2 Sheets—Sheet 1.

J. LANE.

Sulky-Plow.

No. 205,752. **Patented July 9, 1878.**

Fig. 1.

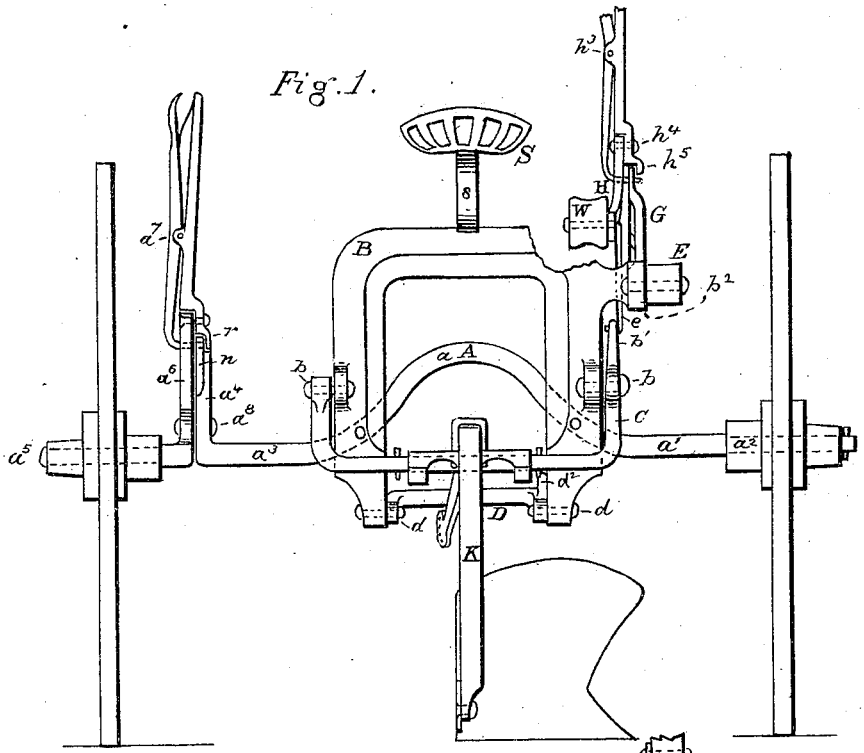
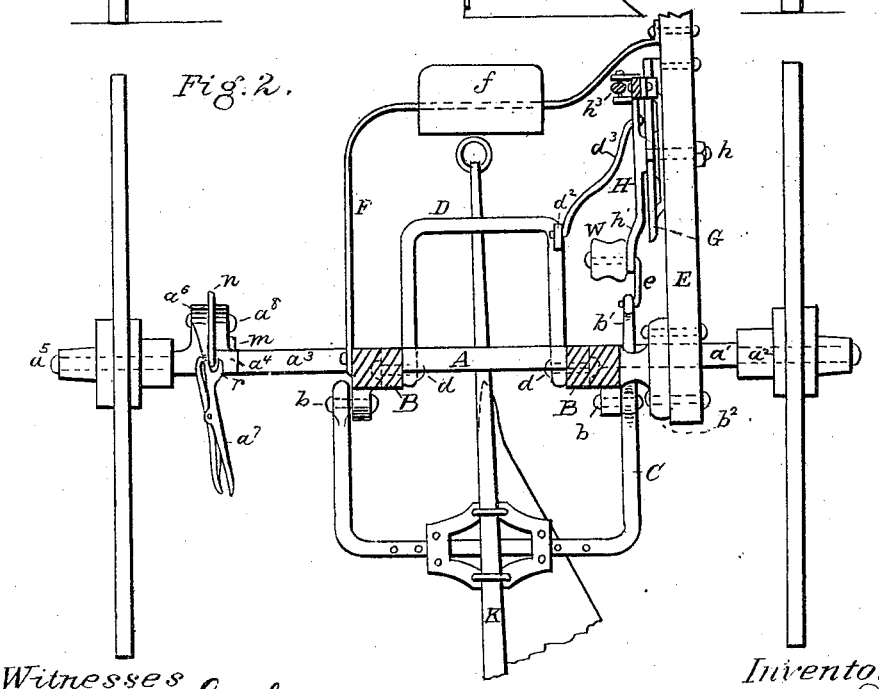


Fig. 2.



Witnesses
Thomas H. Church.
F. H. Hill

Inventor.
John Lane

2 Sheets—Sheet 2.

J. LANE.

Sulky-Plow.

No. 205,752. Patented July 9, 1878.

