

(Model.)

2 Sheets—Sheet 1.

R. H. AVERY.

CULTIVATOR.

No. 256,612.

Patented Apr. 18, 1882.

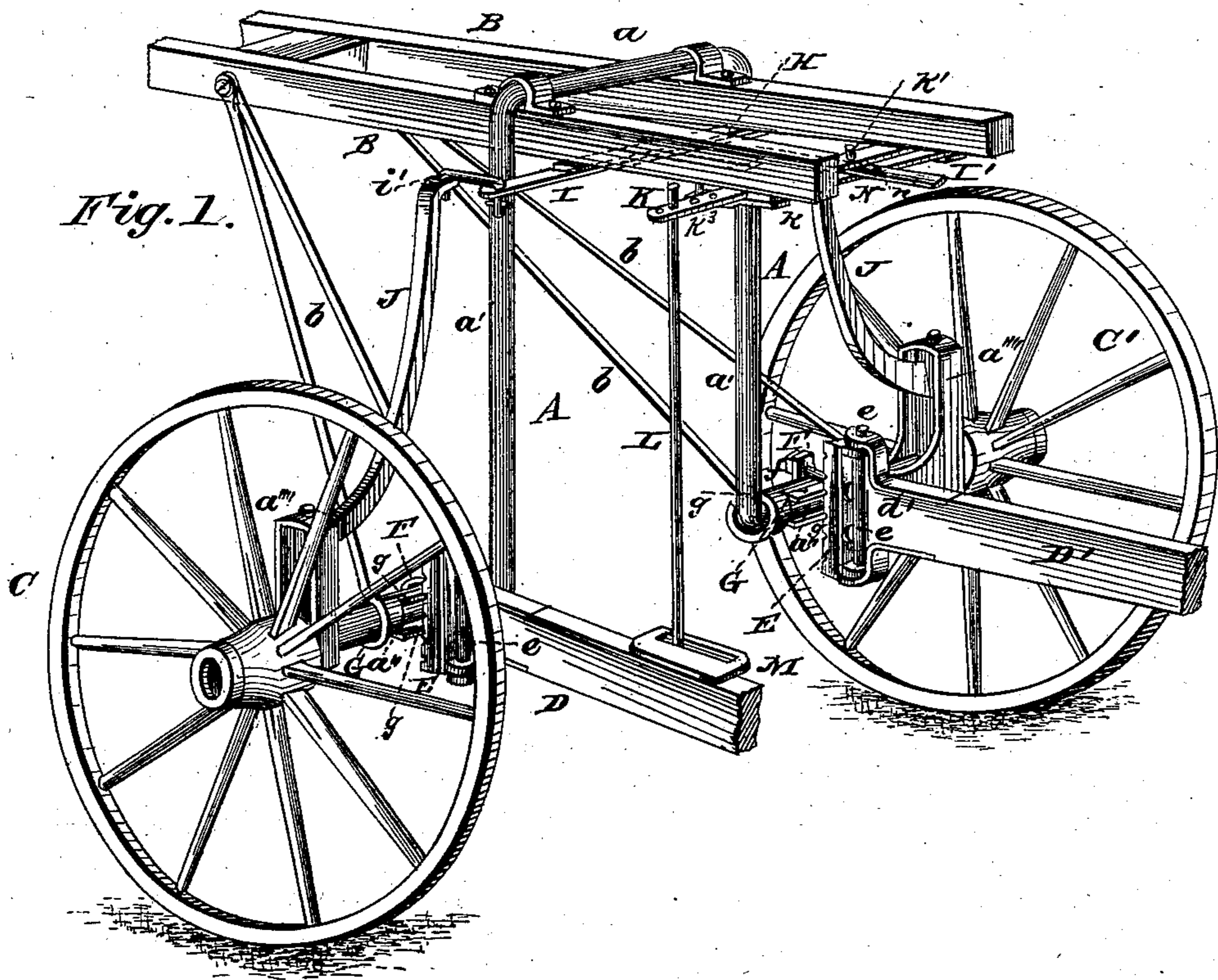
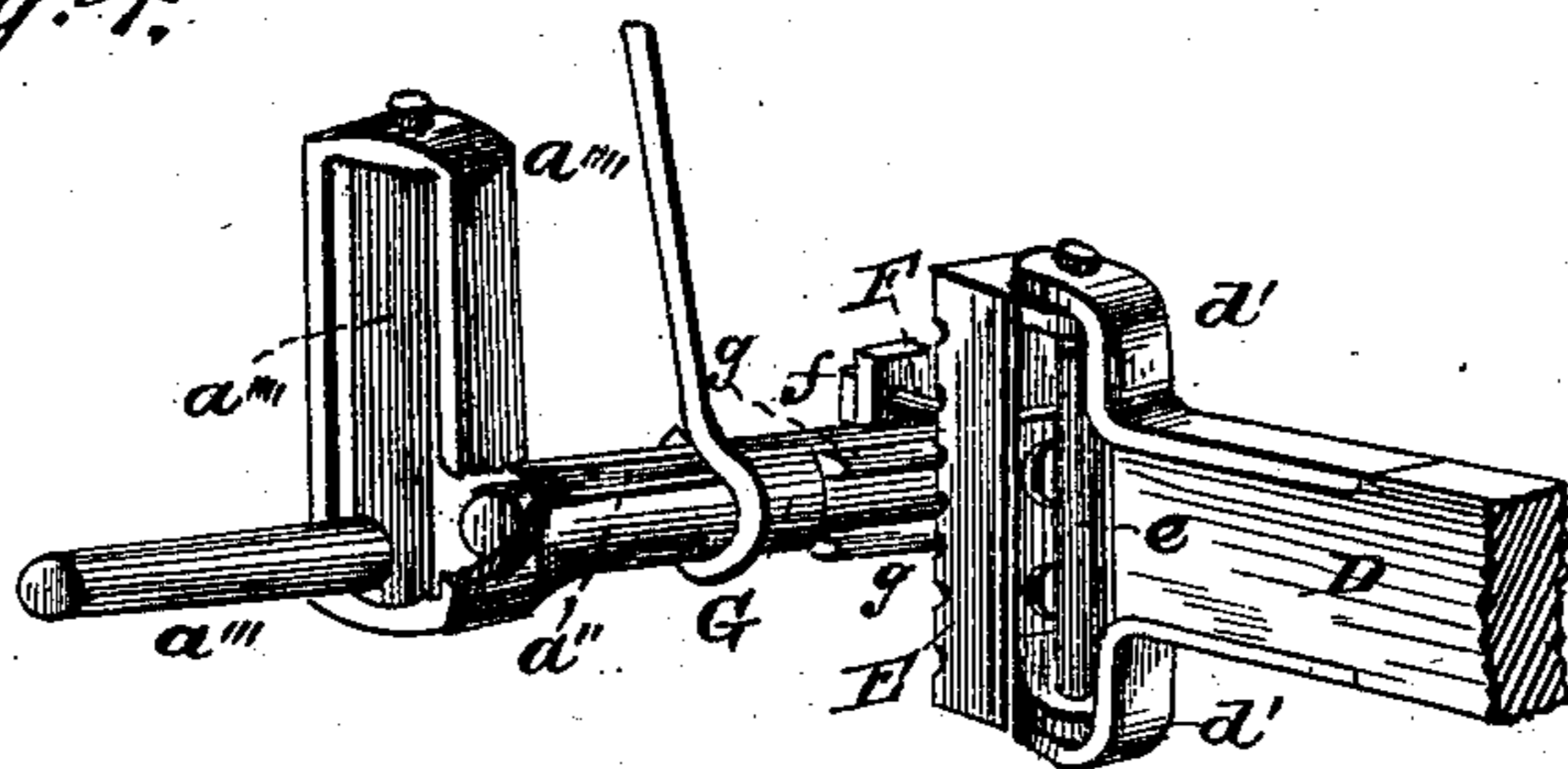


Fig. 4.



