

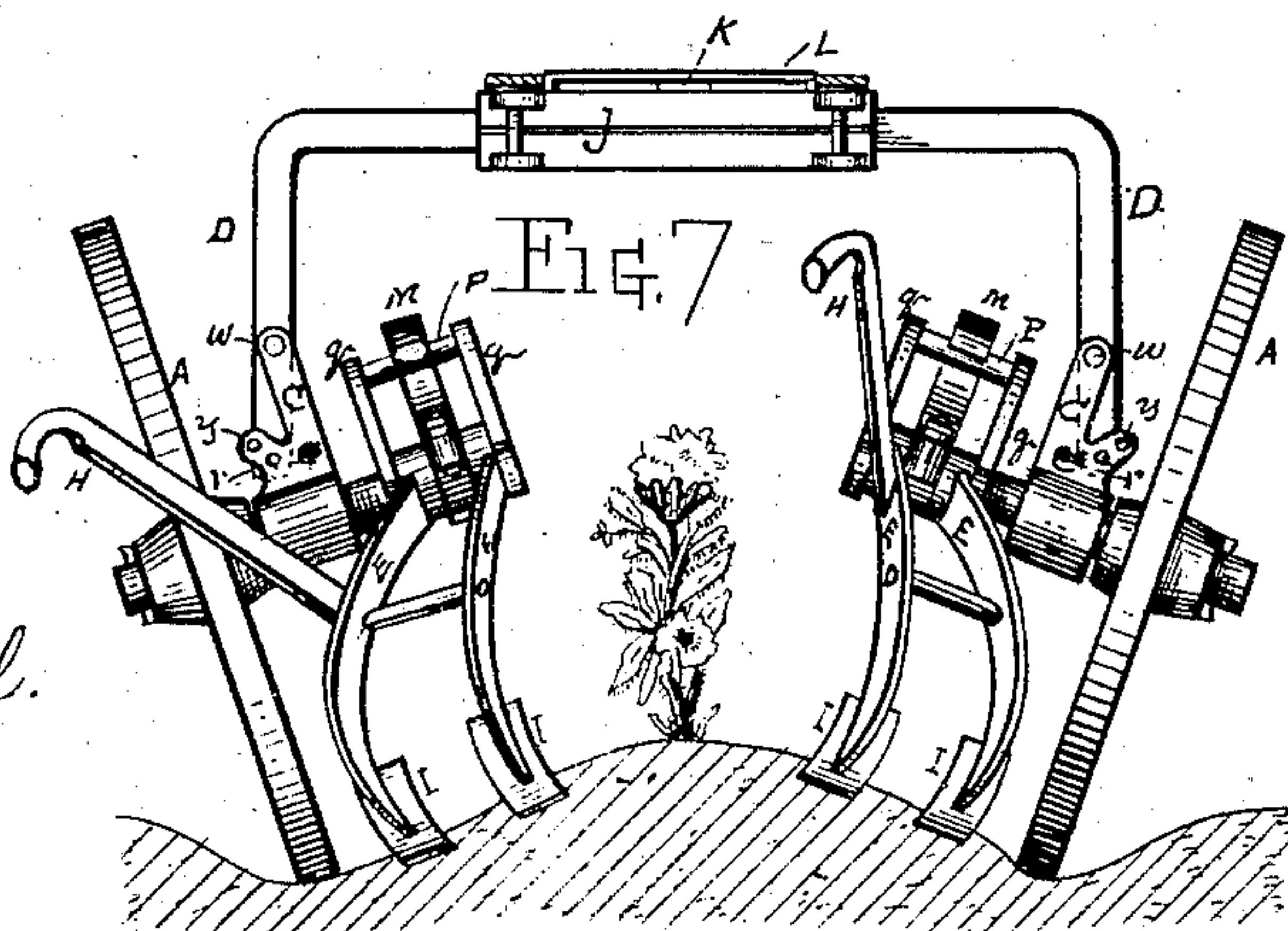
