

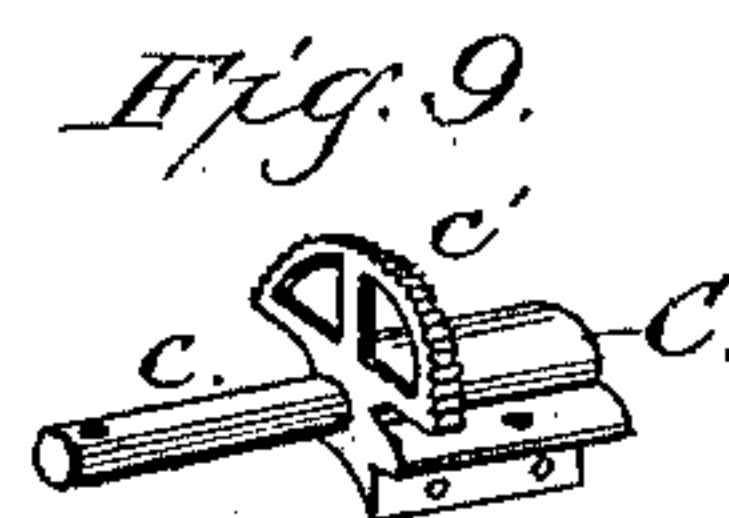
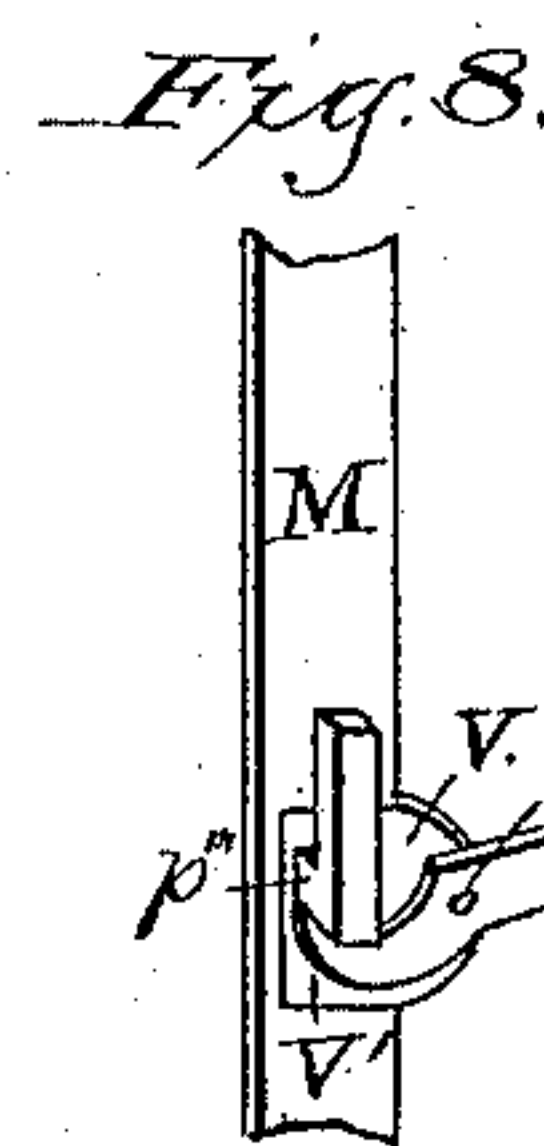
