No. 657,862. Patented Sept. 11, 1900.

C. R. DAVIS.

SULKY PLOW.

Application filed Mar. 3, 1900.

(No Model.) 4 Sheets—Sheet 1.

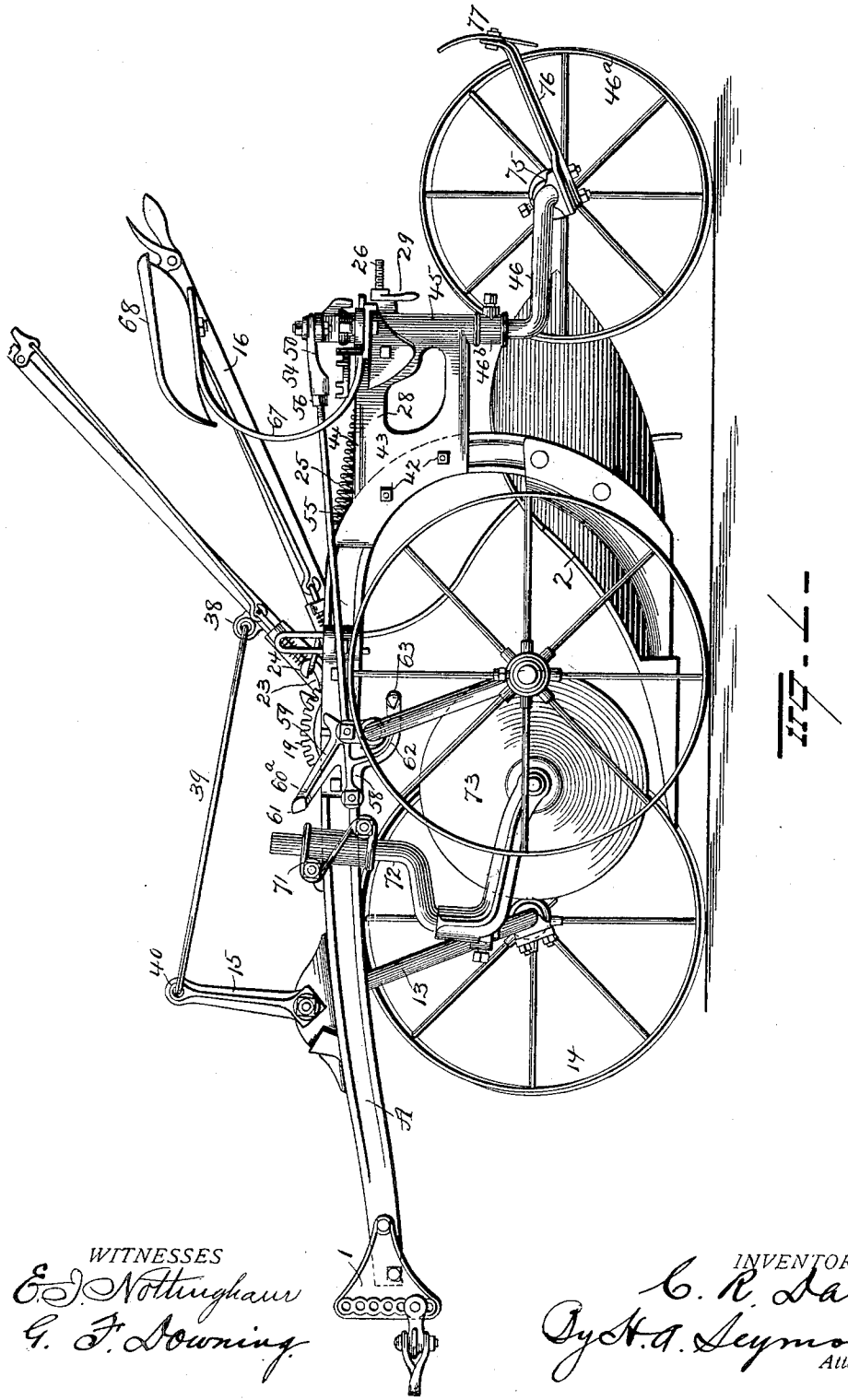


FIG. 1.