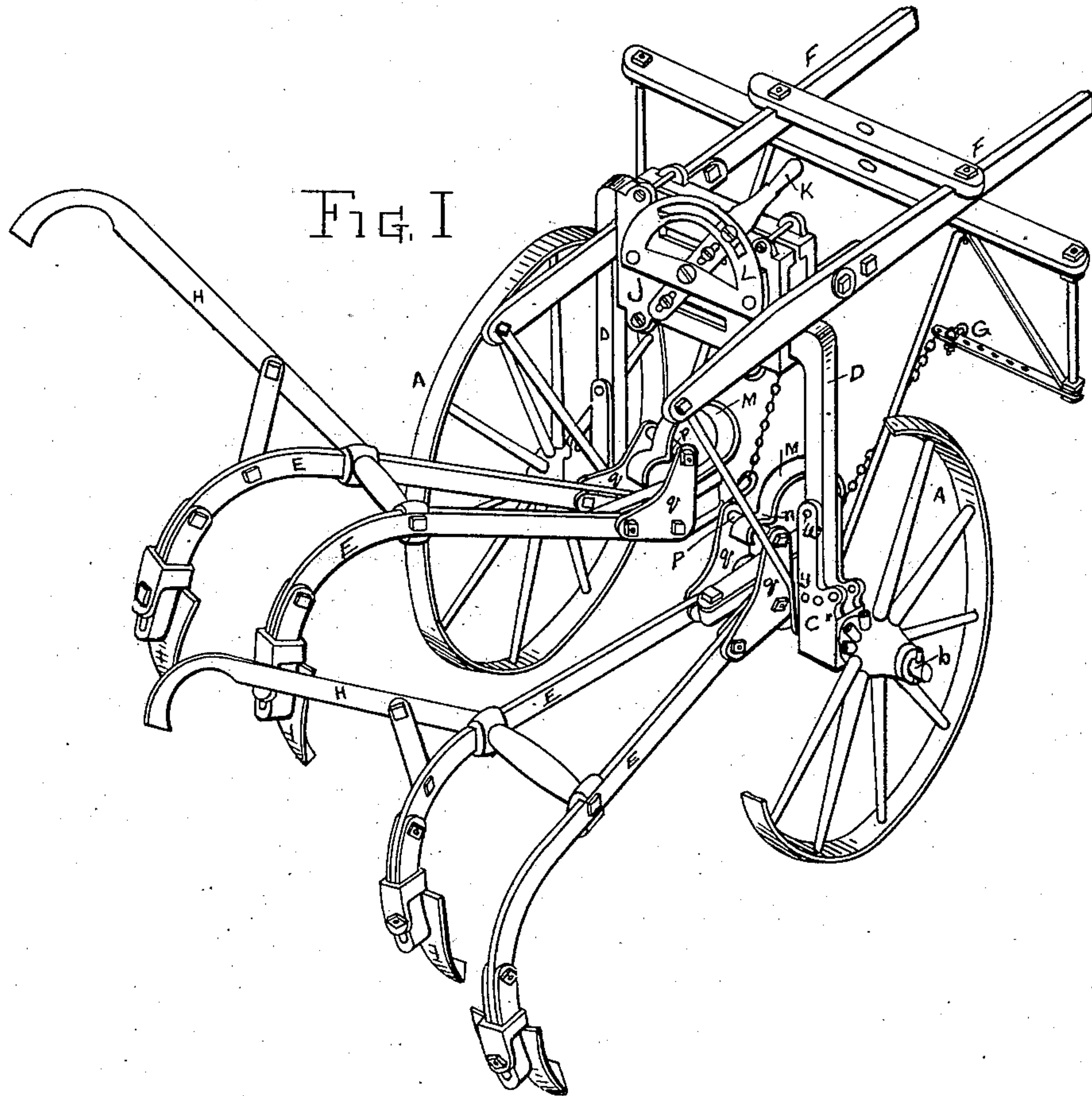
(No Model.)