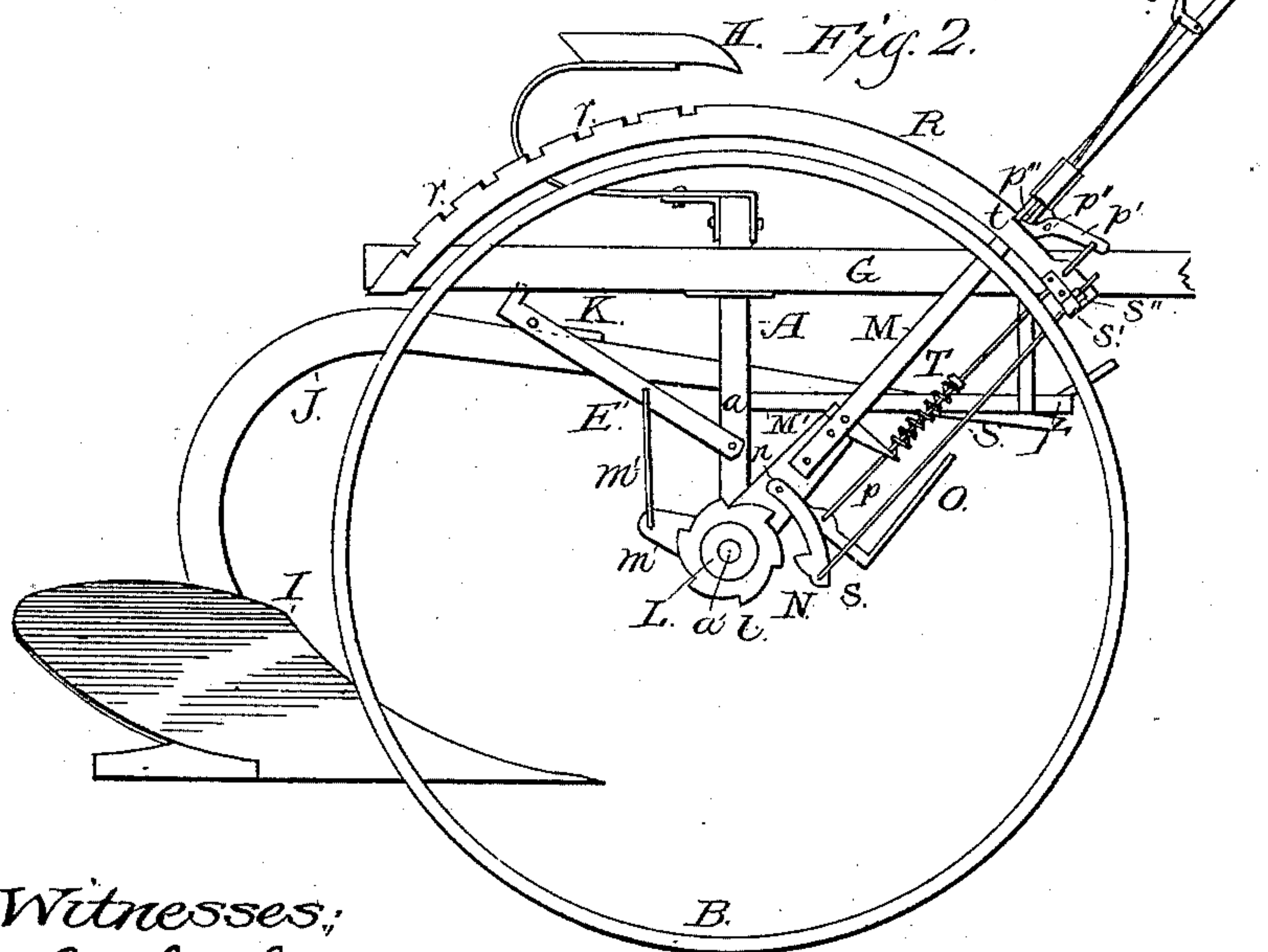
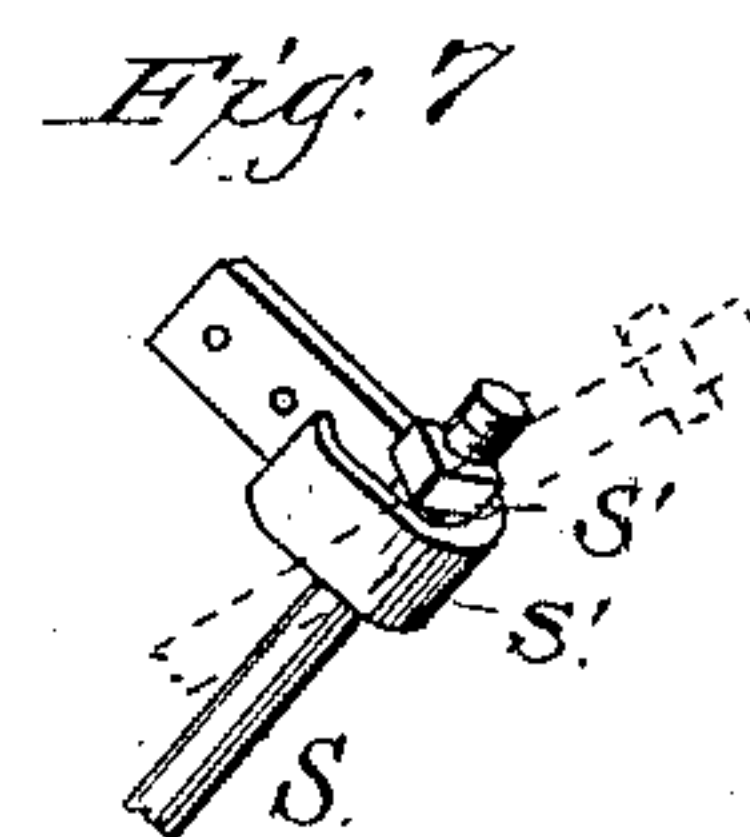
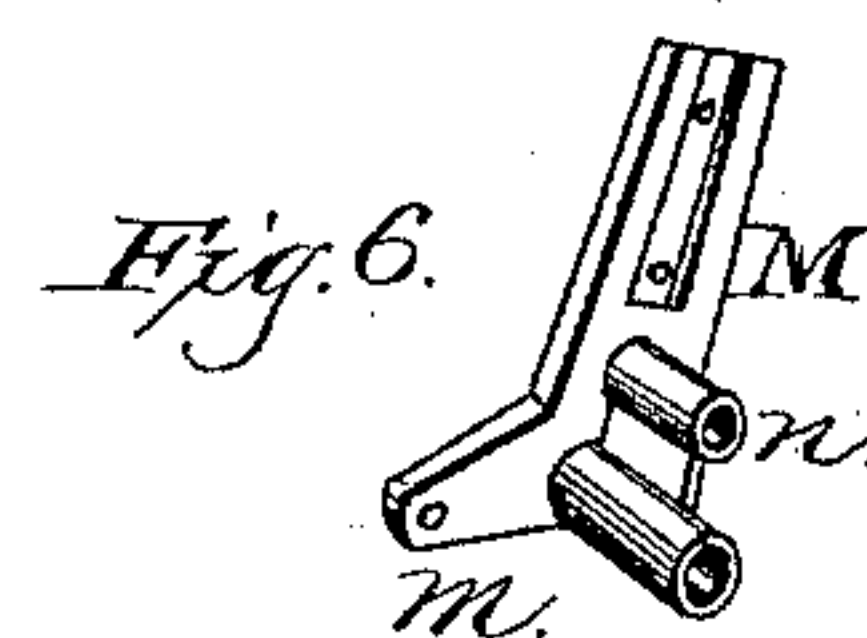
