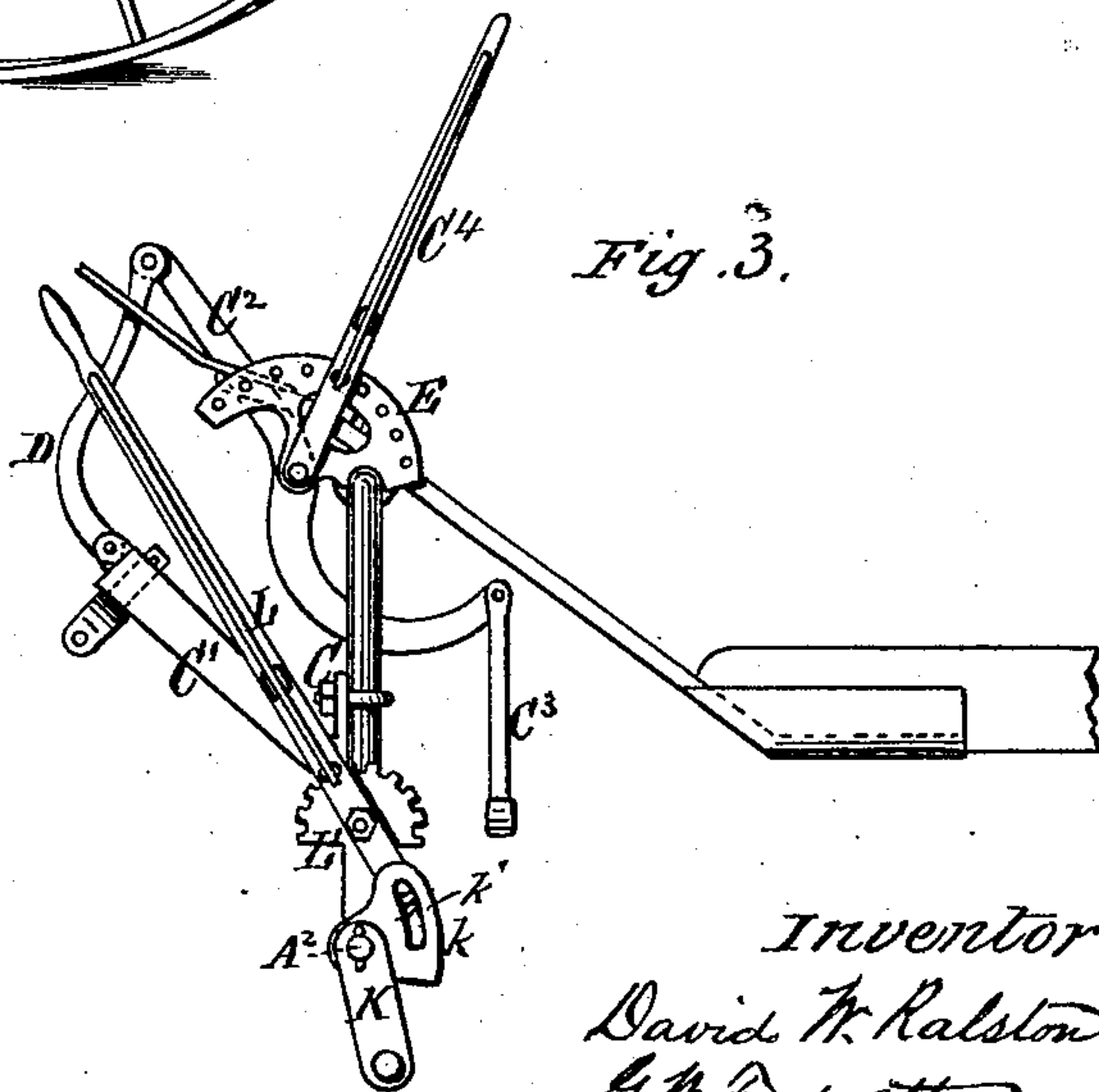
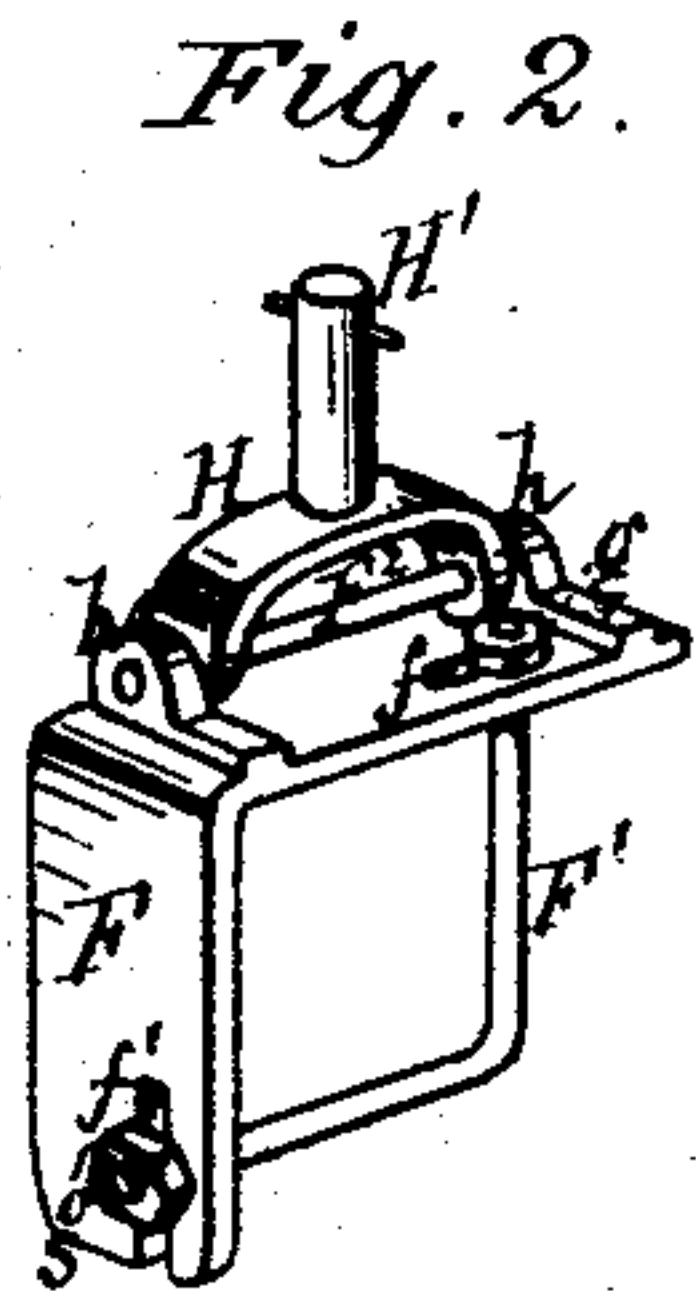
