

(No Model.)

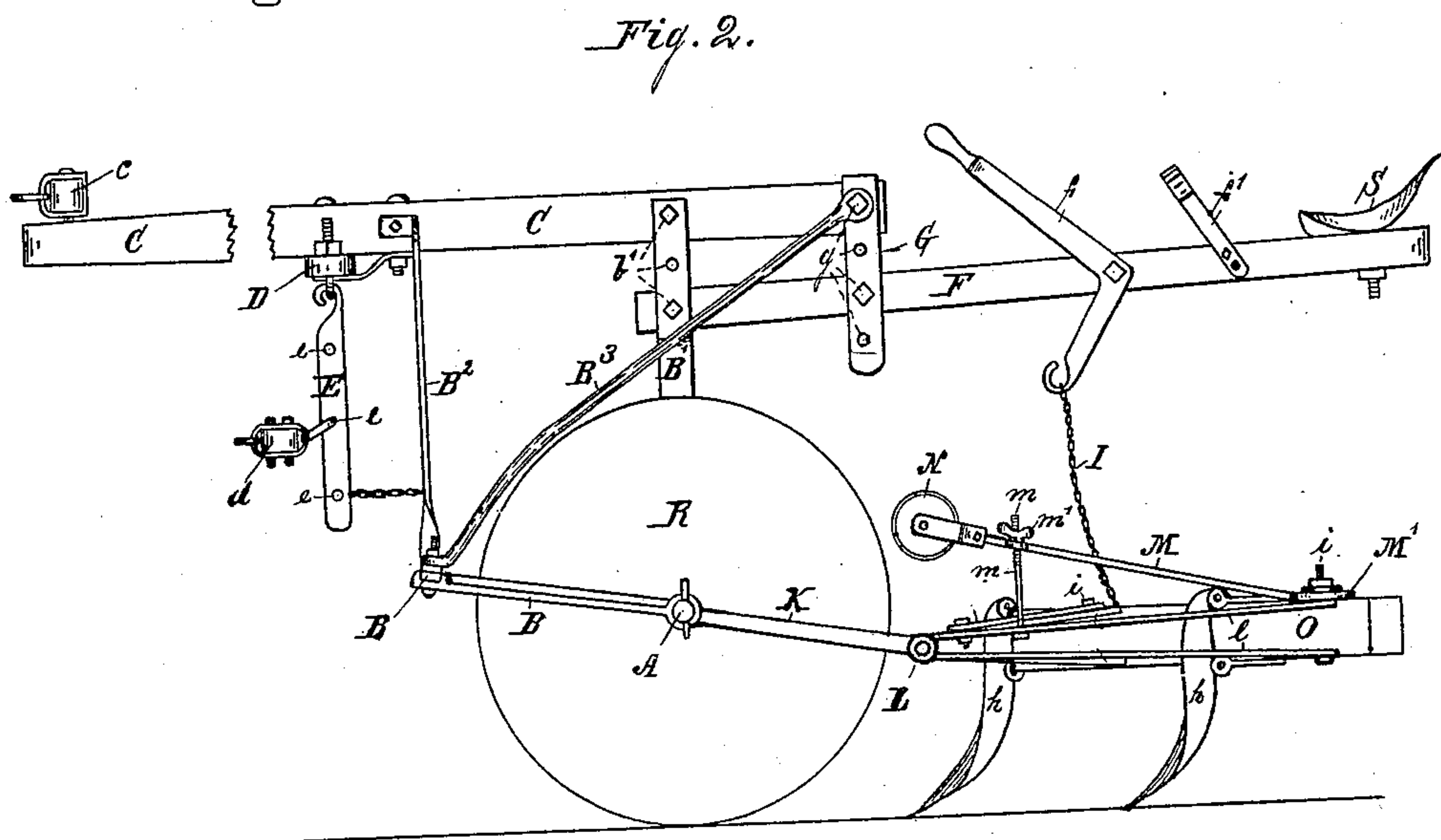
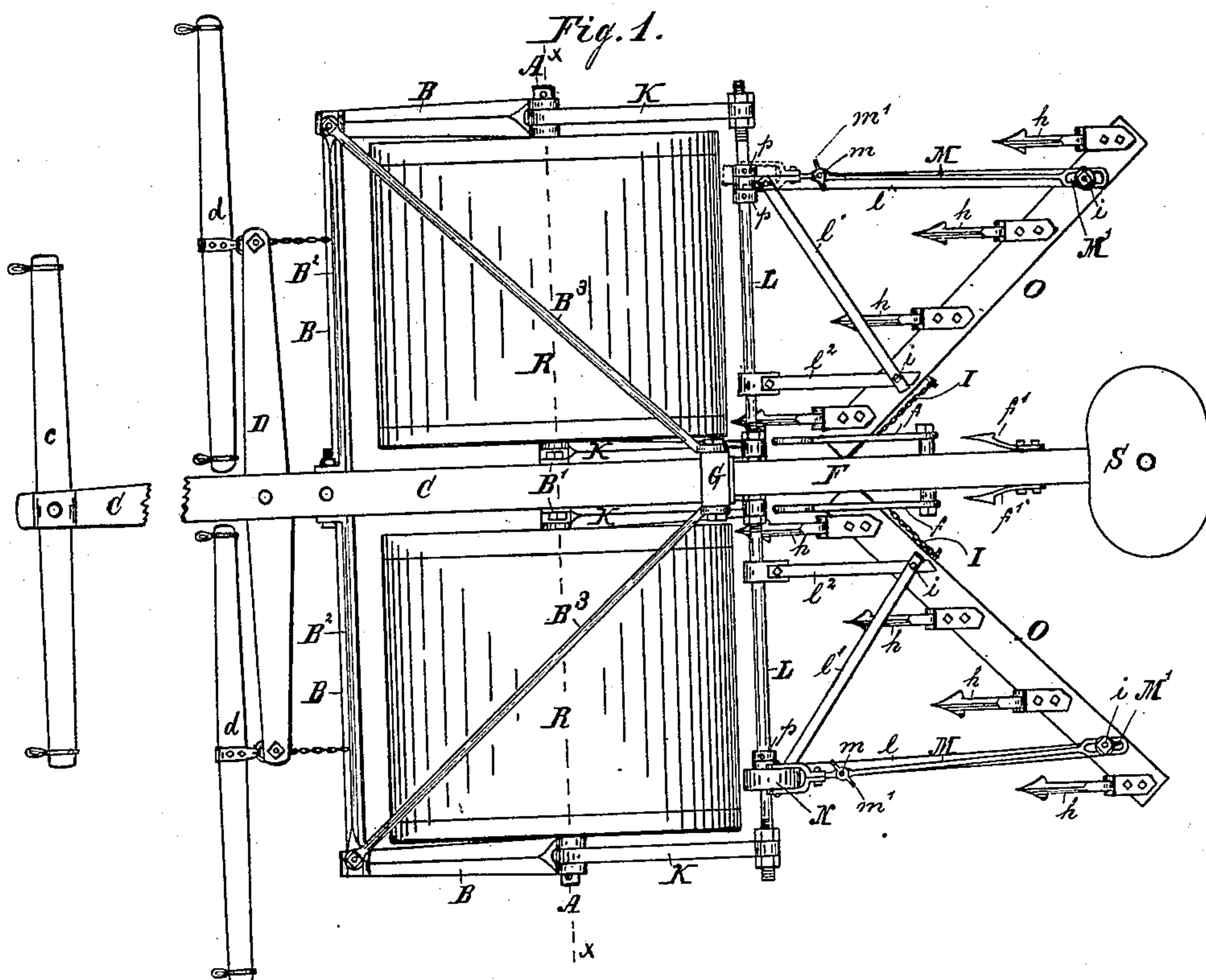
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G. M. HEIM.

