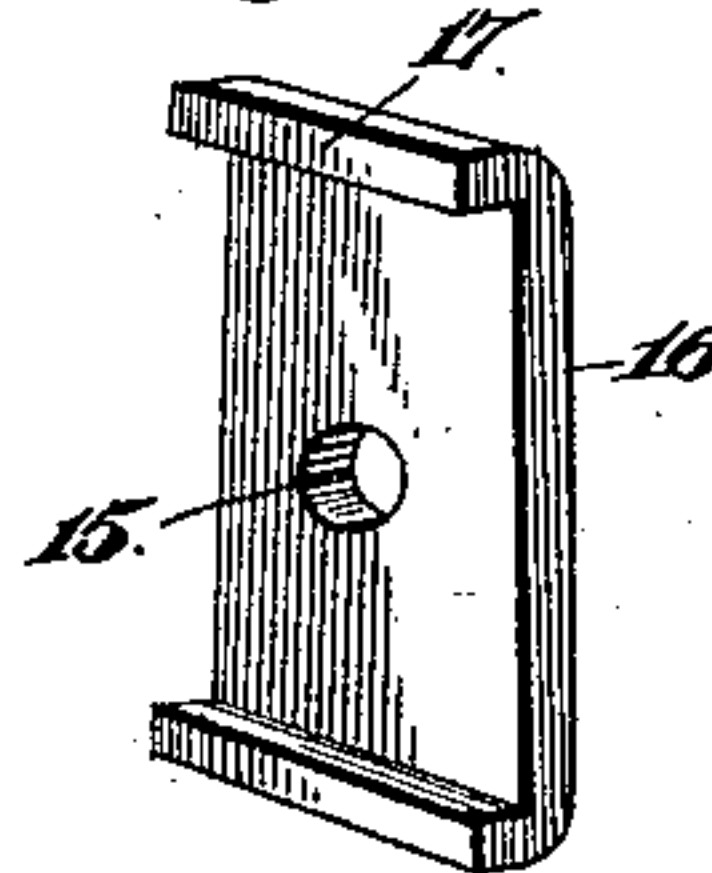
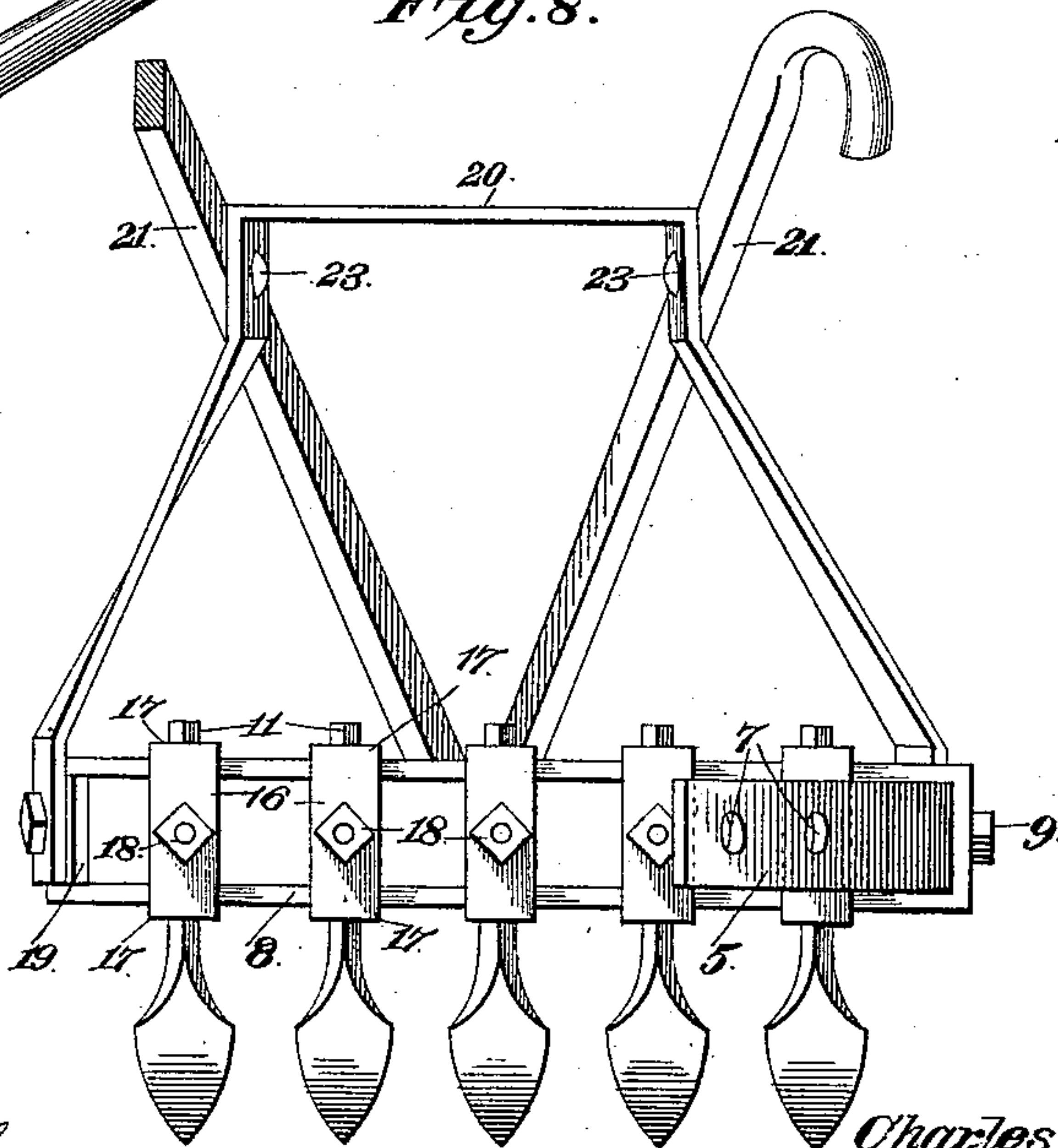