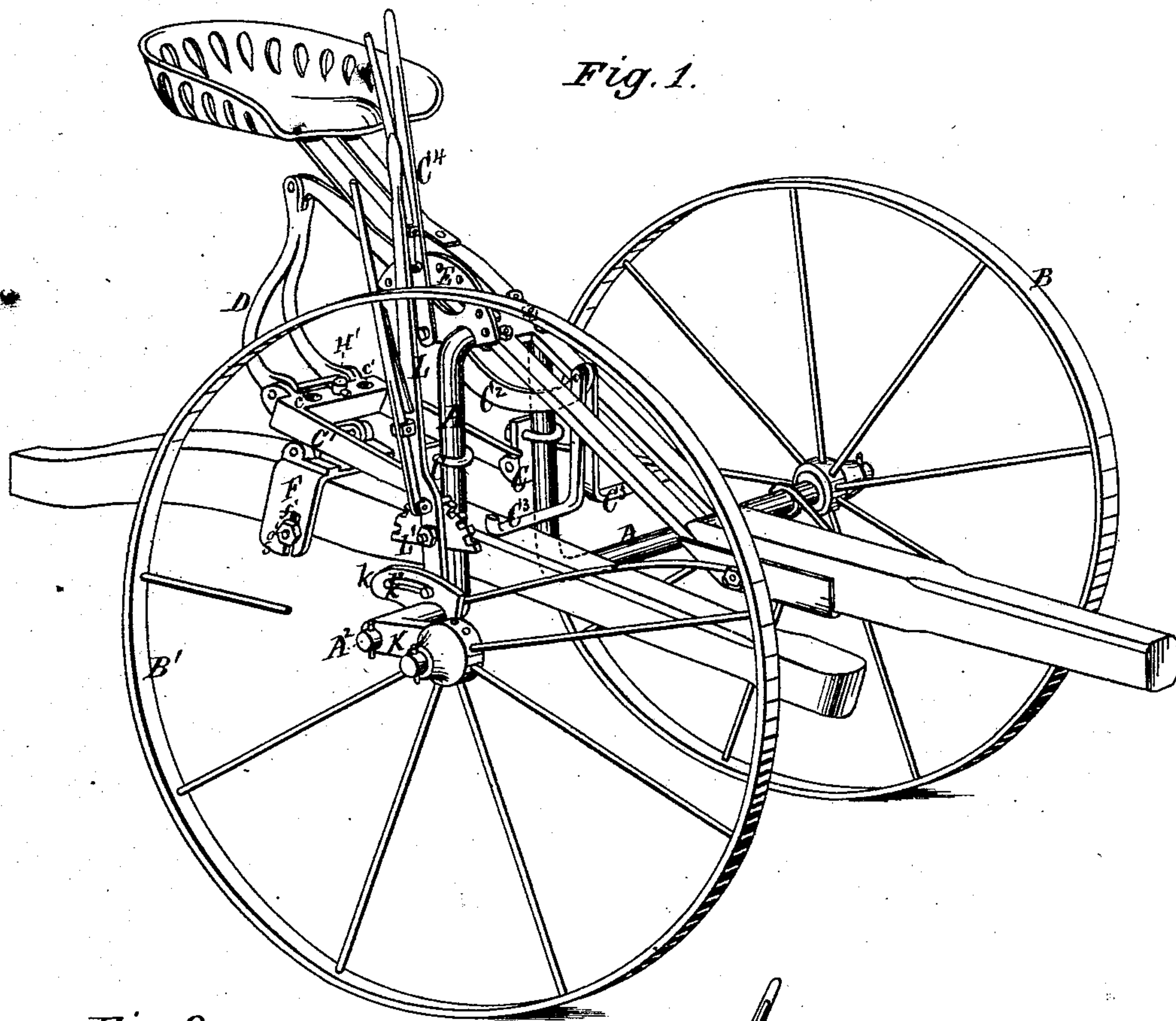


