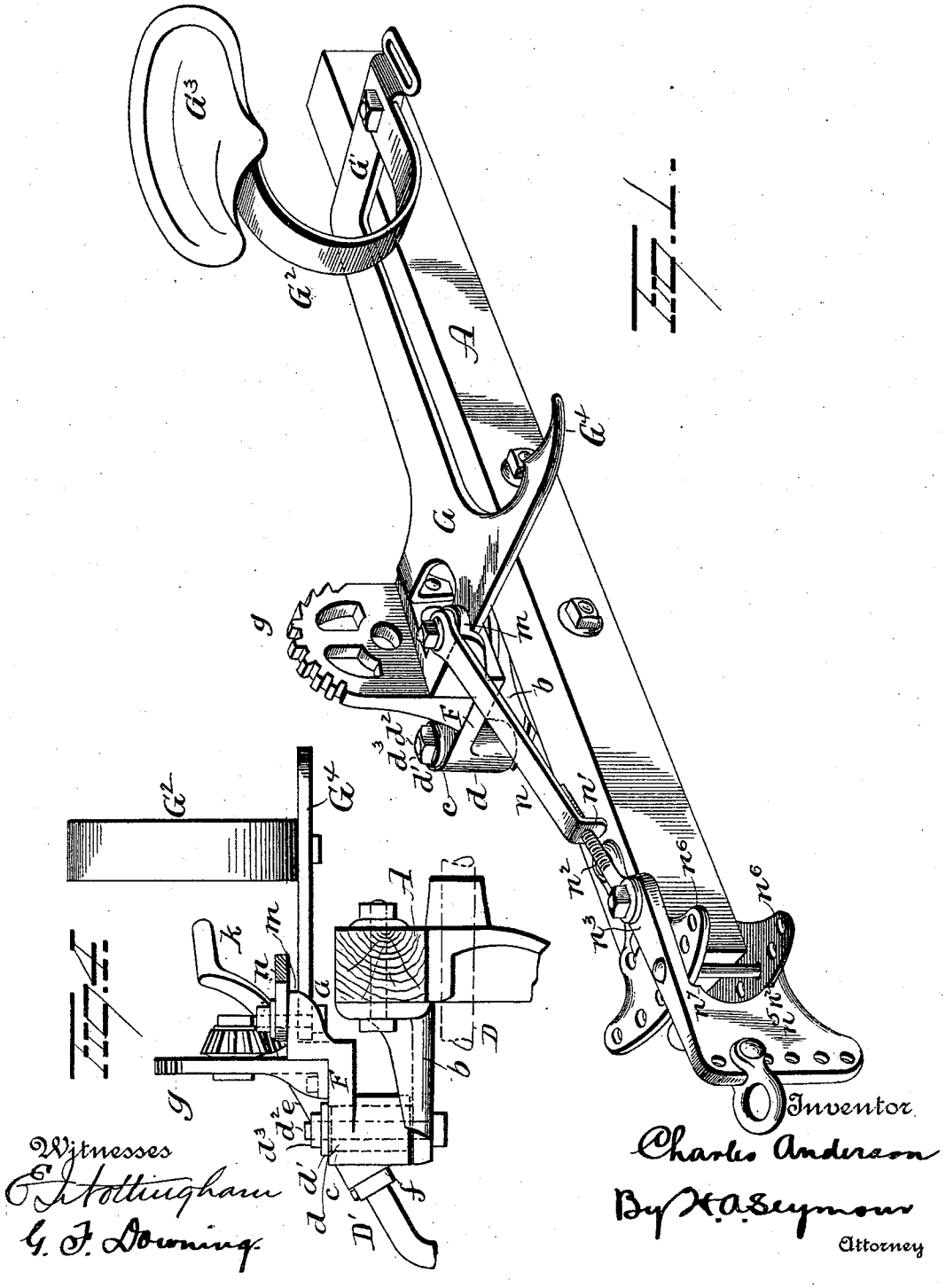
(No Model.) 3 Sheets—Sheet 1.

