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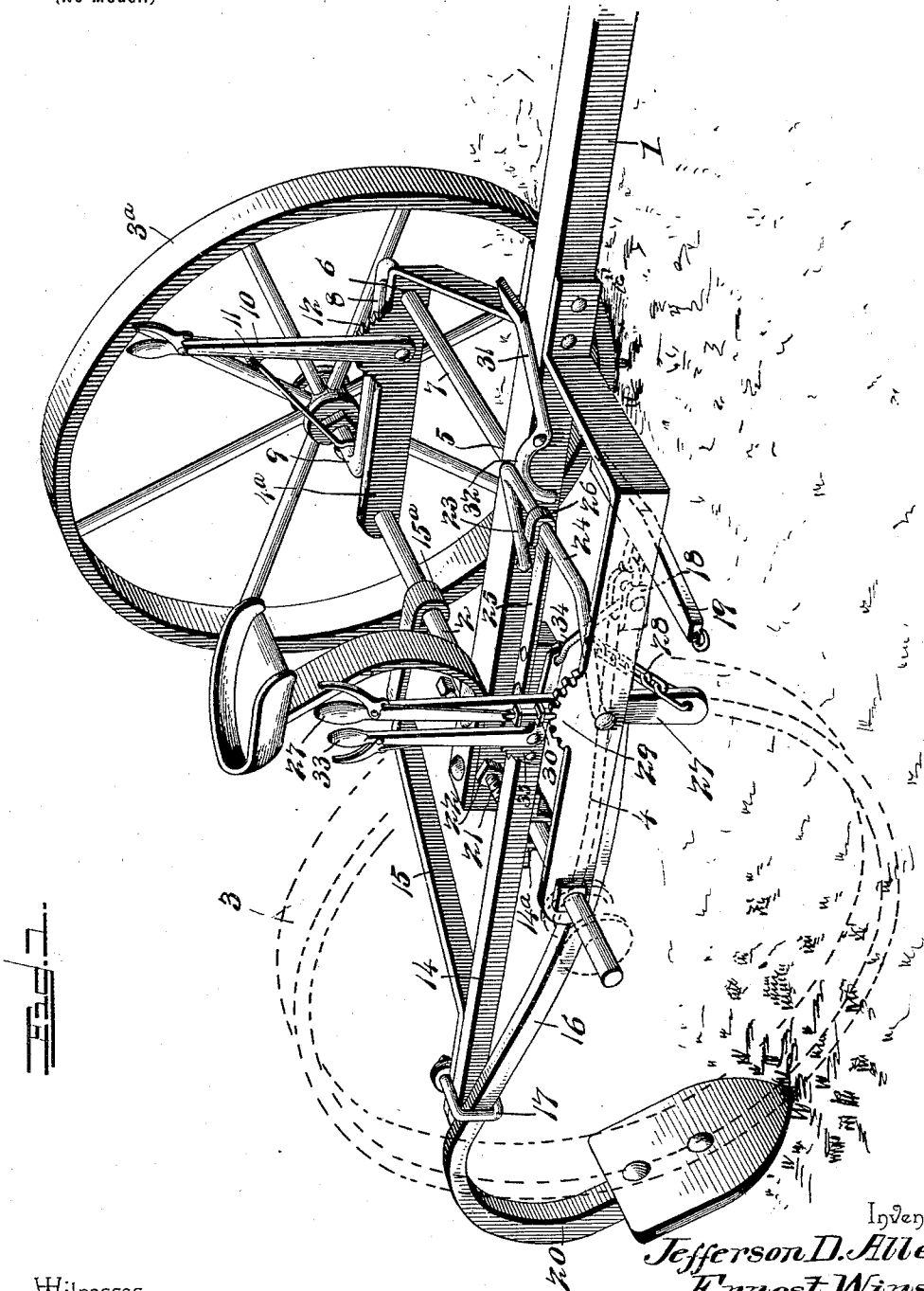
Patented Oct. 25, 1898.