COMBINED ROLLER, HARROW, AND CULTIVATOR.

No. 258,418.

Patented May 23, 1882.



WITNESSES :

Frank D. Kenyon  
Michael H. Snyder

INVENTOR =

George M. Heim

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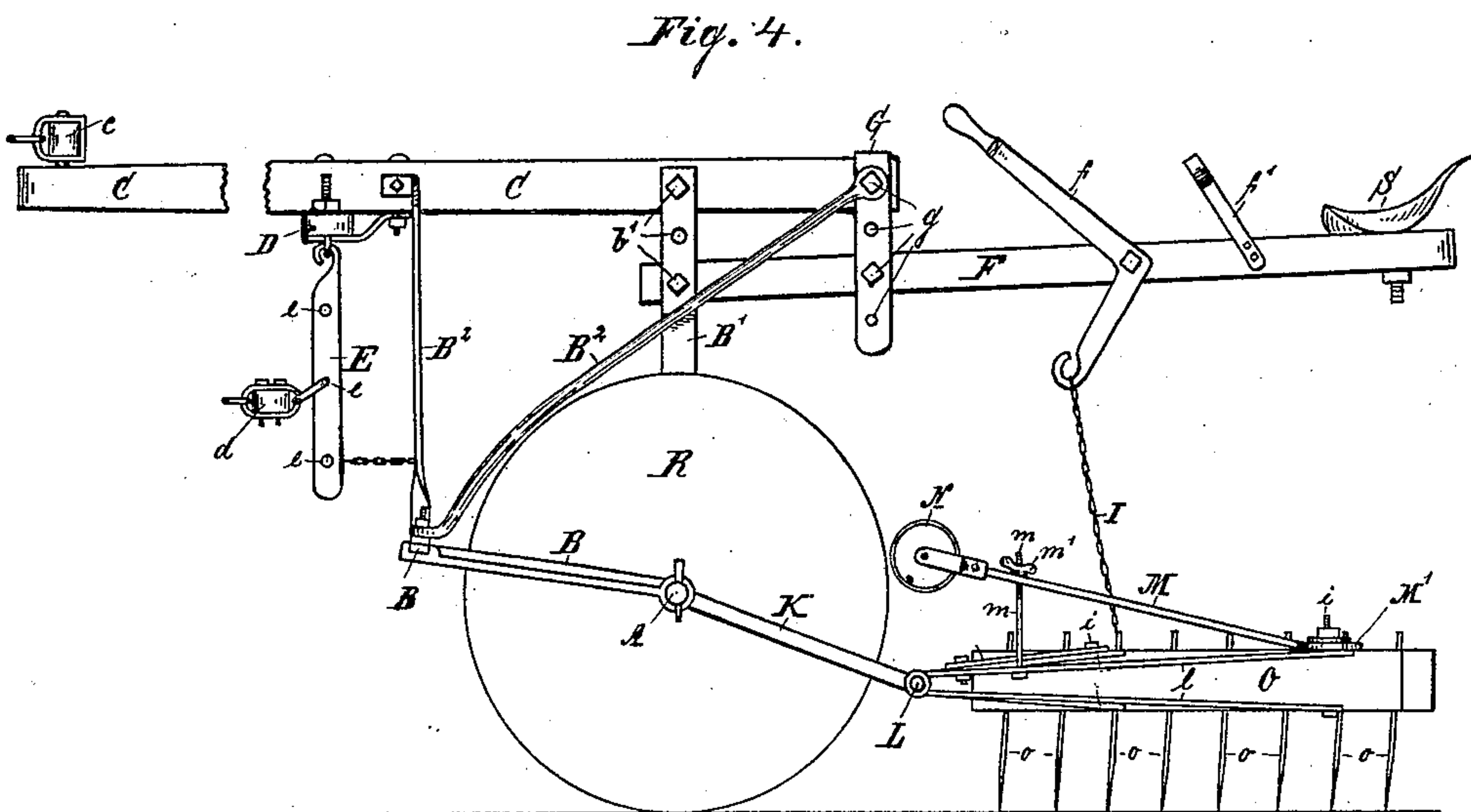
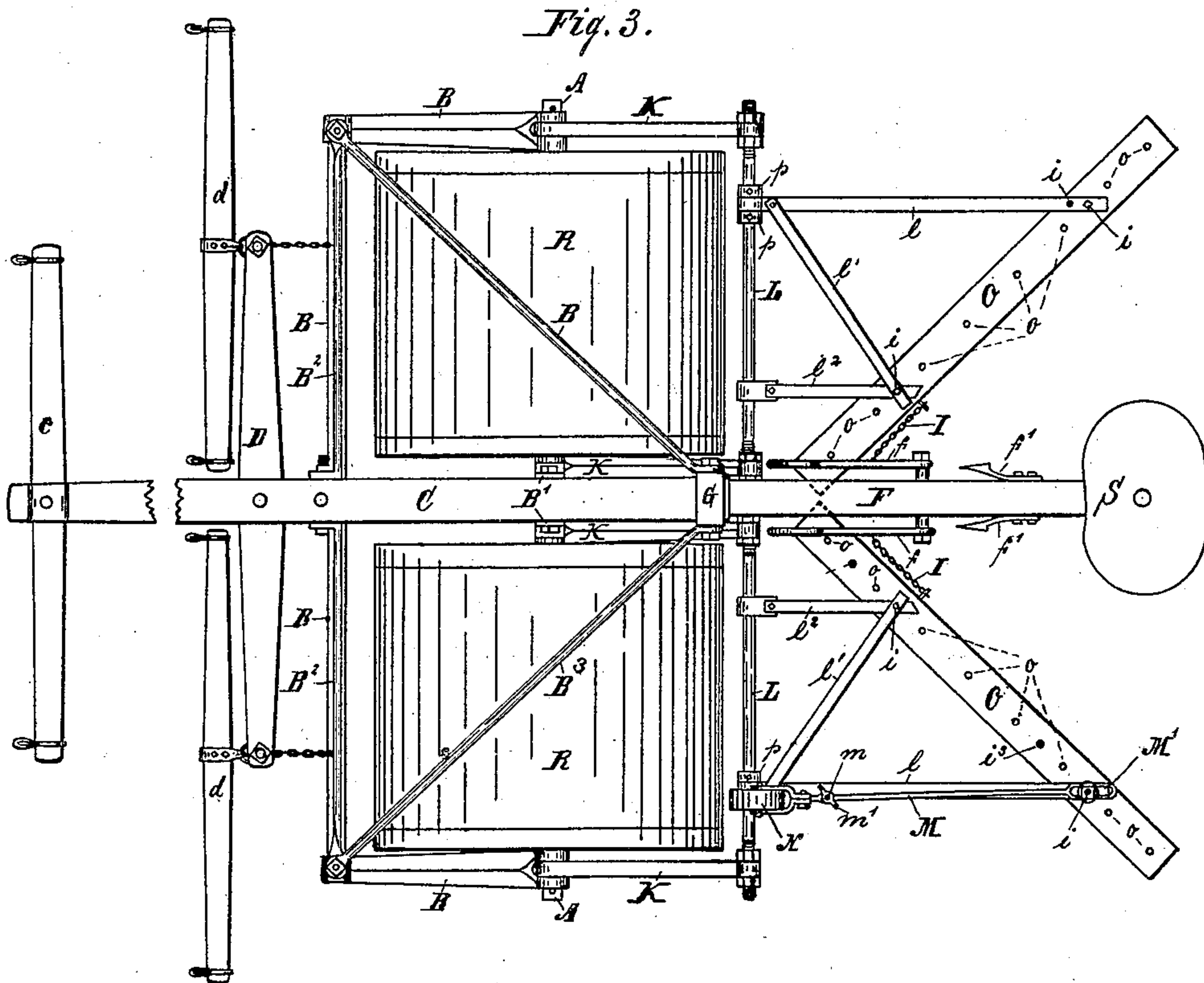
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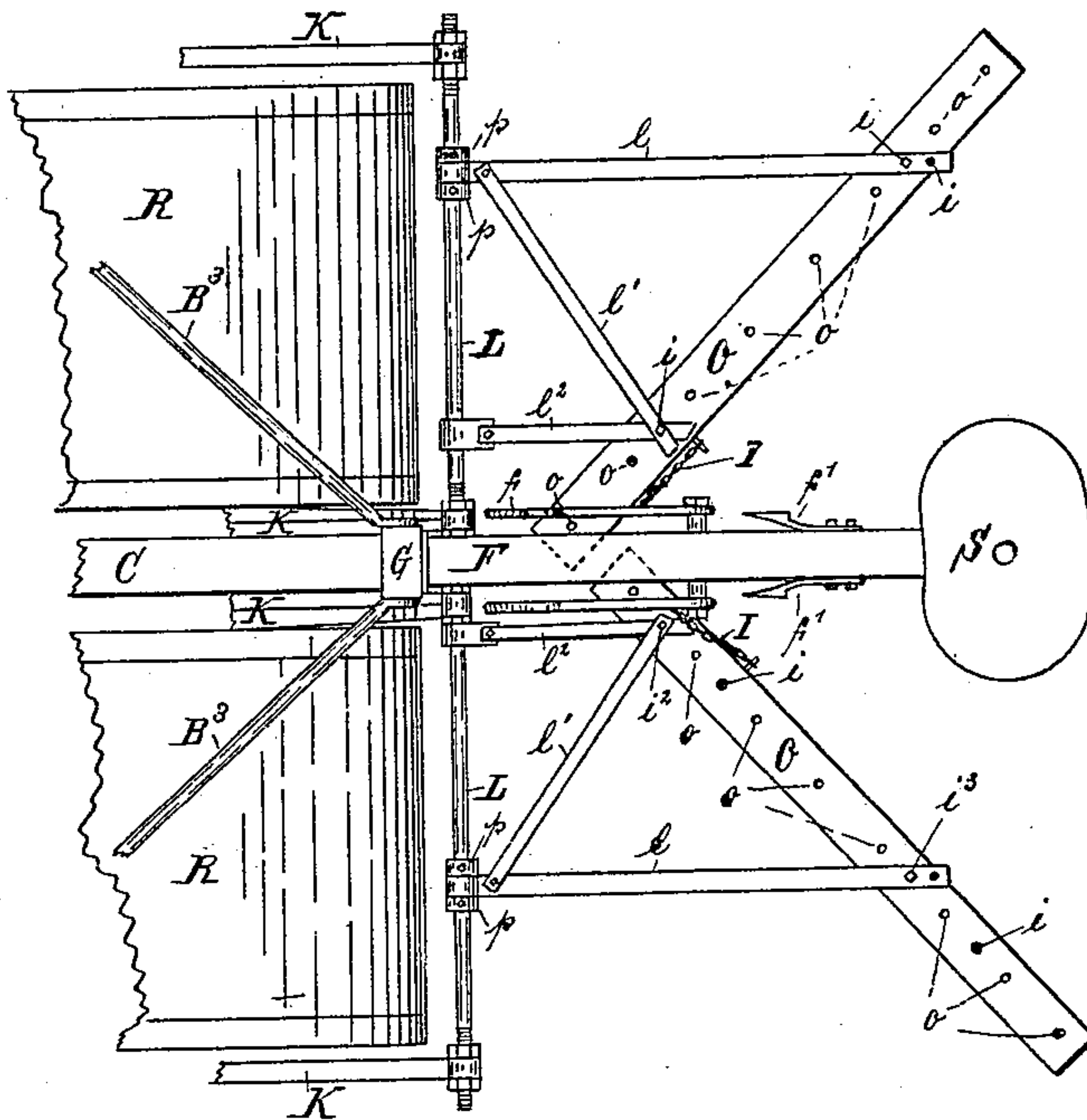