# C. ANDERSON.

## SULKY PLOW.

No. 521,969. Patented June 26, 1894.




THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

(No Model.)

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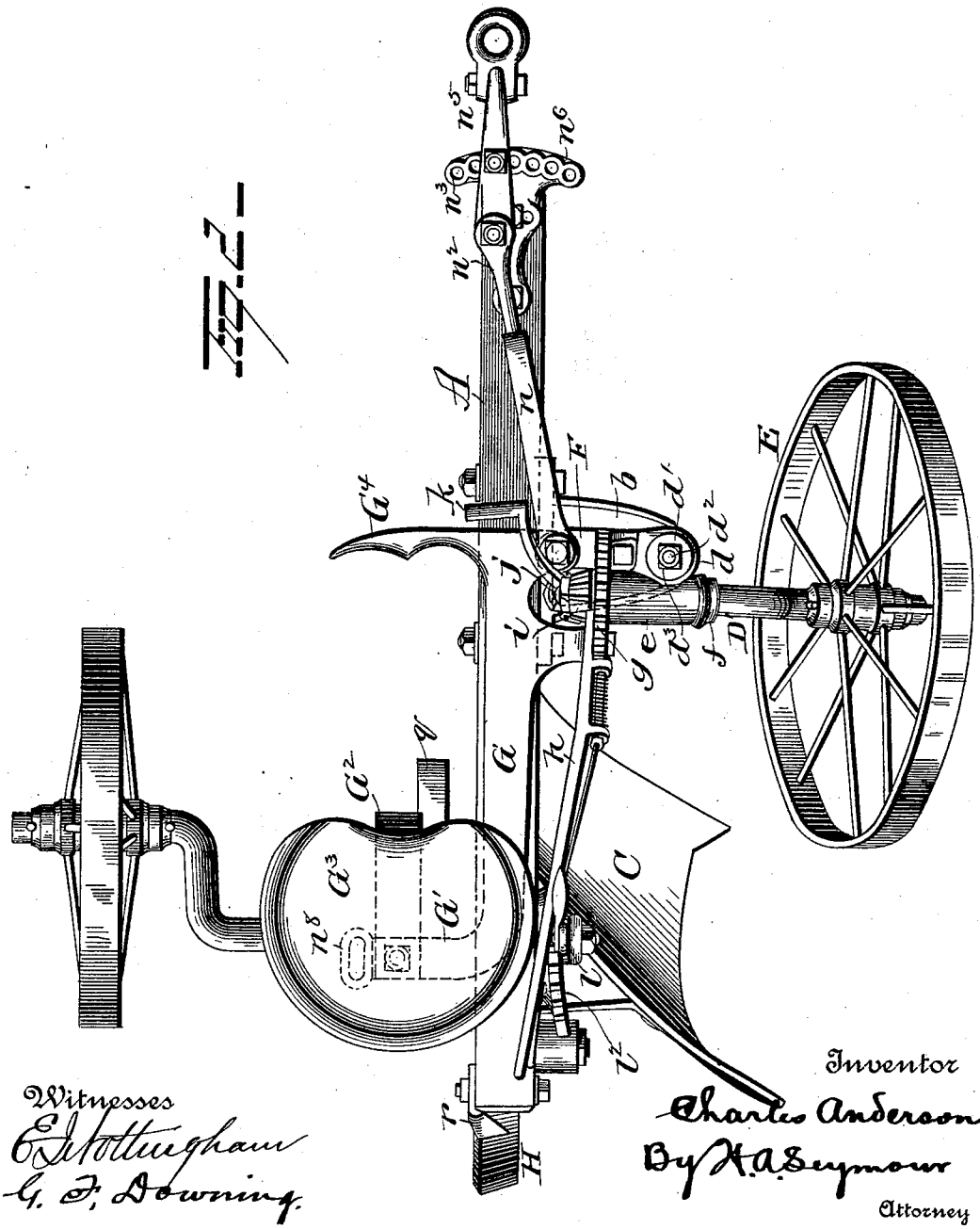


