2 Sheets—Sheet 1.

W. S. WEIR.

SULKY-PLOW.

No. 190,652. Patented May 8, 1877.

Fig. 1.

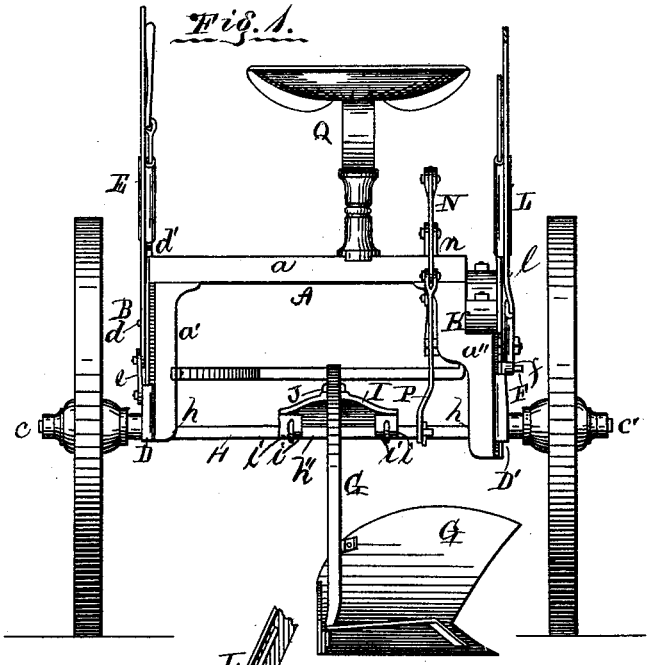

Fig. 2.

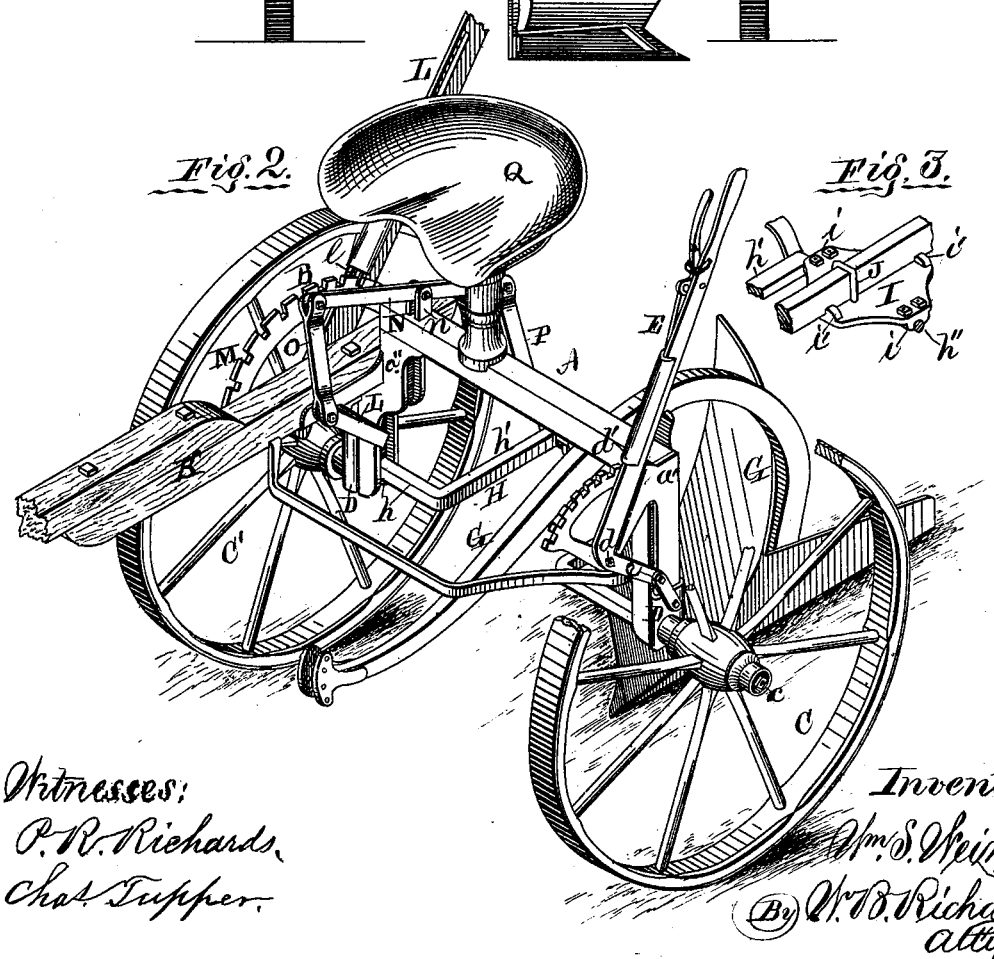

Fig. 3.

