J. B. FISHER.
Sulky-Plow.

No. 207,598. Patented Sept. 3, 1878.

Fig 1.

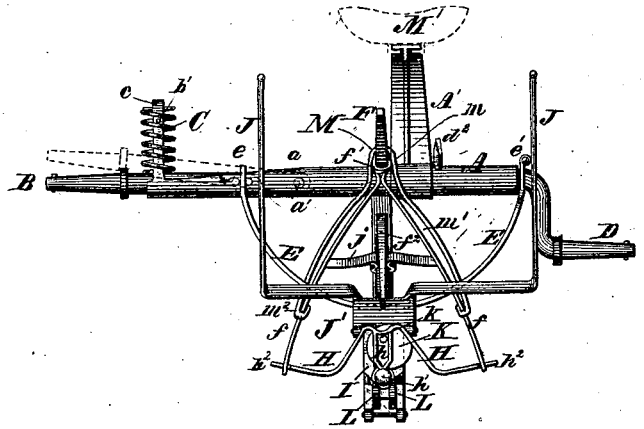


Fig 7.

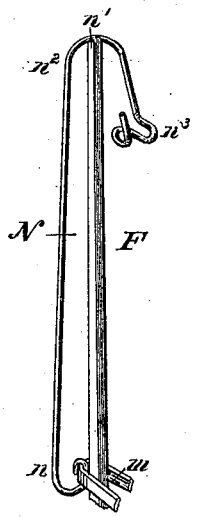


Fig 2.

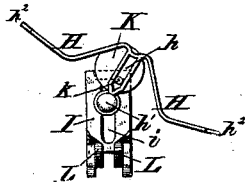


Fig 3.

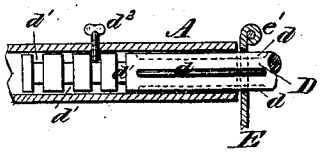


Fig 6.

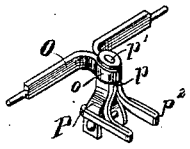


Fig 4.

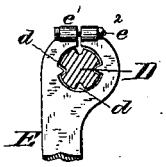
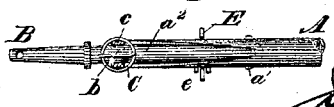


Fig 5.



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IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **207,598**, dated September 3, 1878; application filed July 19, 1878.

To all whom it may concern:

Be it known that I, JAY BOSTWICK FISHER, of Davenport, in the county of Scott and State of Iowa, 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.

My invention relates to sulky-plows which are supported on wheels and provided with a seat for the operator.

The invention consists in a new form of axle, by means of which the sulky-frame is leveled, and the land-side wheel passes over uneven ground without affecting the plow in the furrow.

The invention further consists in certain new combination of devices, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a rear view of my improved sulky-plow axle and adjusting devices, with the wheels, plow, tongue, rack, and rear end of the reach, having a guide caster-wheel, removed, all of which are in my drawings of Letters Patent May 21, 1878, No. 203,903, to which I will refer for the said parts removed. Fig. 2 is a detail view of the lower portion of the adjustable device which operates the plow, having the handles removed. Fig. 3 is a detail view of an enlarged cross-section of the furrow-side end of the axle and crank-spindle, which is secured therein, showing how the spindle is adjusted and operated. Fig. 4 is a detailed view of an enlarged end of the adjusting semicircular rim, and cross-section of the crank-spindle, showing the manner of fastening them together. Fig. 5 is a detail plan or top view of the land-side end of the axle and spindle, hinged to the axle in a tapering slot. Fig. 6 is a perspective detail view of the adjustable device which operates the plow. Fig. 7 is a perspective detail view of the spring-lever, secured to the lock and operative levers.

Referring to parts by letters, A represents the tubular axle, which has a tapering slot in the top of the land-side end, (see Fig. 5,) for the purpose of hinging the tapering spindle or axle B at a with the pin a^1, having its lower bearing in the tapering slot a^2. The spindle B has its bearing on the wheel removed, and moves up and down in the slot b formed by the staple c, which is fastened to the upper edges of the tapering slot a^2, near the end of the tubular axle A, as the wheel passes over uneven ground in cutting a ribbon or furrow with a plow across a field.

