(No Model.) 3 Sheets—Sheet 1.

T. M. MOORE.

CULTIVATOR.

No. 582,300. Patented May 11, 1897.

Fig. 1.

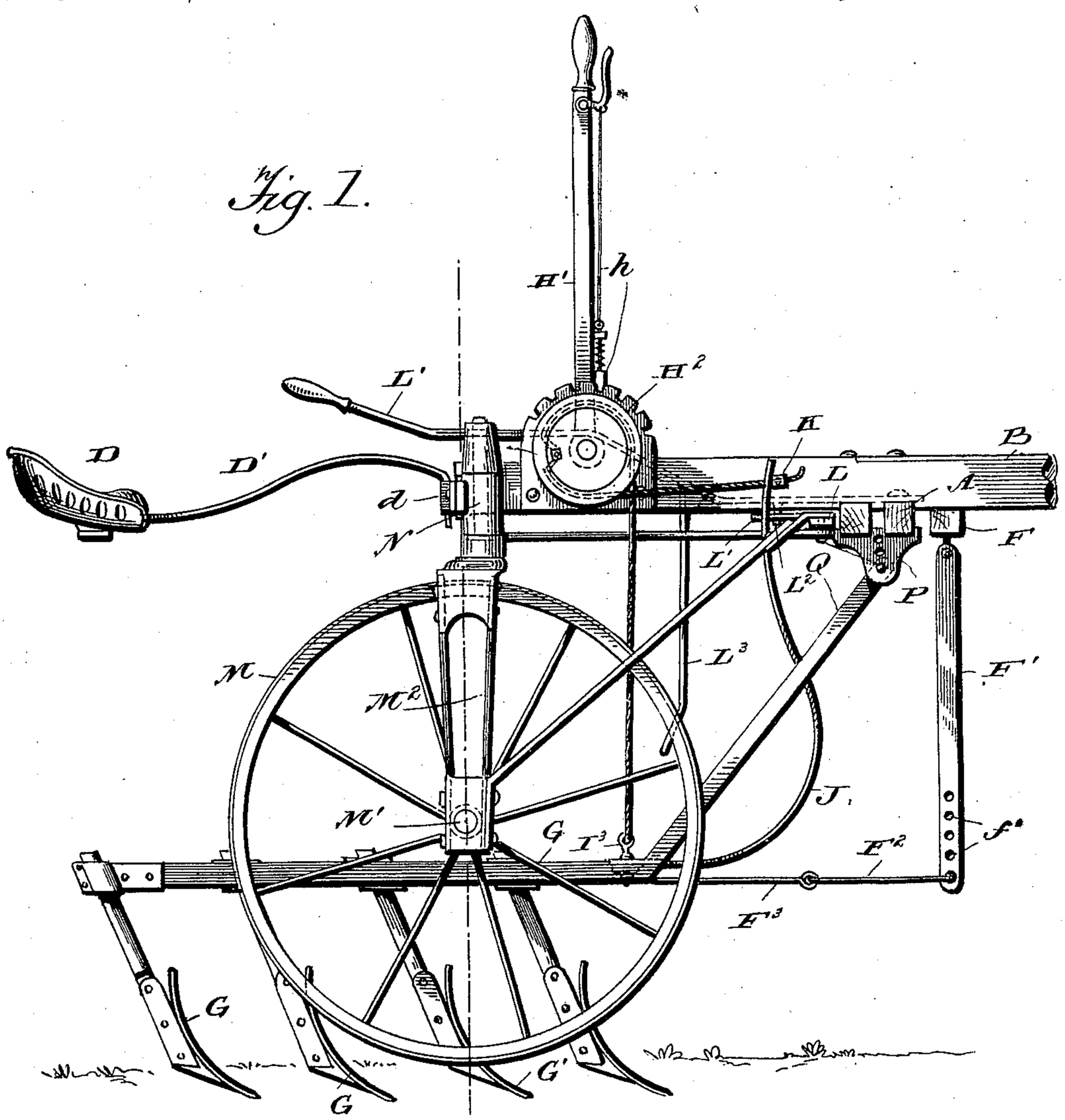

Fig. 4.