2 Sheets—Sheet 1.

T. MEIKLE.  
CULTIVATOR.

No. 312,489.

Patented Feb. 17, 1885.



WITNESSES:

J. C. Turner  
J. H. Ingersoll.

INVENTOR

Thos. Meikle

By his atty.

Rod. O. Smith

ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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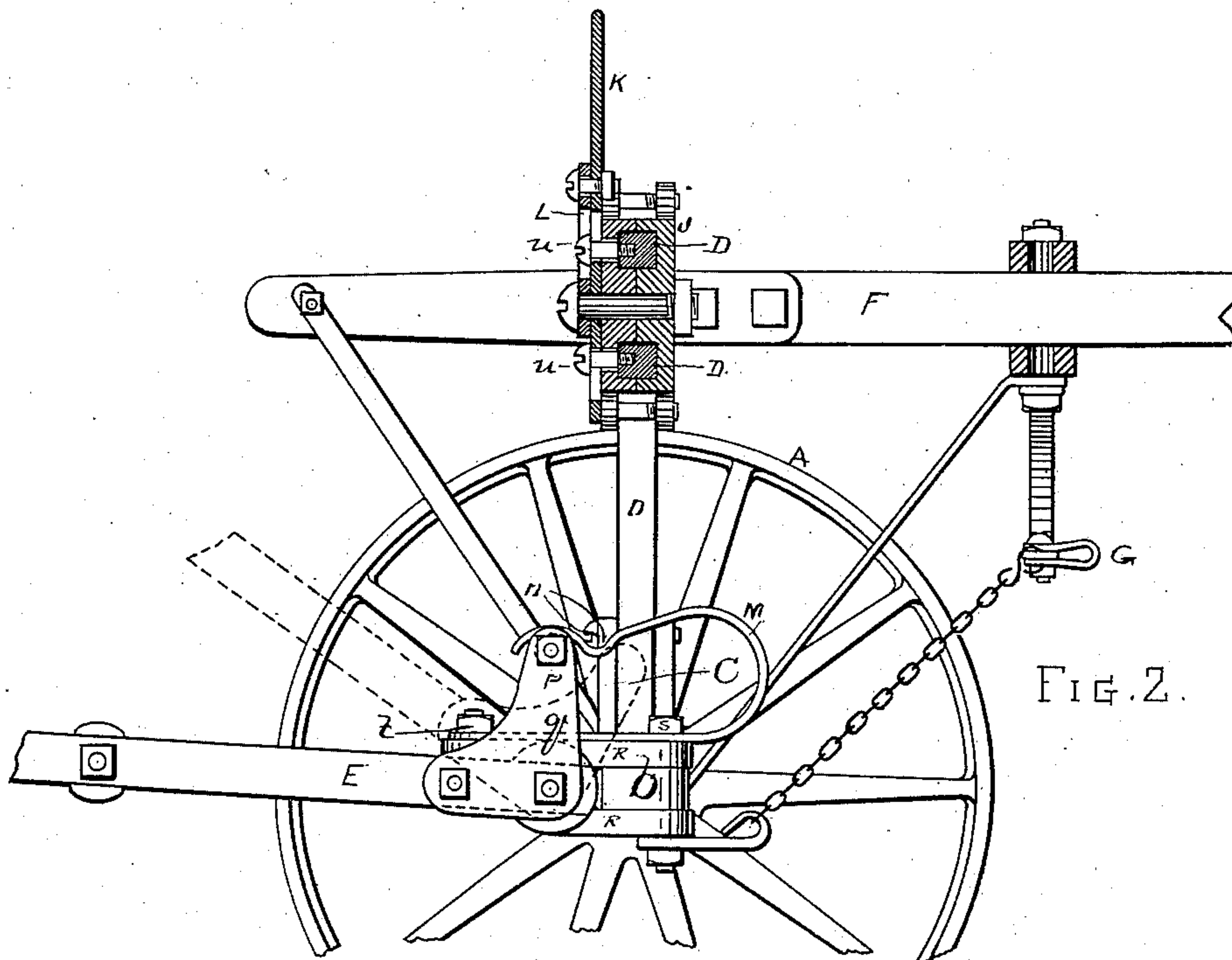


FIG. 2.