The coil-spring C embraces the staple c, and has its upper bearing in the top of the said staple, and it is pressed down under the pin b' whenever it is necessary to stiffen the coil-spring C. The lower end of the coil-spring C has its bearing against the spindle B, so as to prevent a too free motion of the wheel in a vertical and lateral direction, and yet to permit of its movement in this direction when passing over uneven ground or obstacles without moving the plow from its true working position. As the wheel rises with the spindle B the bottom moves outward and the top inward, producing a lateral movement with the upward.

The arc-shaped reach A′ is fastened to the tubular axle A near the center, at right angle, having the rear portion, resting on a guide-wheel and lever-rack, removed. D is the crank spindle or axle, having its bearing on the old furrow-wheel, which is removed, and the end, which is provided with lengthwise grooves d and annular grooves d^1, having its bearing in the furrow-side end of the tubular axle A. The crank-axle D is secured and adjusted therein by means of the screw d^2. (See Fig. 3.)

E is the semicircular rim or bar, which is bolted to the elbow of lever F at the center, and having one end, e, clasping the tubular axle A between two pins, and its end cut away so as to permit the movement of the spindle B up and down in the slot a^2 (see Figs. 1 and 5) when the plow is in the furrow.

The grooved end of the spindle D passes through the feathered end e^1 of the rim E, as seen in Fig. 1, and is secured therein by the screw or bolt e^2. (See Fig. 4.)

The lockage of the end e^1 with the bolt e^2 takes the crank-spindle D along with the rim

E in its up-and-down movement produced by the lever F in raising and lowering the plow, which levels the sulky-frame.

The slotted plate I has journal or hinge bearing ends. The bifurcated handles J and bent lever f^2 are fastened to the plate J′, which is hinged to the upper end of the slotted plate I. The spring-bow j is fastened to the bifurcated arms f, which has its collar-bearing neck hinged or pivoted to the lever F. (See Fig. 1.) Its lower ends are journal-bearing.

The bent lever f^2 locks the handles J by pressing the said bent lever into the bow j with the handles J. The forward bifurcated end of the lever F, which has its bearing on the front end of the plow-beam when raising the plow, is removed, but seen in my patent referred to issued May 21, 1878, No. 203,903.

The bent yoke H has journal ends h^2, slot h, and journal-bearing neck, by which it is pivoted to the slotted plate I with the journal-pin h^1, which moves up and down in the slot i.

The cam K is pivoted above the pin k (see Fig. 1) to the slotted plate I, to prevent the pin h^1 from moving up and down too freely in the slot i, but permitting of it, when the handles J move the plow-beam laterally, taking the cam K along with them, (see Fig. 2,) so that the pin h^1 will rise in the slot i to lengthen out the operative device, so as not to raise the plow from its true working position in the central lateral movement.

L are the knee-pans, which are fastened near the lower end of the slotted plate I. They extend rearward and turn back upon the slotted plate I, so that they will bear on the top of the plow-beam and limit the forward movement of the plow by taking the sulky along with the draft of the plow. The lower end of the slotted plate I is hinged or pivoted to the plow-beam.

M is a bifurcated lock-lever, which is hinged or pivoted loosely to the lever F by its neck m above the neck f^1. The arms m^1 of the bifurcated lock-lever M extend downward under the semicircular rim E, and then up over the bifurcated arm f, and are clinched at the ends m^2, in order to secure a firm bearing of the arms f on the rim E, and lock them thereon, when desired, by means of a spring-lever, N. The said spring-lever has its lower bent end, n, fastened to the neck m of the lock-lever M, and having the upper end resting in a groove, n^1, of the lever F, forming a semicircle, n^2, thereat, and at the end a lock-slot, n^3. Pressing the said lock-slot end against the lever F raises and locks the lock-lever M, when required by the operator, and loosened whenever the land-side wheel is passing over a knoll or running on a corn-hill row, or whenever the sulky-frame is liable to tip or rock, in order that the plow-beam will remain vertical. The lateral and vertical movements of the sulky-frame by means of hinging the bifurcated arms f on the lever F, and the spindle B bearing against the coil-spring C, both reducing the draft of the plow one-quarter.

I may desire to use any other means of securing a lateral hinge or pivot of the plow-beam to the axle or sulky-frame; also any kind of spring which will regulate the up, down, or lateral movement of the land-side wheel in its passage over uneven ground without effecting the true position of the plow in the furrow.

