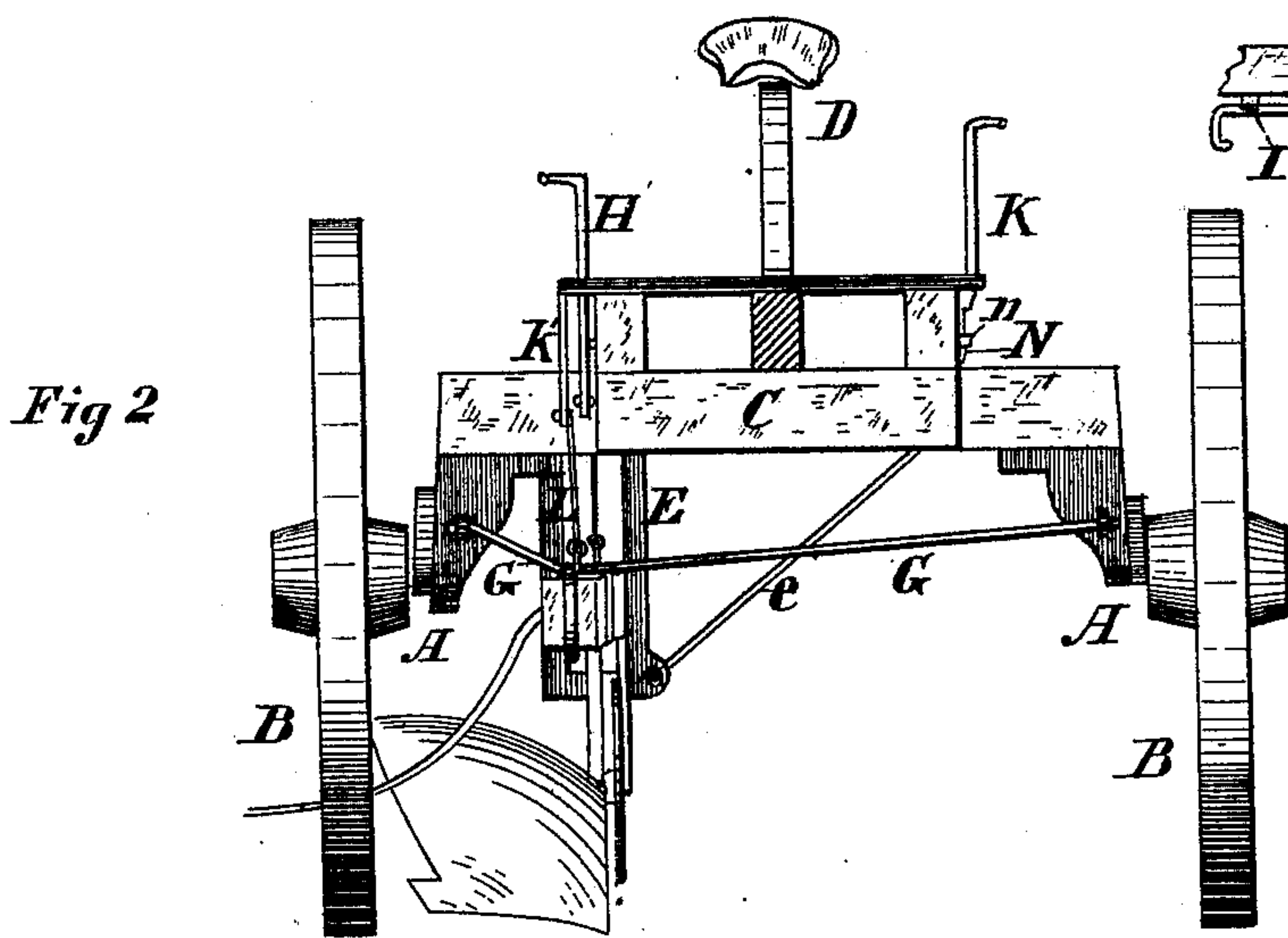