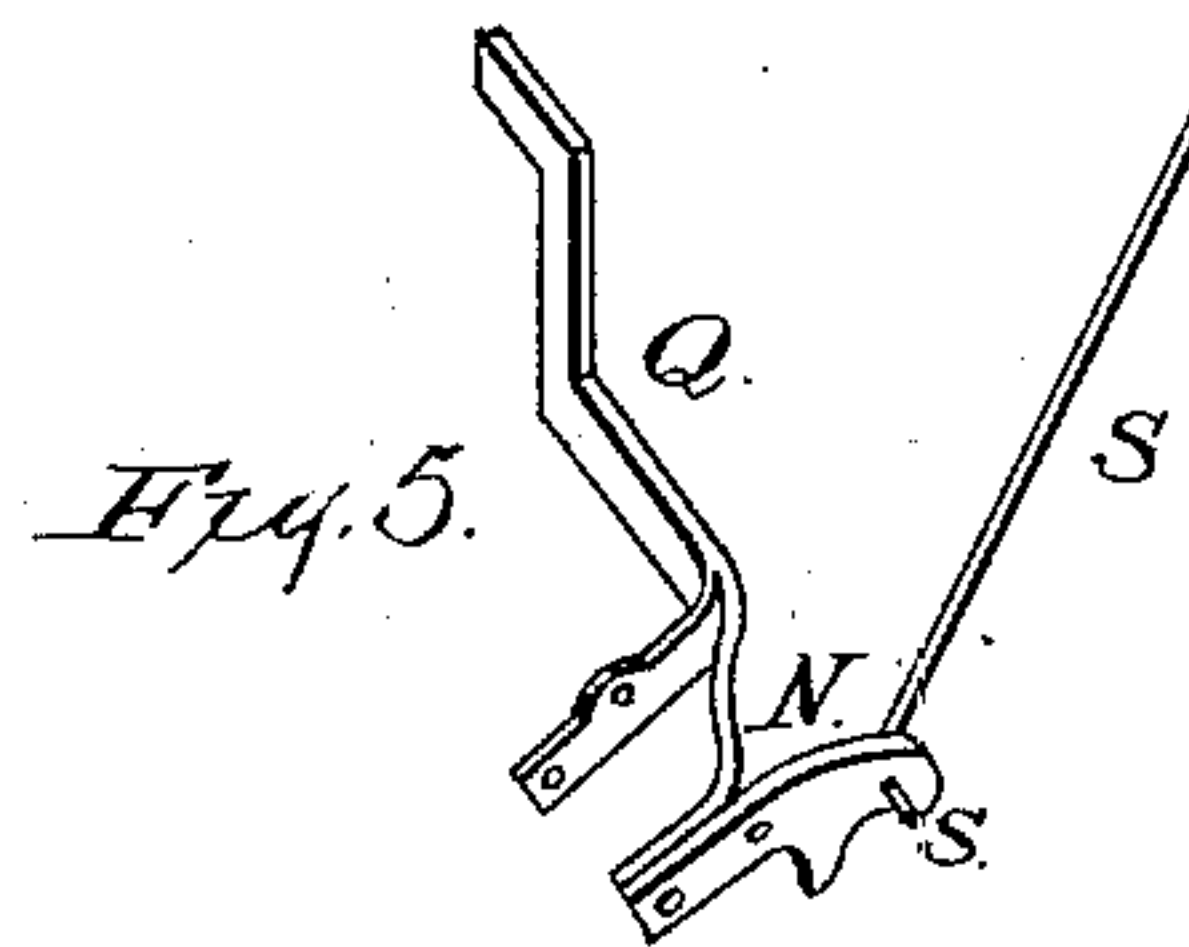
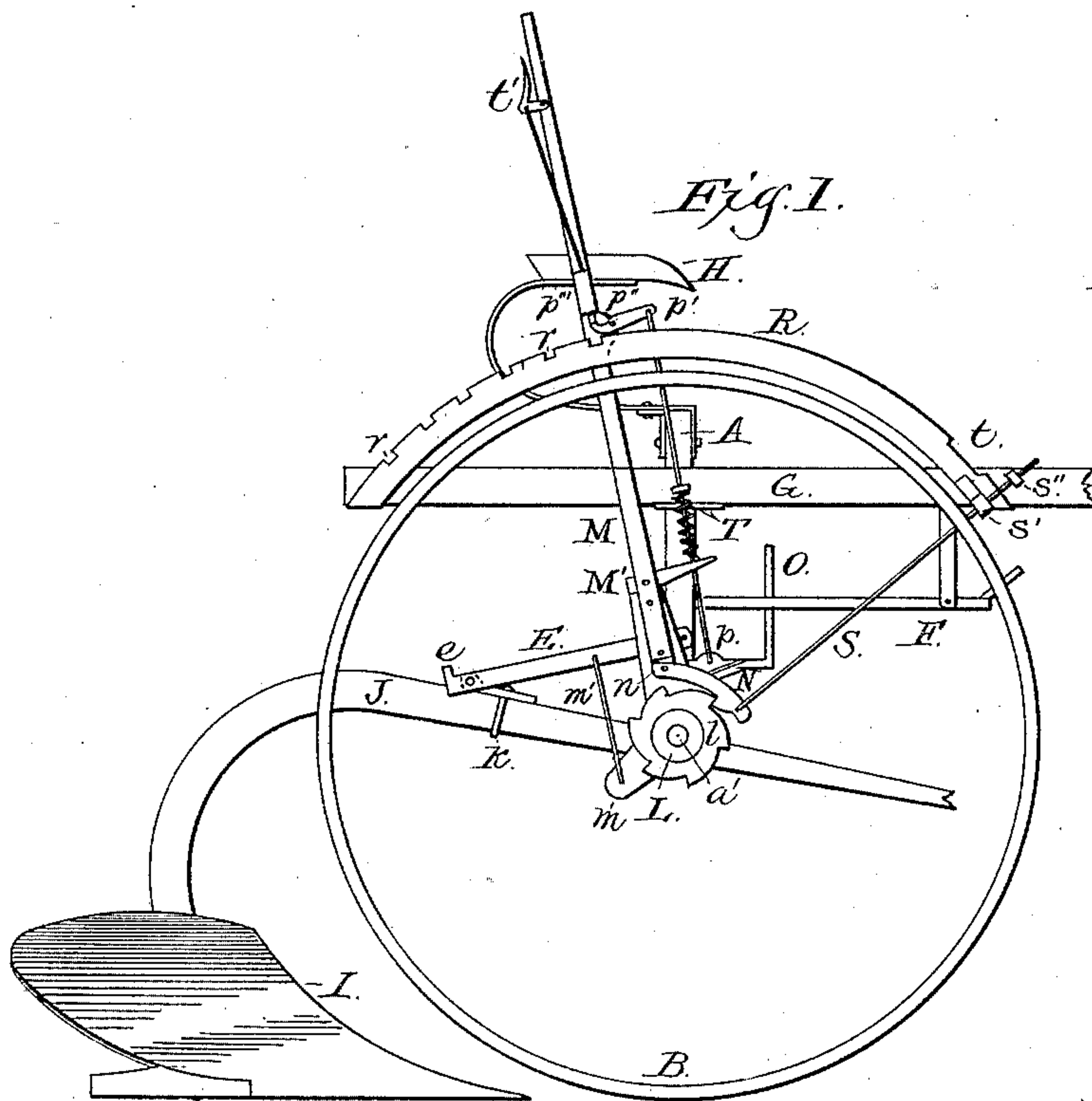
(No Model.)