M′ is a seat, secured to the reach A′. For smooth ground, Fig. 6 is a substitute for Fig. 2. O is the yoke, having a swivel-bearing neck, o, projecting backward, to permit of the rising of the plow without lifting the sulky-frame when striking obstacles, in order to free itself, and the journal ends work in the arms f. P is the bifurcated arm, having journal-bearing ends and swivel-journal neck p and knee-pans p^2, which bear on the plow-beam and limit its forward motion. The journal-neck p is swiveled to the swivel-bearing neck o by the nut p^1, which forces an up, down, or circular motion of the plow. The lower ends of the bifurcated arms P are hinged or pivoted to the plow-beam.

It will be seen that the plow is raised or lowered and the sulky-frame leveled at the same time by the operation of the lever F, first raising the point so the beam will bear against the bifurcated end of lever F, (seen in my sulky-plow, May 21, 1878, No. 203,903,) and then raising the entire plow above the ground. The handles J are managed by the driver on the seat, and the lever f^2 locks them in the bow j, when desired. (See my sulky-plow No. 203,903.)

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

1. A tubular axle having a slot, a^2, constructed substantially as and for the purpose specified.

2. The crank-spindle D, having the grooves d and d^1, to operate substantially as and for the purpose specified.

3. The combination of the crank-spindle D, having the grooves d and d^1, with the tubular axle A, having slot a^2, screw d^2, and wheel to adjust the spindle D, substantially as and for the purposes specified.

4. In combination, the crank-spindle D, having the grooves d and d^1, with the tubular axle A, screw d^2, wheel, and semicircular rim E, for the purpose of leveling the sulky-frame, substantially as and for the purpose specified.

5. In a sulky-plow, the combination of the lever F with the tubular axle A, having the slot a^2, and semicircular rim E, to operate substantially as and for the purpose specified.

6. The bifurcated lock-lever M, having the neck m, arms m^1, and ends m^2, substantially as and for the purpose specified.

7. In combination, the bifurcated lock-lever M, having the neck m, arms m^1, and ends m^2, with the lever F, semicircular rim E and the bifurcated arms f, to operate substantially as and for the purpose specified.

8. In combination, the bifurcated lock-lever

M, having the neck m, arms m^1, and ends m^2, with the lever F, semicircular rim E, bifurcated arms f, and spring-lever N, for the purpose of lockage, substantially as and for the purpose specified.

9. The combination of the bifurcated arms f with the lever F, semicircular rim E, bifurcated lock-lever M, and yoke O, substantially as and for the purpose specified.

10. In combination, the spring-lever N with the lever F and bifurcated lock-lever M, substantially as and for the purpose specified.

11. The yoke O, having a swivel-bearing neck, o, projecting rearward, for the purpose of freeing the plow from obstacles by throwing the sulky-frame forward, substantially as and for the purpose specified.

12. The combination of the yoke O, having a swivel-bearing neck, o, with the bifurcated arms f and bifurcated arms P, having a swivel-neck, p, and knee-pans p^2, substantially as and for the purpose specified.

13. In combination with the tubular axle A, having slot a^2, and plow-beam, the operating device consisting of levers F and N, bifurcated arms f, bifurcated lock-lever M, semicircular rim E, yoke O, bifurcated arms P, and knee-pans p^2, which also constitute the means for hinging the tubular axle to the plow-beam, substantially as and for the purpose specified.

14. The combination of the bifurcated arms P with the knee-pans p^2, plow-beam, and yoke O, having the neck o, to operate substantially as and for the purpose specified.

15. The combination of the tubular axle A, having slot a^2, with the spindle B, pin a^1, and wheel, substantially as and for the purpose specified.

16. In combination, the tubular axle A, having slot a^2, with the spindle B, pin a^1, wheel, and staple c, having slot b, which permits of the rising of the wheel up, in the manner substantially as described, without affecting the working position of the plow, substantially as and for the purpose specified.

17. In combination with the tubular axle A, having slot a^2, spindle B, pin a^1, wheel, and staple c, having slot b, the coil-spring C, operating substantially as and for the purpose specified.

18. The combination of the staple c, having the slot b, with the tubular axle A, substantially as and for the purpose specified.

19. In combination, the staple c, having the slot b, with the tubular axle A, spindle B, pin b', and coil-spring C, 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.

JAY BOSTWICK FISHER.

Witnesses:

LEWIS J. BROWN,

LORILE H. BROWN.