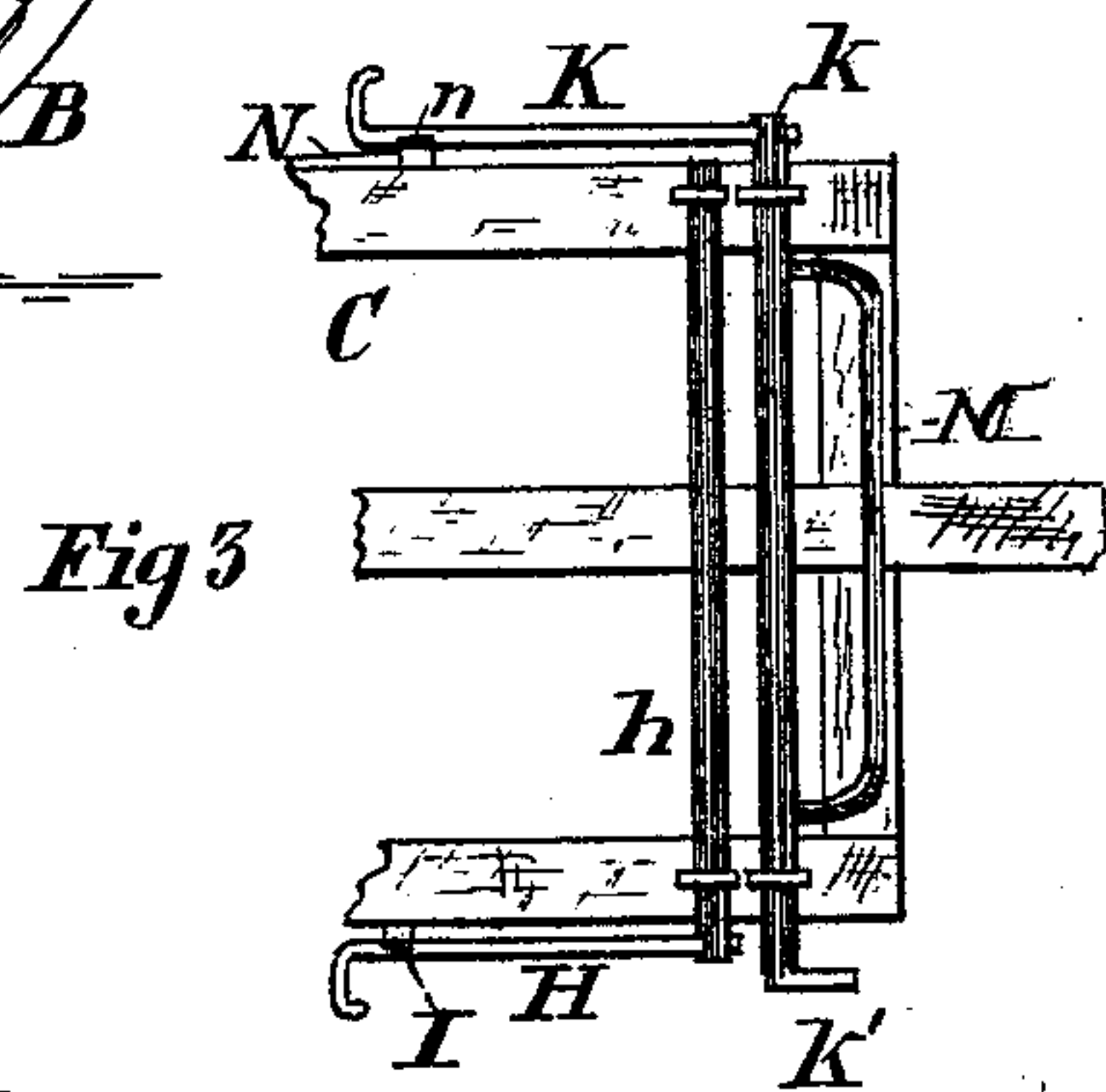