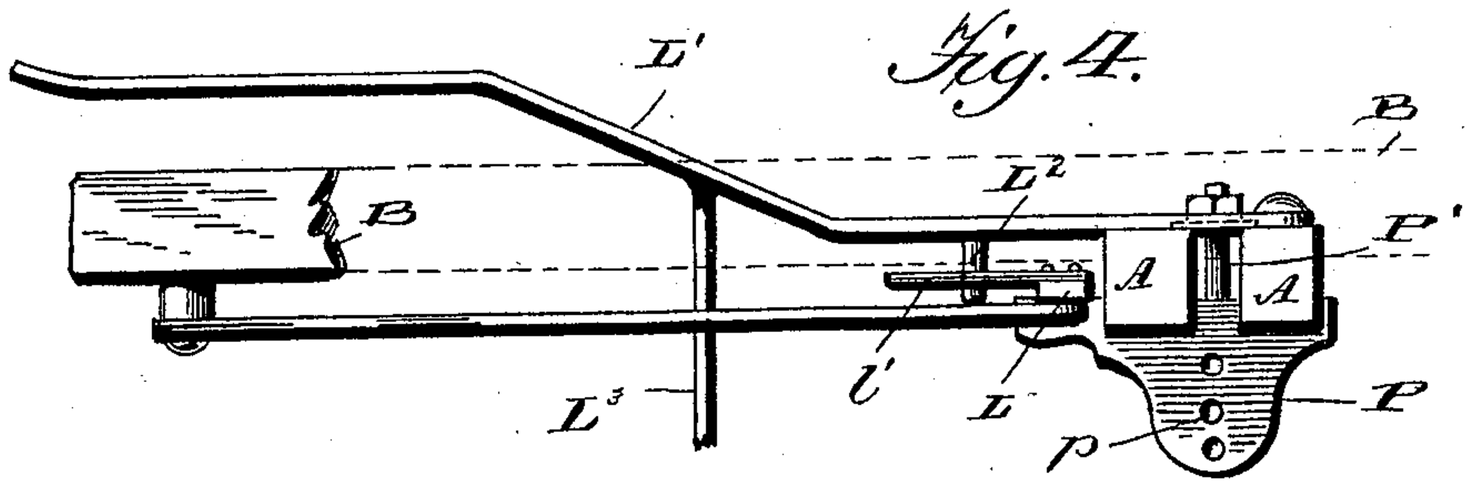

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Fig. 2.

