

(No Model.)

J. E. PORTER.  
SULKY PLOW.

No. 328,518.

Patented Oct. 20, 1885.

Fig. 1.

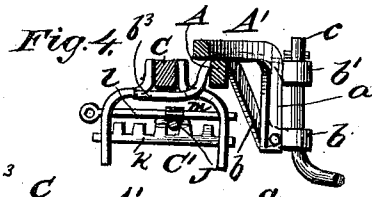
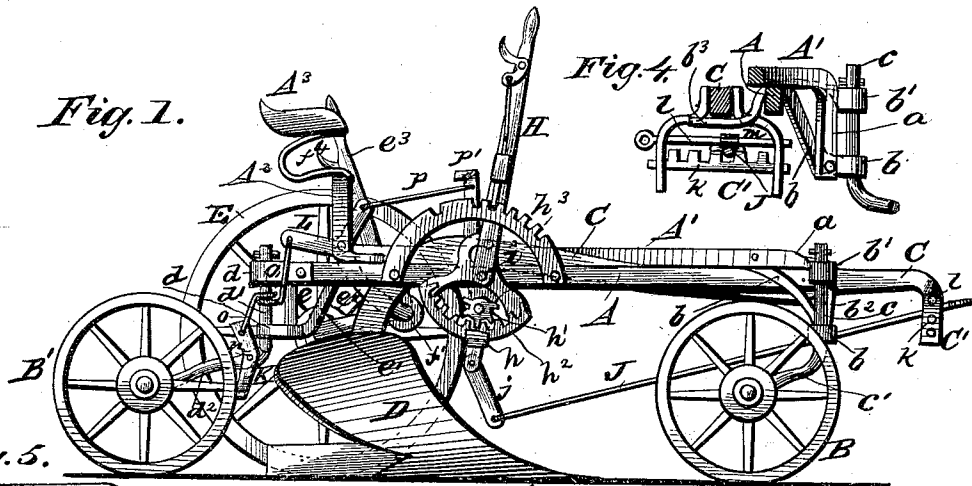


Fig. 5.

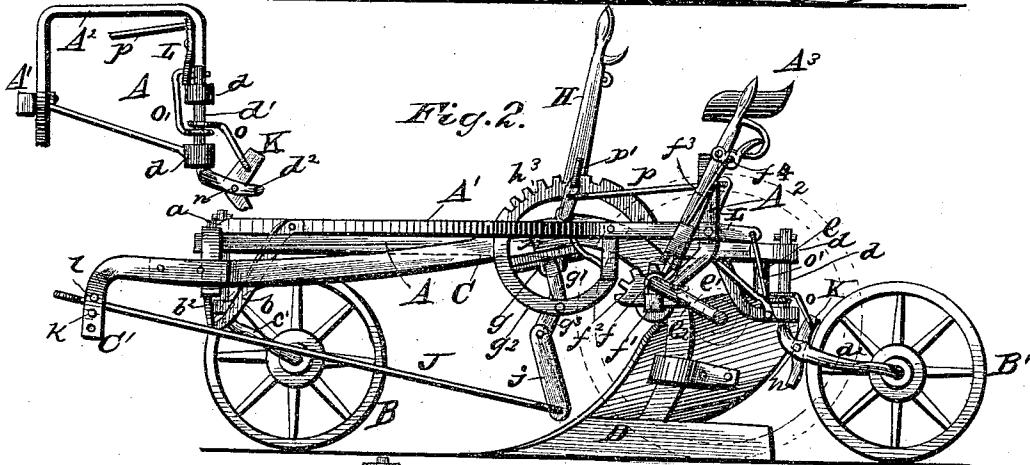


Fig. 2.

Fig. 3.

