

C. N. OWEN.

Improvement in Sulky-Plows.

No. 132,772.

Patented Nov. 5, 1872.

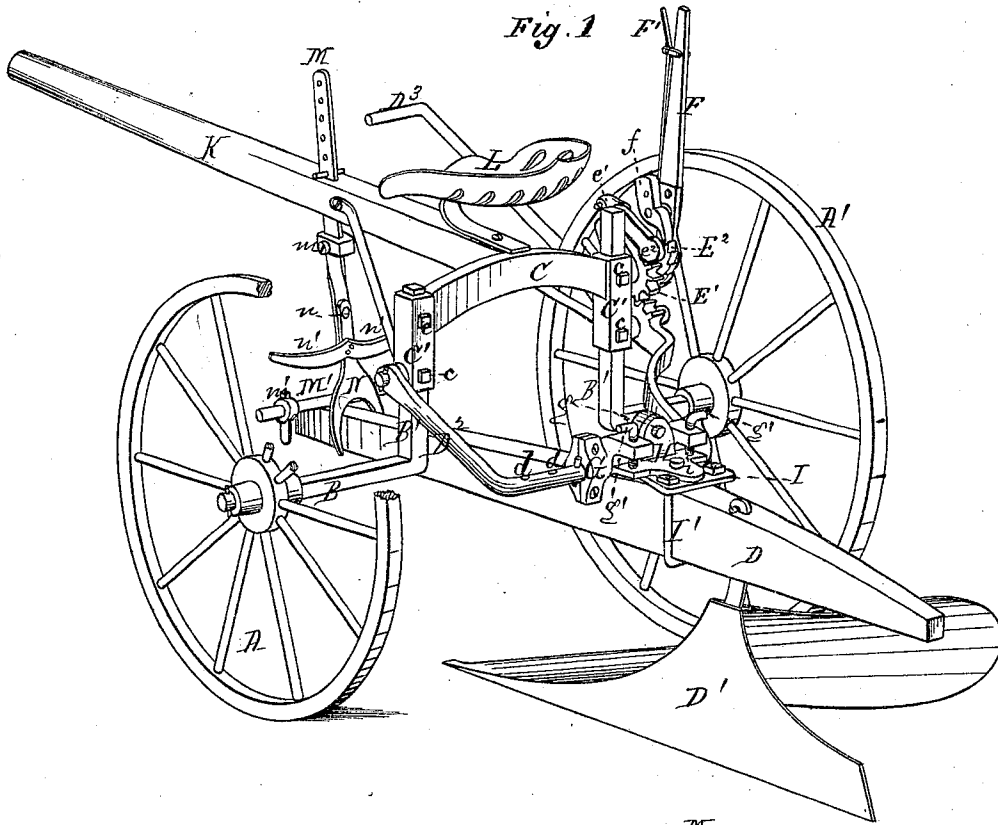


Fig. 2.

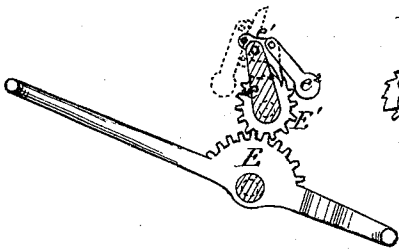
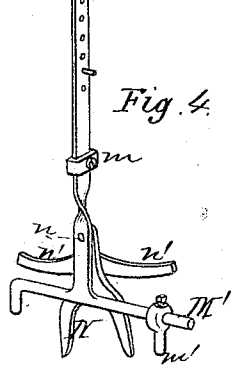


Fig. 3.



Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES N. OWEN, OF SALEM, OHIO.

IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. 132,772, dated November 5, 1872.

To all whom it may concern:

Be it known that I, CHARLES N. OWEN, of Salem, in the county of Columbiana, State of Ohio, have invented a new and useful Improvement in Sulky-Plows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved sulky-plow, and Figs. 2, 3, and 4 are detached views of different parts thereof.

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

The first part of the invention relates to combining, with a plow-beam which is mounted upon wheels by means of a vertical pivot or its equivalent in such manner that said beam can vibrate horizontally, an adjusting-lever operated by the driver, to regulate and control the position of the beam relative to the line of draft, for the purpose of causing the plow to run to or from land. The second part of the invention relates to mounting the plow upon the wheels by means of a hanger which can be adjusted laterally in order to provide for plows of different widths or for any change which may be requisite in adapting the plow for use with three horses. The invention further relates to certain details of construction, as will be fully explained.

In the drawing, A A' are the wheels, one being partly broken away to more fully show certain devices. B B' C C' constitute a crank-axle, C C' being a bracket or arch, the vertical portions C' of which are provided with sockets to receive and support the upright arms B' of the axles. In practice I usually make the arch of cast-iron and make the sockets square; then, by making the axles square also, so that they will not turn in the sockets, their vertical position being adjusted by set-screws *c*, a cheap, convenient, firm, and durable crank-axle is constituted. When preferred, the cast part may be made malleable. I usually make the horizontal arm of the axle of the land-wheel the shortest of the two, and make the vertical arm of the same axle the longest; but I do not wish to be limited to any specific construction of these parts. D is the plow-beam, and D¹ the plow. I have not shown the plow-handles, but these may be of any usual or desired description. D² D³ is a yoke pivoted to