2 Sheets—Sheet 1.

J. LANE.  
SULKY PLOW.

No. 277,749.

Patented May 15, 1883.



Witnesses;  
E. L. Lane,  
A. C. Lane.

Inventor,  
John Lane

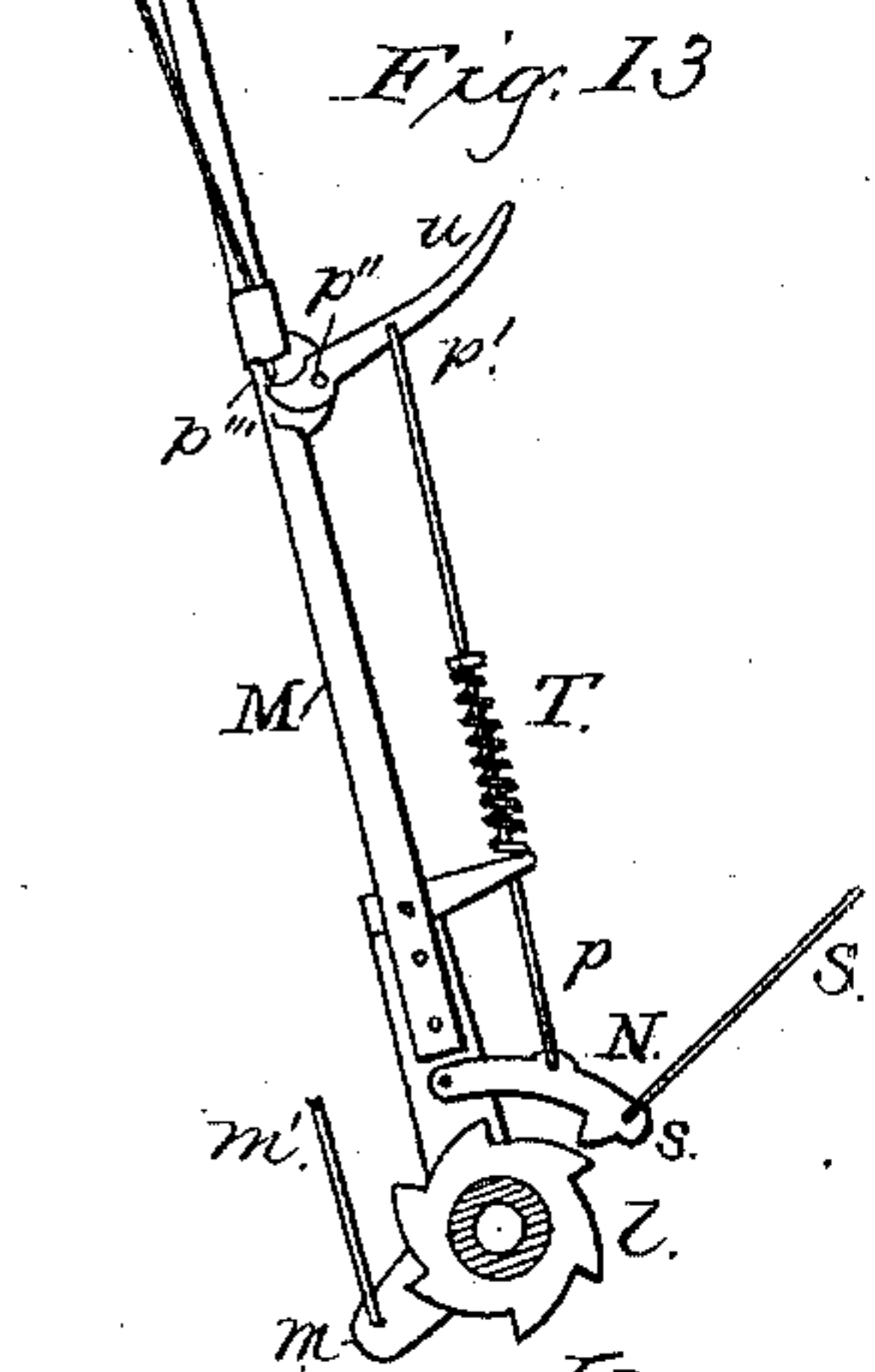
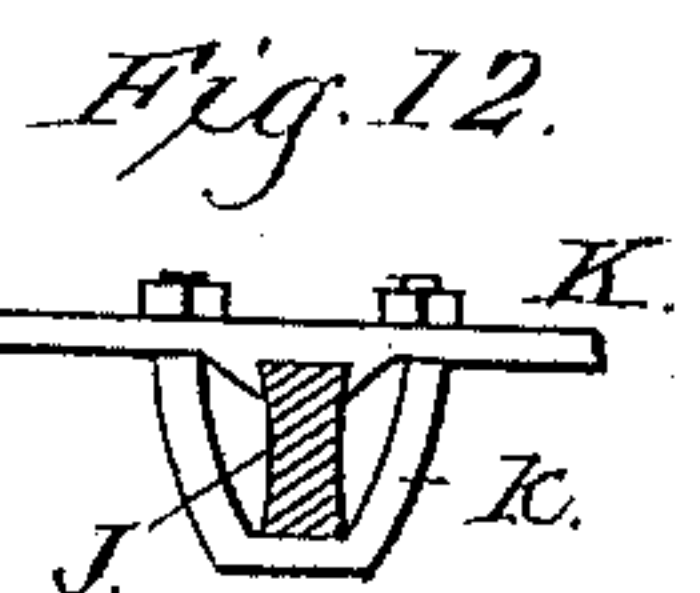
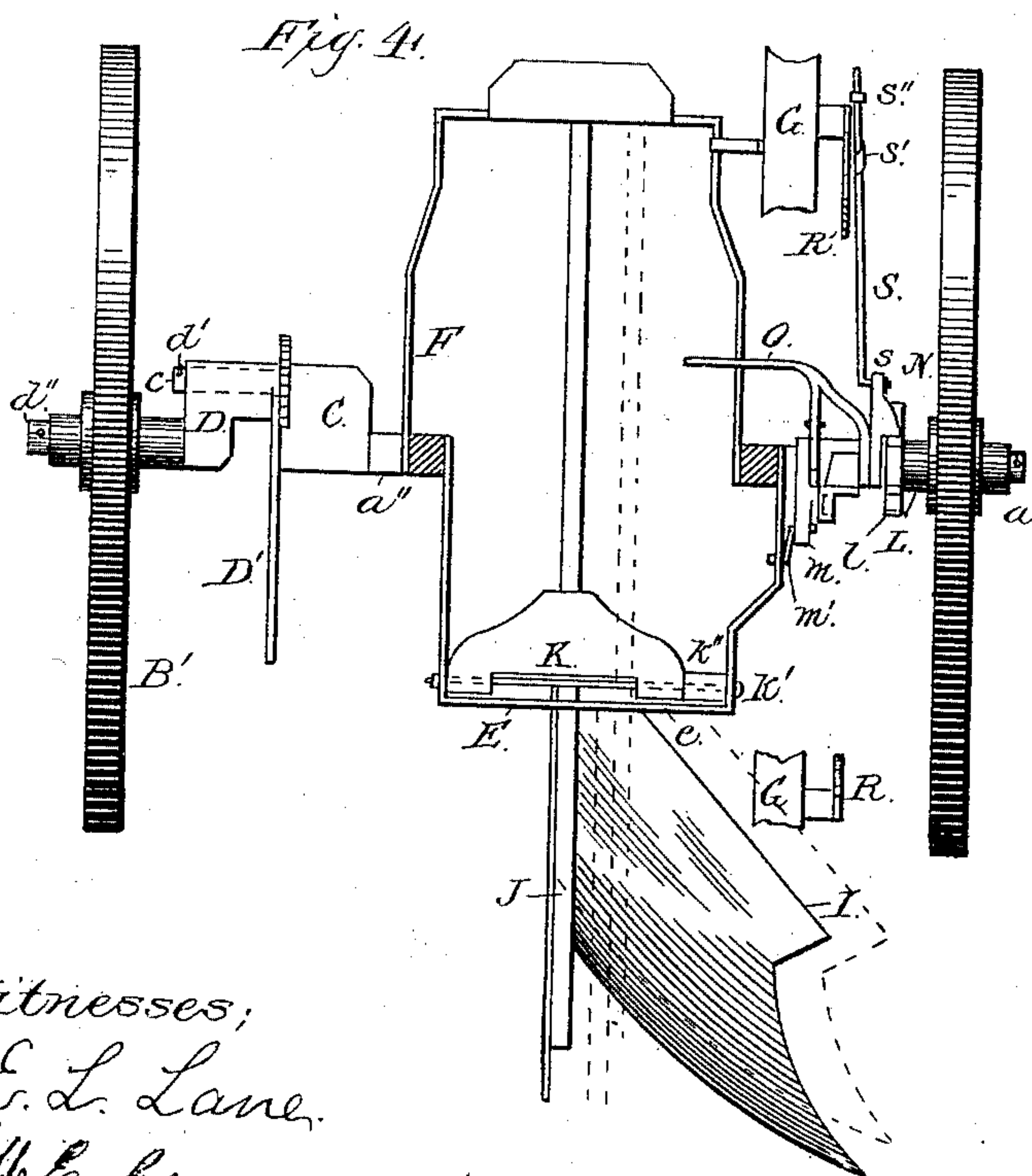