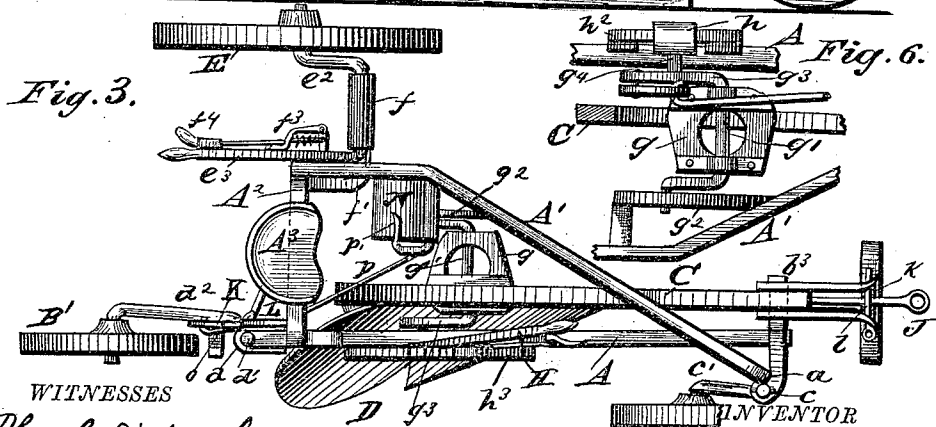
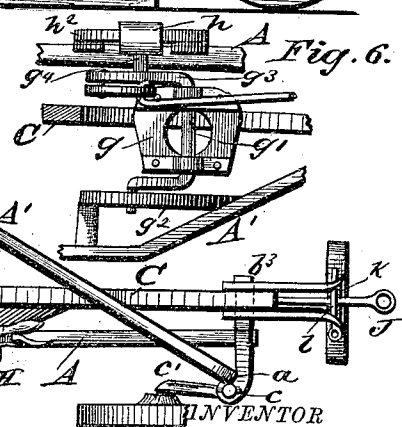


Fig. 6.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN E. PORTER, OF WEIR CITY, KANSAS, ASSIGNOR OF ONE-HALF TO CHARLES WILSON, OF SAME PLACE.

## SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 328,518, dated October 20, 1885.

Application filed July 6, 1885. Serial No. 170,839. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. PORTER, a citizen of the United States, residing at Weir City, in the county of Cherokee and State of Kansas, have invented certain new and useful Improvements in Sulky-Plows; 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to certain novel improvements on wheel or riding plows, which will be fully understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 represents a side view of my device. Fig. 2 is a side view, the reverse of Fig. 1. Fig. 3 is a top view, and Figs. 4, 5, and 6 are detail views.

The main or transporting frame of my improved plow is constructed as follows: A designates a longitudinal bar, which is rigidly connected to the rear longitudinal extension of a diagonal bar, A', by means of an arched seat-support, A<sup>2</sup>, on which is mounted by a spring a seat, A<sup>3</sup>. The forward portion of the diagonal bar or brace A' crosses the bar A near its front end, and is rigidly secured to it, and the front end, a, of this brace A' is turned down at right angles to it and rigidly sustained by means of braces b, b', and b<sup>2</sup>. The furrow-side end of the two braces b b' form eye-bearings for the swivel-standards c of a cranked axle, c', on which is applied a front furrow-wheel, B. The landside end of the transverse brace b' is depressed to form a stirrup, b<sup>3</sup>, for supporting freely the front end of the plow-beam C, which is provided with an adjustable clevis, C', hereinafter fully explained.

The rear end of the frame-beam A has two eyes, d d', formed on it, in which swivels the vertical standard d' of the cranked axle d<sup>2</sup> of the rear furrow-wheel, B', which latter travels in the furrow directly in rear of the turn-plow D. The cranked axle of the front furrow-

wheel, B, is made sufficiently short to prevent this wheel from striking the landside of the furrow. The lowest one of the eye-bearings d, for the rear swivel-standard, d', is rigidly strengthened by means of two braces, e e', the latter one of which is secured to the arched seat-support A<sup>2</sup>.

E designates the landside-wheel, which is applied on a cranked axle, e<sup>2</sup>, having a hand-lever, e<sup>3</sup>. The cranked axle e<sup>2</sup> passes through a long tubular bearing, f, formed on a lateral extension, f', of the left-hand limb of the arched seat-support A<sup>2</sup>. On the inner part of the said lateral extension f' is rigidly secured a toothed segment, f<sup>2</sup>, with which engages a spring-latch, f<sup>3</sup>, applied to the lever e<sup>3</sup>, and connected to an angular hand-lever, f<sup>4</sup>, also applied to lever e<sup>3</sup>. By these means the plowman while in his seat can conveniently manipulate the latch f<sup>3</sup> and lever e<sup>3</sup>, and raise or depress the main frame and level it as he may desire, and then lock the same in the desired position after adjustment.

