

No. 682,720.

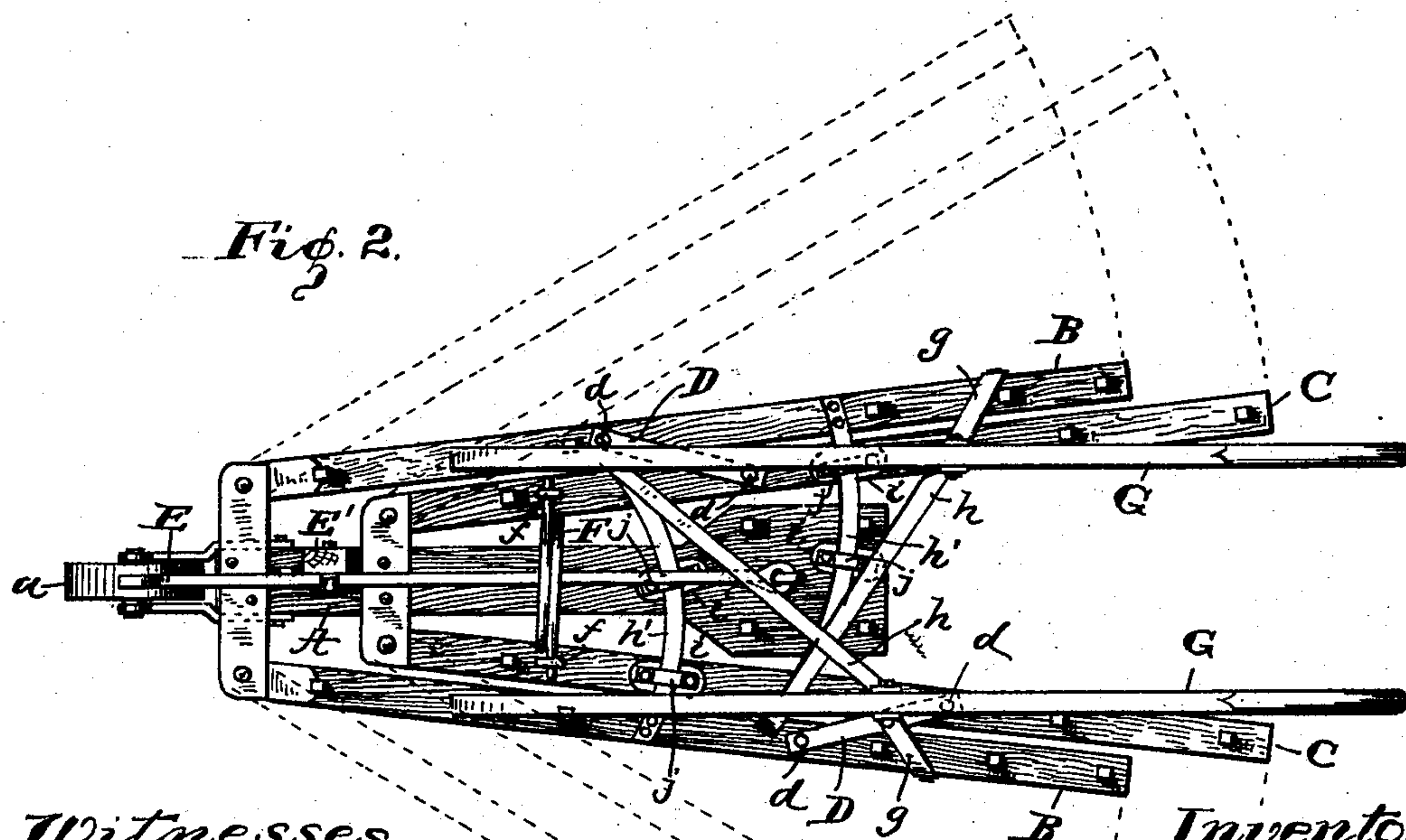