WITNESSES

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P. C. Dietrich.

INVENTOR

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per. *W. B. Richards* Attorney.

(Model.)

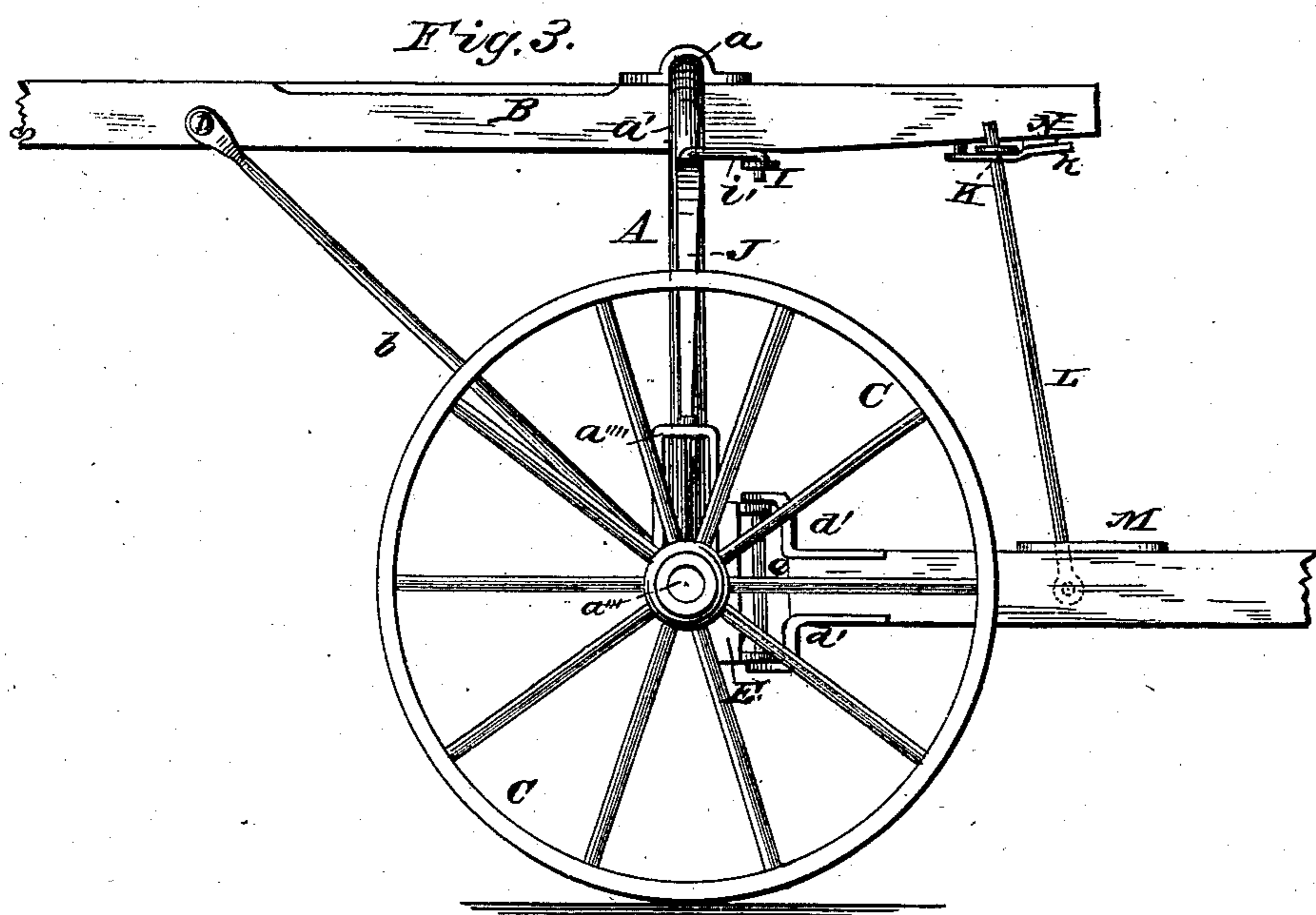
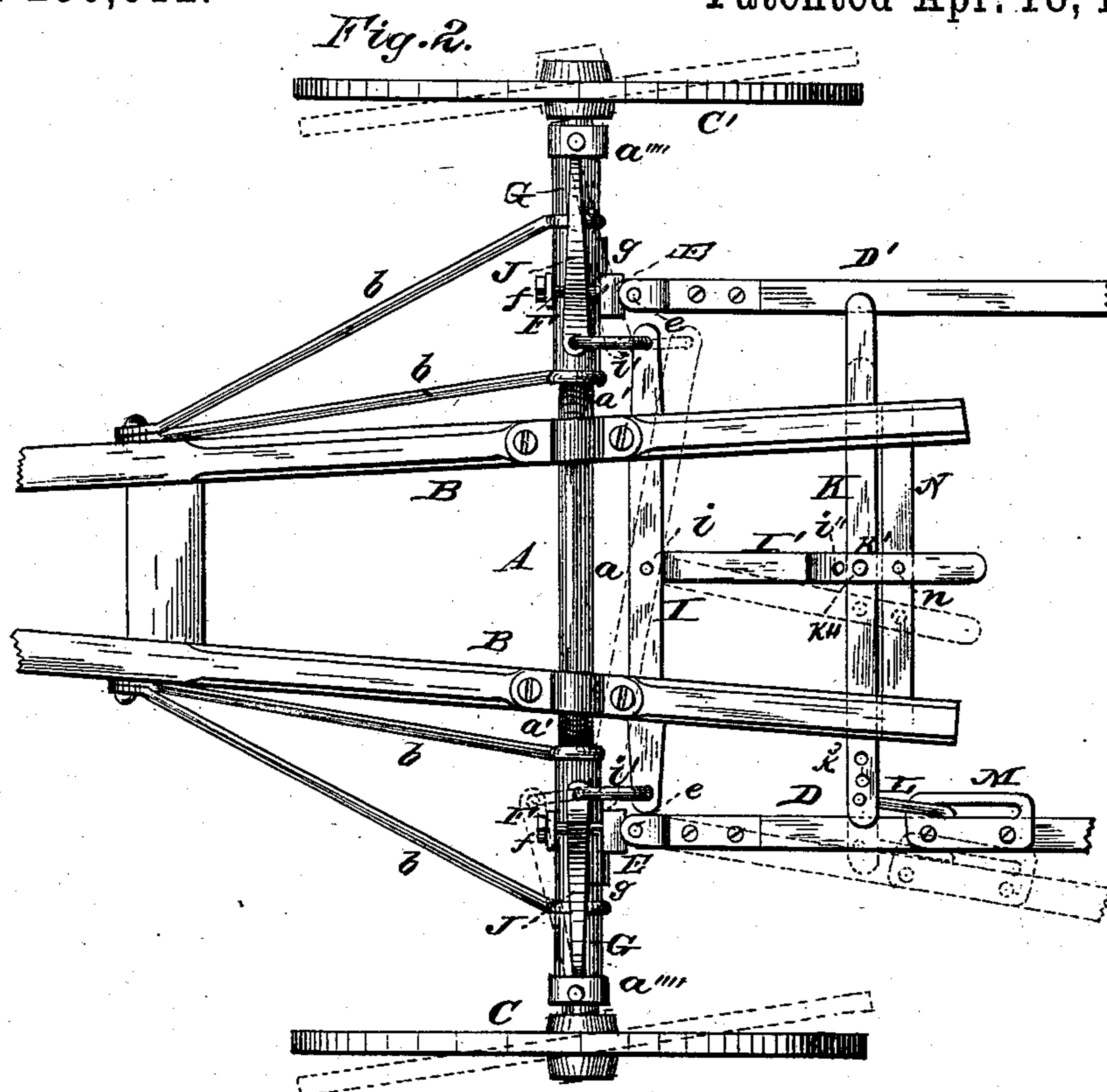
2 Sheets—Sheet 2.

