

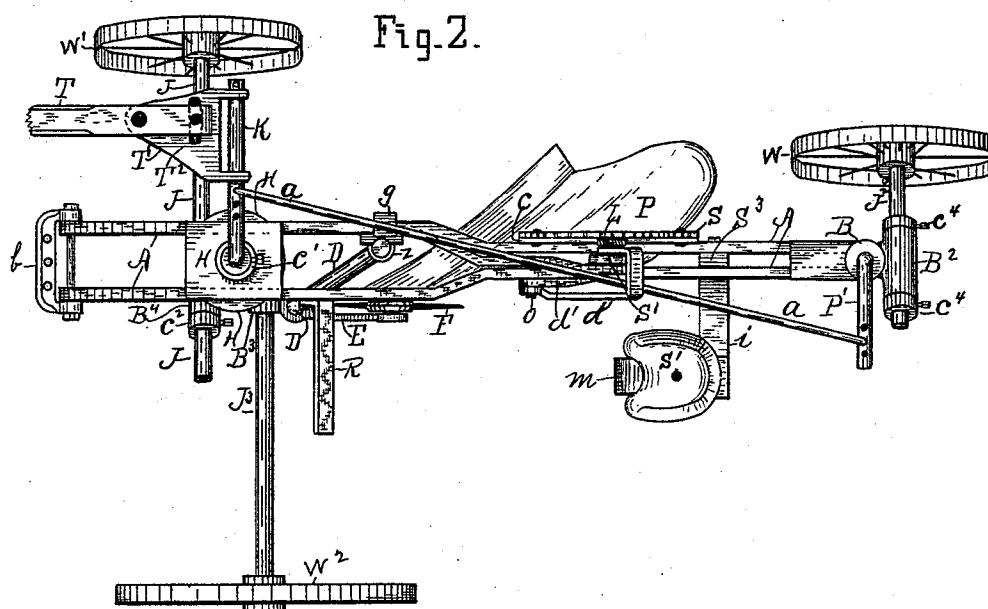
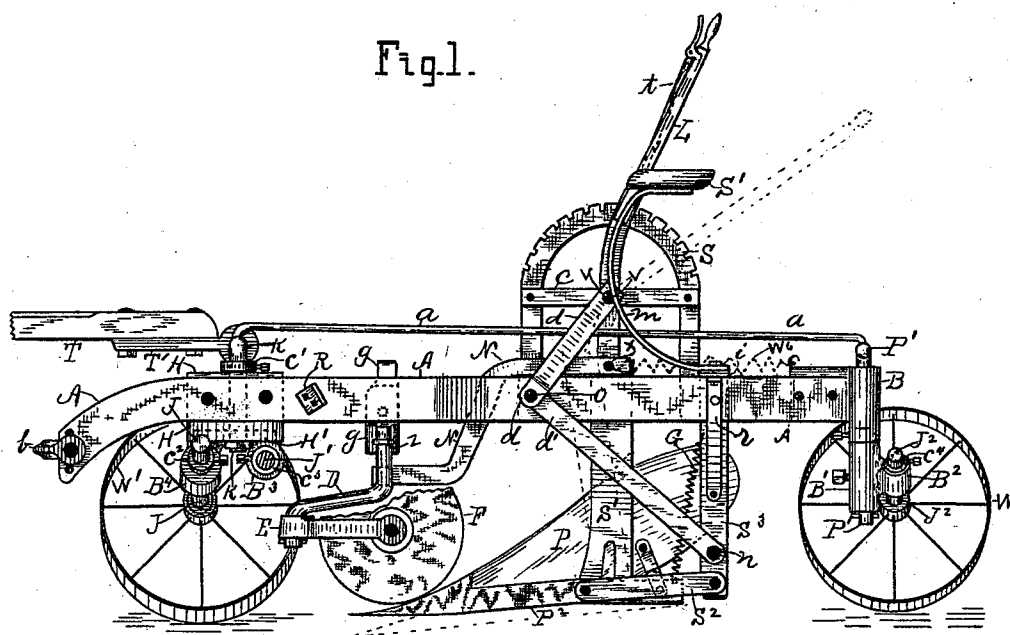
(No Model.)