D. W. RALSTON.  
Plow-Carriage.

No. 160,230.

Patented Feb. 23, 1875.



*Witnesses.*  
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# UNITED STATES PATENT OFFICE.

DAVID W. RALSTON, OF ROCKFORD, ILLINOIS.

## IMPROVEMENT IN PLOW-CARRIAGES.

Specification forming part of Letters Patent No. **160,230**, dated February 23, 1875; application filed October 23, 1874.

*To all whom it may concern:*

Be it known that I, DAVID W. RALSTON, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Plow-Carriages; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 is a perspective view of my improved sulky-plow. Fig. 2 is a perspective view of the clamp by which the plow is attached to the sulky, and Fig. 3 is a side view of the frame with the wheels and plow-beam removed.

Similar letters of reference denote corresponding parts in all the figures.

The invention relates to a novel arrangement of lifting devices, in connection with the sulky and plow-beam, for enabling the driver to use either his hand or his feet for raising and lowering the plow, and whereby the power of both may be applied when necessary, all as hereinafter explained. It also relates to a novel construction of clamp by which the plow-beam is secured in position, and to the manner of connecting said clamp with the frame of the sulky, whereby any desired size of beam and plow can be used, as will be explained. It further relates to the construction and arrangement of the furrow-wheel stub-axle crank, in connection with the main crank-axle and the devices for adjusting the furrow-wheel axle, all as hereinafter explained.