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2 Sheets -Sheet 2.

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Fig. 4.

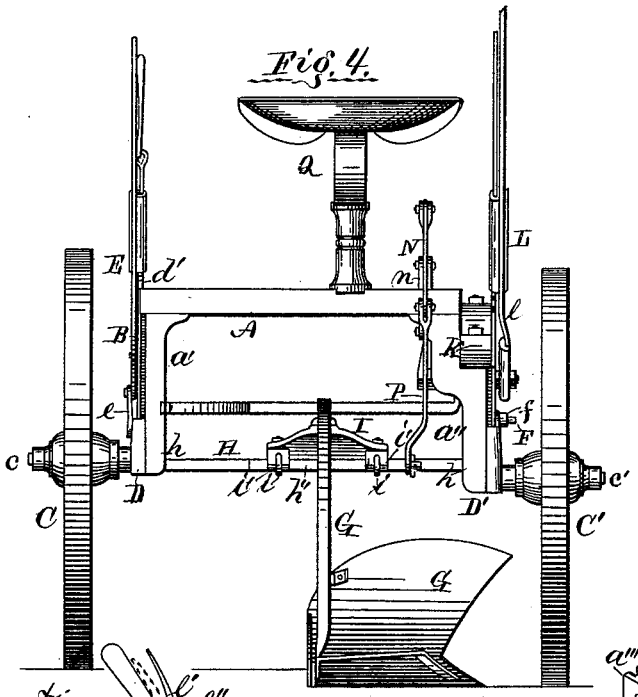

Fig. 6.

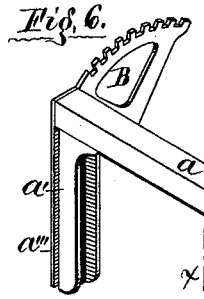

Fig. 7.

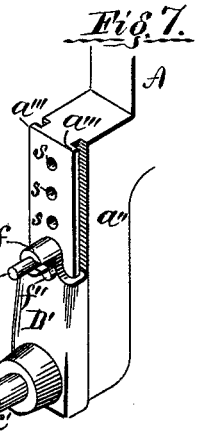

Fig. 5.

Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIAM S. WEIR, OF MONMOUTH, ILLINOIS.

IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **190,652**, dated May 8, 1877; application filed January 13, 1877.

To all whom it may concern:

Be it known that I, WILLIAM S. WEIR, of Monmouth, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Sulky-Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 letters of reference marked thereon, which form a part of this specification, in which—

Figure 1, Sheet 1, is a rear elevation of a sulky-plow embodying my invention. Fig. 2 is a perspective view, partly broken away. Fig. 3 is a detail perspective view. Fig. 4, Sheet 2, is a rear elevation. Fig. 5 is a side elevation, near wheel, in dotted lines. Fig. 6 is a detail perspective view, showing the main part of the axle. Fig. 7 is an enlarged view of one end of the axle and the sliding plate which carries the wheel. Fig. 8 is a transverse section of the axle in the line *x x* in Fig. 6.

The nature of this invention relates to sulky-plows, or plows having a seat for the operator and a carriage attachment; and the invention consists in the use of compound levers for suspending the plows upon the carriage when not in use, and also in the manner of securing the furrow-wheel to the axle.

Referring to the drawings by letters, letter A represents the axle, its upper portion *a* formed of wrought channel-iron, or iron having a web with two flanges, as shown at Fig. 8, its side vertical portions *a' a''* formed of malleable iron, similar in their cross-sections to the part *a*, but with the addition of feathers *a'''* on their outer corners. The part *a'* is also formed integral with a quadrantal rack-bar, B, on its upper end. The parts *a' a''* are bolted or otherwise secured to the bar *a*.

