(Model.)

N. S. BARGER.

SULKY PLOW.

No. 264,846. Patented Sept. 26, 1882.

Fig. 1.

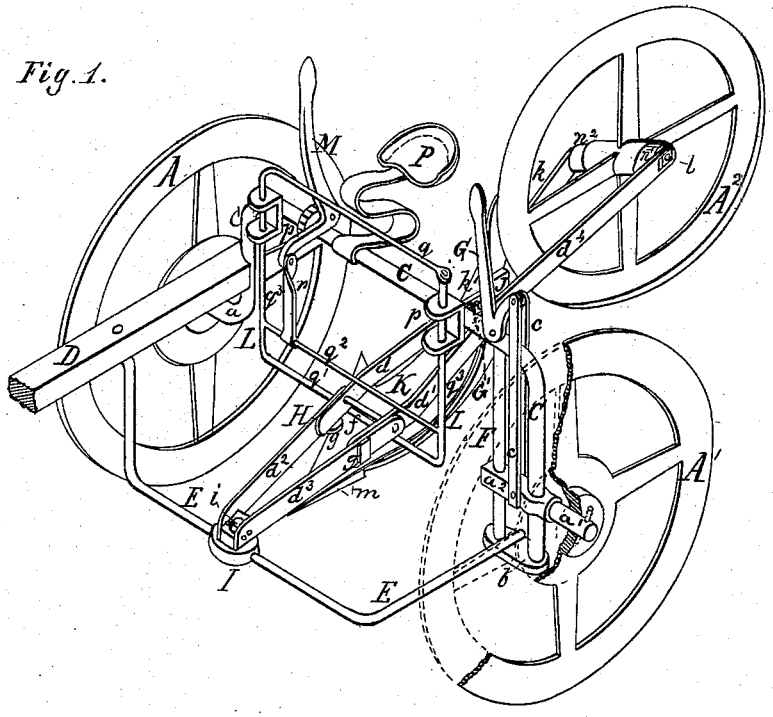


Fig. 4.

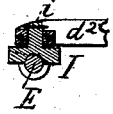


Fig. 3.

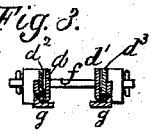


Fig. 2.

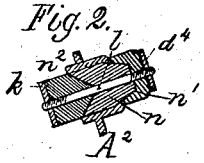
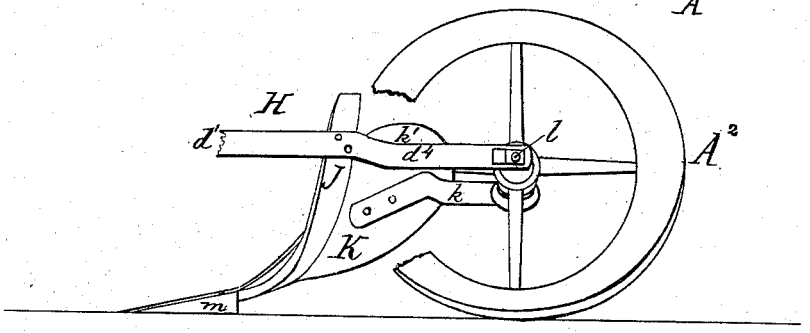


Fig. 5.



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UNITED STATES PATENT OFFICE.

NATHANIEL S. BARGER, OF HAMPTON, IOWA, ASSIGNOR OF ONE-HALF TO N. V. TAYLOR AND W. D. EVANS, BOTH OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 264,846, dated September 26, 1882.

Application filed January 30, 1882. (Model.)

To all whom it may concern:

Be it known that I, NATHANIEL S. BARGER, a citizen of the United States, residing at Hampton, in the county of Franklin and State of Iowa, have invented a new and useful Improvement in Sulky-Plows, of which the following is a specification.