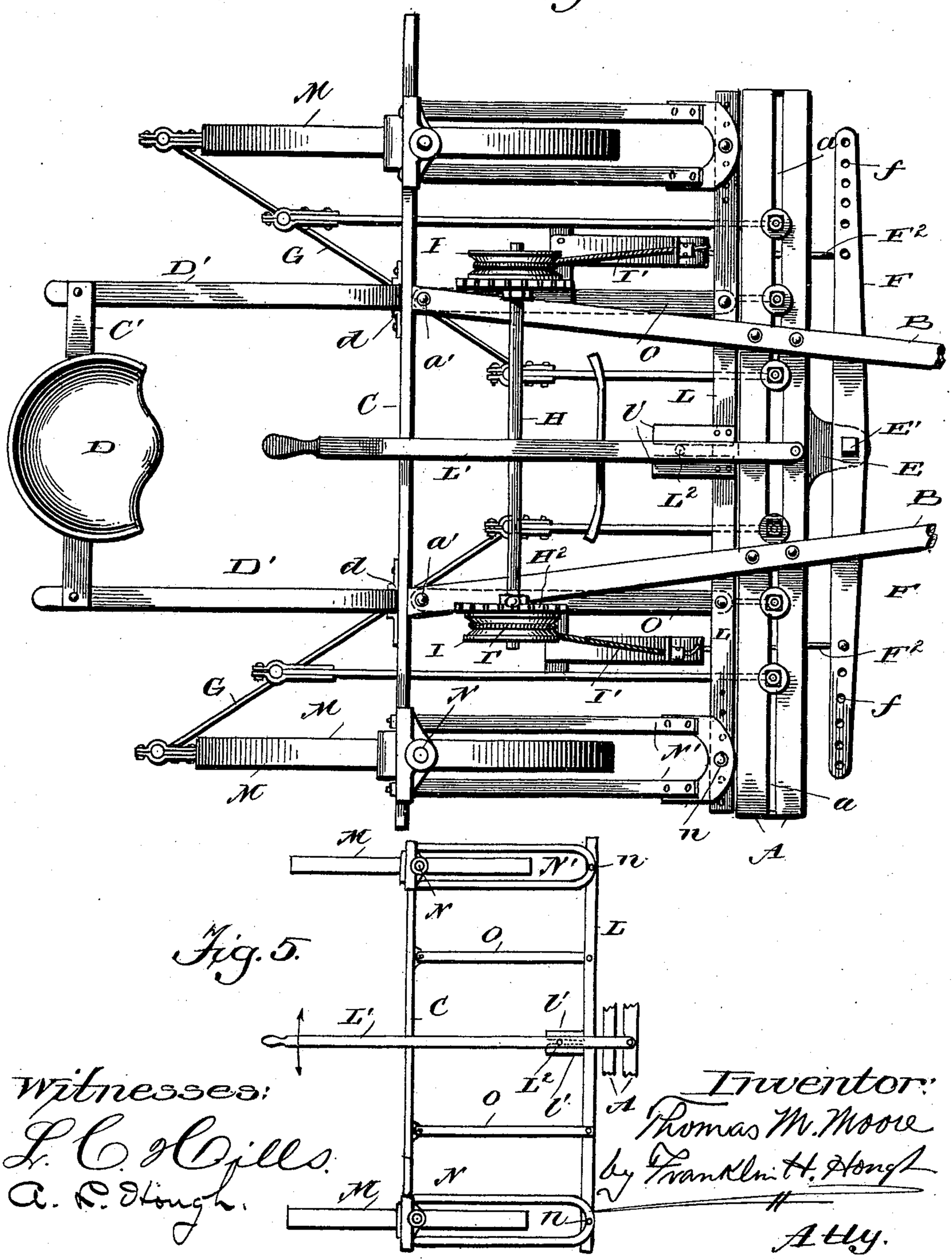

Fig. 5.

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(No Model.) 3 Sheets—Sheet 3.

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Fig. 3.