C is the land-side wheel, and C' the furrow-wheel, each journaled on spindles *c c'*, which are fixed to sliding plates D D', respectively, having grooved edges fitting over the feathers *a'''*, on which they may be adjusted in higher or lower planes. The plate D is operated by an elbow-lever, E, pivoted to the lower part of the quadrant B at *d*, and has a spring-pawl, *d'*, which engages with the rack B. The lower end of the lever E is connected by a link, *e*, with the plate D. The plate D' has a projecting boss, *f*, around an aperture in its upper end, and the boss *f* is slotted down one side for the reception of a detent, *f''*, which projects from one side of the bolt F. The bolt F may thus be inserted through the aperture in the plate D', and made to engage with any of a series of holes, *s*, in the bar *a''*, when, by turning the detent *f''* into a recess made for it in the boss *f*, the bolt F and plate D' may be securely locked in position, as shown more plainly by the enlarged view at Fig. 7. By these means the plate D' may be secured readily, easily, and firmly in a lower position on the axle, as shown at Figs. 2, 4, and 7, and by dotted lines at Fig. 5, or in a higher position, as shown at Fig. 1, or in various positions, as required to retain the bar *a* in a horizontal position while the wheel C' is the depth of the desired furrow lower than the wheel C.

G is the plow, to the forward end of which the team is hitched. H is a double crank or yoke, the ends or shafts *h* of which are journaled in and near the lower ends of the bars *a' a''*, and the sides or webs *h'* of which extend back, and are connected to form a wrist, *h''*, on which a plate or saddle, I, is mounted by means of eyebolts or loops, *i*, so that it may be oscillated thereon in a vertical plane at right angles to the wrist *h''*. J is a yoke, by which the plow-beam G is bolted to the saddle I, further security of attachment being secured by lugs *i'*.

K is the guide-pole, mounted on the bar *a''*. L is a bell-crank lever, suitably journaled at its angle to the pole K, and its longer arm provided with a spring-pawl, *l*, which engages with a rack-bar, M, fixed to the side of the guide-pole K. The lifter for the pawl *l* is a bell-crank lever, *l'*, fulcrumed at its apex to the distal end of the long arm of the lever L, its short arm attached to the upper end of the connecting-rod to the pawl *l*, and its longer arm having a notch, *l''*, into which a detent-link, *l'''*, may be turned, as shown by dotted lines at Fig. 5, for the purpose of holding the pawl *l* disengaged from the rack-bar M when desired. N is a lever, fulcrumed in standards

n, which project upward from the bar *a*, the longer arm of which projects forward, and is connected by a link, O, to the short arm of the lever L, and the short arm of which projects rearward, and is connected by a link, P, to the distal end of the double crank H.

Q is the operator's seat, secured by a standard and spring above the bar *a*.

The wheel C′ may be adjusted on the bar *a″* to regulate the depth of plowing.

The intermediate connections between the lever L and the double crank H are such that when the lever L is thrown well back, and locked by the pawl *l* to the rack-bar M, as shown by full lines at Figs. 1, 2, 4, and 5, it will act as a lock to crank H, making a rigid connection thereby with the axle A, and allowing the weight of the carriage and driver, or any desired portion thereof, in proportion as the lever L is adjusted on the bar M, to be thrown on the plow, and on a rolling cutter or other device attached thereto.

When it is desired, in plowing in rough ground, &c., to allow the wheel C to rise and fall to pass over small obstacles without disturbing the level of the plow, the link *l‴* may be engaged with the notch *l″*, and thus, holding the pawl disengaged with the rack-bar M, permit of movement vertically of said wheel and independently of the plow.

For raising the plow clear of the ground, for local transportation on its own carriage, the lever may be thrown forward, as shown by dotted lines at Fig. 5.

The lever E may be used for leveling up the axle temporarily in case of irregularities of surface of the soil, &c.

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

1. In combination with the axle A and yoke H, to which the plow is secured, the double-elbow lever L, link O, lever N, and link P, the lever N being pivoted to the axle, and the whole arranged in close proximity thereto, substantially as and for the purpose specified.

2. The bolt F, having a detent, *f‴*, arranged to operate with the sliding plate D′, constructed as described, and with the perforated plate *a″*, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM S. WEIR.

Witnesses:
W. B. BOYD,
ALMON KIDDER.