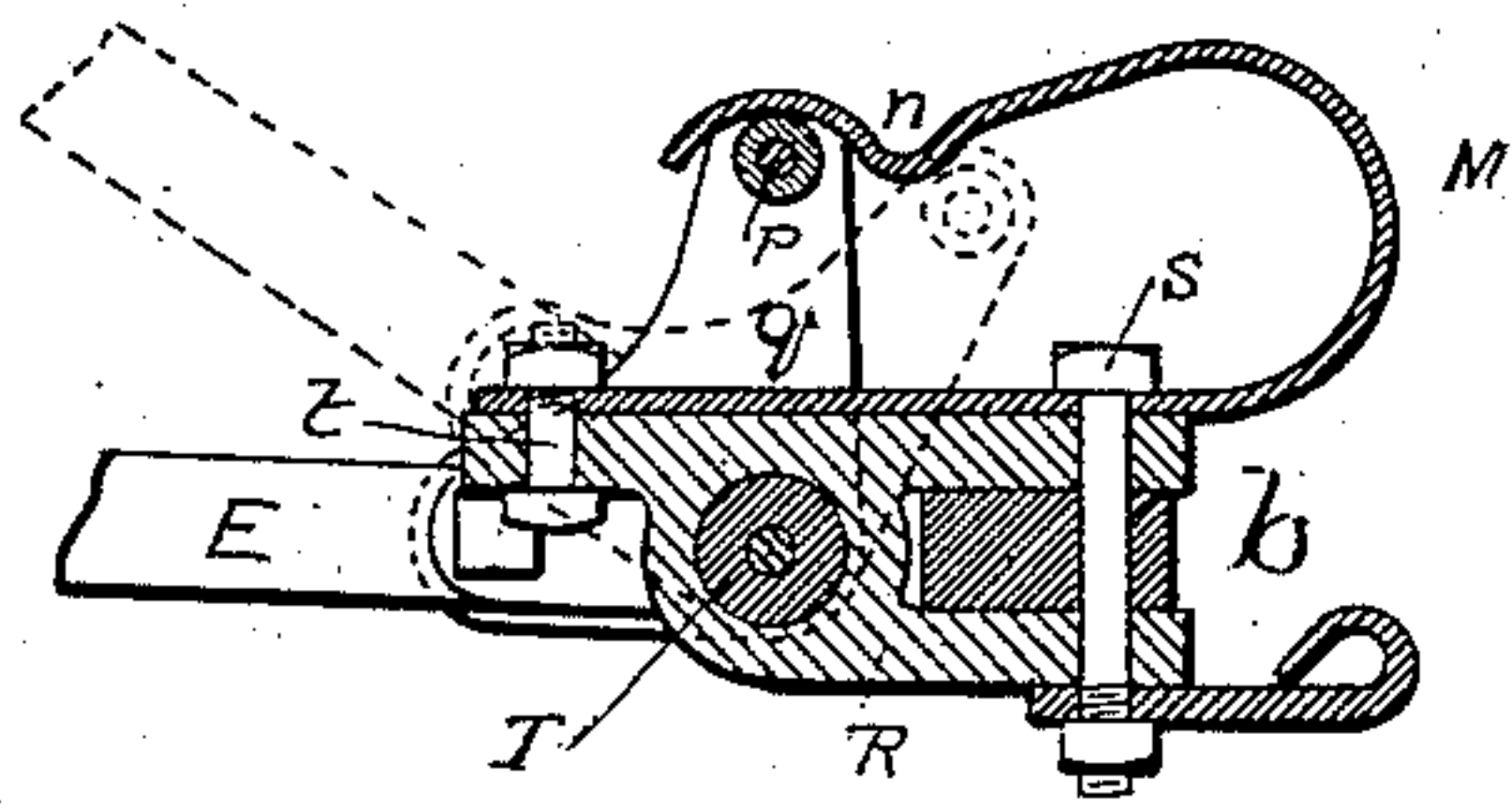


FIG. 3.