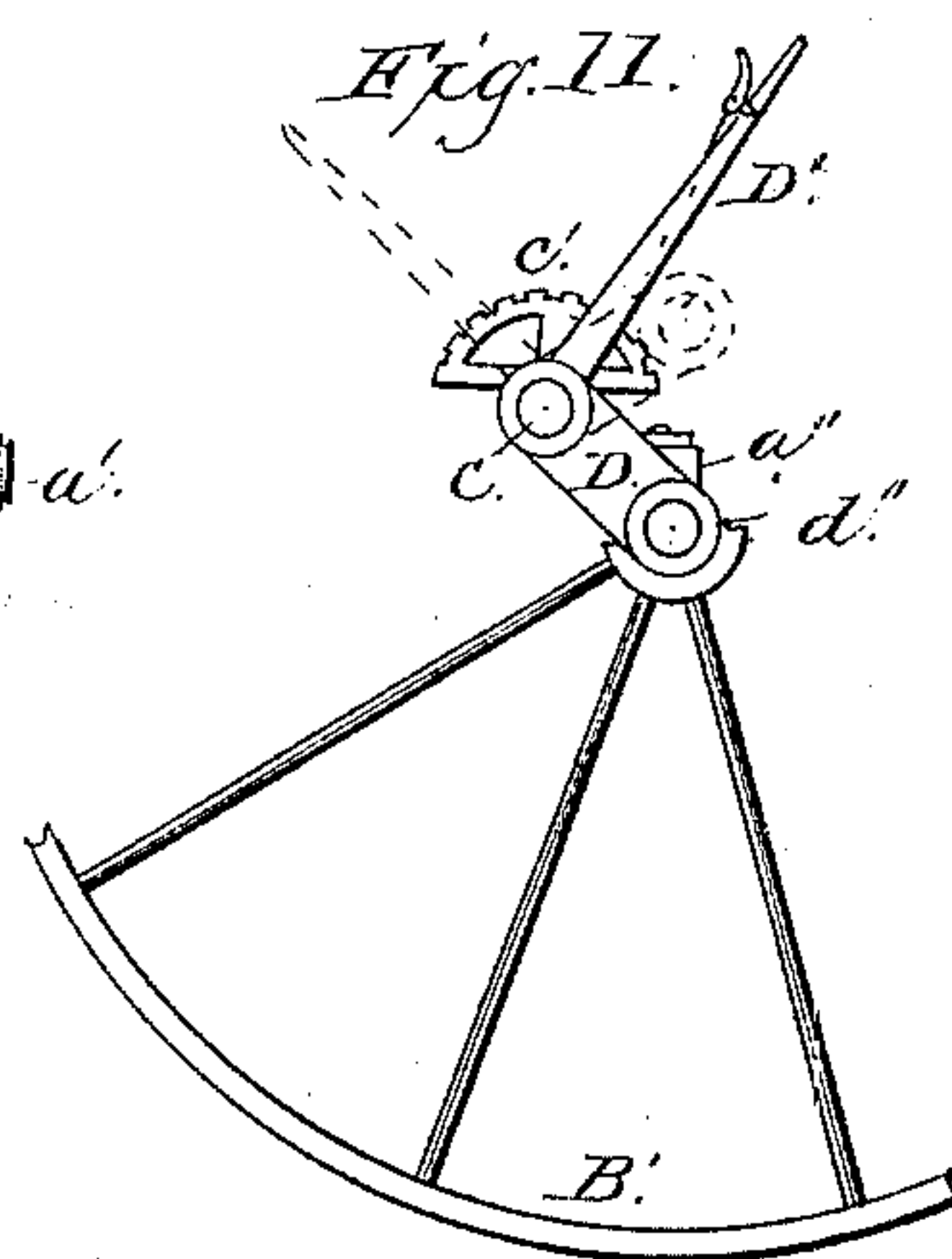
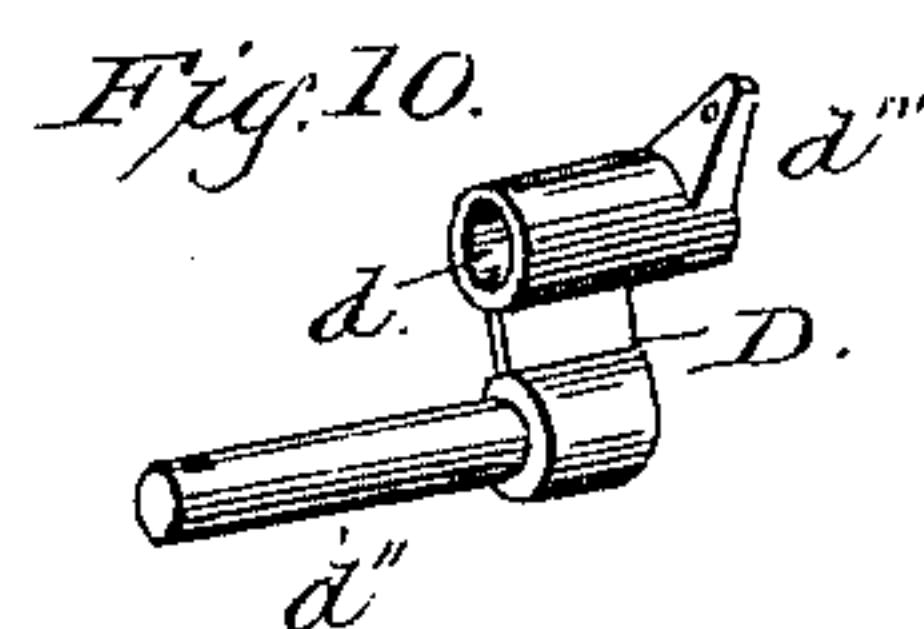
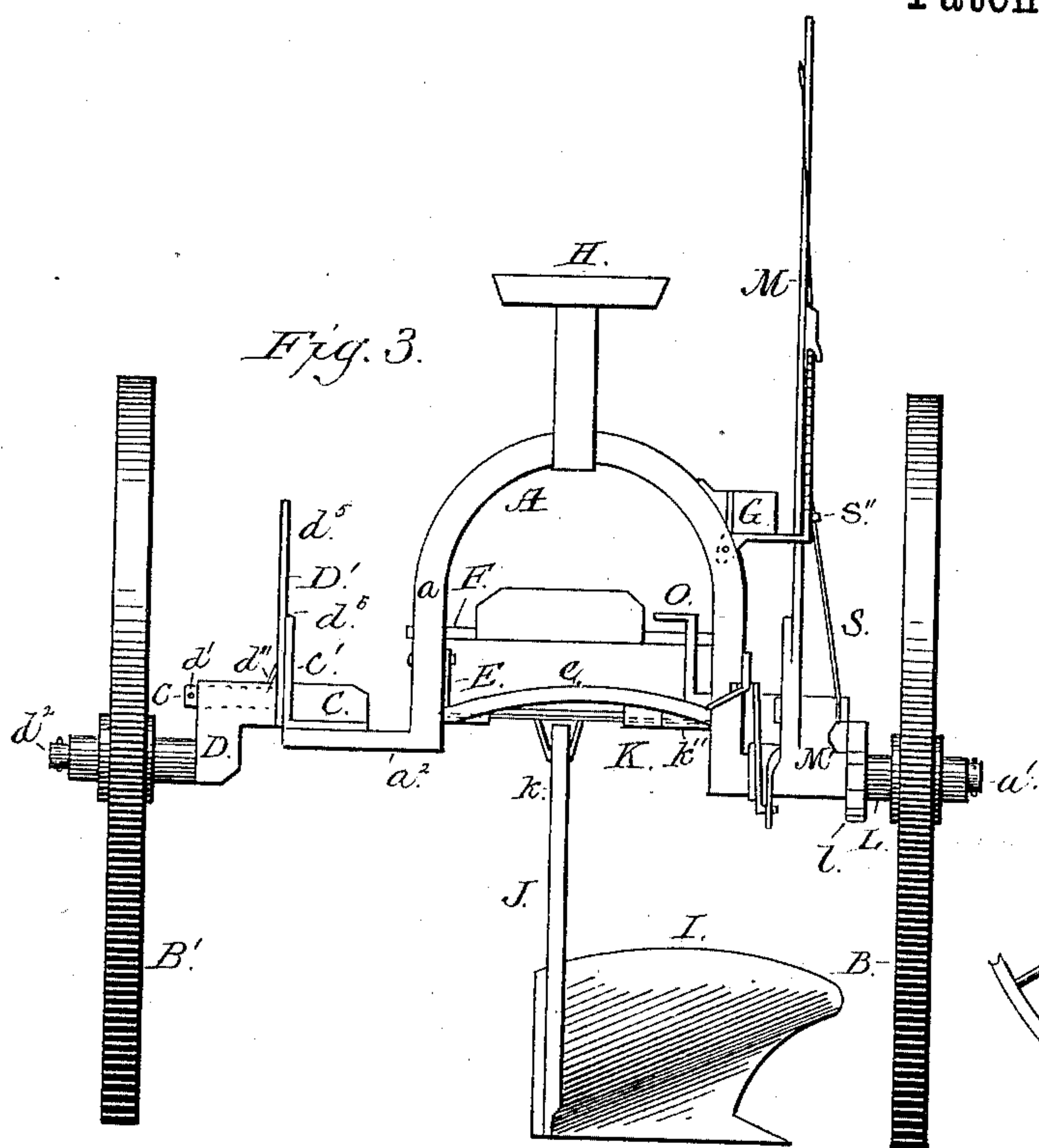
(No Model.)