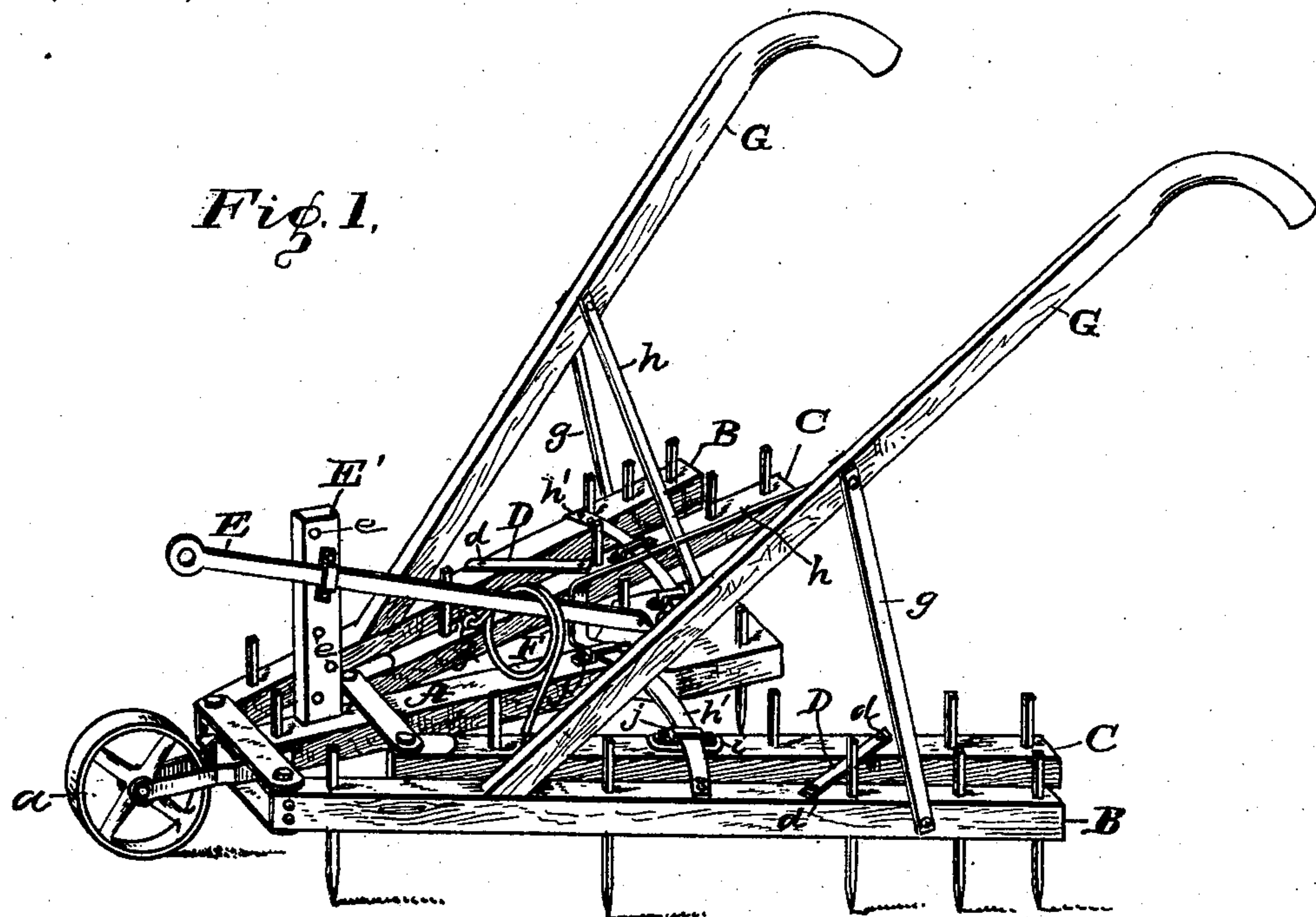
Patented Sept. 17, 1901.