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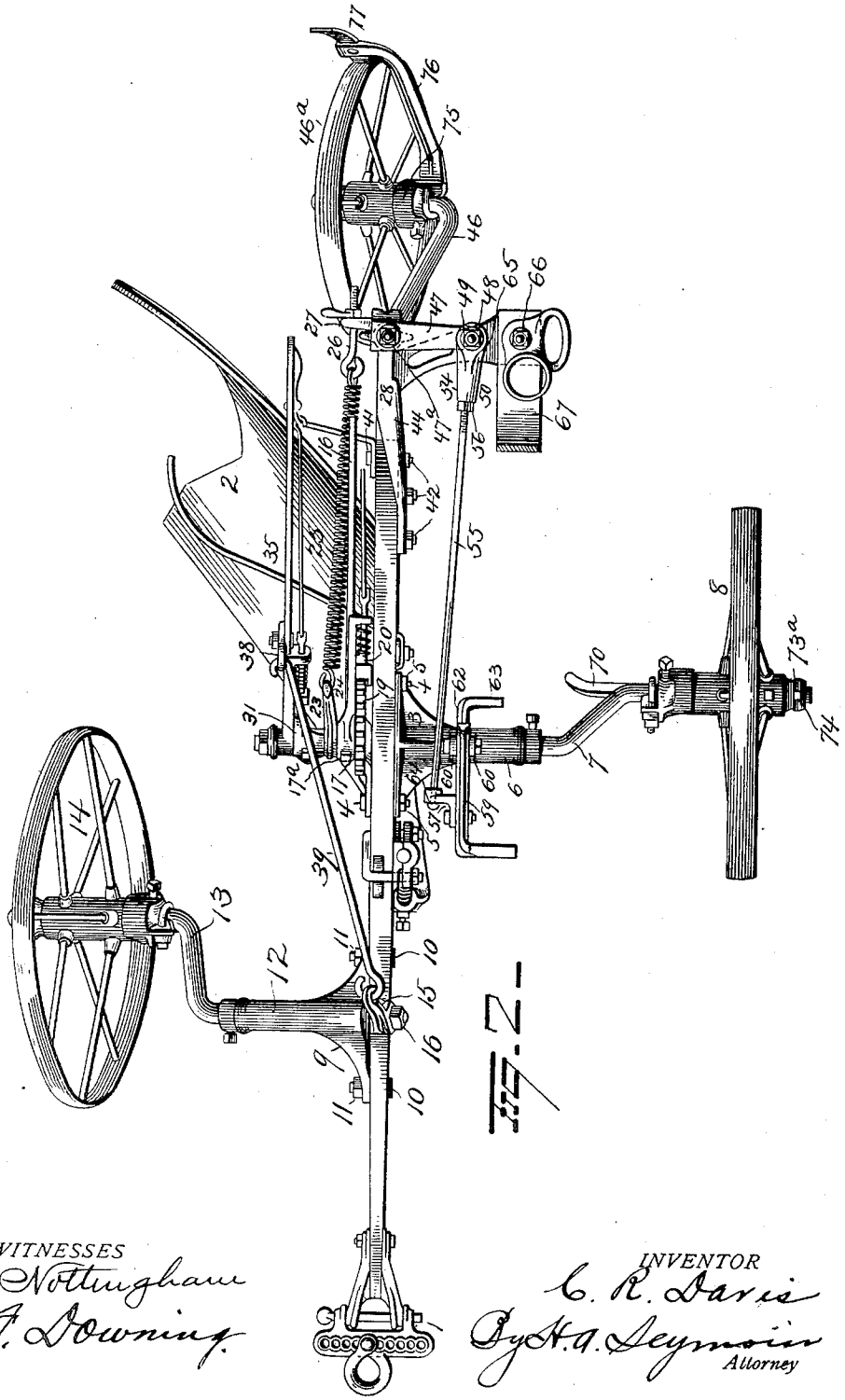