2 Sheets—Sheet 2.

J. LANE.  
SULKY PLOW.

No. 277,749.

Patented May 15, 1883.



Witnesses;  
E. L. Lane.  
M. E. Lane.

Inventor;  
John Lane.



# UNITED STATES PATENT OFFICE.

JOHN LANE, OF HYDE PARK, ILLINOIS.

## SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 277,749, dated May 15, 1883.

Application filed December 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN LANE, of Hyde Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sulky-Plows, which improvement is fully set forth in the following specification and accompanying drawings.

This invention relates to that class of sulky-plows having mechanism for locking to the wheel, wherein the plow may be raised by the team; and the novelty consists in the construction and combination of several parts, all as will now be set out and explained.

In the drawings my improvements will be shown, and the same letters denote the same parts.

Figure 1 is a side elevation of a sulky-plow, the spokes to the carriage-wheel toward the observer being broken away and the hub being in section, and the parts being as when the plow is down upon the ground, showing the mechanism for locking and unlocking to the wheel. Fig. 2 is a similar side elevation, the parts being as when the plow is lifted, showing how the mechanism for locking and unlocking to the wheel has changed position and operated. Fig. 3 is a rear elevation, the parts being as when the plow is down upon the ground and the crank-axle down to level the carriage. Fig. 4 is a plan or top view, the parts being as in Fig. 3, certain parts being removed or broken away to bring into view certain parts of my invention. Fig. 5 is a perspective view, enlarged, of the pawl, in connection with a lever for operating same, also showing the rod connected to the pawl for disengaging the pawl from the ratchet. Fig. 6 is a perspective view, enlarged, of the head of the lifting-lever, showing its construction adapted for use with my improvements. Fig. 7 is a view, enlarged, of the outer end of the disengaging-rod, in connection with a trip, and showing how the rod has a movement in the trip-box. Fig. 8 is a perspective view, enlarged, of the central portion of the lifting-lever, showing its construction, with the sliding bolt and the trip-lever for tripping the sliding bolt, in connection therewith. Fig. 9 is a perspective view of the bracket C, with the segment *c'* and arm *c*, showing construction and how the parts are arranged rigidly together. Fig. 10 is a perspective view of the crank-axle, showing its

construction adapted for use with my improvements. Fig. 11 is a side elevation view from the opposite side to that shown in Figs. 1 and 2, showing how the axle-crank is pivoted forward of and above the axle-center, and showing how the land-wheel B' is opposite or nearly opposite the furrow-wheel B in both positions when the land-wheel is down level with the furrow-wheel, as shown in Fig. 3, and when the land-wheel is elevated and set in a working condition, as shown in the dotted lines. Fig. 12 is a cross-section view, enlarged, of the beam J, with the saddle K and the U-bolt *k*, showing how the U-bolt is constructed and combined with the beam and saddle. Fig. 13 is a view of the lifting-lever, with the parts immediately connected therewith, and showing how the trip-lever *p'* may be extended and the hand-lever *u* formed thereon, and showing how the foot-lever O may be dispensed with.

Referring to the drawings, A represents the axle, having a central arch with perpendicular sides *a* and horizontal arms or ends *a'* *a''*, one of which arms, *a'*, is rounded, on which the wheel B rotates and the lifting-lever is pivoted. The other, *a''*, supports a bracket, C, connecting the crank-axle D and the land-wheel B'. E represents a bail pivoted to the axle and supporting the plow-beam J, F the foot-rail, G the tongue, H the seat, I the plow, and J the plow-beam, all of which are of ordinary construction, except as modified by my improvements, and to which my improvements are combined, as hereinafter set forth.

K is the saddle, rigidly connected to the beam J by the U-bolt *k*, and suspended pivotally on the bolt or rod *k'*, which bolt or rod has a bearing in perforations in the arms of the U-bail E, as shown in Figs. 4 and 1. The saddle may be of ordinary construction with my improvements connected therewith. A thimble, *k''*, may be used on the rod or bolt *k'* at one end of the saddle, for the purpose of adjusting the plow nearer to or farther from the wheel B, for working a wide or a narrow furrow, as when the thimble is on the bolt *k'*, as shown in Fig. 4, the plow will work a wide furrow, and when placing the thimble at the other end of the saddle, as shown by dotted lines, the plow will be moved nearer to the wheel B and work a narrower furrow. The posi-



tion of the plow thus moved is shown in the dotted lines in Fig. 4.

The plow is lifted from the ground by means of what is styled a "power-lift," as follows:

5 The hub  $L'$  of the wheel B is provided with a ratchet,  $l$ , which turns with the hub upon the axle-arm  $a'$ . A lifting-lever, M, is loosely pivoted at its lower end on the axle-arm  $a'$  adjoining the ratchet  $l$ . The head  $M'$  of the lifting-lever M has an extension or arm,  $m$ , which has a link,  $m'$ , connecting with the bail E, as shown in the drawings. A movement of the lifting-lever forward from the position shown in Fig. 1 to that shown in Fig. 2 will operate to lift the plow by the arm  $m$  pushing upwardly on the link  $m'$ , carrying the rear end of the bail E upward.

N represents a pawl pivoted to the lifting-lever at  $n$ , and arranged to engage in the ratchet  $l$ . When thus engaged the wheel B and the lifting-lever become interlocked, and the rotation of the wheel therefore causes the plow to be lifted, changing the position of the various parts from the position of Fig. 1 to that of Fig. 2.