The beam C of the plow D is curved, as shown, and to the under side of this beam is rigidly secured a bearing, g, in the eyes of which a bell-crank, g', is free to oscillate. One limb of this crank g' has its bearing in an inverted arched piece, g<sup>2</sup>, rigidly secured to the diagonal bar or brace A', and the other angular limb, g<sup>3</sup>, of the bell-crank g' has a short transverse shaft, g<sup>4</sup>, rigidly fixed to it, which is borne by a pendant, h, rigidly secured to the longitudinal bar A of the main frame. On the furrow-side end of said short shaft a toothed segment, h', is keyed, the teeth of which engage with the teeth on the inside of a sector, h<sup>2</sup>, which is rigidly secured to a hand-lever, H, having its fulcrum at i on the bar A, and provided with a latching device similar to that described for the hand-lever e<sup>3</sup> on the landside of the machine.

The latch or lever H is adapted to engage with teeth formed on a segment, h<sup>3</sup>, secured to the bar A. By releasing the latch of lever H from the segment h<sup>3</sup> the plowman can, by vibrating said lever, raise or lower the plow D, and by means of the latch applied to said lever he can lock the plow either in an elevated or a depressed position, provision being made,

as shown in the drawings, for setting the plow to run at any desired depth or to run free of the ground at will.

To the lower limb of the bell-crank  $g'$  one end of a link,  $j$ , is pivoted, to the opposite end of which is attached the rear end of a draft-rod,  $J$ , the front end of which is adapted to be attached to a double-tree.

It will be observed that when the plow is in the ground and it is desired to lift it out of the ground it is only necessary to release the lever  $H$  from its segment  $h^3$  and start the team. The movement of the plow will then be backward and upward. When the plow is out of the ground, the double-tree will have been drawn such distance from the clevis that the animals have perfect freedom to turn, and when the plow is put into the ground again the double-tree will be drawn back, so that the point of draft is in close relation to the clevis.

The clevis  $C'$  consists of a bifurcated portion rigidly secured to the plow-beam and provided with a vertically-adjustable bar,  $k$ , having numerous deep notches in it for receiving the draft-rod  $J$ , and allowing the same to be set at different angles with respect to the line of draft. The draft-rod  $J$  is kept in its proper place or notch by a holding-down pin,  $l$ , crossing the said notches, on which pin a small roller,  $m$ , is placed, which affords an anti-friction upper bearing for the draft-rod, as clearly shown in the drawings.

$K$  designates an angular brake-lever, having its fulcrum at  $n$  on the cranked axle of the rear furrow-wheel,  $B'$ . The lower limb of this brake is bent laterally, so that it can be made to bear against the tread of the furrow-wheel. The upper end of the brake  $K$  is connected by an eye-link,  $o$ , to the swivel-standard  $d'$ , the eye of which link is free to be moved on its stand-ard, and it rests freely upon an eye formed on a similar link,  $o'$ , which is pivoted to one arm of an angular lever,  $L$ , having its fulcrum on

the arched seat-support  $A^2$ . This lever  $L$  is connected by a rod,  $p$ , to a treadle,  $p'$ , which has its bearing in the upper part of the foot-stand,  $N$ , for the plowman.

The swivel movements of the rear furrow-wheel are in no wise affected by the application of the brake  $K$  to the furrow-wheel  $B'$ .

The object of the brake  $K$  is to enable the plowman to produce a drag or back draft on the machine, so as to facilitate the lifting of the plow out of the ground by the forward pull of the team on the draft-rod  $J$ .

Having described my invention, what I claim is—

1. The combination, in a wheel-plow, of the main frame constructed and supported on furrow and landside wheels, as described, a plow-beam supported freely in front upon a stirrup secured to the beam  $A$ , a bell-crank support near its rear part, a hand-lever and latch, and a draft-rod,  $J$ , connected to one of the limbs of said bell-crank, substantially as described.

2. The combination, with a draft-frame constructed and mounted on wheels, as described, of a plow which is hung by a bell-crank, a draft-rod connected to one of the limbs of said crank, and a brake applied to act on the rear furrow-wheel to produce a back drag, substantially as described.

3. In a wheel-plow, the combination, with the main frame of the rear furrow-wheel, its swivel-standard and cranked axle, the angular brake, the eye-links  $o o'$ , the angular lever, the treadle, the connecting-rod therefor, and a plow provided with the means described for lifting it out of the ground by the draft of the team, substantially as described.

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

JOHN E. PORTER.

Witnesses:

CHAS. WILSON,  
DORSY OGLE.