the crank-axle and extending rearward. One arm, D³, of this yoke extends forward and is employed as a foot-lever to assist in lifting the plow. E is a toothed segment attached to the yoke. E¹ is a similar segment or a cog-wheel mounted on a stud or spindle projecting from the crank-axle and engaging with segment E. E² is a ratchet-wheel formed in one piece with or secured to cog-segment E¹. F is a lifting-lever vibrating about the same pivot with wheels or segments E¹ E². F' is a thumb-lever operating a weighted pawl, *f*, pivoted on lever F, and engaging with ratchet E². As the construction and operation of the foot-lever, the hand-lever, and their connecting devices is fully explained in a patent already granted to me, they need not be more explicitly set forth here. *e* is a ratchet-segment formed upon or secured to the upper portion of the cog-wheel E¹. *e*¹ is a pawl mounted either upon the bracket C C' or upon an arm rising therefrom. *e*² is a weighted tripping and locking lever pivoted to pawl *e*¹. The construction and relative arrangement of segment E, cog-wheel E¹, ratchet E², and ratchet-segment *e* and pawl *e*¹ are plainly shown in Figs. 2 and 3. The plow-beam D is mounted upon the transverse bar forming the closed end of the yoke D² D³ by means of a hanger, G, in such manner as to vibrate freely thereon. H is a vibrating angular plate, the vertical flange of which is pivoted to hanger G at *g*. I is a flat plate pivoted to the horizontal flange of plate G at *i*. *g*' *g*' are set-screws working in projecting ears or hangers G, and engaging with the horizontal portion of the vibrating angular plate H on opposite sides of the pivot *g*. By depressing one screw and elevating the other, plate H and the plow may be caused to oscillate about pivot *g* as a center, thus changing the position of the land-side relative to a perpendicular line, as will be readily understood without further explanation. Hanger G, and of course the plow, may be adjusted laterally upon the yoke by means of pins inserted in perforations *d*. K is the tongue; L is the seat; these parts being of any usual or desired construction. M M' is a treadle-bar or drop-iron sliding vertically in a slot in the tongue. The T-piece M' is intended to engage with the plow-beam and regulate its vertical position, as in my earlier patent, for which reason it is provided

with a sliding stop, m ; but in this new treadle-bar one or both of the stops m' at the end of the T-piece M' are made adjustable, as it is sometimes convenient to confine the horizontal vibrations of the tongue within narrow limits. N is a forked lever pivoted to the drop-iron at n in such position that one leg shall pass down at each side of the plow-beam near its front end. $n' n'$ are foot-rests projecting from each side of lever N .

The driver while riding in his seat can by means of his feet guide and direct the plow at will through lever N . When the operator desires to lift the plow and hold it in an elevated position he places the weighted lever or balance e^2 in the position shown in the drawing, when, as it is lifted by means of either the hand-lever F or foot-lever D^3 , the pawl e^1 will be caused to engage with ratchet e and lock the plow wherever it is placed. As soon as the weight of the plow is thrown upon the pawl the balance e^2 is reversed, as in dotted lines, Fig. 2. Under this last-described arrangement, if the plow be lifted by either of the levers, the ratchet e^1 will be withdrawn from segment e , leaving the plow free to drop to the ground. Thus it will be seen that the operator can with one hand only let the plow down after it has been locked in an elevated position. In plowing ground having a very smooth surface it is sometimes found advantageous to lock the plow at such height as shall insure a proper depth of furrow, thus relieving the sole of much friction and materially lessening the draft. The plow may be adjusted laterally on the rear bar of the yoke to regulate the width of the furrow, to keep it (the plow) in line when three horses are used, or to compensate for the difference in width of plows or beam.

By making both axles adjustable in the bracket $C C'$, and making the plow adjustable laterally, I provide for adapting it for either a right or left hand plow by merely reversing the positions of the wheels, and can also adapt the sulky to plows of different heights. The lever N might be pivoted to the tongue instead of the drop-iron M ; but I prefer the construction shown, as pivoting to the tongue would require a greater length of legs in order that the plow-beam should not escape from between them during its rising and falling motions.

Although I have shown the laterally-adjustable hanger G in combination with a vibrating yoke, yet I do not wish to be confined to this construction, because many of the advantages incident to this lateral adjustability may be derived by applying this part of my invention to other sulkies.

The plow can be bolted directly to plate H instead of to plate I , and yet have its land-side adjustable by means of set-screws g' , although I prefer the construction shown, as it allows the desired freedom of lateral movement in the plow-beam.

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

1. In a sulky-plow, the combination, with the forward end of the plow-beam, of a foot-lever arranged within reach of the driver's feet for vibrating said plow-beam in a horizontal plane independently of the carriage to cause the plow to run to or from land, substantially as described.

2. In a sulky-plow, I claim the combination of the yoke $D^2 D^3$, the laterally-adjustable hanger G , the plow, and its connecting devices for pivoting and adjusting said plow to the hanger G , all substantially as described.

3. The combination of ratchet-segment e , the pawl e^1 , and the weighted lever or balance e^2 with the cogged wheel E^1 , cogged segment E , the yoke, and operating devices, substantially as described.

4. The combination of the hanger G , the pivoted angular plate H , and set-screws g' for adjusting the position of the land-side, substantially as described.

5. In combination with the drop-iron or treadle $M M'$, the adjustable sliding stop m' , substantially as described.

6. The combination of the adjustable bracket $C C'$, to which the yoke $D^2 D^3$ is pivoted, with the angular stub-axles $B B'$, having the open space between their inner ends to permit the free vertical adjustment of the plow-beam, substantially as described.

In testimony whereof I have hereunto set my hand this 3d day of July, A. D. 1872.

CHARLES N. OWEN.

Witnesses:

THOMAS KENNETT,
PETER AMBLER.