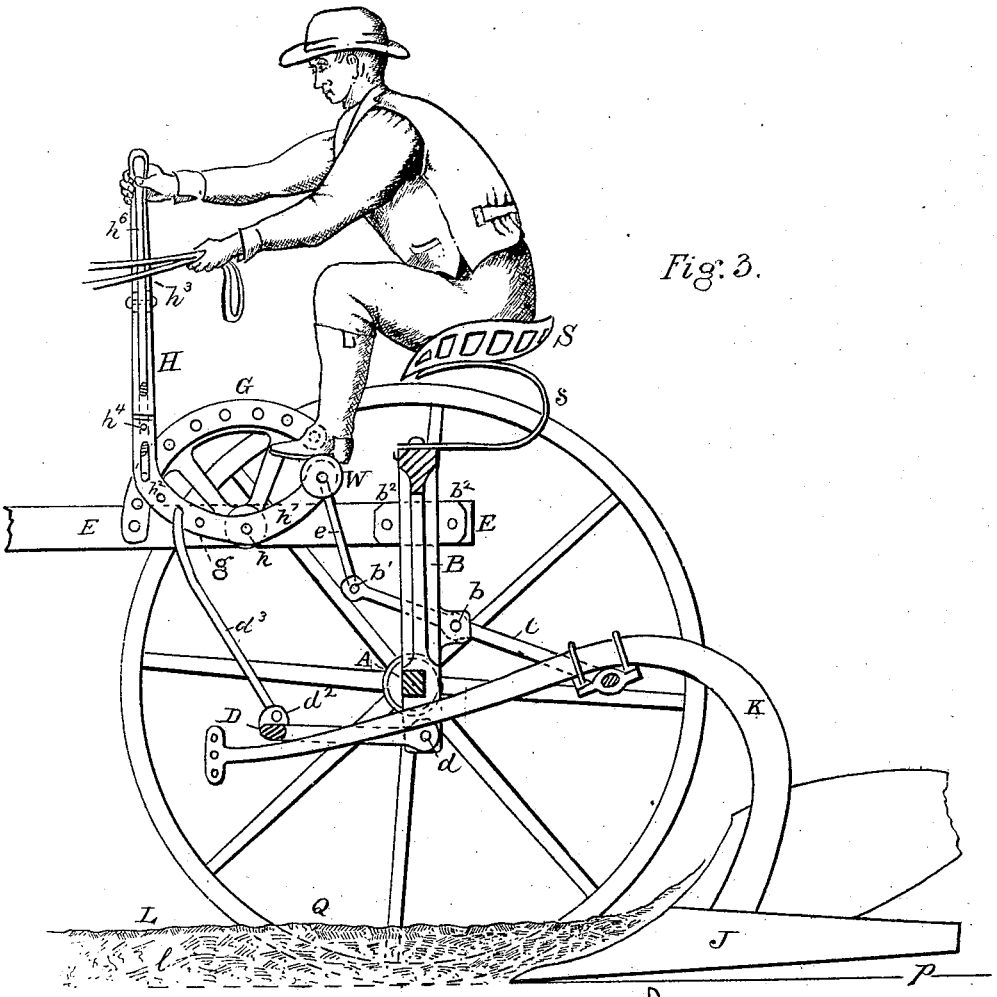


Fig. 3.

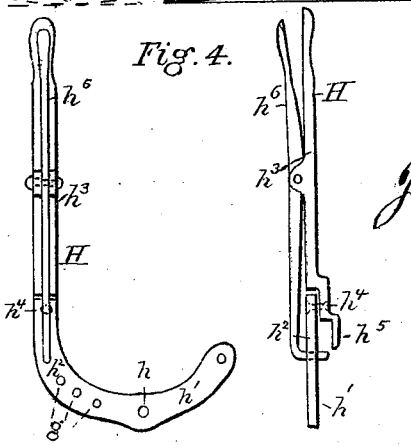


Fig. 4.

Witnesses.
Myron H. Church
G. H. Hine

Inventor.
John Lane

UNITED STATES PATENT OFFICE.

JOHN LANE, OF CHICAGO, ILL., ASSIGNOR OF ONE-HALF HIS RIGHT TO THE CHICAGO PLOW MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **205,752**, dated July 9, 1878; application filed January 15, 1878.

To all whom it may concern:

Be it known that I, JOHN LANE, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sulky-Plows, which improvement is fully set forth in the following specification and accompanying drawing, in which—

Figure 1, Sheet 1, is a rear view of my improved sulky-plow. Fig. 2, Sheet 1, is a top view of same, having the seat and a part of the arch removed. Fig. 3, Sheet 2, is a side view of same, having the front side removed to a line perpendicular from the seat down. Fig. 4, Sheet 2, is a view of my improved lifting-lever detached, and showing both a front and side view.