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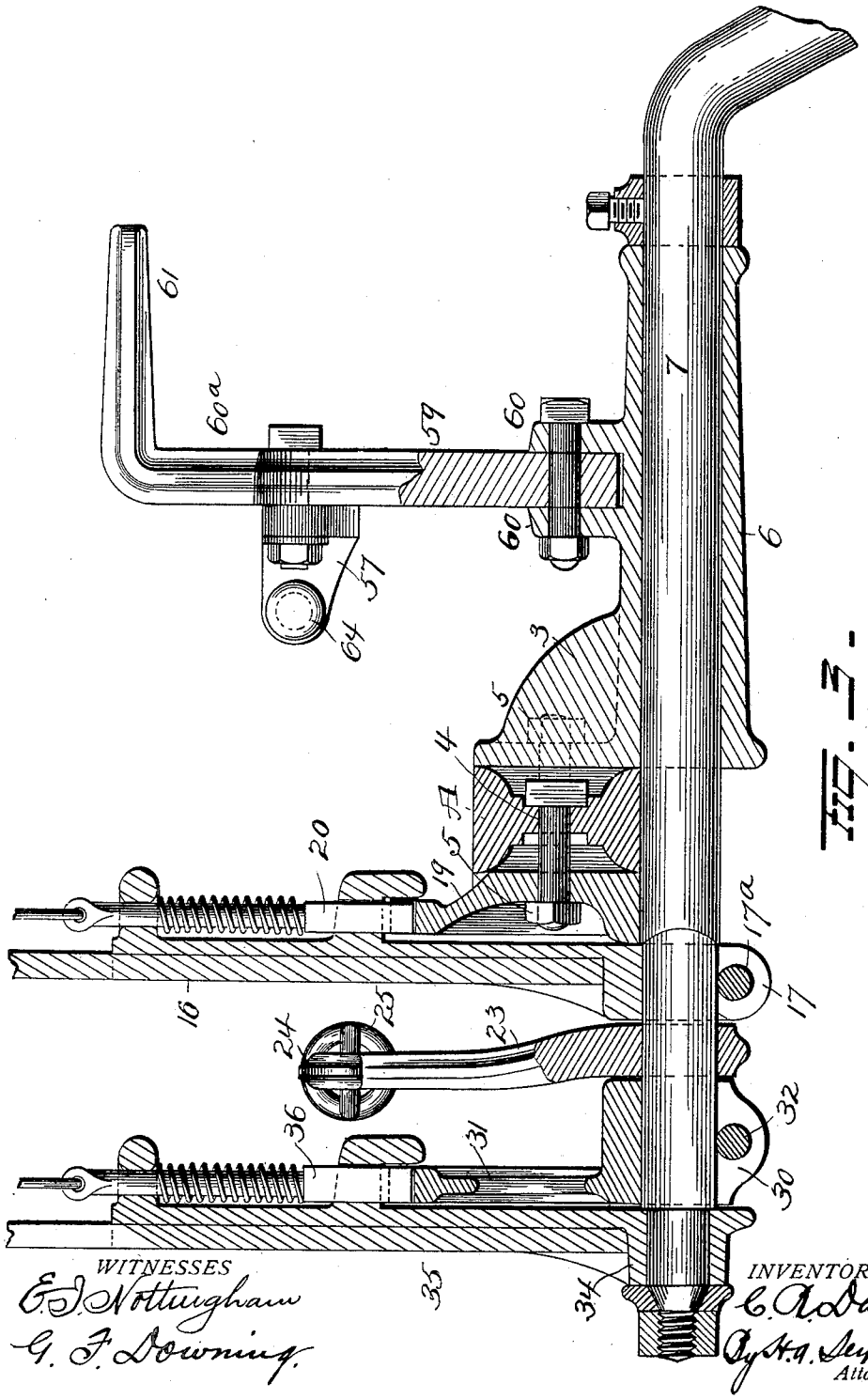