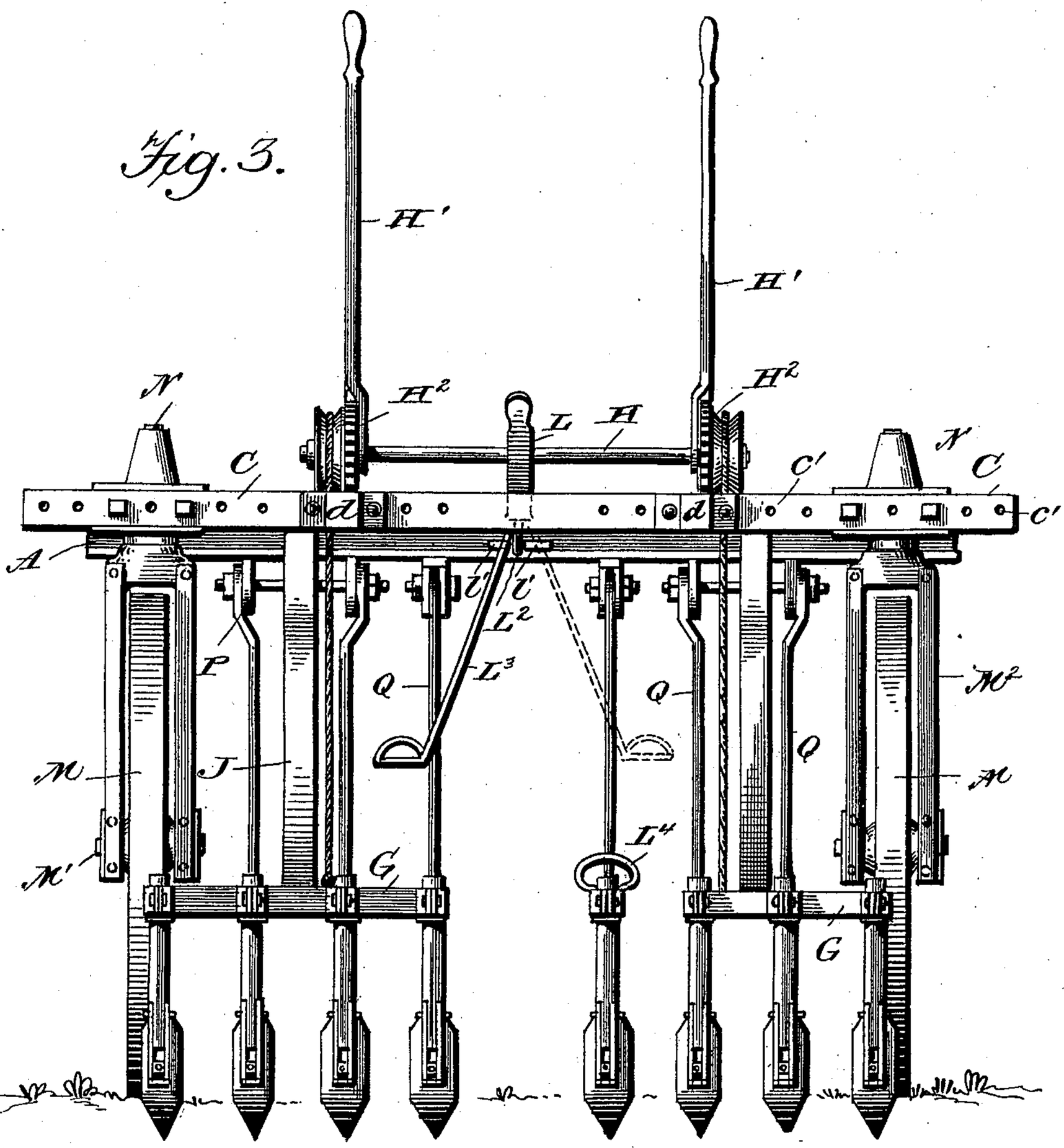


Fig. 8.

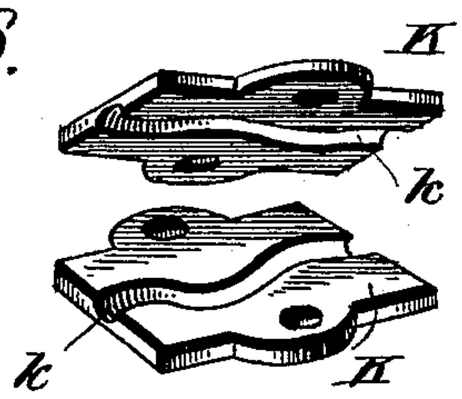


Fig. 6.

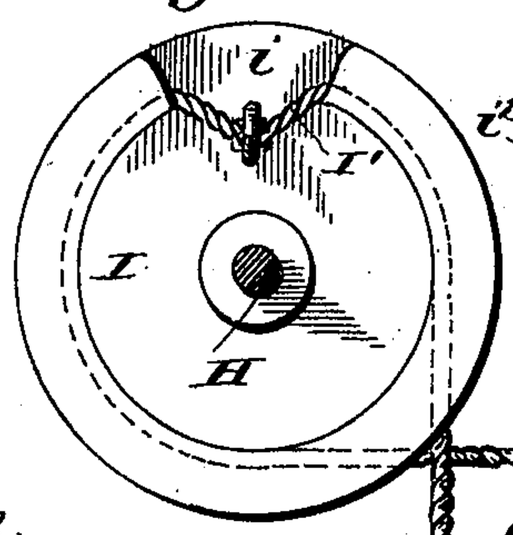
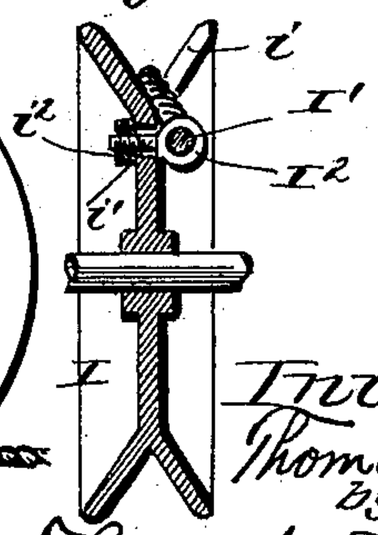


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS M. MOORE, OF SOMERVILLE, NEW JERSEY, ASSIGNOR TO JAMES S. SHERMAN, OF UTICA, NEW YORK.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 582,300, dated May 11, 1897.

Application filed February 19, 1896. Serial No. 579,902. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. MOORE, a citizen of the United States, residing at Somerville, in the county of Somerset and State of New Jersey, have invented certain new and useful Improvements in Cultivators; and I do 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 the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in cultivators; and it has for its object, among others, to provide an improved pivoted-wheel cultivator having provision for the greatest latitude of track adjustment to suit various crops.