J. D. ALLEN & E. WINSTON.  
SULKY PLOW.

(Application filed June 15, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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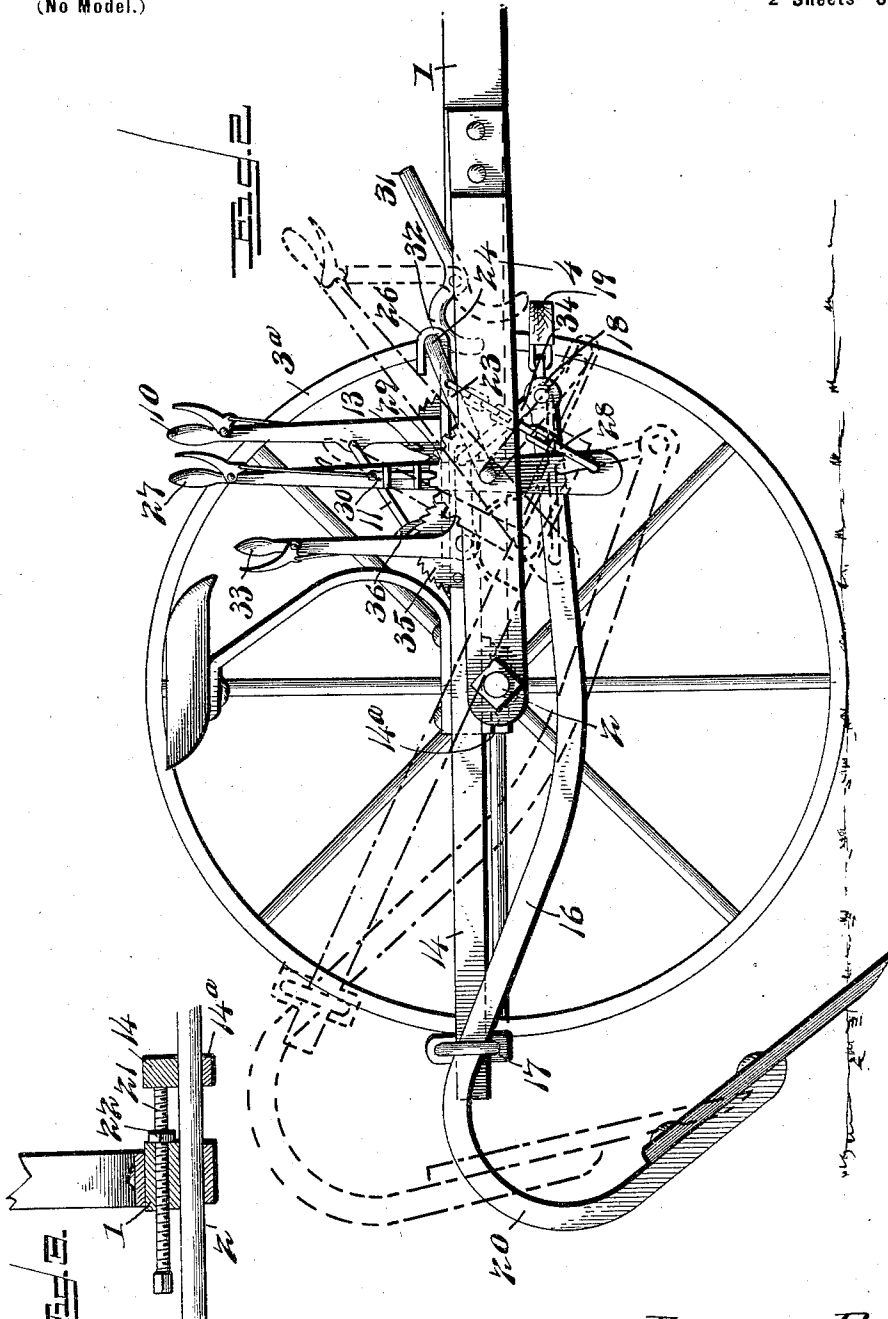
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# UNITED STATES PATENT OFFICE.

JEFFERSON DAVIS ALLEN AND ERNEST WINSTON, OF MORGAN, TEXAS.

## SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 612,809, dated October 25, 1898.

Application filed June 15, 1897. Serial No. 640,829. (No model.)

*To all whom it may concern:*

Be it known that we, JEFFERSON DAVIS ALLEN and ERNEST WINSTON, citizens of the United States, residing at Morgan, in the county of Bosque and State of Texas, have invented a new and useful Sulky-Plow, of which the following is a specification.

Our invention relates to sulky or wheel plows, and has for its object to provide a construction and arrangement of parts and means for adjusting the same, whereby the depression of the plow shovel or shovels may be regulated to operate efficiently upon uneven surfaces and whereby the point of the plow shovel or shovels may be more or less depressed, as required by the character of the work and the soil.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a plow constructed in accordance with our invention. Fig. 2 is a side view with the near wheel omitted, showing the parts in operative position in full lines and with the plow-beam tilted to elevate the plow in dotted lines. Fig. 3 is a detail transverse section of the means for adjusting the lateral position of the tilting beam.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a tongue, to the rear end of which is secured the straight member 2 of a sectional axle carrying a near wheel 3, said axle-section being extended in the opposite direction from said wheel beyond its point of attachment to the tongue and being secured to an angular side bar 4. Mounted for rocking movement in alined bearings 5 and 6 in the tongue and said side bar, respectively, in front of the straight axle-section 2, and hence eccentrically with relation thereto, is a cranked axle-section 7, the crank-arm 8 of which extends rearwardly to bring the spindle 9 approximately in vertical alinement with the straight axle-section to carry the off wheel 3<sup>a</sup>. The term "eccentrically" is employed in this description to indicate that said straight and cranked axle-sections are