Fig. 3.

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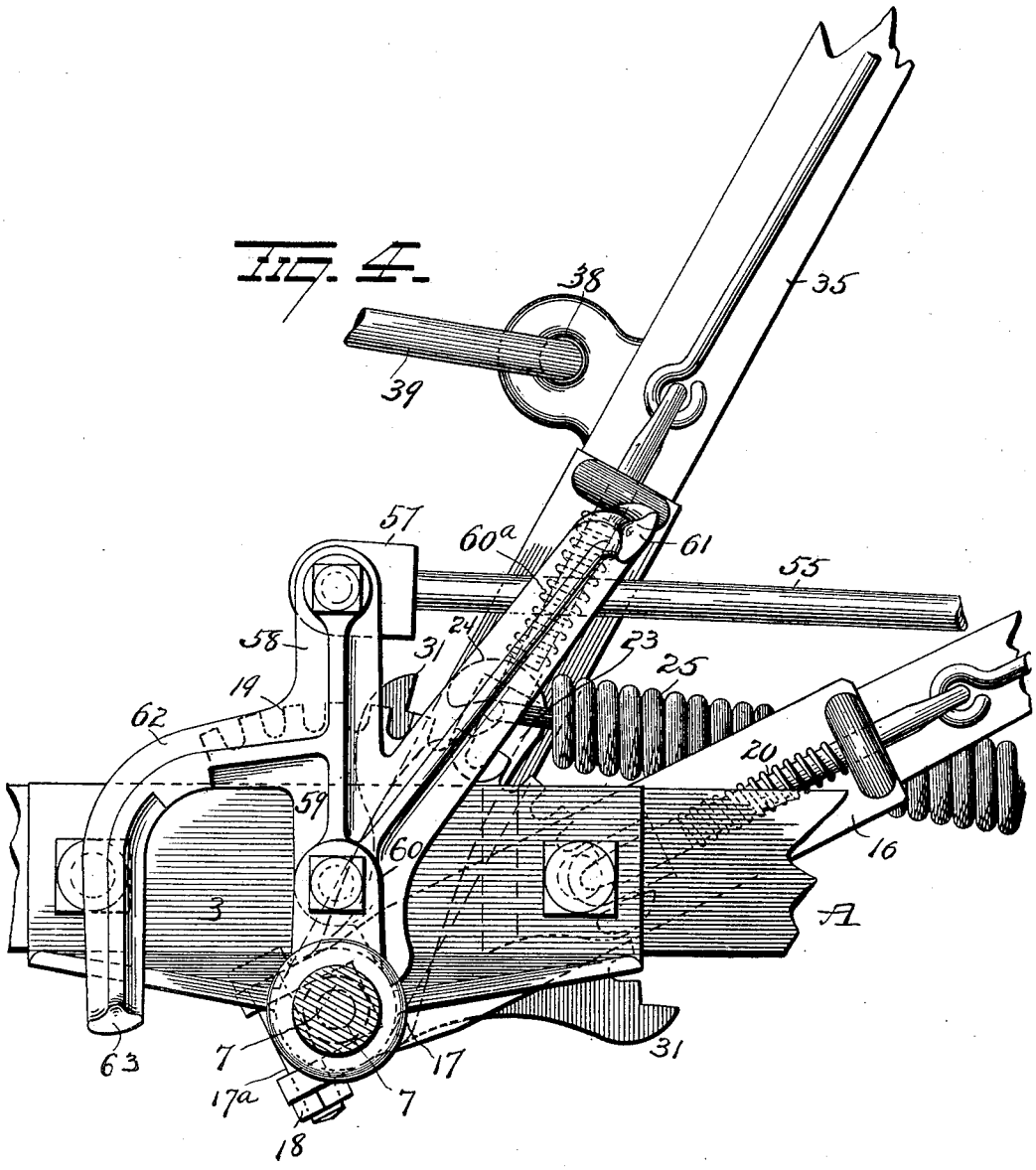
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SULKY PLOW.