I so construct the parts as to throw the working parts of the machine on a practically straight line to the right or left, whether the cultivator is working or not, and thus affording more positive and rapid action to avoid obstacles than where the lateral adjustment or movement is in common only with the forward motion of the machine. The pivoted wheels, one on each side of the machine, are provided with arms projecting forward. For the purpose of supporting the wheels and relieving the main arch of the strain I provide a cross-bar which serves the double function of guiding the machine and affording a support or brace for the wheels thereof. I also provide improved raising and lowering means for the drag-bar and for applying the spring-pressure thereon, as well as a grooved pulley forming a part of such means. I provide for the guidance of the machine by the hand and foot or feet of the operator when desired.

I aim, further, at improvements in the details of construction of the cultivator as a whole and in its various parts whereby a more complete and efficient machine is furnished and by which a greater amount of work can be accomplished in a given time.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention in this instance resides in the peculiar combinations and the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a cultivator constructed in accordance with my invention. Fig. 2 is a plan view thereof. Fig. 3 is a rear elevation with parts removed. Fig. 4 is an enlarged detail, in side elevation, with portions broken away. Fig. 5 is a plan, on a smaller scale, of the frame with portions broken away. Fig. 6 is a face view of the grooved pulley. Fig. 7 is a central section through the same with the rope shown secured thereto. Fig. 8 is a perspective view of the two parts of the clamp-nut removed and separated.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the two front cross-bars of the frame, which are arranged with a space or slot *a* between them, as shown in Fig. 2. B are the shafts or bars secured to the said cross-bars, and at their rear ends secured, as at *a'*, to lugs projecting from the rear cross-beam C, as shown.

D is the seat, suitably supported, as, for instance, upon the transverse bar C', connecting the arms D', which are by preference of spring material, and their forward ends engaged in sockets or analogous supports *d* on the rear side of the rear cross-beam C. This rear cross-beam C is provided with a plurality of holes *c'*, as seen best in Fig. 3, which provide for all necessary adjustment of the pivot-wheels.

As seen in Fig. 2, E is a bracket or casting secured to the front cross-bar A and projecting forward, and in this bracket or casting is supported the bolt E', on which is pivoted the draft-bar F, having a plurality of holes *f* near each end to provide for the necessary adjustment of the draft appliances.

F' are suspended bars having a plurality of holes *f'* near their lower ends, in which are

adjustably connected the rods F^2, the other ends of which are linked with the rods F^3, which are connected at their rear ends to the drag-bars G, which drag-bars carry the shovels or teeth G', which may be of any well-known or approved form of construction and secured to their drag-bar in any desired manner.

The drag-bars, with the shovels or teeth, are designed to be raised or lowered to regulate their depth of cut, and for this purpose I have provided the transverse shaft H, which is mounted in suitable bearings on the frame, and on this shaft are mounted the levers H', one near each end, as seen best in Fig. 3, each lever having a spring-pawl *h* of known construction adapted to engage a toothed segment or ratchet H^2, secured to the frame so that the parts may be securely held in their adjusted positions. Secured to this shaft near each end is a grooved pulley I, which has the V-shaped peripheral groove, as seen best in Fig. 7, and the flange of the wheel or pulley is removed for a short distance, as seen at *i* in Figs. 6 and 7, so that the rope I' may be thrown out of its path to increase the frictional engagement on the pulley, and at this point the rope is held to the pulley by some suitable means, as the screw-eye I^2, passed through an opening *i'* in the web of the pulley, as seen best in Fig. 7, and receiving upon its end a nut i^2, by which it may be tightened when desired. The rope passes through the eye of the bolt, as seen in Figs. 6 and 7. This rope passes around the pulley and has one end extended downward in a vertical direction, where it is secured to an eyebolt or the equivalent I^3 on the forward end of the drag-bar, as seen best in Fig. 1, and its other end extends forward horizontally and is passed through an opening in the upper end of the spring J, which is curved and its other end secured to the forward end of the drag-bar, preferably by the eyebolt I^3 or its equivalent, as seen in Fig. 1. The end of the rope after passing through the upper end of the spring is clamped by suitable means, as the two-part clamp-nut K, the two parts being alike, as seen in Fig. 8, and each has a crooked groove *k* therein, as seen, so that when the two are secured together and the rope held in the two coincident grooves it will be frictionally held against endwise movement therein. The two parts are secured together by suitable bolts or screws passed through the holes *k'* therein. By adjustment of this nut the tension of the spring and its pressure on the drag-bar can be regulated as occasion may acquire. As this spring and mechanism are duplicated on either side of the machine it will be understood how the drag-bars may be raised or lowered at will and the tension or pressure of the springs increased or diminished, as required.