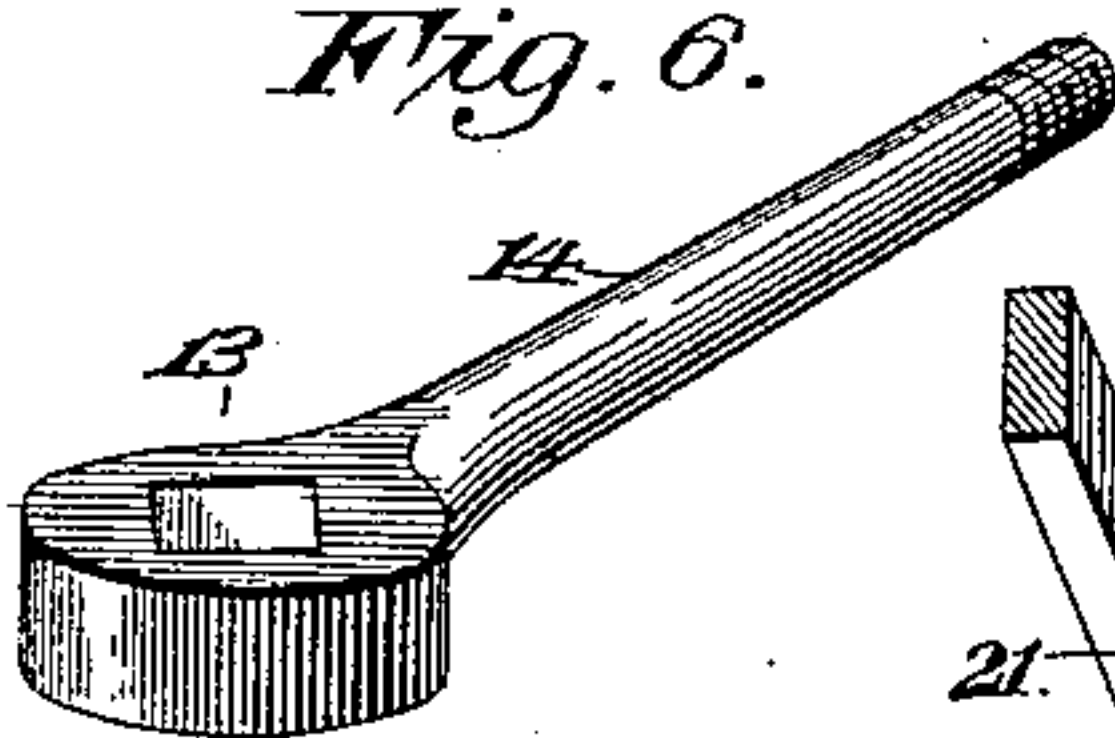