(Application filed Mar. 3, 1900.)

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Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CALVIN R. DAVIS, OF SOUTH BEND, INDIANA, ASSIGNOR TO THE SOUTH BEND IRON WORKS, OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 657,862, dated September 11, 1900.

Application filed March 3, 1900. Serial No. 7,223. (No model.)

To all whom it may concern:

Be it known that I, CALVIN R. DAVIS, 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, one object of the same being to provide improved means for manipulating the land and furrow wheels thereof simultaneously and the latter independently of the land-wheel.

A further object is to provide means for normally retaining the caster-wheel in its proper position while the plow is making a straight furrow and for releasing it when turning corners.

A further object is to provide a sulky-plow of comparatively few inexpensive parts, of simple construction, easy to operate, and strong and durable when in use.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view illustrating my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a view in transverse section through the land-wheel axle, and Fig. 4 is a detail view of the caster-wheel-operating mechanism.

A represents the plow-beam, provided with a clevis 1 at its front end and curved downwardly at its rear end, the rear curved end carrying the plow 2. About midway between the ends of the beam A on one side is secured a bracket 3 by means of bolts 4 passing through said bracket 3 and beam A and secured in place by nuts 5. The bracket 3 is provided with an elongated tubular bearing 6 for the accommodation of a crank-axle 7, carrying the land-wheel 8. The tubular bearing 6 is disposed in a plane below the plane of the beam A and the shaft 7 is adapted to project through said bearing beneath the beam and extend a short distance beyond the same for a purpose which will more fully hereinafter appear. A bracket 9 is secured on the opposite side of the beam A near the forward end thereof by means of bolts 10 and nuts 11, and is made with an inclined tubular bearing 12 for the accommodation of a crank-axle 13, carrying the furrow-wheel 14. The axle 13 projects beyond the inner end of the bearing 12 and is made angular throughout a portion of its length for the attachment of an arm 15, having an angular hole in its lower end to fit onto said shaft, and the extreme inner end of the axle is screw-threaded for the reception of a nut 16 to lock the arm thereon. The end of the land-wheel axle which projects beyond the beam is made angular in cross-section throughout a portion of its length, and a lever 16, having a bifurcated end 17, is secured on the axle by means of a bolt 17^a and nut 18, as shown, and a toothed segment 19 is secured to the beam A for the reception of a spring-actuated detent 20 on the lever 16. An upwardly-projecting arm 23, having an angular opening in its lower end, is mounted on the angular portion of the axle and is made hook-shaped at its upper end, as shown at 24, for the attachment of one end of a coiled spring 25, the other end of which is connected with an eyebolt 26, mounted in a lug 27, integral with the caster-wheel-supporting bracket 28, secured to the curved end of the beam A. The eyebolt 26 is threaded throughout the greater portion of its length and is provided with an elongated locking-nut 29, having a threaded hole in one end for the reception of the eyebolt. This nut 29 is disposed against the rear face of lug 27 and holds the eyebolt and spring in place, and it will be seen that the nut 29 can be turned to adjust the eyebolt in the lug, and thereby adjust the tension of the spring, The elongated bifurcated end 30 of a toothed segment 31 is secured on the angular portion of the axle by means of a bolt 32 and nut. The axle 7 is made circular near its outer end adjacent to the toothed segment 31 for the reception of a circular bearing 34 in the lower end of a lever 35, loose on said axle. The lever 35 is provided with a spring-actu-

ated detent 36, adapted to engage the toothed segment 31 and lock said lever and segment together. The lever 35 is provided on its front edge near its lower end with an eye 38, and a rod 39, having a hook at each end, connects the eye 38 with the upper end of arm 15, having a hole 40 therein for the reception of the hooked end of said rod. It will thus be seen that when the lever 35 is operated it will raise and lower the furrow-wheel without affecting the rest of the plow in the slightest; but when the lever 16 is operated it will raise and lower the beam and plow secured thereto, for when the lever turns the axle 7 the latter will move the toothed segment 31 and lever 35 (locked thereto by the detent 36) in the same direction, and the furrow-wheel axle will be operated by the movement of the lever 35, while the spring 25 will serve as a counterbalance to assist in raising the plow from the ground.