To operate the pawl the following mechanism is employed: A lever, O, is attached to the pawl, and pivotal with the pawl at  $n$ . A link or rod,  $p$ , connects the lever O with the trip-lever  $p'$ , which trip-lever is pivoted in the central portion of the lifting-lever at  $p''$ , and a short arm of the trip-lever  $p'$  is seated under the end of the stop-latch  $p'''$ . In operation a movement downwardly of the lever O, locking the pawl N into the teeth of the ratchet  $l$ , will pull down on the rod  $p$  and move the trip-lever  $p'$ , tripping or unlocking the stop-latch  $p'''$  from the notches  $r$  in the segment R, releasing the lifting-lever, in which condition the pawl is locked into the ratchet, the lifting-lever carried forward, and the plow lifted from the ground. A rod, S, has its lower end connected to the pawl N at  $s$ , and its outer end seated loosely in a bearing-box at  $s'$ , and the rod S has a nut, pin, or stop,  $s''$ , above the bearing-box. In operation, when the lifting-lever is in position, as shown in Fig. 1, the rod S will be pushed out, so that the nut or pin  $s''$  will be some distance from the bearing-box  $s'$ , and as the pawl rotates with the wheel the rod S will be drawn in until the nut or pin  $s''$  meets the bearing-box  $s'$ , when it can go no farther, and then the rod S will pull the pawl out of the ratchet  $l$ , when the spring T immediately pushes up on the rod  $p$ , by which the trip-lever  $p'$  releases its hold on the stop-latch  $p'''$ , and the stop-latch drops into the notch  $t$  in the segment R, holding the plow in an elevated position, as shown in the drawings in Fig. 2. To drop the plow from its elevated position to the ground the operator takes hold of the outer end of the lifting-lever and closes in on the thumb-latch  $t'$ , which thumb-latch has a rod connecting with the stop-latch  $p'''$ , and which will draw the stop-latch  $p'''$  away from the notch  $t$ , releasing the lock, when the plow will fall to the ground

and the lifting-lever be carried back to the position shown in Fig. 1.

The construction of the lever O, as I prefer to make it, is shown in Fig. 5, in which is shown that a branch of the lever is riveted or bolted to the pawl, and both lever and pawl pivoted on same pivot-bolt at  $n$  on the lifting-lever, and the outer end of the lever O in a convenient position for the operator to use the foot in operating it.

The lever O and pawl N may be made in one piece, by casting or otherwise, without departing from my invention.

The pawl N is constructed with a hooking-tooth, and with its outer end perforated, as shown in Fig. 5.

The lever O may be dispensed with without departing from my invention, in which case I use and arrange the following mechanism, constructed substantially as shown in Fig. 13, which is a view of the lifting-lever M, with the parts working therewith, the same as heretofore shown, except that the lever O is not used, and in its stead the trip-lever  $p'$  may be extended beyond the rod  $p$  for a hand-lever,  $u$ , as shown in Fig. 13, and the rod  $p$  directly connected to the pawl N, by which, in operation, when it is desired to throw the pawl into the ratchet, the operator moves the hand-lever  $u$  downwardly, which moves the trip-lever  $p'$ , as before, and, pushing down on the rod  $p$  and pawl N, throws the pawl into gear with the ratchet. Otherwise the operation is the same as with the lever O, before stated.

The spring T is preferably a spiral around the rod  $p$ , having one end seated on a bracket extending from the lifting-lever, the other end seated under a shoulder on the rod  $p$ , as shown in the drawings, and the purpose and operation of the spring is to push upwardly on the rod  $p$  and hold the pawl out of lock with the ratchet, and to hold the trip-lever so that the stop-latch may enter the notches  $r$  while the machine is in active operation plowing.

The lifting-lever M has on its central portion an ear,  $v$ , formed thereon, as shown in the drawings, and a recess,  $v'$ , formed by dies striking in the iron, which recess sets back from the face of the lifting-lever the thickness of the trip-lever, whereby the trip-lever may be back out of the way of the segment, and the lifting-lever close to the segment; and the stop-latch  $p'''$  is constructed with an L at its bottom end, and the short arm of the L is seated on the short arm of the trip-lever  $p'$ , with the end of the stop-latch overhanging the trip-lever, as shown in Fig. 8, so that the body of the stop-latch may be free to enter the notches  $r$  in the segment R whenever the trip-lever drops the stop-lever down.

I am aware that the use of a bracket to connect the crank-axle is old; and I am aware that thimbles have been used to adjust the plow; and I am aware, also, that power-lift devices have been made in many forms, and that it is common to lock the lifting-lever to the wheel;



but I am not aware that any one has constructed the peculiar devices represented in the accompanying drawings.

Having thus set forth my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a sulky-plow, the combination of the bail E, provided with a closed end, constructed arched over the beam, rod or bolt *k'*, seated in the arms or sides of the said bail, saddle K, suspended pivotally on said rod or bolt, and thimble *k''*, seated at the end of the said saddle, all substantially as and for the purpose shown.

2. In a sulky-plow, the arched axle constructed with perpendicular sides and horizontal arms, the lifting-lever provided with the short arm and pivoted on the horizontal arm of the axle, the bail pivoted to the perpendicular sides of the axle, and the link connecting the said short arm and bail, substantially as and for the purpose set forth.

3. In a sulky-plow, the arched axle constructed with perpendicular sides and horizontal arms, the lifting-lever provided with a short arm and pivoted on the horizontal arm of the axle, the bail pivoted on the perpendicular

sides of the axle, and the link connecting the said short arm and bail, in combination with a pawl attached to the lifting-lever, and with the ratchet seated on the wheel, substantially as and for the purpose set forth.

4. In a sulky-plow, the wheel B, provided with the ratchet, the lifting-lever provided with the pawl, with suitable mechanism, substantially such as shown, for locking the pawl into the ratchet and elevating the plow, in combination with the disengaging-rod provided with the nut, pin, or stop, one end of the said rod attached to the said pawl, and the other end connected to the frame, substantially as and for the purpose set forth.

5. In a sulky-plow, the lifting-lever provided with the pawl attached thereto, with the disengaging-rod attached to the said pawl, in combination with the trip-lever *p'*, rod *p*, and spring T, and with the thumb-lever *t* and stop-latch *p'''*, all substantially as and for the purpose set forth.

JOHN LANE.

Witnesses:

W. K. HOAGLAND,  
JAMES CANNON.