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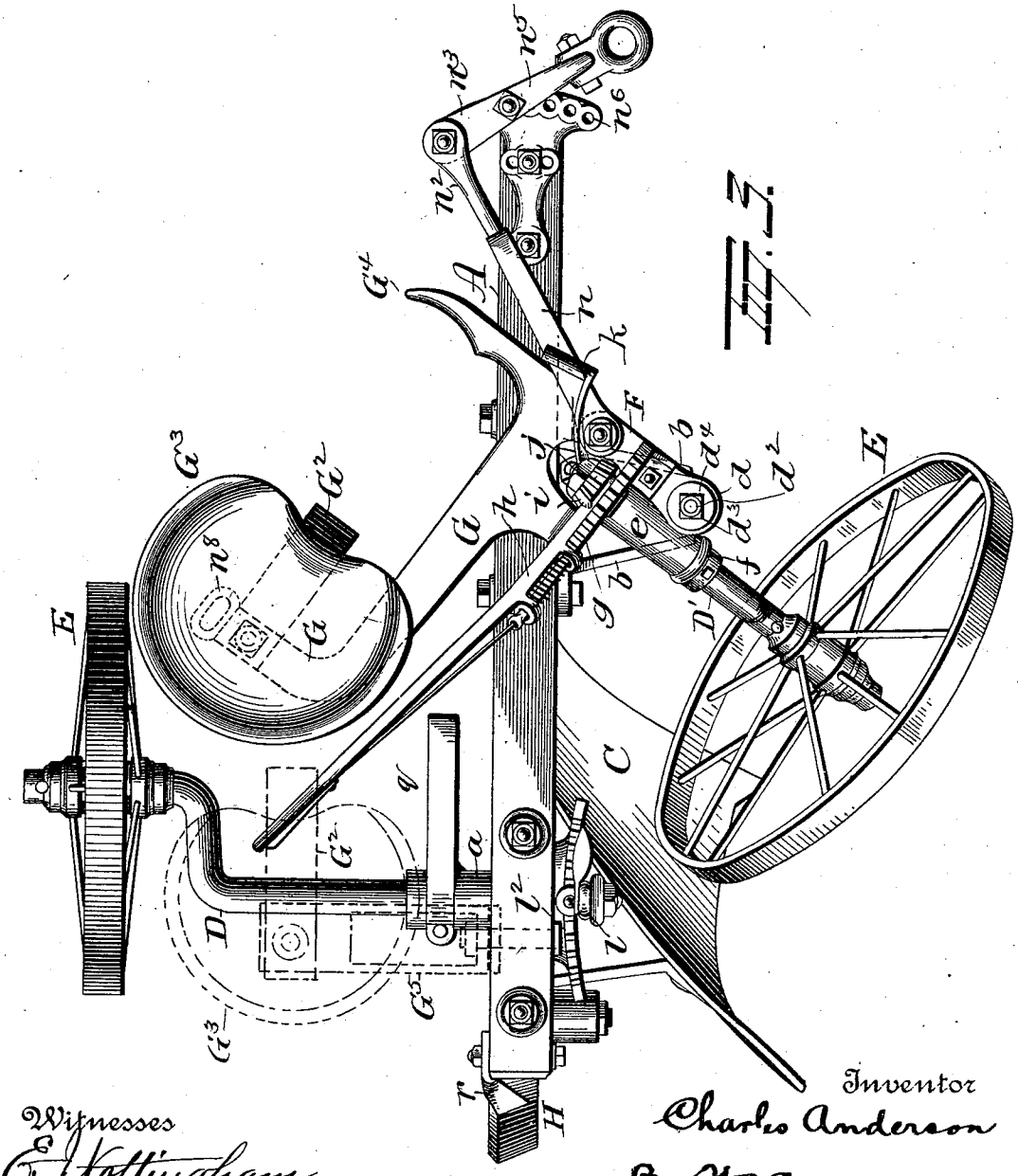

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# UNITED STATES PATENT OFFICE.