This invention relates, first, to a plow-beam which is flexible between its ends in an upward direction and rigid in a downward direction; second, to a combination of a lifting and lowering frame in connection with the jointed beam; third, to the combination, with the plow, of the oblique wheel-landside, the plow-beam having a vertical joint and a rear extension, and an arm bolted to the mold-board, forming, with the plow-beam, extension-bearings for the wheel-landside; fourth, to a peculiar hub and axle for the wheel-landside; fifth, to a grooved block provided with a vertical pivot on which the plow-beam is pivoted, in connection with the bail upon which the block rocks, and may also be adjusted sidewise; sixth, to a combination, with the truck-frame of the sulky-plow provided with wheels, of a plow-beam having a joint between its ends, a wheel-landside, and a lifting-frame; and, seventh, to a combination of the bail connected with the pole, a foot-plate, an upright guide, the arched axle having a vertical leg attached to the plate, the sliding wheel-spindle, the connecting-bars, and a lever, as hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 is a perspective view of my improved sulky-plow. Fig. 2 is a detail cross-section through the hub of the wheel-landside, showing the construction whereby dirt is excluded from the hub and axle. Fig. 3 is a detail cross-section through the jointed portion of the plow-beam, showing the lugs for rendering the beam rigid in a downward direction. Fig. 4 is a detail section in the line of the plow-beam, showing the construction of the hinge-connection between the plow-beam and the bail of the sulky-truck; and Fig. 5 is a detail land-side view of plow, beam, and wheel-landside.

A A′ are the truck-wheels, and A^2 the wheel-landside. The furrow or right-hand wheel, A, is attached to a crank-arm, *a*, of the arched axle C, while the landside or left wheel, A′, is attached to an axle-arm, *a′*, which slides up and down on the vertical left leg of the arched axle C. Both wheels A A′ revolve freely upon their axle-arms *a a′*.

To the right side vertical leg of the arched axle C the pole D is fastened, and to the under side of this pole an angular bail, E, is connected, which from its vertical end extends across and then rearward on a horizontal plane, and is connected to a foot-plate, *b*, at the bottom of the leg of the arched axle C.

From the horizontal part of the arched axle a guide and stay rod, F, is extended down parallel with the right leg of said axle and fastened in the plate *b*. The slide a^2 of the axle-arm *a′* is fitted by means of vertical passages formed in it to the guide-rod F and right leg of the arched axle, and by this means it is stayed and guided truly up and down. To this slide two connecting-bars, *c*, are secured by a pivot-pin, and the upper ends of these bars are connected by another pivot-pin to an elbow-lever, G, which is pivoted to a notched sector-plate, G′, fastened on the rear side of the horizontal part of the arched axle. With this construction and mode of operating the land or right wheel, liability to bind is obviated and a strong and durable support for the land-wheel secured.

The plow-beam H is formed of four flat bars or plates, *d d′* d^2 d^3, set up edgewise and connected together almost directly under the arched axle by means of a pivot-pin, *f*. The rear plates, *d d′*, extend some distance forward of the pivot *f*, inside of the plates d^2 d^3, and rest down upon horizontally inwardly-extended lugs *g* of plates d^2 d^3, and by this means the plates *d d′* are made to form, with the plates d^2 d^3, a rigid beam with respect to any downward pressure upon the joint when the beam is horizontal on top, and a flexible or upwardly-bending beam with respect to any upward pressure that may be brought against said joint. The plates d^2 d^3 converge toward one another at their front ends, and are united into a solid end and connected with a sliding pivot-block, I, of the bail E. The block I is provided with a half-groove on its under side and

clipped upon the bail, so as to slide and turn freely thereon, and around the pivot *i* of this block the solid end of the beam turns freely in a horizontal or oblique plane, said block being free to turn on the bail. By this means the sulky can turn independently of the plow-beam and plow, while the plow can move independently of the sulky, either laterally in a straight line, or in either a horizontal or vertical plane, or in oblique planes. The rear plates of the beam are made to converge toward one another as they run backward, and their rear portions are fastened firmly upon the standard J of the plow K. The plate *d'* extends beyond the said standard and forms a hanger or bearing, d^4, for one end of the axle *l* of the wheel-landside A^2. The other end of the said axle *l* is supported in a bearing-bracket, *k*, extended back from the under side of the mold-board *k'* of the plow proper, K, as shown. The bracket or bearing *k* is set lower than the extension-bearing d^4, and the axle *l* of the wheel-landside lies inclined, so as to bring the periphery of the wheel-landside parallel with the land side of the furrow cut by the plow.

The boxes in which the axle is set are adjustable in oblong slots, which are formed in the bearings d^4 and *k*, and by this means the wheel-landside may be set as near to or as far from the heel of the plow as circumstances demand.

The hub of the wheel-landside A^2 is constructed in form of a hollow metal cylinder, and within it a turned wooden box, *n*, is applied. The right or highest end of the wooden box is made convex and the left or lowest end concave. Upon the convex end a concave cap-nut, *n'*, is secured by means of a screw-thread on the axle *l*, so as to cover the convex end of the hub, and thereby form a bearing, and also serve for excluding dirt. This cap-nut can be regulated so as not to bind and cause undue friction.