The caster-wheel-supporting bracket 28, heretofore referred to, comprises an open-work plate 43, conforming at its forward edge to the shape of the curved portion of the beam A, and is secured thereto by means of bolts 41, passing through said plate and beam and secured in place by nuts 42. The plate 43 is provided on its upper edge throughout the greater portion of its length with a flange 44, extending at right angles thereto, and the rear edge of said plate is made with a vertical tubular bearing 45 for the vertical portion of the caster crank-axle 46, carrying caster-wheel 46^a, the bracket being supported on collar 46^b, rigidly secured to the axle. The upper end of said axle projects through the tubular bearing and is made angular to fit within an angular opening in an arm 47, and the extreme upper end of said axle is screw-threaded for the reception of a nut 47^a to secure the arm in place. To the outer end of arm 47 is pivotally connected, by means of a bolt 48 and nut 49, a bracket 50, provided at its forward end with an internally-threaded ring 54 for the reception of the threaded end of a rod 55, which latter is provided on its threaded end against the bracket 50 with a nut 56, so that said nut can be operated to adjust the rod to its proper position. The forward end of the rod 55 is disposed in a bracket 57, pivotally secured to one member 58 of a bell-crank foot-lever 59, pivotally supported between parallel lugs 60 on the land-wheel-axle bearing 6, the other member 60^a of said lever being provided on its free end with an outwardly-projecting foot-rest 61, and the member 59 is provided between its ends with a downwardly and rearwardly projecting arm 62, provided on its free end with a foot-rest 63. The forward end of the rod 55 is provided with an enlargement or head 64 to prevent its escape from the bracket. The operation of this portion of my improved plow is as follows: When the foot-lever 59 is pushed forward, the caster-wheel will be moved to its working position and the forward end of rod 55 will be carried down slightly below the center of the pivotal point of the member 58, thereby locking the rod against movement and securing the caster-wheel in position. When turning in one direction, the wheel is free to caster as the rod slides forward in the bracket 57, and after the turn of the plow is complete the caster-wheel finds its original position and is made secure in such position by the position of the foot-lever. When the plow is to be turned in the opposite direction, the operator presses the arm 62 forward and unlocks the foot-lever 59, and thus permits the wheel to caster freely in either direction.

The caster-axle-supporting bracket 28 is provided with an integral arm 65, projecting at right angles thereto and provided with a series of holes for the reception of a bolt 66 to secure a curved seat-supporting spring 67 thereto, on the upper end of which is secured the driver's seat 68.

To the sand-band 69 on the land-wheel axle is secured an inwardly-projecting foot-rest 70 for supporting one foot of the driver; his other foot resting on the foot-rest 60 on the lever 59. A bracket 71 is secured on the beam A between the furrow-wheel and land-wheel axles for supporting a forked rod 72, in which the colter 73 is revolubly mounted.

The furrow-wheel 14 and caster-wheel 46^a are each provided with dirt and grit excluding bearings disclosed in Patent No. 631,986, granted to me August 29, 1899, while the land-wheel 8 is secured on its axle by a sleeve 73^a, held in place by a set-nut 74. The sand-band 75 on the caster-wheel axle is provided with a rearwardly-projecting arm 76, carrying a scraper 77 to scrape the dirt from said wheel.

It will be seen that with my improved plow, as the furrow-wheel lever is loosely connected to the end of the land-wheel axle and is connected with the furrow-wheel axle, as heretofore described, it makes it possible to set the furrow-wheel to the proper position and the furrow-wheel lever back on a line with the lifting-lever within easy range of the seat, so that the operator is not compelled to leave the seat when it becomes necessary to manipulate the furrow-wheel lever. The plow-bottom is turned to or raised from the ground with one lever, thus greatly simplifying the plows of this general character now in use. When lifting the plow-bottom and when the plow is lifted from the ground at the end of the furrow, the plow runs out on the unplowed land with the plow perfectly level and not tilting to one side, thereby causing the operator to sit uncomfortably in a cramped position, as is usual with all similar plows formerly made.