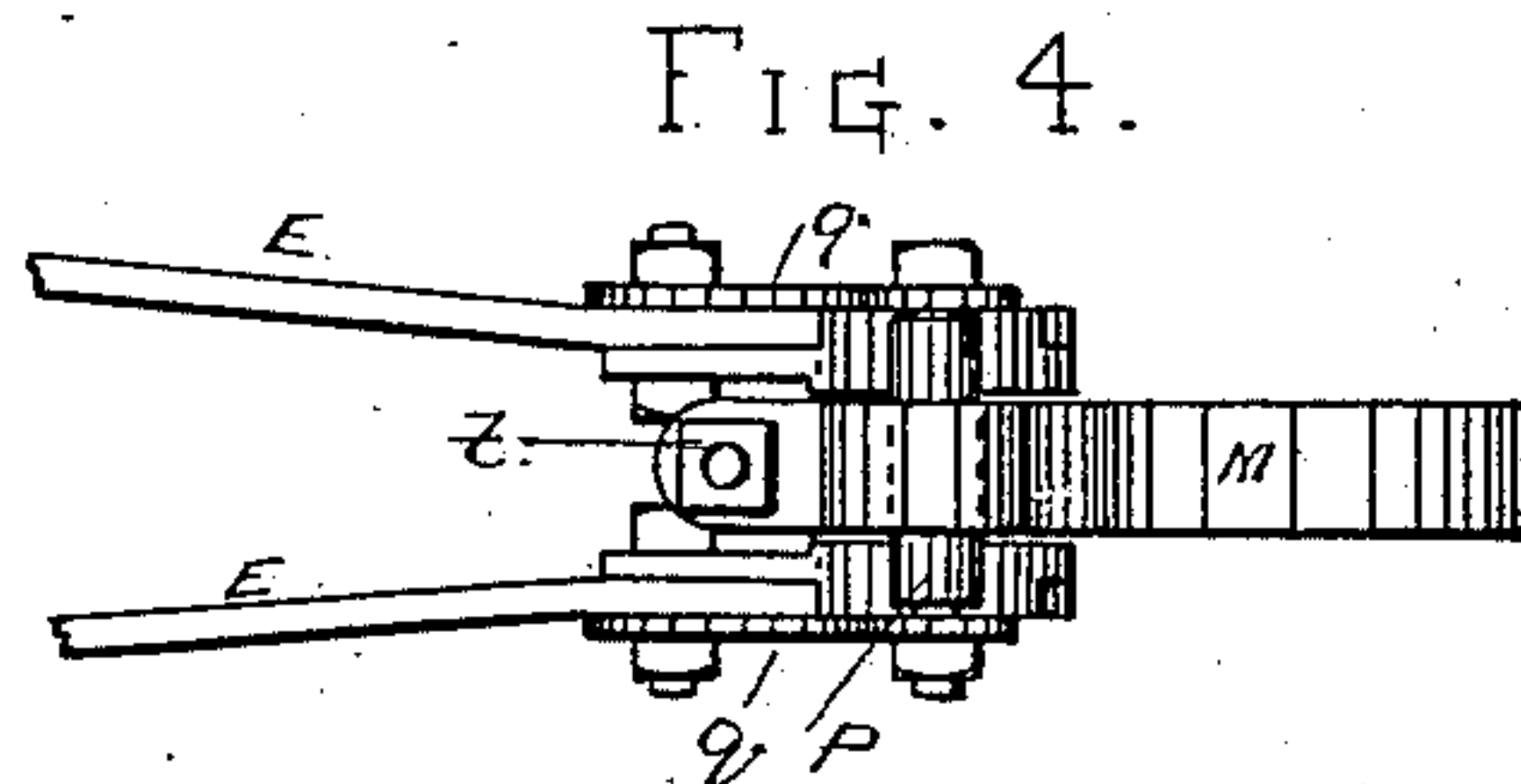


FIG. 4.