On the lower end of the axle a screw-thread is cut, and a convex plug-nut, n^2, is fitted so as to enter the concave end of the wooden box, and thereby form a bearing and serve for excluding dirt. This plug-nut can also be regulated to fit close and yet not bind and cause undue friction. The wheel-landside revolves on the axle between the bearings n' n^2, while the axle remains stationary. The plow K will be better adapted for use with this wheel-landside if its landside *m* terminates at about the point where the share and mold-board unite, and the lower front end of the standard is extended forward alongside this short landside and fastened to it and the share, as in a former patent granted to me. The standard runs up from the terminus of the short landside, and in rear of the standard no other landside-bar is used, as the wheel-landside, in the same manner as heretofore known, takes the place of the ordinary rear landside-bar. By my mode of supporting the wheel-landside A^2 it can be set in rear of the plow K and still be supported by extensions of the beam and mold-board alone.

Upon the arched axle C two eye-brackets, *p*, are provided, and through these brackets vertical side bars of a sliding frame, L, slide up and down. The frame L has an upper cross-bar, *q*, and a lower cross-bar, *q'*, and also an intermediate cross-bar, q^2, all uniting with the upright sliding side bars, q^3. The lower bar, *q'*, is underneath the joint of the plow-beam, and acts upon the beam in raising it, while the middle bar, q^2, is just above the joint of the beam and at a sufficient distance from the lower bar to permit the necessary free horizontal movement of the beam between the two bars. This bar acts upon the upper side of the beam when it is being lowered. The upper bar, *q*, only serves to add strength, and may be used or not, as deemed best.

To the bar q^2 a pitman-rod, *r*, is connected, and this rod is pivoted to an elbow-lever, M, fastened to the horizontal portion of the arched axle C.

The lever M is to be provided with the usual ratchet and pawl for holding it in any desired position. The frame L is raised by this lever, and as it is raised it bends the plow-beam at its joint, and thereby raises the point of the plowshare instead of its heel; and by moving the lever a sufficient extent the beam can be raised, so as to have the plow run entirely above the ground while its weight is resting upon the wheels A A' A^2. Thus, whether plowing with or transporting the plow, its point may be thrown up and its weight always rest upon the wheels A A' A^2.

From the foregoing description it will be seen that a larger oblique wheel-landside, A^2, can be used when set back of the plow than when placed under the mold-board; also, by the improved construction of the hub of this wheel, dirt will be excluded and clogging prevented; also, that by having the beam jointed between its hinging-block and its standard, in the novel manner herein described, and adjustable at its joint, the whole weight can be carried in an improved and more advantageous manner than heretofore upon wheels, and the plow can more conveniently and perfectly than heretofore be thrown in and out of the ground at the most natural place—viz., the point.

It will also be seen that a very stable means for supporting, guiding, and adjusting the land-wheel are secured; also, that the hinging-block affords the plow and sulky-truck every freedom to make all movements required, either together or independently of one another, and, finally, that by the whole combination of parts a sulky-plow which will operate in almost any direction, either while plowing or turning around, with very little friction or draft, is produced.

I do not claim broadly an oblique wheel-landside, as this has been patented heretofore, applied in a manner different from what I have shown and described; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A plow-beam, H, provided with a joint between its ends, which is flexible in an upward direction and rigid in a downward direction, substantially as and for the purpose described.

2. The combination of the jointed beam and the lifting and lowering frame, substantially as and for the purpose described.

3. The combination, with the plow K, of the oblique wheel-landside A^2, the plow-beam H, having a vertical joint and a rear extension, d^4, and the arm *k*, bolted to the mold-board, and forming, with the plow-beam, extension-bearings for the wheel-landside, substantially as described.

4. The grooved block I, provided with the vertical pivot *i*, and plow-beam H, pivoted thereon, in combination with the bail E, upon which it rocks, and is also adjustable laterally, substantially as described.

5. The wheel-landside A^2, provided with a hollow metal hub, within which is fitted a wooden box having a concave and convex end, in combination with the axle *l*, provided with screw-threads, and the concave cap and convex washer, substantially as and for the purpose described.

6. The combination, with the truck-frame of a sulky-plow provided with wheels A A′, of a plow-beam having a joint between its ends, a wheel-landside, A^2, and a lifting-frame, substantially as and for the purpose described.

7. The combination of the bail E, connected with the pole D, foot-plate *b*, upright guide F, arched axle C, having a vertical leg attached to the plate *b*, sliding wheel-spindle a^2, connecting-bars *c c*, and lever G, substantially as described.

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