L is a bar arranged to the rear of and parallel with the front cross-bars, but adapted to be reciprocated as may be required, and this movement back and forth is accomplished by means of the rudder L', the handle end of which extends to within convenient reach from the seat D, and its forward end is pivoted, as at *l*, on the front cross-bar A, as seen best in Figs. 2 and 5, and depending from this rudder to the rear of its pivot is the pin L^2, which extends between the bars *l'*, which extend rearward from the bar L, as seen in Figs. 2, 4, and 5, so as to engage either one or the other according to the direction in which it is desired to move the bar. It may sometimes be found desirable to move this bar by the foot or feet of the operator, and for this purpose I have provided the stirrup L^3, which, as seen in Figs. 1 and 4, depends from the rudder and is designed to receive the foot of the driver, so that the bar L may be moved in either direction. There may be one or two of these stirrups, in Fig. 3 there being two indicated, one by full lines and the other by dotted lines, the latter not being present when the stirrup L^4 is provided on one of the shovel-standards, as is shown in the same view, or both of these stirrups may be removed and the inner or independent teeth of the cultivator guided by two stirrups L^4.

M are the pivot-wheels. They may be of any well-known or preferred form of construction and are carried by the short axles M', which are mounted in suitable boxes or bearings, which may be ball-bearings, if desired, and these bearings are supported in the lower ends of the hangers M^2, which are dependent from the swivels N, as seen in Figs. 1 and 3, and the vertical axis of the swivel is forward of the central line through the axle, as indicated in Fig. 1, the supports for the swivels being adjustably secured to the rear cross-beam C, so that the wheels may be adjusted in or out, as may be necessary or required. These swivels have extending forward therefrom horizontally the yokes or bars N', as seen best in Fig. 2, and which are pivotally connected, as at *n*, with the slide-bar L, the pivot being capable of adjustment into any one of the holes in the said bar.

O are horizontal bars connecting the slide-bar L with lugs on the front face of the rear cross-beam C, as seen best in Fig. 5. They are pivoted at their ends.

P are plates having a plurality of holes *p*, and these are adjustable in the slot or space *a* between the cross-bars A A by means of the vertical bolts P', having nuts and washers, as shown, and adjustably connected to these plates are the rods or bars O, the other ends of which are connected with the drag-bars or the standards of the shovels.

The center standards, one or both, may be independent of the others, as shown in Fig. 3, or not, as may be found most expedient.

The parts of a cultivator not here illustrated and such parts as are shown and not specifically described may be of any of the well-known or approved forms of construction, and various modifications in detail of the parts hereinbefore specifically described may be resorted to without departing from

the spirit of the invention or sacrificing any of its advantages.

It will be readily seen that by the construction herein described it will be possible, when track adjustment is desired or in the event of the arch with which the wheels are pivotally connected being distorted or bent by sudden strain or wrench, to readily compensate therefor and maintain a uniform tracking of the wheels by adjusting equivalently the point of connection to the projecting arms and to the compensating or guiding bar.

What is claimed as new is—

1. In a cultivator, a grooved pulley having a portion of its flange removed, and an opening through its web at the base of the grooved portion, combined with an eyebolt, which is passed through the opening at right angles to the pulley, and a rope or chain, which is fastened to the pulley at or near its center, whereby but a single fastening device is necessary, and the rope or chain is made to operate from either end, substantially as described.

2. In a cultivator, the combination with a drag-bar and a spring connected therewith, of a grooved pulley, means for operating the same, and a rope passed around the pulley and secured to the same between its ends, and at its ends secured to the drag-bar and to the free end of the spring, substantially as specified.

3. In a cultivator, a drag-bar, and a vertical curved spring secured to the front end of the drag-bar, combined with a rope or chain, and an operating mechanism therefor; one end of the rope or chain being fastened to the upper free end of the spring, to regulate its tension, and the other end fastened to the front end of the drag-bar, so as to raise it at this point, substantially as described.

4. In a riding-cultivator, two pivoted bearing-wheels, a rod for connecting them, and upon which the wheels are adjustably secured combined with the forwardly-projecting U-shaped yokes, and the rods L upon which the yokes are adjustably pivoted, and whereby the yokes and pivots have a corresponding adjustment, as shown and described.

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

THOMAS M. MOORE.

Witnesses:

JOHN B. THOMPSON,

FRANKLIN H. HOUGH.