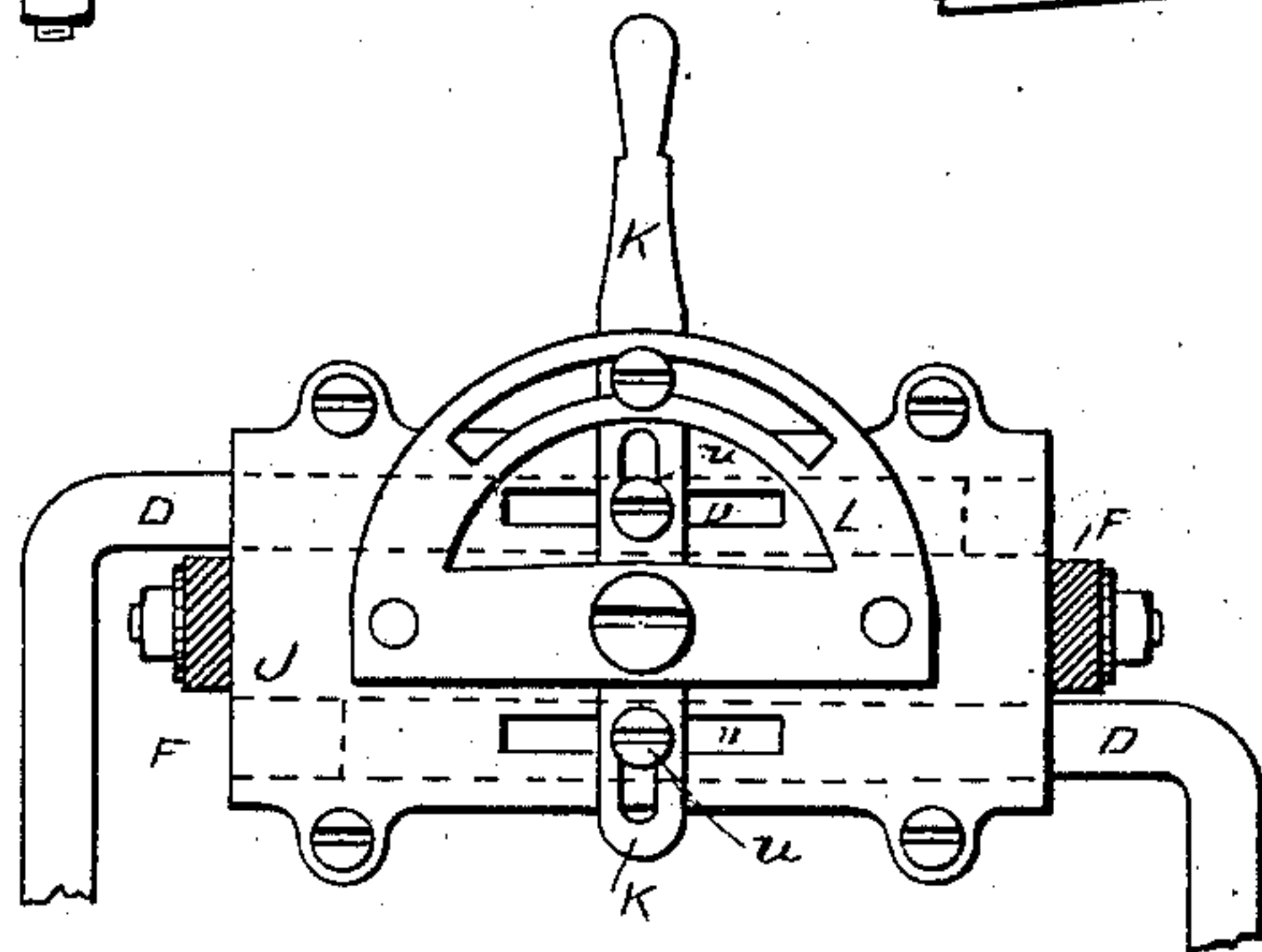


FIG. 6.

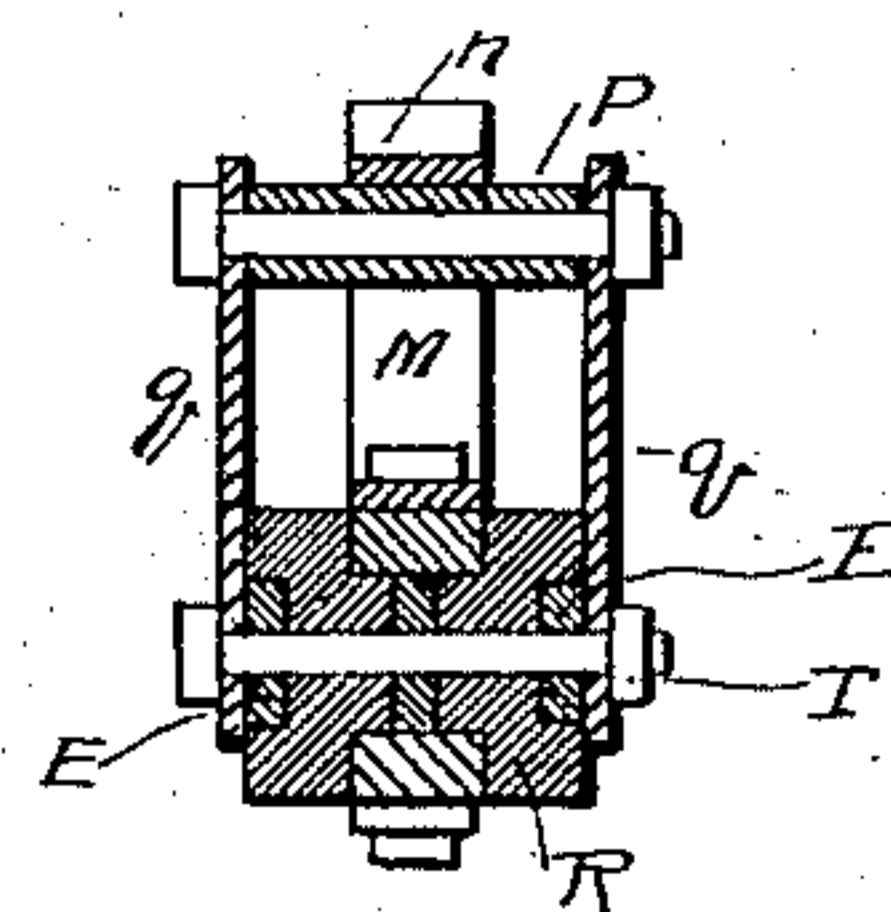


FIG. 5.

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# UNITED STATES PATENT OFFICE.

THOMAS MEIKLE, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THOMAS MEIKLE AND COMPANY, CORPORATION, OF SAME PLACE.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 312,489, dated February 17, 1885.

Application filed November 1, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS MEIKLE, of Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Cultivators; and I do hereby declare that the following is a full and accurate description of the same.