In the accompanying drawings, A represents the axle, bent in the form of a double crank, one arm, A<sup>1</sup>, which supports the land-wheel B, being longer than the one, A<sup>2</sup>, which supports the crank-axle of the furrow-wheel B'. To the upright or crank portion of the axle are connected sliding blocks C, the lower ends of which are provided with ears or lugs, in which the arms of a U-shaped link or bail, C<sup>1</sup>, are pivoted, said link extending in rear of the axle, and to the rear swinging end of which the plow-beam is swiveled. To the rear end of this link C<sup>1</sup> is also connected a Y-shaped link, D, which extends upward, and is connected with a lever, C<sup>2</sup>, which extends forward in front of the axle, and is pivoted centrally of its length in bearings in the frame in rear

of the axle. To the forward end of this lever are pivoted stirrups or foot-rests C<sup>3</sup>, one on each side, in which the feet of the driver rest, enabling him to use his feet in raising the plow. The central pivot or shaft, on which the lever C<sup>2</sup> is vibrated, has a hand-lever, C<sup>4</sup>, rigidly connected with it at one end, by the vibration of which, also, the driver is enabled to raise and lower the plow-beam by hand. Upon the side of the frame, and supported by it, is mounted a segment, E, provided with a series of perforations, into which a spring-latch mounted upon the lever C<sup>4</sup> catches, for holding said lever, after the plow is raised or lowered, in any desired position. The beam of the plow is secured to the sulky by means of a clamp made in two parts, F F<sup>1</sup>, the part F resting upon the top and right-hand side of the beam, and being provided at its ends with slots *f* and *f'*, the one *f'* being open at its lower end, for a purpose which will be explained. The part F<sup>1</sup>, which has a screw-thread cut upon each end, passes up through the slot *f*, and around the beam, and through the slot *f'*, and, by means of nuts *g g'* placed upon its ends, holds the beam in position. The slot *f'*, which is left open at its lower end, permits the ready removal of the clamp from the beam after the nut *g* has been removed. The part F is provided upon its upper face with lugs or ears *h*, which form the bearings for a shaft, F<sup>2</sup>, which forms the pivot of a block, H. This block is provided upon its upper end with a pin, H', which passes through one of a series of perforations, *c'*, formed in the rear end of the link or bail C<sup>1</sup>, and being free to turn therein, but held in place by means of a pin passing through its upper end.

It will be seen that by providing the rear end of the link C<sup>1</sup> with the series of perforations the plow can be set nearer to or farther from the furrow-wheel, thus permitting the use of plows of different widths of cut with the sulky.

Upon the arm A<sup>2</sup> of the main axle is mounted a crank-axle, K, and upon the spindle of which the furrow-wheel B' is mounted. To the hub of this crank-axle, and at its inner end, is secured a plate, *k*, which is provided with a curved elongated slot, *k'*, in which slot an arm or pin formed on the lower end of a lever,



L, plays, for a purpose which will be explained. L' is a standard, provided with an enlarged circular head, in the center of which head the lever L is pivoted. This circular head is also provided with notches or ratchet-teeth on its circular face, with which teeth a spring-latch mounted on the lever L is made to engage.

It will be seen that by drawing the lever L backward the pin formed on its lower end is caused to move upward and through the slot  $k'$  in the plate  $k$ , and in moving through-said slot it causes the plate  $k$  to be pushed forward; and said plate being rigidly connected to the crank-axle K, it causes said axle to be turned on the arm or spindle  $A^2$  of the main axle, and thus depresses the furrow-wheel. By reversing the movement of the lever, the wheel can be brought on a level with the land-wheel B.

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

1. The arm or lever  $C^2$ , connected with the

swiveled plow-beam, as described, and provided with the hand-lever  $C^4$  and treadle  $C^3$ , whereby the driver is enabled to raise the plow by the aid either of his hand or his feet, or both, as described.

2. The clamp which connects the plow-beam with the vertical swivel and bail, composed of the slotted angular plate F and the angular bolt  $F^1$ , substantially as and for the purpose set forth.

3. The furrow-wheel stub-axle crank K, mounted upon the crank-axle  $A^2$ , and having the eccentrically-slotted plate  $k$  rigidly connected to it, in combination with the lever L, provided with a pin for actuating the axle K, arranged and operating as described.

This specification signed and witnessed this 13th day of July, 1874.

DAVID W. RALSTON.

Witnesses:

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