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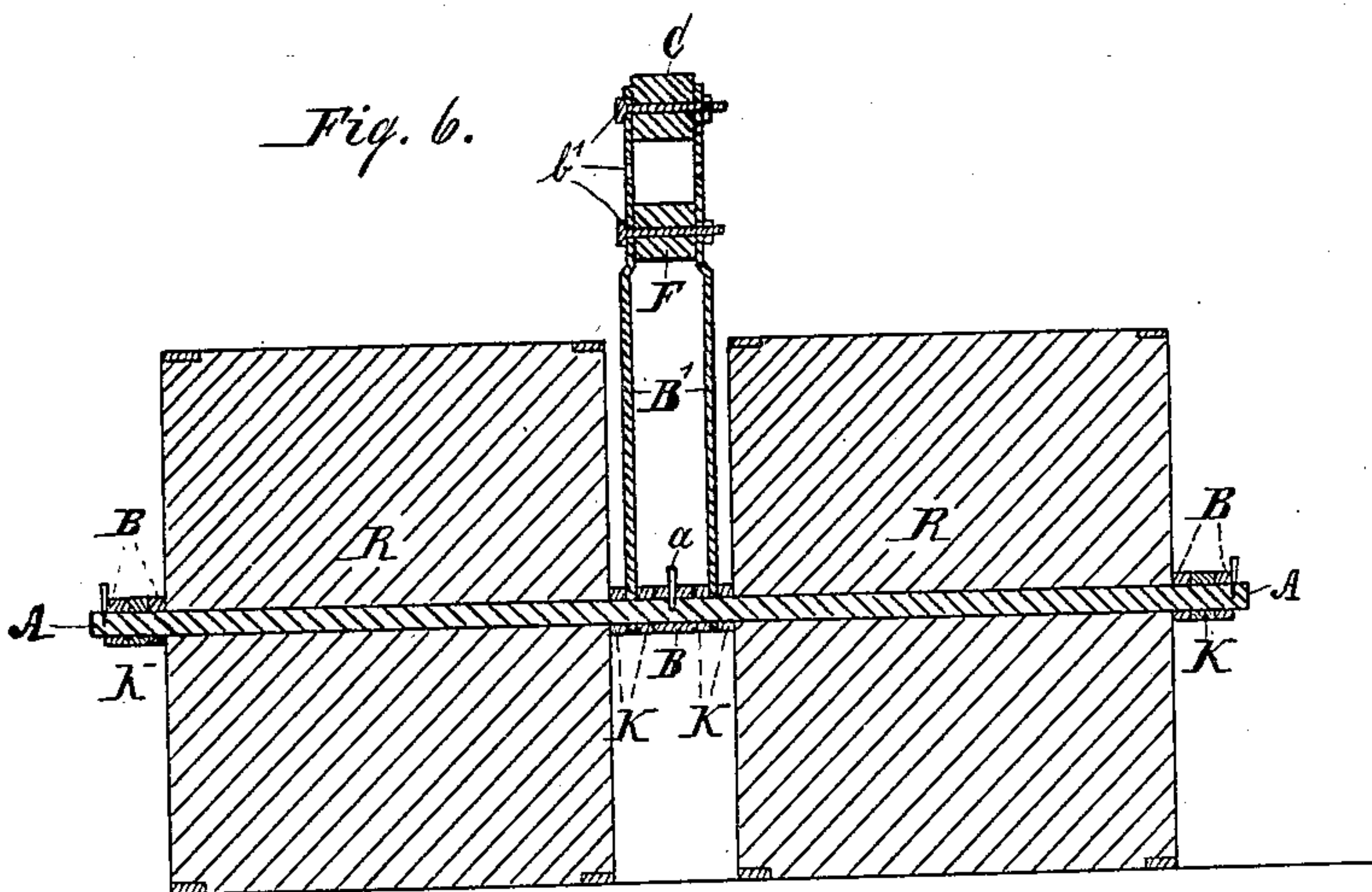
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*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