Like letters of reference refer to like parts in all the drawings.

My invention relates to sulky-plows; and consists in providing an axle, supported on wheels and carrying one or more plows, with the peculiar parts and arrangements of parts combined in the construction of my improved sulky-plow, as is hereinafter set forth and shown.

A is the axle, which is of peculiar construction, and made of a single bar, bent, forming the elevated center *a*, and extending both to the right, a^1, and left, a^3, and the right extension a^1 having a wheel-arm, a^2, formed thereon, and the left extension a^3 having its end a^4 bent upright, and to which is attached a rotating wheel-arm, as shown.

B is the arch, which is attached to the axle A, and supports the tongue end E, the carrier D, the support C, and the foot-rail F, as shown. The arch B is attached to the axle near the bends in the axle A, and extends below the axle, as shown.

C is the support, which is formed of one piece of iron, bent somewhat in ⊔ shape, and connected with pivots *b b* to the arch B above the axle A, and, extending rearward, supports the plow-beam K, as shown.

One arm of the support C extends forward, as at b^1, beyond the arch B, as a lever, to assist in lifting the rear part of the support C and plow thereto attached, as shown.

D is the carrier, which is formed of one piece of iron, bent somewhat in ⊔ shape, and both arms thereof are attached by pivots to the arch B, below the axle A, on the pivot-centers *d*, and the carrier extends forward unattached on the top of and near the end of the beam K, as shown.

At one corner of the carrier D is formed a perforated lug, d^2, in which a connecting-rod, d^3, is secured, connecting the carrier D with the hand-lever H forward of the fulcrum in the hand-lever, as shown.

E is the tongue or rear end thereof, which is rigidly secured to the arch B, with bolts through the ears b^2. The tongue extends forward and supports the segment G, the hand-lever H, and the foot-rail F.

F is the foot-rail and brace, which is attached at one end to the arch B, and extends forward, and is curved obliquely to the tongue end E, to which it is rigidly attached, forming a brace from the forward end of the tongue end E, to the far-off side of the arch B.

f is a foot-board attached to and near the center of the foot-rail F, as shown.

G is the perforated segment, which is attached to the side of the tongue end E some distance forward of the arch B.

H is the lifting hand-lever, which is bent curved somewhat in L shape, and near the center of the curve is the fulcrum, attached to and pivoted on the center *h* of the segment G, with the short arm h^1 extending rearward, and the long arm h^2 extending first forward and then curved upward, and ending in an upright portion, h^3. The short arm h^1 and the center curved part and that part extending forward to just beyond the segment G is one separate piece, separate from the upright portion h^3, and the two are bolted together at h^4. The arm h^3 extends below the bolt at h^4, and has formed thereon the offset-slide guard h^5, resting loosely against the back of the segment G, keeping the lever H close to the segment G when moved back and forth.

The long arm h^3 carries a side lock-lever, h^6, having a pin at its bottom end, striking through a perforation in the lever H into one of the perforations in the segment G, locking the lever H to the segment G, when, by grasping the top end of arm h^3 and the side lever h^6, drawing them together, the pin is drawn out

and the lever H moved as desired. At the rear end of the arm h^1 is a perforation, supporting a rod-link, e, which connects in a perforation in the end of the extension b^1 of support C, as shown.

Forward of and between the fulcrum of the lever H and the rim of the segment G are perforations g in the lever H, to receive and support the rod-link d^3, connecting with the corner of the carrier D, as shown; and the connecting-rod d^3 may be adjusted by moving it to other perforations g in the lever H, so as to regulate the carrier D up and down as to its position relatively to the rear part of the support C, as shown.

The advantage of having the lever H bent in L shape (over a straight lever) is that in its operation it requires the heaviest power pull at starting to lift the plow, and the power is gradually decreased, until finally slight power is wanted as the plow reaches its highest elevation, for the reason that the short arm h^1 in its travel on the arc of a circle at first moves the plow rapidly, and then slowly, until the fulcrum center h, short arm h^1, rod-link e, and the forward end of extension b^1 are on or nearly on a straight line from the fulcrum-center h on the tongue downward to the extension b^1, while the long arm h^3 extends horizontally rearward by the side of and in easy reach of the operator.

The tongue end E, or a tongue bolted to the tongue end, extends forward between the horses to the neck-yoke. A seat, S, provided with a spring, s, is attached to the top of the arch B, as shown.