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WITNESSES

Ad. L. Dietrich.
P. C. Dietrich.

INVENTOR

Robt. H. Avery

per.

W. B. Richards Attorney

Attorney

UNITED STATES PATENT OFFICE.

ROBERT H. AVERY, OF GALESBURG, ILLINOIS, ASSIGNOR OF ONE-HALF TO
CYRUS M. AVERY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 256,612, dated April 18, 1882.

Application filed September 9, 1881. (Model.)

To all whom it may concern:

Be it known that I, ROBERT H. AVERY, a citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to cultivators of that class in which the plow-gangs are arranged to cultivate both sides of a row of plants simultaneously, and are drawn by an axle or frame mounted on supporting-wheels, to which axle or frame said wheels are hinged, so that they may be deflected or swung obliquely to the frame for the purpose of changing the direction of the path of the cultivator when in operation in the field.

The principal object of this invention is to provide novel means whereby the operator may deflect the wheels on the frame simultaneously, and thereby change the direction of the path of the frame and plow-gangs; and to this end this invention consists in the use of arms projecting from the wheel spindles or journals, which arms are connected in such manner that both wheels may be deflected in the same direction and at the same time.

A further object in the invention is to provide novel means whereby the operator, in swinging the rear end of one of the plow-gangs to either side, will thereby deflect both supporting-wheels so as to move the axle or frame, and thereby the forward ends of the plow beams or gangs, over toward that side of the path of the cultivator toward which he swung the rear end of the plow-beam; and to this end the invention consists in combinations of parts and constructions hereinafter described and claimed.

In the accompanying drawings, which illustrate my invention, and in which the same reference-letter indicates the same part in the different figures, Figure 1 is a perspective; Fig. 2, a top plan; Fig. 3, a side elevation;

Fig. 4, a perspective of one end of the axle, partly broken away to show the hinge.

Referring to the drawings by letters, letter A represents an ordinary cultivator-axle, with an elevated central part, *a*, side parts, *a'*, horizontal end parts, *a''*, the outer ends, *a'''*, of which are hinged to the parts *a''*, as hereinafter described.

B is a tongue fixed to the elevated central part of the axle and braced by rods *b*.

CC' are the supporting-wheels, journaled on the parts *a'''* of the axle. The inner ends of the parts *a'''* are bent upward at right angles to the parts *a''*, and are journaled at their upper and lower ends in brackets *a''''* on the ends of the parts *a''*, as shown at Fig. 4, whereby the wheels may be deflected or swung, as indicated by dotted lines at Fig. 2. This axle may be constructed in any desired manner, the tongue fixed upon it in any desired manner, and the wheels fixed thereon in any desired manner which will permit of swinging them, as herein described and as well understood at this time by those skilled in the art.

D D' are plow-gangs of ordinary construction, and may have ordinary handles when it is desired to use the implement as a walking-cultivator. Each plow-gang has a bracket, *d'*, at its forward end, which embraces a block, E, and is hinged thereto by a vertical bolt, *e*, so that the gangs may be swung laterally thereon. The blocks E are slotted vertically, and a stirrup, F, which embraces the end *a''* of the axle, passes through said slot, and has nuts *f* on its outer end.

The blocks E may be adjusted in higher and lower planes, and held after adjustment by the nuts *f*, for the purpose of governing the depth of penetration of the soil by the plows.

The stirrup F may be adjusted at different locations on the part *a''*, and held also by the nuts *f*, for the purpose of adjusting the distance between the plow-gangs. A plate, G, is bent at its ends to encircle the part *a''* of the axle, and the edges *g* of its central portion project rearward to form a rest for the block E. The stirrup F passes around the plate or sleeve G, and the plate G turns on the part *a''* of the axle to permit of swinging the plow-gangs in vertical planes.