mounted neither concentrically nor coaxially, but are mounted with their axes transversely disposed out of alinement to arrange the spindle portion of the cranked axle-section approximately in the vertical plane of the straight axle-section. The relative adjustment of the axle-sections is controlled by means of a lever 10, pivoted upon said side bar 4 and connected by a rigid link or pitman 11 with the cranked axle-section at a point near the spindle thereof. Locking devices for this lever may consist, as illustrated in the drawings, of a toothed segment 12, engaged by a pawl 13. It will be seen that in either position of the cranked axle-section the draft applied thereto by the frame, which includes the tongue and the side bar 4, is in the direction of the crank thereof, thereby relieving the adjusting-lever of unnecessary strain in operation. Secured to the opposite side of the tongue from said side bar 4 is an angle side bar 4<sup>a</sup>, also having its rear end attached to the straight axle-section contiguous to the plane of the near wheel 3.

Mounted upon the straight axle-section is a tilting frame, consisting of a tilting beam 14 and a brace 15, which are rigidly connected together in rear of said axle-section and are provided with alined bearings 14<sup>a</sup> and 15<sup>a</sup>, respectively, which are fitted to slide upon said straight axle-section, whereby the tilting beam may be adjusted laterally with relation to the tongue for a purpose hereinafter explained. This tilting beam carries a plow-beam 16, which extends loosely through the U-shaped clip 17, located near the rear end of the tilting beam, and which is loosely connected at its front end with said tilting beam, whereby draft applied directly to the plow-beam may operate without straining the frame of the machine. In order to facilitate such application of draft to the plow-beam, the latter is provided at its front end with a clevis 18, and the whiffletree 19 is shown attached thereto, said whiffletree having no connection with the tongue.

It will be understood that any desired construction of plow-shovel may be attached to the standard 20, formed by the rear end of the plow-beam, or a plurality or gang of plow-shovels may be attached thereto in any of the ordinary ways well known in this art, the

drawings showing simply an ordinary form of single shovel. In order, however, to adapt the apparatus for the use of shovels of different sizes, wherein the side draft varies more or less, it is desirable to provide for the lateral adjustment of the plow-beam supporting-frame, and hence the sliding connection of the tilting beam with the straight axle-section, said frame being held at the desired lateral adjustment by means of an adjustable stop, consisting of a screw 21, threaded transversely in the rear end of the draft-beam and provided with a lock-nut 22, the extremity of said screw being adapted to bear against one side of the tilting beam to limit the movement thereof toward the center of the sulky-frame, the tendency of the tilting beam, due to the side pressure upon the plow-shovel, being toward the draft-beam.

Mounted upon the sulky-frame, in operative relation with the front end of the tilting beam, is a crank-shaft 23, of which the cross-bar 24 is parallel with the straight axle-section and is adapted to bear upon the upper surface of the extremity of the tilting beam, the latter being preferably provided with a terminal arm 25, having a hooked extremity 26, in which said cross-bar is free to slide and in which it fits when the parts are in operative position. The cross-bar is of greater length than the width of the tilting beam, whereby the latter may be adjusted laterally by the means hereinbefore described without removing it from the desired position with relation to the crank-shaft. Fulcrumed upon the side bar 4<sup>a</sup> is an operating-lever 27, loosely connected, as by a chain 28, with the crank-shaft, whereby the forward movement of the free end of the lever is adapted to draw the crank-shaft downwardly to depress the front end of the tilting beam and thereby elevate the plow-shovel. Suitable locking devices, including a toothed segment 29 and a pawl 30, are employed to secure the lever, and hence the crank-shaft and plow-beam, in the desired positions. (See dotted lines in Fig. 2.) When the crank-shaft is released, the weight of the rear portion of the plow-beam and the shovel serves to depress them into contact with the soil, as shown in full lines in said figure. It is frequently necessary, however, to employ positive means for holding the plow-shovel depressed in order to keep it from running out of the soil, and to accomplish this we provide a foot-lever 31, having a cam-face 32 to bear against the crank-shaft when the latter is in its normal position, the effect of said foot-lever being to elevate the cranked portion of said shaft and thereby depress the portions of the tilting beam and plow-beam which are in rear of the straight axle-section.