2 Sheets—Sheet 1.

S. H. TINSMAN.
SULKY PLOW.

No. 496,458.

Patented May 2, 1893.



Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL H. TINSMAN, OF MORRIS, ILLINOIS, ASSIGNOR TO THE MORRIS MANUFACTURING COMPANY, OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 496,458, dated May 2, 1893.

Application filed November 30, 1892. Serial No. 453,626. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. TINSMAN, a citizen of the United States of America, residing at Morris, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Sulky-Plows, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a side elevation of the plow looking at its land side. Fig. 2 is a plan view of the plow. Fig. 3, is a side elevation of the plow looking at the reverse side from Fig. 1. Figs. 4, 5, 6, 7, 8, and 9 are detail views of parts of the plow to make their construction more clear.

This invention relates to certain improvements in sulky plows, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings A. A. represent the plow beam consisting of a pair of horizontally arranged parallel metal bars connected together at or near their forward ends by means of bolts passing through them, and a casting H forming an upper turn plate upon which said beam bars rest, and which turn plate H is formed with an annular depending flange for receiving a lower turn plate H' as shown more particularly in Fig. 4. K is a king bolt which passes centrally through said turn plates and is square on its lower end in its part in plate H' for fitting a square hole in said plate so that said plate may be oscillated by said king bolt as it is turned in either direction. Said king bolt is screw threaded on its extreme lower end below plate H' for receiving a nut to hold said king bolt from moving upward out of said plate, and is provided with a collar c' immediately above plate H, and secured to said king bolt by means of a set screw, for the purpose of holding said king bolt in its proper place. Said king bolt K is turned in its part above plate H, at right angles with its part in said plates and extends horizontally toward the mold board side of the plow, and has pivotally attached to it a tongue plate T' to which a tongue T is attached by means of a pair of bolts passing through said tongue and plate, the inner bolt passing

through a transverse slot T² in said plate for the purpose of adjusting the angle of said tongue.

The lower turn plate H' is held in contact with the upper turn plate H by means of said king bolt K as stated, and is provided with a pair of integral axle boxes B³ and B⁴ arranged parallel with each other. The forward box B⁴ is arranged obliquely to the plane of the ground and receives the inner end of the axle J of the furrow wheel W', in which box the said axle turns, and is held in its proper position in said box by means of a pair of set screw collars c² and c⁶. Said axle extends obliquely downward toward the furrow and has secured on its outer end a furrow wheel W' that is designed to travel in the old furrow next the land, and stands in an oblique position with relation to the plow with its upper part farthest from the plow. Said axle J is intended to be adjustable endwise in said box B⁴ for the purpose of setting wheel W' in or out from the plow to accommodate it to any width of plow that may be used. The box B³ is horizontal with relation to the plow and receives the inner end of the axle J³ of the land wheel W² secured on the outer end of said axle. Said axle J³ turns in said box B³ and is held in place in said box by means of a set screw collar c⁵; one arranged at either end of said box. When said king bolt K is turned said plate H' with its boxes, axles and wheels are turned with it, so that the plow can be turned around in a very short space. The forward end of the plow beam A, is thus supported on the said wheels W' and W² and their axles in said boxes, said boxes being made long so as to have a long bearing to the said axles in said boxes so the wheels will run steadily.

The draft to pull the plow is applied to the clevis b on the forward end of the plow beam A, and the tongue T is only intended to guide the plow, and turn it around.

The bottom of the lower turn plate H' is shown in Fig. 5 to more clearly show its boxes B³ and B⁴ and the square hole K² through its center for the reception of the lower square end of said king bolt, and in Fig. 6 a horizontal section of the upper turn plate H is shown taken on line 1 of Fig. 4 looking down,

showing a partial view of said boxes of the lower turn plate H', and Fig. 4 shows a vertical section through the two turn plates and boxes, and a side view of the king bolt K.