Fig. 6.

Fig. 8.

Fig. 7.



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# UNITED STATES PATENT OFFICE.

CHARLES SHADE CURTIS AND CHARLES BOGGS, OF SUMMIT, MISSISSIPPI.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 465,165, dated December 15, 1891.

Application filed July 11, 1891. Serial No. 399,244. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES SHADE CURTIS and CHARLES BOGGS, citizens of the United States, residing at Summit, in the county of Pike and State of Mississippi, have invented a new and useful Cultivator, of which the following is a specification.

This invention relates to a combined cultivator and harrow, the objects in view being to provide a combined cultivator and harrow adapted to be changed from one to the other and to efficiently serve the functions of each; to construct the same in a simple and durable manner; to provide for an adjustment of the teeth and a change of the same in order to adapt the device for various kinds of work, and, finally, to provide means for supporting the handles in such position as not to interfere with the adjustment of the harrow or cultivator bar.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a combined cultivator and harrow constructed in accordance with our invention. Fig. 2 is a plan of the same, the handles removed. Fig. 3 is a detail in perspective of the harrow-bar. Fig. 4 is a detail of the preferred form of harrow-tooth. Fig. 5 is a similar view of the preferred form of cultivator-tooth. Fig. 6 is a detail of the eyebolt. Fig. 7 is a detail of the clip-plate. Fig. 8 is a rear elevation of the combined harrow and cultivator. Fig. 9 is a detached view of one end of the harrow or cultivator bar in enlarged form.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing our invention we combine two opposite metal bars, bolting the same together for about one-third their length, as indicated at 1, to form a draft-beam 2, terminating at its front end in a clevis-hook 3. The two terminals diverge, the one indicated as 4 being straight and diagonally disposed to near its rear end and then curved, as indicated at 5, and the other terminal 6 being gradually curved from its point of divergence from the terminal 4 near its rear end, and between its

ends at intervals are provided with adjusting-holes 7 for the reception of bolts.

8 designates the harrow or cultivator bar, and the same is an open frame of metal, oblong in shape and of a length adapting it to embrace the two terminals 4 and 6, which, as before stated, have bolt-openings 7, and the ends of the bar are likewise provided with bolt-openings 7, through which bolts 9 are passed for the purpose of adjusting the bar upon the beam-terminals 4 and 6. One end of the harrow-bar moves upon the small circle or curved end 5 of the terminal 4, while the opposite end of the harrow or cultivator bar moves upon the curved terminal 6, so that the bar may be transversely disposed and at a right angle to the line of draft or adjusted diagonal to said line, all for purposes hereinafter apparent.

The two front edges of the harrow bar or beam are provided with fine L-shaped or right-angular notches 10, which notches are adapted to receive the angular shanks 11 of cultivator or harrow teeth. These cultivator-teeth may be of any shape desired. For instance, a scooter-shaped tooth, as shown in Fig. 4, having a square shank 12, may be employed and may be turned slightly, so as to be disposed edgewise, and thus serve as a harrow-tooth. Each of the shanks 11 or 12, whichever is used, is passed through the rectangular eye 13 of a bolt 14, the rear ends of the bolts passing rearwardly between the upper and lower sides of the bar 8, and have their ends passed through perforations 15, formed in clip-plates 16, the flanges 17 of which embrace the upper and lower sides and straddle the rear edges of the bar, and the ends of the bolt have nuts 18 threaded thereon.

The terminal 6 at its rear extremity is laterally bent, as at 19, and supported by the same, and the terminal 4 is a metal arch 20, the terminals of which are securely bolted in position. To the draft-beam 2 handles 21 are bolted, as at 22, said handles passing rearwardly, diverging, embracing, and bolted, as at 23, to the metal arch just mentioned.

It will be obvious that by this construction of fastening various characters of teeth may be employed, and that various numbers may



be employed, the teeth being located at any desired distance apart necessary. It will be seen that the combined harrow and cultivator bar may be swung around, as illustrated in 5 Fig. 2, so as to serve as a harrow-bar or as a cultivator-bar to suit the nature of the work the device is to perform and that the standards supporting the handles are so arranged as not to interfere with the movements of the 10 bar. It will be also observed that the structure possesses great strength and durability and is of very simple construction.

Having described our invention, what we claim is—

15 1. The combined cultivator and harrow, the same comprising the opposite beams or bars bolted together to form the draft-beam and diverged in rear of their point of connection, one beam being diagonally disposed and 20 curved at its end and the other curved from the point of connection to a point near its rear end, in combination with the open frame constituting a harrow-bar embracing the two beams and provided with tooth-re- 25 ceiving seats, and adjusting - bolts passed through the ends of the bar and through per-

forations formed in the curved portions of the beams, substantially as specified.

2. The combination, with the opposite beams bolted together near their front ends 30 to form a draft-beam, one beam being diagonally disposed and curved at its rear end and the opposite beam curved from its point of connection to near its rear end and then inwardly bent, of the combined harrow and 35 cultivator bar embracing the two beams and provided with seats for teeth, the arch connected to the rear bent end of the curved beam and to the straight portion of the diagonal beam, the handles bolted to the draft- 40 beam and rearwardly extended and bolted to the arch, and set - bolts passed through the ends of the bar and through perforations in the beam, substantially as specified.

In testimony that we claim the foregoing as 45 our own we have hereto affixed our signatures in presence of two witnesses.

CHARLES SHADE CURTIS.

CHARLES BOGGS.

Witnesses:

I. NEWHOUSER,

M. CONN.