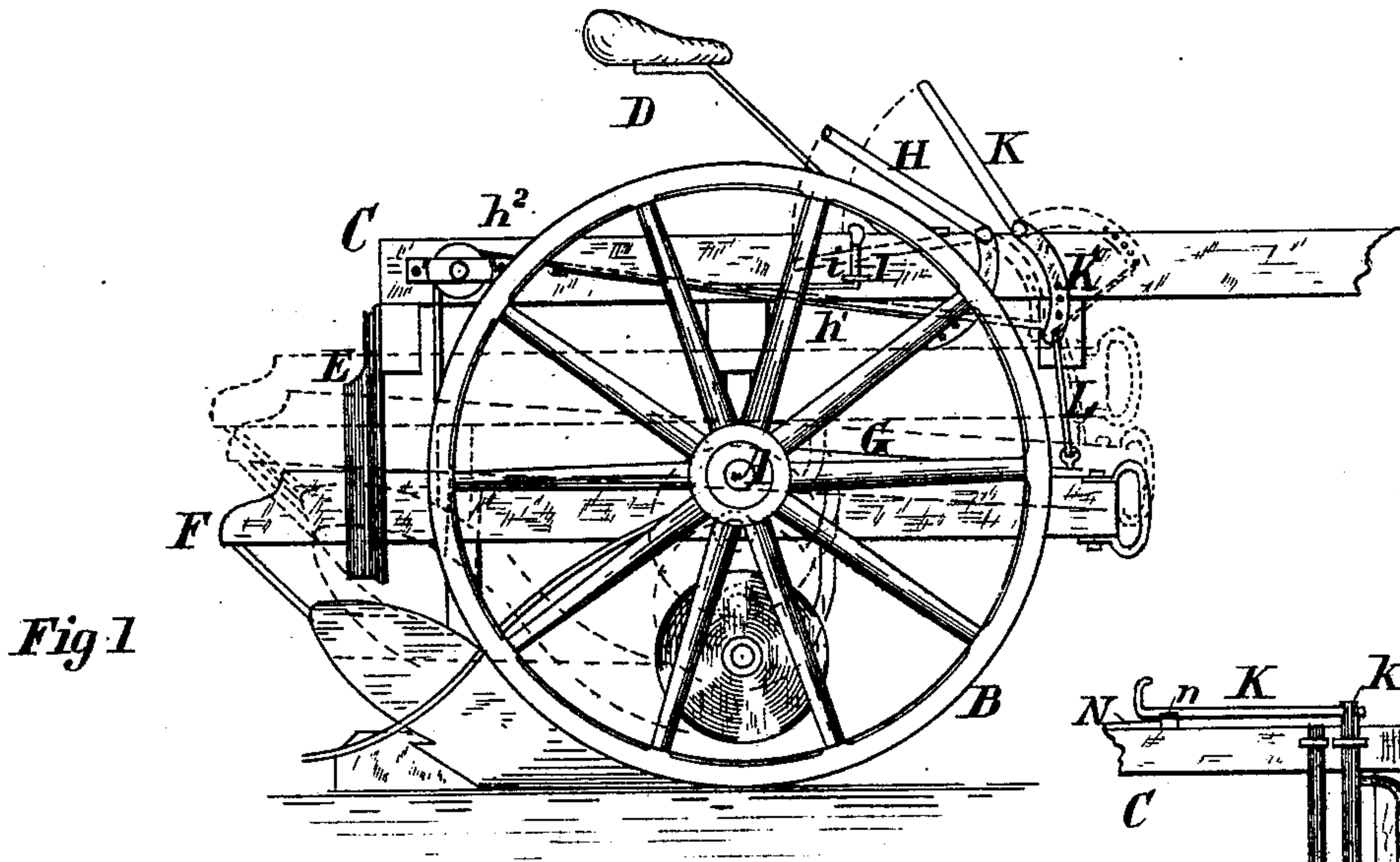