5 The rear ends of the two bars A forming the plow beam are connected with each other by means of bolts passing through them and a casting between them, which casting has an integral vertical box B for receiving the
10 cranked shaft P'. Said shaft P' has secured on its lower end below box B, the box B' secured to said shaft by means of a set screw. A collar is placed on said shaft between said two boxes, and secured to said shaft by means
15 of a set screw for adjusting said shaft in the box B. The box B' has an integral obliquely arranged box B² for receiving the inner end of the shaft J² having secured on its outer end the obliquely arranged furrow wheel W. Said
20 shaft J² forms the axle of said furrow wheel, and turns in said box B², and is held in its proper place in said box by means of the set screw collars C⁴, and said collars furnish means for end adjustment in said box of said axle.
25 The rear end of the plow beam is supported by said furrow wheel W which is intended to travel in the furrow behind the plow in the angle next the land. The upper end of shaft P' is cranked in the opposite direction from
30 the cranked upper end of the king bolt K, and their two cranked upper ends are connected by means of a connecting rod a, so that when the king bolt K is turned, it turns with it shaft P', together with boxes B' and B² and
35 wheel W and its axle, in the opposite direction from king bolt K and its appendages, for the purpose of enabling the plow to be turned about in the shortest possible space. The box B² is made long so as to cause wheel W to travel
40 steady, and cause less wear of the axle journaled in said box.

P is the plow having its standard S' secured at its lower end to the land side or heel P² of the plow near its rear end, and having its upper
45 end pass up between and through the space between the two bars forming the plow beam A, and is pivotally attached at x to the lower end of a hand lever L fulcrumed at v to the cross bar c of the notched segment
50 frame s, said hand lever being provided with an ordinary spring latch t for engaging the notches of said segment.

S³ is a permanent standard having its upper end secured to and between the two parts
55 of the beam A, and extending downward so its lower end is immediately at the rear end of the heel P² of the plow, and is braced by means of the brace d' from the point n to the point o on the side of the plow beam above
60 the plow for the purpose of giving great strength to said standard S³, as the plow is driven by it.

The land side or heel P² of the plow is pivotally connected with the lower end of the
65 permanent standard S³ by means of the arm S², the forward point of pivot of said arm being at a point on said plow at its land side or

heel, about in line with the forward side of standard S'. G is a coil spring which connects the heel P² of the plow with the upper
70 part of standard S³. The tension of said spring serves to assist in lifting the plow from the ground. The brace d has its lower end connected to the side of the plow beam at o, and its upper end connected with the bar C
75 of the segment S at V for assisting to support said segment and the hand lever L.

g is a hanger (shown in detail in Fig. 7), pivotally connected to one of the bars of the plow beam A at r' and has its upper end ter-
80 minating in a hook Z³ for overhanging the bar to which it attaches, for preventing lateral movement of said hanger. The inner side of said hanger g is provided near its lower end with a groove for receiving the in-
85 ner end of the cranked arm D, and z is a strap passing around said arm, and having its ends passed through said hanger and provided with nuts for the purpose of clamping said arm firmly to said hanger at any desired angle.
90 The outer end of said arm D is pivotally connected to the yoke E of a colter wheel F, and the position of said colter is adjustable laterally by means of adjusting the angle of arm D with the plow beam. Said hanger g has at-
95 tached to its lower outer side an arm y adjustably secured to said hanger by means of a bolt a'. The lower end of said arm y is connected, pivotally, with the upper end of the plow standard S' at x by means of the con-
100 necting rod N, so that when lever L is operated to raise the plow, the colter F will be caused to swing rearward and upward off the ground, so that but one hand lever is used to elevate the plow and colter simultaneously.
105

Figs. 1 and 3 show the plow as it would appear ready to plow, the plow being let down so as to enter the ground to turn a furrow. The broken lines in Fig. 3 show the position
110 of the plow and colter when raised off the ground to enable the plow to travel on the road, or to be turned about. The broken lines in Fig. 1 show the hand lever turned rearward so as to throw the point of the plow downward to cause it to enter the ground so as to turn
115 the first furrow. A seat S' is supported on the upper end of the spring standard m secured at its lower end to the outer end of an arm i bolted at its inner end to the side of the plow beam, and supported by a brace r.
120