In addition to the above construction we also employ means for depressing the point or nose of the plow-shovel without affecting the general position of the shovel, said means consisting of a crank-lever 33, fulcrumed

upon the tilting beam in advance of the straight axle-section and having one of its arms connected by means of a rigid link or pitman 34 with the front end of the plow-beam, said lever being provided with suitable locking devices, including a toothed segment 35 and a pawl 36. By swinging said lever forwardly its approximately horizontal arm is depressed to correspondingly move the front end of the plow-beam and, thereby tilt the shovel, and thus depress the point or nose thereof, this adjustment being wholly independent of the rocking adjustment of the tilting beam.

From the above description it will be seen that the straight and cranked axle-sections 2 and 7, respectively, are eccentrically mounted or with their centers out of transverse alignment, the straight axle-section being mounted in the frame near its rear end, while the cranked section is mounted in the frame near its front end, with its crank-arm 8 extending rearwardly to dispose the spindle portion 9 approximately in the vertical plane of the straight axle-section.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described our invention, what we claim is—

1. In a sulky-plow, the combination with a sulky-frame and a transverse axle carried thereby, of a tilting frame mounted upon a straight portion of the axle for swinging movement in a vertical plane, and lateral sliding movement parallel with said axle, and carrying a plow-beam, means for holding the tilting frame at the desired lateral adjustment, and other means for securing said tilting frame at the desired angular adjustment, substantially as specified.

2. In a sulky-plow, the combination with a sulky-frame and an axle, of a tilting frame fulcrumed upon said axle, means for securing the frame at the desired inclination, a plow-beam loosely mounted to yield forwardly and rearwardly upon the tilting frame, and draft devices connected with the plow-beam, substantially as specified.

3. In a sulky-plow, the combination with a sulky-frame and an axle, of a tilting frame mounted for lateral adjustment upon the axle and carrying a plow-beam, means for securing the tilting frame at the desired inclination, and an adjustable stop for limiting the lateral movement of the tilting frame, substantially as specified.

4. In a sulky-plow, the combination with a sulky-frame and an axle, of a tilting frame fulcrumed upon the axle for transverse adjustment, and carrying a plow-beam, means for securing the tilting frame at the desired angular adjustment, and an adjustable stop consisting of a screw threaded in a fixed member of the sulky-frame and bearing terminally

against the off side of a member of the tilting frame to limit the movement of the tilting frame in one direction, substantially as specified.

5 5. In a sulky-plow, the combination with a sulky-frame, of a tilting beam mounted for swinging movement in a vertical plane, and means for securing the tilting beam at the desired inclination, a plow-beam carried by said  
10 tilting beam and mounted for vertical swinging movement thereon, whereby the angular position of the plow-beam may be changed with relation to the tilting beam to vary the angular depression of the plow-point, and  
15 means for holding the plow-beam at the desired inclination, substantially as specified.

6. In a sulky-plow, the combination with a sulky-frame, a tilting beam and means for securing it at the desired adjustment, a plow-  
20 beam mounted upon the tilting beam for independent inclination in a vertical plane to vary the depression of the plow-point, a crank-lever fulcrumed upon the tilting beam and having an arm connected by a pitman with the  
25 contiguous extremity of the plow-beam, and means for securing said lever at the desired adjustment, substantially as specified.

7. In a sulky-plow, the combination with a sulky-frame, of a tilting beam carrying a plow-  
30 beam, a crank-shaft having a bearing upon the front end of the tilting beam, an operating-lever loosely connected with the crank-shaft for operating the same to depress the front end of the tilting beam and elevate the

plow-point, and a foot-lever having a cam-face 35 in operative relation with the crank-shaft for imparting upward pressure thereto, in opposition to the operating-lever, to depress the plow-point, substantially as specified.

8. In a sulky-plow, the combination with a 40 sulky-frame, of a tilting beam fulcrumed at an intermediate point, a plow-beam carried by the tilting beam and having its plow-point arranged in rear of the fulcrum of the tilting  
45 beam, a crank-shaft mounted upon the sulky-frame and having a bearing upon the tilting beam in front of its fulcrum, an operating-lever mounted upon the sulky-frame, and having its lower end flexibly connected, by upwardly and forwardly inclined means, with the  
50 crank-shaft for imparting downward movement to the front end of the tilting beam, to elevate the plow-point, and a foot-lever mounted upon the sulky-frame and provided, in rear of its fulcrum, with a cam-face in operative  
55 relation with the crank-shaft, for imparting upward pressure thereto in opposition to the operating-lever, to depress the plow-point, substantially as specified.

In testimony that we claim the foregoing as 60 our own we have hereto affixed our signatures in the presence of two witnesses.

JEFFERSON DAVIS ALLEN.  
ERNEST WINSTON.

Witnesses:

R. B. WINSTON,  
H. M. BELCHER.