CHARLES N. OWEN.

Improvement in Wheel Plows.

No. 123,505. Patented Feb. 6, 1872.

Fig. 1.

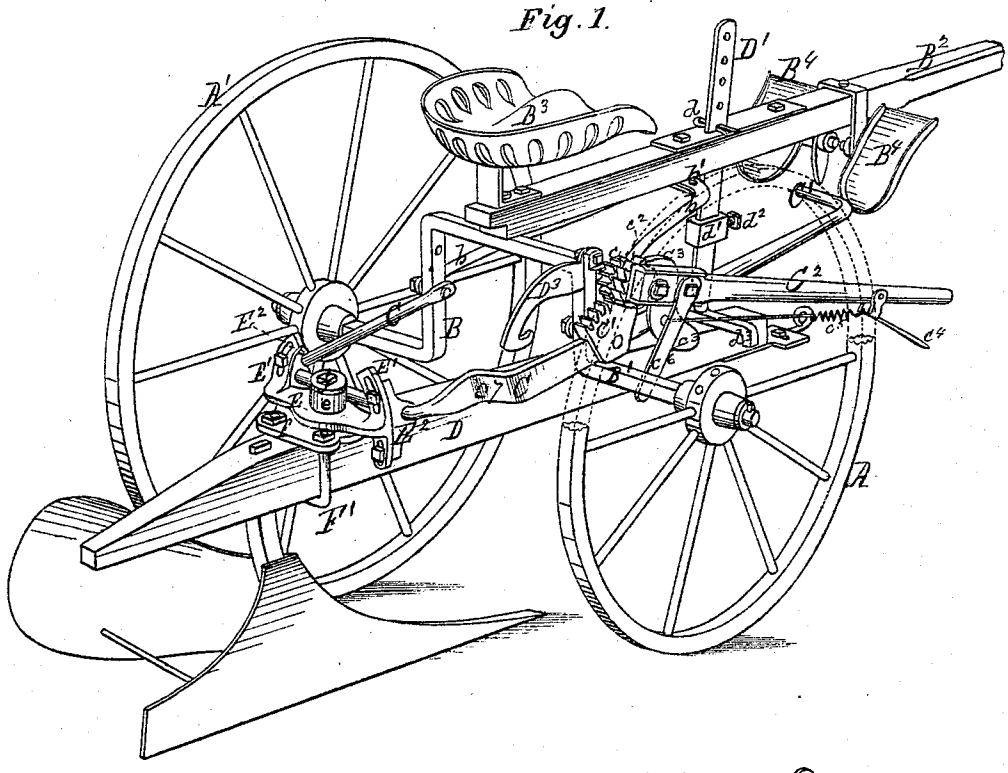


Fig. 2.

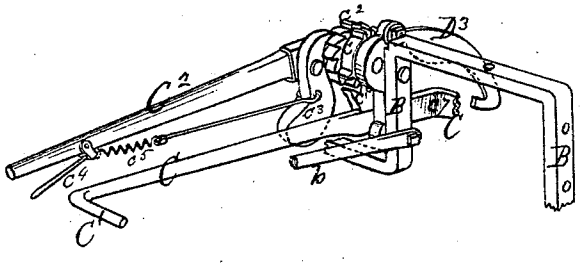
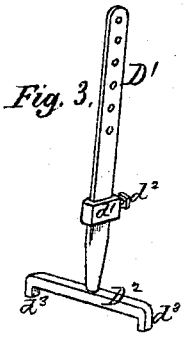


Fig. 3.



Witnesses

Alex^r Mahon

H H Doubleday

Inventor.

Charles N Owen

by his Attorney

A. M. Mills

UNITED STATES PATENT OFFICE.

CHARLES N. OWEN, OF SALEM, OHIO.

IMPROVEMENT IN WHEEL-PLOWS.

Specification forming part of Letters Patent No. 123,505, dated February 6, 1872.