The rotating wheel-arm a^5, with its holder a^6 and adjusting-lever a^7, is of peculiar construction. The wheel-arm a^5, holder a^6, and the bar connecting them together are of one piece, a single bar bent, one end forming the wheel-arm a^5, the other end forming the upright holder a^6, and connected together by the bar extending horizontally from one to the other, and is pivoted on a pin, a^8, at the lower corner of the holder a^6, as shown, connecting the holder a^6 to a box, m, on the forward side of the extension a^3 of the axle A. On the top of the upright a^4 is a segment-bar, n, which is perforated with several holes; and an adjusting-lever, a^7, locking into the bar n, adjusts the wheel on the wheel-arm a^5 up and down. The adjusting-lever a^7 is bolted to the top end of the upright-part holder a^6, and has a side lever-lock, locking into perforations in the segment-bar n; also, has an extension, r, by the side of the segment-bar n, keeping the parts close together. The upright part a^6 has support by resting against the box m and segment-bar n, and the wheel-arm has support by resting against the upright part a^4, resisting down weight and forward pull of the plow and frame.

The rod-link e is of novel construction, and consists of a rod of iron bent at both ends at right angles, and one end (a short bend) is secured in the perforation in the end of the extension b^1. The other end (a longer bend) passes through the perforation in the end of the short arm h^1 of lever H, and extends through the perforation in the short arm h^1 a sufficient distance for a foot-rest, on which I place a foot-roll, w, as shown, whereby the operator, having his foot resting on the roll w, throws his weight on the foot-rest when pulling backward on the lever H, assisting with the foot in working the lever and lifting the plow.

In operation, the plow is adjusted at work, carrying the plow with its load of furrow-slice on the wheels, by so adjusting the carrier D with the support C as to hold the point of the plow-point down and working below the land-side bar, as shown in Fig. 3, in which the line L shows the top of the furrow-slice l and the line P shows the bottom of the furrow; and J is the land-side bar of the plow; and the position of the plow shows how the rear end of the land-side bar J is carried above the bottom of the furrow, and the plow with the furrow-slice carried on the wheels while the plow-beam K is held in position by the support C and carrier D, as shown.

In the drawing, Fig. 3, the wheel Q is shown as working in the last furrow before the furrow just turning by the plow, and the foreground not shown, so as to show the plow at work, with its load of furrow-slice being carried, as shown, when the land-side bar J does not rest on the bottom of the furrow.

The operator, sitting in the seat S, with his foot resting on the foot-roll w, throws his weight on his foot, while with his hand he unlocks the lever H and pulls back one or more stops, thereby lifting the plow squarely up. The rod d^3 lifts the carrier D equal in distance to what the lever-arm h^1, rod e, extension b^1, and support C have lifted the rear part of the plow, and the plow now works at a less depth. The plow-beam not being attached to the carrier D, other than resting against it, the plow endeavors to seek a level work of the land-side, and is prevented from so doing by the carrier D holding the end of the beam down, while the support C supports and holds the plow from working any deeper. The operator continues to pull lever H to raise the plow from the ground for turning corners and going about the field.

The width of plowing is regulated by the draft-clevis, as in ordinary plowing.

The lever H operates to control the depth of plowing and lift the plow above the ground.

The rotating wheel-arm a^5 regulates the winging of the plow or leveling of the plow with the depth-cutting; and the carrier D and support C regulate and control the pitch and depth of cutting, and insure the plow working point down and being carried on the wheels, as shown.

Having thus described my invention and the operation of my improved sulky-plow, I claim in a sulky-plow carrying one or more plows—

1. The lever H, rod d^3, and carrier D, ar-

ranged and operating, as shown, with rod-link *e*, extension b^1, and support C, all arranged and operating substantially as shown, and for the purpose set forth.

2. The lever H, carrying the lock-lever h^6, with segment G, connected therewith, as shown, and operating with rod d^3 and carrier D, also with rod-link *e*, foot-roll *w*, extension b^1, and support C, all arranged and combined substantially as shown, and for the purpose set forth.

3. The carrier D, bent and formed as shown, and the ends of the arms pivoted on the pivot-centers *d d*, and extended forward of the axle to near the forward end of the plow-beam, where its forward end rests on top of the plow-beam, and rod d^3, and lever H, all arranged and operating substantially as shown, and for the purpose set forth.

4. The lever H, rod-link *e*, extension b^1, and support C, arranged as shown, and having the foot-roll *w* attached to the rod-link *e*, and all arranged and operating substantially as shown, and for the purpose set forth.

5. The rod-link *e*, connecting the short arm h^1 of the lever H and extension b^1, and the top end of rod-link *e*, extending and supporting the foot-roll *w*, as shown, all arranged and operating substantially as shown, and for the purpose set forth.

JOHN LANE.

Witnesses:
E. G. SHUMWAY,
G. H. HULL.