R is a foot rest secured to the side of the plow beam for resting the feet of the driver as he rides in the seat S'. A coil spring may if desired be located as shown in broken lines
125 in Fig. 1 at W⁶, having one end connected to the lower end of the hand lever L, and its opposite end connected to the rear end of the plow beam to assist said lever to elevate the plow point. The object of having the axles journaled at their inner ends in boxes located
130 at the beam is to prevent dirt from getting into the wheel hubs as it does when the wheels turn on the outer ends of the axles but if desired the axles could be secured in the boxes

on their inner ends and have the wheels turn on their outer ends.

It will be seen that by means of the arm S^2 connecting the plow between its point and heel the plow is elevated and lowered more in a horizontal position than if it were pivotally connected at its heel to some object and is thus more easily controlled when it is desired to pass over obstructions when the plow is raised and it requires less power to elevate and lower the point, or the entire plow.

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

1. In a sulky plow the combination with the plow beam of a plow having a standard secured to its land side between its point and heel, a permanent standard secured to the plow beam and arranged at the rear of the heel of the plow, an arm for pivotally connecting the lower end of said permanent standard and the plow between its point and heel and the means described for elevating and lowering the plow all arranged to operate substantially as and for the purpose set forth.

2. In a sulky plow the combination of the standard S' lever L , rod N arms D and Y , strap Z , hanger g having the hook Z^3 , plow beam A , yoke E and colter F all arranged to operate substantially as and for the purpose set forth.

3. In a sulky plow the combination with the plow beam of a turn plate having boxes for receiving the inner ends of the forward axles journaled in said boxes, one of said boxes being oblique and the other horizontal, axles fitting said boxes having wheels secured on their outer ends, a cranked king bolt for turning said turn plate and axles and wheels all arranged to operate substantially as and for the purpose set forth.

4. In a sulky plow the combination of the plow beam A , box B secured to its rear end, cranked shaft P' passing through said box, box B' secured to said shaft below box B and having the oblique integral box B^2 , axle J^2 having its inner end journaled in said oblique box, wheel W secured on the outer end of said axle, connecting rod a and cranked king bolt k all arranged to operate substantially as and for the purpose set forth.

5. In a sulky plow, a plow having its standard secured thereto between its heel and point and connected to a hand lever at its upper

end, a permanent standard secured to the plow beam at the rear of the plow and pivotally connected at its lower end by means of an arm to the bottom of the plow between its heel and point a colter, arranged above the plow point and pivotally connected with the upper end of the plow standard by means of an arm, and pivotally connected to the plow beam and adapted to be laterally adjusted and elevated and lowered simultaneously with the plow, all combined and adapted to operate substantially as and for the purpose set forth.

6. In a sulky plow the combination of the plow beam A , hanger g pivotally connected to said beam and having the hook Z^3 , cranked arm D , yoke E , colter F and the means shown and described for elevating and lowering and laterally adjusting said colter substantially as and for the purpose set forth.

7. In a sulky plow, the combination with the plow beam of a plow having its standard pivotally connected at its upper end to a hand lever, a standard connected to the plow beam and arranged at the rear of the plow, and an arm for pivotally connecting the plow and said permanent standard substantially as and for the purpose set forth.

8. In a sulky plow having boxes, axles having their inner ends journaled in said boxes and having traveling wheels secured on their outer ends the said axles having end adjustments in said boxes all combined and arranged to operate substantially as and for the purpose set forth.

9. In a sulky plow the combination of the plow beam, a turn plate arranged in the forward end of the plow frame and having axle boxes, axles having their inner ends journaled in said boxes, and having wheels secured on their outer ends, a plate secured to the plow beam and resting on said turn plate, a king bolt passing through said plates and having its lower end secured in said turn plate, and having its upper end cranked, and a tongue arranged on the cranked end of said king bolt for controlling said axles and wheels, all arranged to operate substantially as and for the purpose set forth.

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Witnesses:

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