This invention relates to that class of cultivators known as "straddle-row," and particularly, first, to devices for varying the distance between the center shovels; second, to devices for holding the shovels down to the ground or elevated above the ground, as preferred; and, third, to devices for shifting the inclination of either or both wheels to adapt the machine to work on high ridge-rows such as are common in cotton-cultivation.

I am aware that the distance between the center shovels has been regulated by means of a divided axle the parts of which were capable of relative movement, and that said parts have been simultaneously moved by means of a rack and pinion operated by a lever, and that they have also been independently moved and fixed in position by set-screws. The last-named method is undesirable because it is troublesome, and the first-named is undesirable because it is costly and extremely liable to obstruction by reason of solid matter getting lodged between the teeth of the rack or pinion. My invention obviates the objections to both methods by means of a lever pivoted to the coupler and jointed to said parts of the axle, respectively, on each side of the fulcrum-pin. It is customary to support the shovels above the ground for transportation by temporarily attaching the drag-bars to some overhanging part of the axle-frame; and I am aware that a spring has been employed for the same purpose. The same spring has been employed or adapted to hold the shovels either up or down, according to the position in which the attendant may have placed them; but in that case the spring was attached to the drag-bar at a distance behind its joint to the wheel-frame, and it was therefore much exposed. My spring is attached rigidly at one end to the axle, immediately in front of the drag-bar joint, and toward its other or free end it is bent over in

C shape, and has a short bend inward and then outward; or it may be provided with a solid attachment which will present on its exterior surfaces having the requisite directions as to each other. The drag-bar or shovel-frame has a shoulder or pin which is always in contact with the above-mentioned bend or attachment of the spring, and constantly bears against one or the other side thereof, according as the shovel is on the ground or above it, and from either position the shovel can only be moved by flexing the spring to cause said pin to pass said bend or attachment.

In the culture of cotton it is customary to plant the same along the top of a ridge, and in cultivating the same it is desirable that all the shovels shall penetrate to the same depth below the surface, and because said surface slopes in one direction at one side of the plants and in the opposite direction at the other side, it is necessary to cant the shovels at one side in a direction opposite from the cant of the shovels on the other side; and to preserve unchanged the relative positions of the planes of shovel-cut and wheel-tread I shift or cant the wheel and shovels on each side together.

The following is a particular description of the devices above named as I have preferred to construct them, but without intending to limit myself to the details as shown, because, obviously, they may be greatly varied without changing the mode of operation in the least.

Reference is had to the accompanying drawings, wherein Figure 1 is a perspective view of my cultivator. Fig. 2 is a longitudinal sectional elevation. Figs. 3, 4, 5, and 6 are details. Fig. 7 is a rear elevation.

A A are the supporting-wheels, mounted upon axle-spindles *b*, which are secured at their inner ends to the cast-metal boxes C, which in turn are adjustably attached to the arched axles D.

For convenience in manufacture I prefer to make the box C and axle-spindle separate, inserting the latter through said box, and fastening in proper position by means of a set-screw or other proper device.

To the inner end of the spindle *b*, which



projects inward from the box C, I attach the coupler R by means of the vertical joint-pin S, whereby said coupler is free to swing on said pin in a horizontal plane. The cultivator drag-bars E E are jointed to the coupler R by a horizontal joint-bolt, T, and may therefore rise and fall thereon in a vertical plane; and by compounding the movements upon the pins S and T the shovels I may move in any direction. The draft-pole F is attached to the top of the arch D, but it is preferable and more convenient to attach the single-trees at a lower level, as at G. The cultivators at each side being connected rigidly, so as to move together, may be managed by a single handle, H, and the same may be adapted, as in the drawings, for a walking attendant; or, by making said handle in the form of a foot-piece it may be adapted to the requirements of a riding attendant. The axle D is made in two parts, the adjacent ends whereof are laid in parallel grooves in a coupler, J, and are free to slide therein. A lever, K, is pivoted to the coupler J at a point between the grooves above mentioned, and at points on each side of said pivot said lever is jointed to said parts of the arch D, respectively, by means of joint-pins *u* and slots in the lever K, as shown, or by links connecting said lever with the respective parts of the axle D. To the same end and purpose I think it preferable to provide the lever K with a segment, L, to which said lever may be locked in any position desired, and thereby secure both parts of the axle in position. It is evident the coupler J may be made with its grooves in a horizontal plane instead of a vertical plane, as shown, and in that event the lever K will project horizontally and be in more convenient position for the hand of a riding attendant, because it is sometimes desirable to shift the width of the cultivator while the machine is in action, and it may, with my device, be done without stopping. When going to or from the field, it is required that the cultivators shall be held above the ground, and I have therefore provided a strong spring, M, having attached to it near its free end a shoulder or projection, *n*, which I prefer to form by a bend in the spring itself, though it may with a similar effect be constituted by a separate piece attached to or actuated by said spring. The spring, with its shoulder, is permanent in position, being firmly attached at one end to the coupler R by the bolts S *t*, and a part, P, (which is most conveniently constructed with a bolt covered by a loose sleeve or roller supported by side arms, *q q*, attached to the coupler R and the drag-bars E,) constantly bears against one or the other side of said shoulder, so that when the shovels are in the ground the pressure of the spring tends to keep them down, and when they are up the pressure of the spring tends to keep them up, because to move from either position the part P causes the spring to flex and allow said part to pass to the other side