To all whom it may concern:

Be it known that I, CHARLES N. OWEN, of Salem, county of Columbiana, State of Ohio, have invented certain new and useful Improvements in Sulky-Plows Attachment, 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 plow or sulky attachment for plows. Fig. 2 is a detached view of the devices employed for lifting or tilting the plow by means of its hanging devices; and Fig. 3 represents the treadle-bar, which is used to regulate the depth at which the plow shall run, and for depressing the end of the beam.

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

In the drawing A is the land or turf-wheel, which runs upon the unplowed ground, and A^1 the furrow-wheel. As wheel A^1 runs in the furrow it is made larger than the land-wheel, in order that the working parts of the machine may retain a horizontal position when in operation. Wheel A is partly broken away to show more plainly the construction and arrangement of the lifting devices. B B^1 is the axle, composed of two crank-arms, (shown planly in Fig. 2,) each of these arms being provided with two perforations. B^2 is the tongue, and B^3 the seat. The tongue is bolted at or near the center of the crank-axle, and is further secured to it by means of the double-armed brace *b*. (See Fig. 1.) The front ends of these arms are connected by a short shank having two or more holes, to either of which the tongue may be bolted, as at b^1. By means of these holes the position of the tongue can be changed so as to cause the draft to run the plow to or from land. B^4 are stirrups or foot-rests attached to the tongue. C is the plow-beam, yoke, or hanger, pivoted to and supported upon the crank-axle, substantially as is customary in this class of plows, except that one arm of the yoke is much longer than the other, and extends forward of the axle, terminating in a suitable foot-rest, C^1, and so arranged, relative to the seat, that the driver can readily place his foot upon it, and employ his weight to elevate or assist in elevating the plow, as will be readily understood from an inspection of the drawing. C^2 is a hand-lever, pivoted either to the crank-axle or to a block or plate bolted to said axle. In practice I usually pivot it to the plate in order to make it movable, as will be explained. *c* is a cogged wheel or sector-plate, mounted loosely upon the same pivot with lever C^2, and gearing with a corresponding cogged sector, c^1, attached to one arm of yoke C. c^2 is a ratchet-wheel attached to and moving with cogged wheel *c*. c^3 is a weighted or spring-pawl pivoted upon lever C^2, and made to engage with ratched wheel c^2, at the will of the operator, by means of bell-crank thumb-lever c^4 and link c^5. c^6 is a stop-arm projecting from lever C^2. This arm strikes against the axle, and prevents the lever from falling out of reach of the driver, as in Fig. 1. D is the plow-beam. It is connected with the rear closed end of yoke C by devices which will be presently described, and which permit the beam to vibrate freely upon or about the yoke, in both a horizontal plane and in a vertical plane, and also provide that the beam and plow may be adjusted by rocking or rotating said beam upon or about a horizontal longitudinal axis, for the purpose of setting the land-side of the plow either in a perpendicular or an inclined position to regulate the form of the furrow-slice. D^1 is a treadle-bar or drop-iron, sliding in a slot cut for its reception in the tongue. *d* is a pin passing through any one of a series of holes in the bar. d^1 is a sliding sleeve-stop, secured in any desired position on bar D^1 by a set-screw, d^2. The lower end of this bar terminates in a T-piece, D^2, having at each end a downwardly-turning lug, d^3. D^3 is a latch pivoted to the axle and extending rearward. E is a bearing plate expanded at each end into slotted arcs E^1, the centers of these arcs being coincident, thus making them practically segments of a circle. E^2 are bearing-blocks mounted upon yoke C in such manner as to vibrate freely thereon. Plate E is secured to these blocks by means of set-screws or bolts, which pass through the slots in the arcs E^1.