CHARLES ANDERSON, OF SOUTH BEND, INDIANA, ASSIGNOR TO THE SOUTH BEND IRON WORKS, OF SAME PLACE.

## SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 521,969, dated June 26, 1894.

Application filed February 15, 1894. Serial No. 500,244. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES ANDERSON, a resident of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Sulky-Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in sulky plows,—the object of the invention being to construct a sulky or gang plow in such manner that it can be easily made to make a square turn to the right or the left while plowing, and so that a perfect furrow will be maintained, without strain on the machine.

A further object is to produce simple and efficient means whereby a sulky plow can be made to turn a square corner in either direction solely by the operation of the team.

A further object is to so construct a sulky plow adapted to be made to make a square turn while plowing, that the driver's seat will be so shifted automatically, when such turn is made, that the driver will at all times be brought directly on a line with the team.

A further object is to guard against tipping the plow when making a gee turn and to fully accomplish this purpose by apportioning the weight properly, thereby maintaining an equilibrium.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is a perspective view illustrating my improvements. Fig. 2 is a plan view showing the parts in their normal positions. Fig. 3 is a similar view showing the positions of the parts in the act of making a gee turn. Fig. 4 is a detail view.

A represents a plow beam, to the rear end of which a standard B is fixed and to said standard the plow C is secured. Projecting laterally from the top of the standard B is a sleeve *a*. A crank axle D passes loosely through the sleeve *a* and through the standard, said crank axle having a land wheel E mounted thereon.

To the mold board side of the beam A at a point between its ends and preferably slightly in advance of the center thereof, a bracket *b* is secured, at the free end of which a hollow post or journal *c* projects upwardly therefrom, for the accommodation of a sleeve *d*, which latter constitutes a part of a bracket F, and on this post or journal and end of the bracket *b*, the bracket F and the parts carried thereby, as hereinafter described, are adapted to turn. A bolt $d^2$ passes through the hollow post or journal *c* and end of the bracket *b*, the lower end of said bolt being headed and the other end being screw threaded for the reception of a nut $d^3$, between which and the post or journal, a washer $d^4$ is located. The bracket F is also made with a diagonal sleeve *e*, constituting an extended diagonal bearing for a crank axle D′, which passes loosely through said sleeve, said crank axle having a furrow wheel E′ mounted thereon. The crank axle D′, is provided with a collar *f* adapted to bear against the end of the sleeve *e*. Secured to or made integral with the bracket F and projecting upwardly therefrom, is a toothed segment *g*, with which the locking bar or a lever *h* is adapted to engage, a portion of the teeth of said segment being made square and a portion being made in the form of ratchet teeth. The lever *h* is pivotally connected to the toothed segment *g* and carries a segmental gear *i* adapted to mesh with a similar segmental gear *j* carried by the end of the crank axle D′, and at the upper end of said crank axle a foot lever *k* is provided. From this construction and arrangement of parts it will be seen that by pulling the lever *h* or pushing against the foot lever *k*, the crank axle D′ will be made to turn and the plow will be raised. It will also be seen that the plowman can operate the lever *h* and the foot lever *k* simultaneously, thereby rendering the raising of the plow very easy. The reverse movement of the levers *h*, *k*, will cause the plow to be lowered. It will also be seen that the sleeve *e* affords the proper inclination of the forward furrow wheel.

A lever *l* is secured to the end of the crank

axle D in proximity to the beam A and carries a locking bar adapted to engage a toothed segment $l^2$ preferably secured to the standard A. By the operation of the lever $l$ the depth to which it is desired to plow is regulated.

The swinging bracket F is provided at its inner end with a lug $m$, which projects slightly above the beam A. To this lug, one end of a bar or pitman $n$ is pivotally connected, and the forward end of said bar or pitman is made with a lug $n'$ having a screw threaded perforation for the reception of the screw threaded end of an eye-bolt $n^2$, the other end of said eye bolt being pivotally connected to an arm $n^3$ projecting rearwardly from a clevis $n^5$, which latter is pivotally connected to brackets $n^6$ secured to the forward end of the beam A. The clevis $n^5$ is free to turn in one direction, but will be limited in its movement in the opposite direction by means of shoulders $n^7$ engaging the brackets $n^6$.