of said shoulder. In practice I prefer to make the spring M C-shaped, with a sharp outward bend near the free end to constitute the shoulder *n*. 70

When the machine is employed in cultivating cotton planted upon ridges, as shown in Fig. 7, it is desirable that the cultivators shall be set to penetrate to an equal depth below the surface, and as this depth bears a definite relation to the position of the tread of the wheel it is necessary to adjust both wheel and cultivator, and this is most conveniently done by shifting the position of the box C, which carries with it the axle-spindle *b* and the coupler R, though, as will be apparent to any mechanic, the adjustments of the relative positions of wheel and cultivators may be attained by other means. The method shown is simple, effective, and not liable to derangement. A series of change-holes, *r*, in the box C permits said box, with its attachments, to move on the bolt *w* as a center, and by shifting the bolt *y* from one of said change-holes to another the axial inclination may be changed as desired. 80 85 90

For some purposes it is desirable to place the bearing-wheels farther to the rear, and it is not then necessary to make said wheels adjustable. The wheel-axle is then made rigid, and the adjustable arch D is placed at a proper distance in front of the wheel-axle, and serves to support and control the drag-bars only. The same adjusting mechanism may be applied to the cultivator-arch even if no wheels be employed. 95 100

Having described my invention, I claim as new—

1. A straddle-row cultivator the arch whereof is composed of two parts, combined with a coupler-block, J, provided with a groove or grooves wherein said arch parts may slide and lap past each other full size, to cause the cultivators to approach or recede from each other, a lever with which to move said parts, and a locking device whereby said axle parts may be fastened in the desired position. 105 110

2. A straddle-row cultivator the arch whereof is composed of two parts, combined with a coupler, J, provided with grooves wherein said parts may move and lap past each other full size, to cause the cultivators to approach or recede from each other, and a lever whereby the parts of said axle may be coincidentally moved, and a locking device whereby said arch parts may be fastened and held in the desired position. 115 120

3. A straddle-row cultivator the axle whereof is arched and composed of two parts capable of relative movement at the top of the arch, to cause the wheels and cultivators to approach or recede from each other, combined with a coupler, J, a lever, K, pivoted to said coupler at a point between said axle parts, and jointed to said parts, respectively, at each side of said pivot, and a locking device whereby said lever and axle parts are locked and retained in position. 125 130

4. A straddle-row cultivator having the



arched axle D in two parts, the coupler J, with parallel grooves to receive said parts separately, the slotted lever K, pivoted to said coupler at a point between said grooves, and  
5 connected with said axle parts by pins which pass through said slots, and the segment L, with a locking device, all combined substantially as set forth.

10 5. A cultivator supported upon wheels, and provided with a C-shaped spring rigidly attached to the axle at one end, and having a bend, *n*, near the free end, in combination with the drag-bar E, having the upturned arms *q* at its front end, provided with the bearings P,  
15 whereby the same spring acts to support the cultivator above the ground or to keep the same down upon the ground, substantially as set forth.

20 6. In a straddle-row cultivator, an axle provided with axle-spindles and cultivators, coup-

lers adjustable thereon in a vertical plane, and locking devices whereby, when said spindles and couplers have been adjusted, they may be locked and retained in position, whereby the wheels may be set oblique to the axle and  
25 adapted to stand, with the cultivators, perpendicular to the surface on which they are working, substantially as set forth.

7. In a straddle-row cultivator, an arched axle combined with the spindle-boxes C, pro-  
30 vided with a series of change-holes, *r*, arranged concentric as to the bolt *w*, so that by changing the bolt into one or another of said holes *r* the angular position of the wheel may be changed, substantially as set forth.

THOS. MEIKLE.

Witnesses:

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C. B. HALL.