S. KIRKPATRICK.
Sulky-Plow.

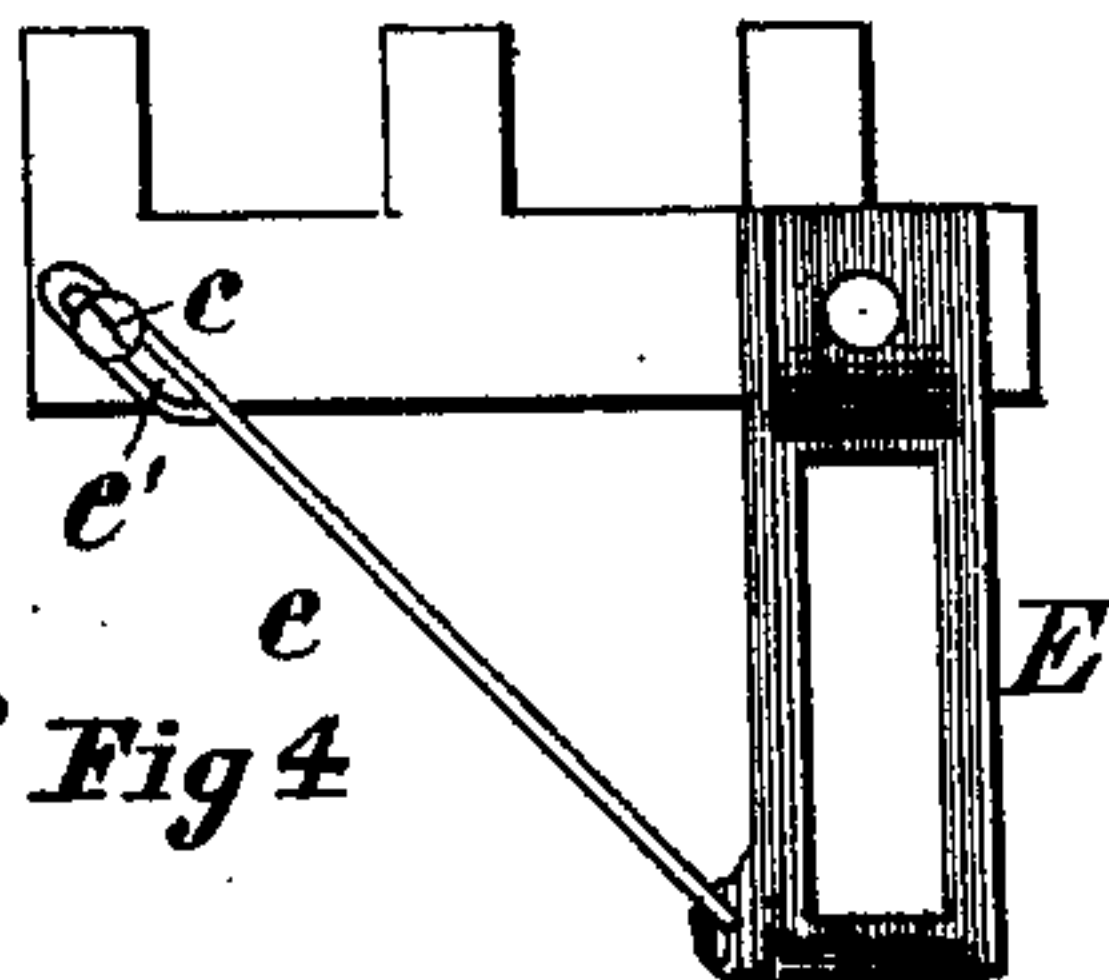
No. 205,874.

Patented July 9, 1878.



Witnesses

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Jno. C. Macgregor.



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UNITED STATES PATENT OFFICE.

SMILEY KIRKPATRICK, OF WATERMAN, ILLINOIS.

IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **205,874**, dated July 9, 1878; application filed April 13, 1878.

To all whom it may concern:

Be it known that I, SMILEY KIRKPATRICK, of Waterman, in the county of De Kalb and State of Illinois, have invented a new and useful Improvement in Sulky-Plows, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a plow embodying my improvements; Fig. 2, a front elevation of the same; Fig. 3, a plan view of the forward end of the sulky-frame, showing the devices for lifting the plow; and Fig. 4, a detail rear elevation, showing the adjustable hanger and brace.

My invention relates to devices for handling and controlling the plow, and is an improvement upon the plow described in Letters Patent No. 180,137, granted to me July 25, 1876.

The invention consists in the special construction and combination of devices for adjusting and lifting the plow, all of which will be hereinafter more fully set forth.

In its main features the sulky and plow are constructed substantially as described in my prior patent, and therefore a particular description will be given here of such parts only as are new.

In the drawings, A represents the axle; B, the supporting-wheels, and C the sulky-frame, on which is mounted a seat, D, for the driver. A slotted hanger, E, is pivoted at its upper end to the rear end of the frame, and the rear end of the plow-beam F is held in this hanger, as in my former patent. The device for adjusting this hanger is, however, somewhat different. A rod, *e*, is hinged at one end to the lower end of the hanger, and is extended upward in an inclined direction to the frame, as shown in Fig. 4, of the drawings.