A seat bar G is removably secured at its forward end to the swinging bracket F and extends rearwardly, preferably to a point over or beyond the crank axle D, where it is made with a laterally projecting arm G', to which the spring standard $G^2$ of the driver's seat $G^3$ is secured, and the free extremity of the laterally projecting arm may be provided with an eye $n^8$ for the reception of a wrench. At its forward end the seat bar G is provided with a laterally projecting foot rest $G^4$, which may be made integral therewith or it may be made separate and secured thereto by means of bolts or otherwise. At the rear end of the beam a small furrow wheel H is located.

In order to remove dirt adhering to the periphery and face of the small furrow wheel H, a scraper $r$ is attached to the rear end of the beam A.

A brake $q$ is preferably mounted on the axle D and adapted to engage the small furrow wheel H.

Plows of the class to which my invention relates can be turned to the left while plowing, but as usually constructed they cannot be turned to the right without removing the plow from the ground and without strain or injury to the machine. By the construction and arrangement of parts above described, the plow can not only be turned to the left, but can also be made to make a square turn to the right while the plow is in the ground, and without strain or injury to any of the parts. When it is desired to make a turn to the right, the team attached to the clevis will be turned in that direction, whereupon the clevis will be made to turn, which motion of the clevis will be transmitted to the swinging bracket F, through the connection thereof with the clevis. The swinging bracket F being thus made to turn, the axle D' will be swung around and the wheel E' carried thereby will be moved back to the position shown in Fig. 2, and the continued movement of the team will cause the plow to make a square turn without strain upon the parts, and maintaining a perfect furrow. When the turn shall have been made, the parts will be automatically brought back to their normal positions by the action of the team in moving forward in a straight line.

The object of connecting the seat bar with the swinging bracket F so that it will move therewith, is to permit the driver to be brought directly on a line with the team when a turn is made and also to guard against tipping the plow when making a "gee" turn, which this device fully accomplishes by apportioning the weight properly, thereby maintaining an equilibrium.

While it may, in most cases, be desirable to so arrange the driver's seat that it will be automatically moved when the plow is turned, whereby the driver will be brought in line with the team when a turn is made, still it is not essential to the proper operation of my improved swinging or turning devices that the seat be so arranged.

It may, in some cases, be desired to dispense with the swinging seat and make a rigid connection between the seat standard and the plow beam. When such arrangement is desired, the seat bar G will be removed from the swinging bracket F and the seat standard detached from the bar G. The spring seat standard $G^2$ will then be secured to a bracket $G^5$ rigidly attached to and projecting laterally from the rear portion of the plow beam, as shown in dotted lines in Fig. 3.

My improvements are very simple in construction, automatic in operation and effectual, in every respect, in the performance of their functions.

Various slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not wish to limit myself to the precise details of construction herein set forth; but,

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

1. In a sulky plow, the combination with a beam and a fixed bracket projecting therefrom, of a swinging bracket mounted on the fixed bracket, an axle mounted in the swinging bracket, a wheel on the end of said axle, a clevis pivotally connected to the beam, and a connection between said pivoted clevis and the swinging bracket, substantially as set forth.

2. In a sulky plow, the combination with a beam and a fixed bracket projecting laterally therefrom, of a swinging bracket mounted on said fixed bracket, an axle mounted in said swinging bracket, a wheel on the end of said axle, a pivoted clevis at the forward end of said beam, and an adjustable connection between said pivoted clevis and the swinging bracket, substantially as set forth.