GEORGE M. HEIM, OF BROWNSVILLE, INDIANA.

## COMBINED ROLLER, HARROW, AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 258,418, dated May 23, 1882.

Application filed June 26, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. HEIM, a citizen of the United States, residing at Brownsville, in the county of Union and State of Indiana, have invented a certain new and useful Improvement in Combined Roller, Harrow, and Cultivator, of which the following is a specification.

My invention relates to an improvement in combined roller, harrow, and cultivator; and it consists in the peculiar construction and arrangement of parts, whereby a cheap, simple, and efficient machine is produced, as will be more fully set forth hereinafter.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is a top plan view of my machine with the cultivator attachments. Fig. 2 is a side elevation of the same. Fig. 3 is a top plan view of my machine with the harrow attachments. Fig. 4 is a side elevation of the same. Fig. 5 is a partial top plan view, showing the attachments combined to form an A-harrow. Fig. 6 is a vertical cross-section on the line *xx*, Fig. 1.

A represents the axle rigidly secured to the frame, that consists of the horizontal bars B and the two vertical bars B'.

Mounted upon the axle A are the rollers R, between which rise the vertical bars B'.

Between the upper ends of the bars B' is bolted the rear end of the tongue C, which is further secured to the frame by means of the braces B<sup>2</sup>, bolted thereto slightly in advance of the rollers, the said braces being bolted at their lower outer ends to the outside horizontal bars B.

Rigidly secured to the rear of the tongue at a slight distance back of the bars B' are the vertical bars G, the same bolt that secures them to the tongue serving also to secure the inner upper ends of the diagonal curved braces B<sup>3</sup>, the lower outer ends of which are also secured to the outside horizontal bars B.

Pivoted to the axle A at both ends of the rollers R are the four rods K, the rear ends of which are secured together in pairs by the round rods L, thus forming U-shaped frames, to which the harrow or cultivator attachments are secured.