The upper end of this inclined rod is provided with a slot, *e'*, through which a set-screw, *c*, is passed into the frame, which, when turned up, holds the rod firmly in position, and when loosened permits the latter to be moved lengthwise for the purpose of adjusting the hanger, as desired, the latter being held in any position to which it may be adjusted by the rod, which also acts as a stay-rod, thereby

making the slotted support at the rear end of the plow-beam stronger and more secure.

The front end of the plow-beam is connected to the sulky by the hinged bent rod or bail G, heretofore used by me.

A bent lever, H, is attached to a rock-shaft, *h*, or in any other way pivoted to the main frame. This lever is arranged at one side of the frame, and is connected by a link-rod, *h*¹, and chain *h*² with the rear end of the plow-beam, the chain running over a pulley at the rear end of the frame. This chain or cord may, if desired, extend the whole distance to the lever. The upper end of the lever is extended above the rock-shaft just sufficiently far to adapt it to be operated by the foot, the extreme upper end being provided with a bend or rest for the foot.

On the same side of the frame is a spring, I, the rear end of which is fastened to the frame, and the forward end bent upward and held in a loop, *i*, which permits movement within certain limit. The bent end of the spring is notched, and when the lever H is pressed down by the foot it will engage with these notches on the end of the spring and be held in any position desired.

On the other side of the frame is a similar foot-lever, K, attached to a rock-shaft, *k*; but the lever does not extend below the rock-shaft, as in the former case. At the other end of the rock-shaft *k* is a crank-arm, *k*¹, into the end of which is hooked the upper end of a stiff link-rod, L, the lower end of which is hinged to the forward end of the plow-beam.

The rock-shaft *k* is also provided with a foot-lever, M, projecting in front of the shaft, as shown in Fig. 3, of the drawings, the lever K being inclined slightly backward from the shaft.

On the same side of the frame as the lever K is a second spring-catch, N, which is constructed like the spring I, is held in a similar loop, *n*, and operates, in connection with the foot-lever K, the same as the spring I, with the foot-lever H.

It will be seen from the above description that the plow is not necessarily controlled by the varying positions of the sulky as it passes

over the uneven ground, as the plow is not connected to the sulky by rigid attachments. It is also evident that the plow can be adjusted and controlled with great ease. Whenever it is desired to raise the rear end of the plow-beam, it is only necessary to depress the lever H with the foot, and, if it is desired to hold the plow in this elevated position, to engage the lever at the desired point with the spring-catch I.

If it is desired to raise the forward end of the plow-beam, the lever K is depressed by the foot in the same manner, and also caught and held in the same way by the catch N.

If the forward end of the plow-beam is connected to its lifting-lever by a chain or cord, as in my prior patent, it will sometimes be thrown up so as to run the plow out of the ground, and it is very desirable to have some means for easily holding the forward end of the plow down.

The stiff rod L, between the plow-beam and crank arm on the rock-shaft, in connection with the foot-lever M, furnishes the means for accomplishing this result, for by placing his foot upon this lever the driver can depress the forward end of the beam and hold it in any position desired with the greatest ease.

The levers are all arranged so as to be easily reached by the driver with his feet while sitting upon the seat D, and his hands are left entirely free to guide the team.

It is evident that by properly manipulating

the levers either end of the plow-beam may be raised independently of the other, or both may be raised successively, and the plow held above the ground for transportation. (These several positions shown in dotted lines in Fig. 1 of the drawings.)

These adjustments of the plow are made as occasion requires to effect the running of the plow, and the levers are provided with a series of holes, so that the attachment of the link-rods may be adjusted as desired. In addition, the adjustment of the hanger at the rear end of the machine turns the plow-beam upon its axis, thereby throwing the plow in or out, for the purpose described in my prior patent.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The crank-shaft *k*, provided with the lifting foot-lever K and a depressing foot-lever, M, both attached to said shaft, in combination with the rock-shaft *h*, provided with the lifting foot-lever H, the plow-beam F, connected at its rear and front ends to the shafts, respectively, as specified, and the catch-springs I, N, substantially as and for the purpose set forth.

SMILEY KIRKPATRICK.

Witnesses:

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