Various slight changes might be resorted to in the general form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not limit myself to the precise details set forth, but consider myself at liberty

to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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, of a furrow-wheel crank-axle and a land-wheel crank-axle, a lever secured to the land-wheel crank-axle, an arm also secured to said last-mentioned axle, a spring secured at one end to said arm and at the other end to the beam, a toothed segment secured to said land-wheel crank-axle, a lever loosely mounted on said axle and adapted to engage said segment and a rod connecting the loosely-mounted lever and the furrow-wheel crank-axle.

2. In a sulky-plow, the combination of a furrow-wheel crank-axle, a lever for turning said furrow-wheel axle independently, a lever for simultaneously turning the furrow and land wheel axles, an arm secured to the land-wheel axle between said levers and a spring connected with the said arm and the beam and adapted to assist in raising the plow.

3. In a sulky-plow, the combination with a beam, furrow and land wheel axles connected thereto and a single lever for simultaneously turning said axles to raise and lower the beam, of an arm secured to one of said axles and a spring connected to said arm and to the beam and adapted to assist in raising the plow from the ground.

4. In a sulky-plow, the combination with a beam, land-wheel and furrow-wheel crank-axles connected therewith, of levers on the land-wheel axle for operating the furrow-wheel axle, an arm secured to the land-wheel axle, and a spring connected with said arm and the beam to assist in raising the plow from the ground.

5. In a sulky-plow, the combination with a beam, a furrow-wheel crank-axle on said beam and an arm secured to said axle, of a land-wheel crank-axle revolubly supported on the beam, a lever secured to said land-wheel axle, a toothed segment also secured to said axle, another lever loose on said axle, means on said last-mentioned lever adapted to lock the same and toothed segment together, a rod connecting said last-mentioned lever and arm on the furrow-wheel axle, an arm secured on the land-wheel axle, and a spring secured at one end to the rear portion of the beam and at its other end to the free end of said last-mentioned arm.

6. In a sulky-plow, the combination with a beam, a bracket secured to said beam and a caster-wheel crank-axle mounted in said bracket, of an arm secured to said axle, and a foot-lever and means connecting said axle and arm for turning the caster-wheel axle and locking it against movement in one direction.

7. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle revolubly connected therewith and an arm on said axle projecting at right angles thereto, of a bell-crank foot-lever connected with said beam and a rod connecting one member of the lever with the arm on the caster-wheel axle and means for limiting the movement of said lever and permitting the connection of the rod to the lever to descend below the pivotal support of the lever for locking the caster-wheel axle against movement in one direction.

8. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle revolubly connected therewith, and an arm on said axle projecting at right angles thereto, of a bell-crank foot-lever supported by said beam, a pivoted bracket on one member of said lever, a headed rod disposed in the bracket and secured to the arm on the caster-wheel axle, and means for locking said last-mentioned member of the lever with its free end below its pivotal support.

9. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle connected therewith and a bell-crank foot-lever supported by said beam, of a bracket on one member of the foot-lever, a rod connecting said bracket with the caster-wheel crank-axle and adapted to be moved to a plane below the axis of the foot-lever to lock the caster-wheel axle against movement in one direction and means for releasing the rod from its locked position.

10. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle connected therewith and a bell-crank foot-lever supported by the beam, of a rod connecting one member of the foot-lever with the caster-wheel axle and adapted to be moved below the pivotal support of said member to lock the axle against movement in one direction, and a downwardly and rearwardly projecting arm on said member for releasing the lever from its locked position.

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

CALVIN R. DAVIS.

Witnesses:
EDWIN NICAR,
MICHAEL M. MATTHEWS.