F represents the bar, to the rear end of which, on its upper side, is secured the driver's

seat S, the front end of the bar being bolted or otherwise secured between the vertical bars B' and the bars G. These bars B' and G are provided with a series of holes, *b'* and *g*, respectively, by means of which the bar F may be secured at any height the driver may prefer.

Pivoted to the tongue C is the double-tree D, to the outer ends of which are secured, by means of eyebolts or otherwise, the vertical bars or equalizers E, which are provided with a series of holes, *e*, and are secured at their lower ends to the frame B by means of suitable chains or links. To these bars or equalizers E are secured the single-trees *d d* at any suitable height to secure sufficient leverage to sustain the driver's weight and prevent the machine from tilting backward or from bearing too heavily upon the horses' necks.

*l*, *l'*, and *l''*, represent Z-shaped frames, of which there are two, the outer bars, *l*, of which are longer than the inner ones, *l''*, and to these bars or braces, at their rear ends, are secured the diagonal beams O, in which are rigidly secured the harrow or cultivator teeth, as the case may be. The front ends of these braces are pivoted upon the round rods *h*, and are made capable of lateral adjustment by the collars *p*, provided with set-screws for binding them to the rods L. By this construction the frames can be adjusted so as to leave a wide or narrow space between them, as may be required, when cultivating different kinds of vegetables; or they may be united at their inner ends so as to form an A when used as a harrow, as shown at Fig. 5.

NN are friction-rollers bearing against the faces of the rollers R, said friction-rollers being secured to the frames O by means of the rods M, which are slotted at their rear ends at M', and are capable of adjustment back and forth upon the frames. The height at which the rollers N come in contact with the rollers R is determined by the screws *m*, which extend upward from the frames through the rods M, and are provided with the thumb-nuts *m'*. The rollers N, bearing against the faces of the rollers R, serve as braces to keep the harrow-teeth or cultivators in the ground. Were the brace-rods M and rollers N not used, the frames would tend constantly to rise at their rear ends, and thus the teeth would enter the ground at differ-



ent depths and do uneven work. By means of the slots  $M'$  in the rods  $M$  the frames can be adjusted so as to cause the teeth to run shallow or deep. In order to raise the frames above the ground when in transportation, I pivot the bent levers  $f$  to the arm  $F$  and connect their lower ends to the frames by chains  $I$ . The levers  $f$  are secured when the frames are elevated by the pivoted catches  $f'$ .

In Figs. 1 and 2 the letter  $h$  designates the cultivator-teeth. In Figs. 3, 4, and 5,  $o$  represents the harrow-teeth.

Having thus described my invention, I claim—

1. The combination of the axle  $A$ , rollers  $R$ , horizontal bars or frame  $B$ , vertical bars  $B'$ , attached to the axle between the rollers  $R$ , and securing the tongue  $C$ , braces  $B^2$ , and diagonal braces  $B^3$  for holding the tongue rigidly in position, rods  $K$ , pivoted to the axle at their front ends and being connected in pairs by the rods  $L$ , substantially as shown and described.

2. The combination of the rollers  $R$ , axle  $A$ , rods  $K$ , pivoted upon the axle at their front ends, and to the rods  $L$  at their rear ends, the rods or braces  $l' l^2$ , and the cultivator-frame, to which the cultivating devices are secured, substantially as set forth.

3. The combination of the rollers, mechanism for attaching the frame to which the cultivating or harrowing devices are secured, the rollers, and brace-rods, which bear against the rollers so as to force the cultivating devices into the ground, all substantially as specified.

4. The combination of the rollers, frames to which the cultivating devices are attached, and mechanism for attaching the frames to the rollers, with the brace-rods  $M$ , provided with the rollers  $N$ , substantially as shown.

5. The combination of the rollers, frames to which the cultivating devices are attached, mechanism for attaching the frames to the rollers, with the brace-rods  $M$ , provided with the rollers  $N$ , and suitable adjusting mechanism, whereby the cultivator or harrow teeth can be caused to run shallow or deep, all combined and arranged substantially in the manner and for the purpose set forth.

That I claim the within as my invention, I hereunto set my hand this 22d day of June, 1880.

GEORGE M. HEIM.

Witnesses:

FRANK D. KENYON,  
MICHAEL H. SNYDER.