By an inspection of the drawing it will be seen that the bearing-plate has two movements, one being a free vibration about the yoke, the other a vibration or oscillation upon

the arcs E^1—being held in any desired position upon said arcs by means of the set-screws or any equivalent. These parts E E^1 E^2 constitute a hanger from which the plow is suspended, as follows: F is a swiveling-plate, pivoted to plate E at *f*. By preference I provide plate E with a hub or sleeve, *e*, through which pivot *f* passes for the sake of additional strength. The plow-beam D is attached to swiveling-plate F by a stirrup, F^1, or by any other usual or suitable device which shall be its equivalent. As the plow is drawn forward, the driver places his feet upon the T-piece of the drop-iron D^1, (which rests upon the plow-beam, as shown in Fig. 1,) thereby depressing the front end of the beam, applying such pressure as may be required to cause the plow to enter the ground promptly, the extent of the depression being regulated by the pin in the upper end of the drop-iron. After the plow is fairly in the ground, he removes his feet from the bar and allows it to rise until stop d^1 strikes the under side of the tongne. By adjusting the position of this stop on the bar the depth of the furrow may be regulated at will, the beam being free to vibrate laterally between the ears or lugs d^3. The width of the furrow-slice is regulated partly by the use of an adjustable clevis, as is customary in this class of plow, and, when a further adjustment is required, by shifting the tongue upon the tongue-brace *b*. A further point gained by this adjustment of the tongue upon the tongue-brace is, the certainty with which the wheels can be made to track properly, relative to the furrow, upon sloping ground.

In case I wish to raise the plow out of or off from the ground, I grasp the lever C^2, and, by means of a bell-crank lever, c^4, cause the pawl c^3 to engage with ratchet-wheel c^2. I now draw lever C^2 toward me, thereby imparting a rotary motion to ratchet c^2, cog-wheel *c*, and the cogged sector c^1, which, as has been described, is attached to yoke C. This elevates the rear end of the yoke and with it the plow. If the plow is lifted high enough, the latch D^3 engages with a shoulder at c^7 in the yoke, and thus supports the plow until it is released by lifting latch.

As will be readily seen the operator can, by placing his foot on the foot-rest C^1, employ his own weight to assist in lifting the plow. The arrangement of the weighted pawl is such that whatever may be the position of lever C^2 the pawl disengages itself from the ratchet, except when it is held in contact by the driver; therefore, when the lever is not employed for lifting the plow, it may be left in a horizontal position supported by the stop-arm c^6, as it (the lever) will not be affected by the movement of yoke C, sector c^1, gear *c*, and ratchet c^2. In addition to the usual vertical and lateral vibrations of the beam, a permanent adjustment of the land-side of the plow, relative to a perpendicular line, can be made by means of the slotted arcs E^1 for the purpose of determining the form of the furrow-slice, in a manner which will be readily understood without further explanation.

It is frequently desirable to substitute a plow which shall turn a furrow toward the right for one which turns the furrow to the left, and vice versa. In order to do this I reverse the position of the tongue, tongue-brace, yoke C, and the lifting devices relative to the axle, each of the vertical arms of said axle having suitable holes through which the yoke, the lifting devices, and the latch can be bolted. By mounting the lever C^2, gear-wheel *c*, ratchet-wheel c^2, and latch c^3 upon a separate plate, as described above, the operation of transferring these devices from one crank-arm to the other is greatly facilitated.

After the plow has been raised to the desired height I can hold it up with the foot-lever and let the hand-lever down, until stop c^6 strikes the axle. I can then cause the pawl to engage with the ratchet-wheel. If I now release the pressure upon the foot-lever, the weight of the plow will be thrown upon the hand-lever, and will keep the pawl locked in place, as will readily be understood without further explanation. Of course the pawl can be easily released by resuming the pressure on the foot-lever.

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

1. The combination of a yoke or bracket, C, having a vertical vibration, a hanger, E E^1, adjustable in an arc of a circle, and a vertical pivot, *f*, to which the plow-beam is attached, substantially as described.

2. In a sulky-plow, the combination, with the yoke C, to which the plow-beam is attached, of a hand-lever, cogged sector *c* c^1, and a foot-lever, operating as set forth, to lift the plow from the ground.

3. In combination with the yoke C, and the hand-lever and foot-lever, operating as set forth, the stop c^6, ratchet-wheel c^2, and weighted pawl c^3, for locking the plow in an elevated position, substantially as set forth.

4. In combination with tongue B^2, beam D, and drop-iron D^1, the adjustable stop d^1, substantially as described.

CHARLES N. OWEN.

Attest:
THOMAS KENNETT,
PETER AMBLER.