3. In a sulky plow, the combination with a beam and a fixed bracket projecting laterally therefrom, of a swinging bracket mounted on

the fixed bracket, an axle mounted in the swinging bracket, a wheel mounted on the axle, a pivoted clevis, an arm projecting from said pivoted clevis, stops on the clevis to limit its movement in one direction, and a connection between said arm of the clevis and the swinging bracket, substantially as set forth.

4. In a sulky plow, the combination with a beam and a fixed bracket projecting laterally therefrom, of a swinging bracket mounted on the fixed bracket, an axle mounted in the swinging bracket, a wheel at the end of said axle, a pivoted clevis, a bar or pitman connected with said swinging bracket and having a screw threaded lug at its other end and a screwthreaded eye bolt connected with the pivoted clevis and adapted to pass through said screwthreaded lug, substantially as set forth.

5. In a sulky plow, the combination with a beam, of a fixed bracket projecting laterally therefrom, a hollow post or journal projecting upwardly from said fixed bracket, a swinging bracket having a sleeve to receive said hollow post or journal, a bolt passing through said hollow post or journal and the fixed bracket and having a head at one end, a nut on the other end of said bolt, a washer between said nut and sleeve, an axle mounted in said swinging bracket, and a wheel on said axle, substantially as set forth.

6. In a sulky plow, the combination with a beam, of an axle having a pivotal relation thereto, a wheel on said axle, a seat bar projecting from said pivotal connection and adapted to move with it, and a seat on said seat bar, substantially as set forth.

7. In a sulky plow, the combination with a beam, of a swinging bracket carried thereby, an axle mounted in said swinging bracket, a wheel on said axle, a seat bar secured to and projecting from said swinging bracket and a seat carried by said seat bar, substantially as set forth.

8. In a sulky plow, the combination with a beam, of an axle having a pivotal connection therewith, a wheel on said axle, a seat connected with and adapted to move with said pivotal connection, and devices between said pivotal connection of the axle and the team whereby when the team turns at an angle to the longitudinal axis of the plow beam, said wheel and seat will be automatically turned, substantially as and for the purpose set forth.

9. In a sulky plow, the combination with a beam, of a swinging bracket carried thereby, an axle mounted in said swinging bracket, a wheel on said axle, a seat bar secured at one end to said swinging bracket and having a laterally projecting arm at its free end, and a seat secured to said laterally projecting arm, substantially as set forth.

10. In a sulky plow, the combination with a beam, of a swinging bracket carried thereby, an axle mounted in the swinging bracket, a wheel on said axle, a seat bar secured to said swinging bracket, a seat secured to one end of said seat bar and a foot rest at the other end thereof, substantially as set forth.

11. In a sulky plow, the combination with the plow beam, of a bracket having pivotal connection with said beam, and an axle sleeved in said bracket whereby it is capable of being rocked axially, said bracket carrying a toothed segment, and operating in connection therewith for rocking the axle, substantially as set forth.

12. In a sulky plow, the combination with a beam, of an axle having a pivotal relation thereto, a wheel on said axle, a removable seat bar projecting rearwardly from said pivotal connection and a seat at the rear end of said seat bar, substantially as set forth.

13. In a sulky plow, the combination with a plow beam, of a bracket having pivotal connection with the beam, an axle connected with the bracket whereby it may be turned axially relative thereto, a segment on the bracket, a lever operating in connection therewith for turning the axle, and a seat carried by the bracket whereby the relative positions of the lever and seat are sustained, substantially as set forth.

14. In a sulky plow, the combination with a plow beam, of a bracket pivotally connected with the beam, an axle capable of rocking axially in said bracket, said axle having a foot lever on its inner end, a segment secured on the bracket, a lever pivoted thereto and adapted to operate to rock the axle, a seat supported by the bracket whereby all of said parts swing with the bracket when the latter is swung on its pivot, substantially as set forth.

15. In a sulky plow, the combination with the plow beam, of a bracket pivotally connected with the beam, a clevis pivoted to the beam, and an extensible connection extending from the bracket to the clevis and pivotally connected to each of said parts, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES ANDERSON.

Witnesses:
JNO. W. HARBAN,
J. T. WALKER.