B. F. KUHNS.

COMBINED CULTIVATOR AND HARROW.

(Application filed Oct. 8, 1900.)

(No Model.)



Witnesses,
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UNITED STATES PATENT OFFICE.

BENJAMIN F. KUHNS, OF INDIANAPOLIS, INDIANA.

COMBINED CULTIVATOR AND HARROW.

SPECIFICATION forming part of Letters Patent No. 682,720, dated September 17, 1901.

Application filed October 8, 1900. Serial No. 32,419. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. KUHNS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in a Combined Cultivator and Harrow, of which the following is a specification.

This invention relates to improvements in cultivators and harrows having tooth-carrying beams which are adjustable horizontally to operate on ground of different widths; and the object of the invention is to provide means whereby the tooth-carrying beams are under the control of the operator through the medium of the handle-bars and may be instantly expanded or contracted in width.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention, and Fig. 2 a plan view of same.

Like letters of reference indicate like parts throughout both views of the drawings.

A is a central longitudinal beam, to each side of which are laterally-adjustable wings comprising the beams B and C. The beams B and C are hinged separately at their front ends to the beam A in the manner as shown and are held in prescribed distances of each other by the bars of strap-iron D, which bars are pivotally secured by bolts *d d* at each end of the bar D, said bar being thereby bolted to each of two adjacent beams.

The beams A, B, and C have the harrow-teeth, as shown. Said beams may be of wood or may be of angle-iron or steel. The beam A will preferably have the wheel *a* at its forward end to keep that end from going too deep into the soil and for convenience in turning the cultivator at the ends of the rows and for transporting it from field to field. The beam A will also have attached near its rear end the traction-bar E. This attachment will be a flexible one to permit the front end of the bar to be varied in altitude, and this altitude will be maintained by the standard E', having a series of holes *e*, through which the loop supporting the bar will be fixed at various heights. The rear of the beam A is expanded in width to afford a broader support for the handle-bar guides hereinafter to be described

and to support two rows of teeth. The side wings formed by the beams B C B C are spread normally away from the central longitudinal beam A by the spring F, consisting of a bar having a middle coil and ends caught in eyebolts *f f*, secured to the beams C C.

G G are the handle-bars, which are fastened to the respective outside beams B B. They are braced to their respective beams by the braces *g g* and are additionally held and guided by an inside brace for each of peculiar construction, comprising the diagonal member *h*, secured at its upper end to the handle, and the horizontal curved member *h'*, which is fastened rigidly at its outer end to the outer beam B and is connected at its inner end with the lower end of the diagonal member *h*. The horizontal members of each brace rest on top of the central beam A and on their respective intermediate beams. They rest on bearing-plates of metal *i* and are held down to the plates by the clips *j*, which, however, permit of sliding movement there-through. These horizontal members afford a broad and stable bearing for the handles and serve also to keep the individual beams from jumping out of the plane common to all. I consider this brace construction as a very important feature of my invention. More than two beams may be used in making up the wings or only one may be used.

This machine is specially adapted to be drawn between rows of growing plants and is instantly adjustable in width to suit the space between the rows by the operator, who, having his hand constantly on the handles G G, throws either or both of the wings in or out by moving the handle attached to the wing to be moved. The action of the spring F being to spread the wings, the operator will be compelled to hold the handles against this tendency.

I am aware that implements have been made with laterally-adjustable tooth-carrying beams and do not broadly claim such construction; but

What I do claim as new, and wish to secure by Letters Patent of the United States, is—

1. The combination of the central longitudinal beam, side beams hinged at their front ends to the central beam, and laterally adjustable as to their rear ends, handles secured

to the side beams whereby the lateral adjustment of said beams is made and held, and resilient means for normally spreading the hinged members, substantially as described
5 and shown.

2. The combination with two pairs of beams hinged at their forward ends so as to be laterally adjustable as to their rear ends, said rear ends of each pair of beams being connected
10 by double-hinged bars, a spring to press the pairs of beams in opposite direction from each other and handles secured to one of the beams of each pair of beams said handles having inside sliding braces, substantially as described
15 and shown.

3. The combination of a central longitudinal beam, a pair of beams on each side of said central beam each hinged to the latter at its forward end to swing laterally, said side
20 beams being connected in pairs by double-

hinged bars, a spring to press the side pairs away from the center beam, handles secured to the outer ones of the side pairs of beams each of said handles having an inside brace with diagonal upper member attached at its
25 upper end to the handle and having a horizontal curved base which rests on top of the center beam and its respective side beams and fastened to the handle-carrying beam and clips to hold the curved base to the beams
30 to permit of a sliding attachment of the curved base to the beam, all substantially as described and shown.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this
35 6th day of October, A. D. 1900.

BENJAMIN F. KUHNS. [L. s.]

Witnesses:

JOSEPH A. MINTURN,
FRANK W. KUHNS.