H is a bar secured to the tongue B, and I is a bar pivoted thereto at its mid-length portion at *i*. The outer ends of the bar I are connected by links *i'* with the upper ends of cranks or arms J, which project upwardly and inwardly from the parts *a'''*, so that by oscillating the bar I the hinged wheels C C' may be swung simultaneously and in the same direction, as indicated by the dotted lines at Fig. 2. An arm, I', extends rearwardly from the bar I, by means of which the bar I may be oscillated.

K is a bar which may be reciprocated lengthwise of itself and transversely of the cultivator in stirrups *k* on the rear end of the tongue. A pin, *k'*, may be passed through a hole, *k''*, in the bar K, and a hole, *i''*, in the arm I', for securing them to each other.

L is an arm, hinged at its lower end to the side of one of the plow-beams or gangs D, and its upper portion passes through one of a series of holes, *k³*, in the outer end of the slide-bar K, to permit adjusting the bar L laterally in the bar K to correspond with the lateral adjustment of the plow beams. The arm L is stayed by a slotted plate, M, secured to the plow-beam, as shown.

N is a bar fixed to the rear end of the tongue, and has a hole, *n*. By passing the pin *k'* through the hole in the arm I' and the hole in the bar N the arm I will be locked and held from movement endwise, and will thereby hold the wheels from being deflected when desired. With the pin *k'* removed from the arm I', so as to leave it free to move, said arm may be taken hold of by the operator and used in the evident manner to deflect the supporting-wheels, and thereby control the path of the cultivator, whether the arm L is connected with the bar K or not. The arm L passing through the hole in the bar K will slide in said hole and not interfere with raising and lowering the rear end of the plow gang or beam; but when said gang or beam is swung laterally the arm L will slide the bar K, and thereby deflect the wheels C C', or swing them in a direction to carry the front ends of the plow-gangs over toward the same side toward which the rear ends of the gangs or beams were swung, and thus enable the operator to quickly and easily move the plows toward either side to avoid plants out of line, or for other purposes.

It will be readily seen that the crank-arms J may be differently constructed from what I have shown, and that the device for connect-

ing them may be variously constructed and arranged, and may be connected with the plow-gang differently from what I have shown; so I do not limit my claims to the precise construction nor arrangement of these parts. Neither do I limit my claims to cultivators having tongues or draft-poles, as it will be seen that the main features in the invention may be used in a cultivator without a tongue by supposing the tongue to be removed forward of the axle and the remaining portion to be secured to the axle; but

What I claim, and desire to secure by Letters Patent, is—

1. In combination with the axle and wheels hinged thereto and arms projecting from the wheel-spindles, the transverse pivoted bar I and links *i'*, connecting the arms J, a bar, I', extending rearwardly from the bar I, by means of which the bar I may be oscillated and the wheels deflected, substantially as and for the purpose specified.

2. In combination with the axle or frame having swinging wheels with arms J, the bars I I', sliding bar K, and plow-beam D, the rods or arms L, adapted to move the wheels by the lateral movement of the plow-beam, substantially as and for the purpose specified.

3. In combination with the bars I I' for operating the swinging cultivator-wheels, and with the sliding bar K, the rigid bar N, to which the bar I' may be locked, substantially as and for the purpose specified.

4. In combination with the sliding bar K and plow beam or gang, the rod L, adapted to move freely in the bar K to permit the plow-beam to swing vertically without moving the bar K, and to move said bar K when the plow-beam is swung laterally, substantially as and for the purpose specified.

5. In combination with the axle or frame having swinging wheels with arms J, the links *i'*, bars I I', sliding bar K, having a series of adjusting-holes, *k³*, and plow-beam D, the rods or arms L, adapted to move the wheels by the lateral movement of the plow-beam, substantially as and for the purpose specified.

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

ROBERT H. AVERY.

Witnesses:

CHAS. T. WYCKOFF,
E. D. AIKEN.