No. 759,489. PATENTED MAY 10, 1904.

S. V. WEEKS.

DISK PLOW.

APPLICATION FILED MAY 22, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 9.

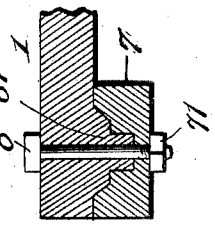


Fig. 1.

Fig. 7.

Witnesses

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

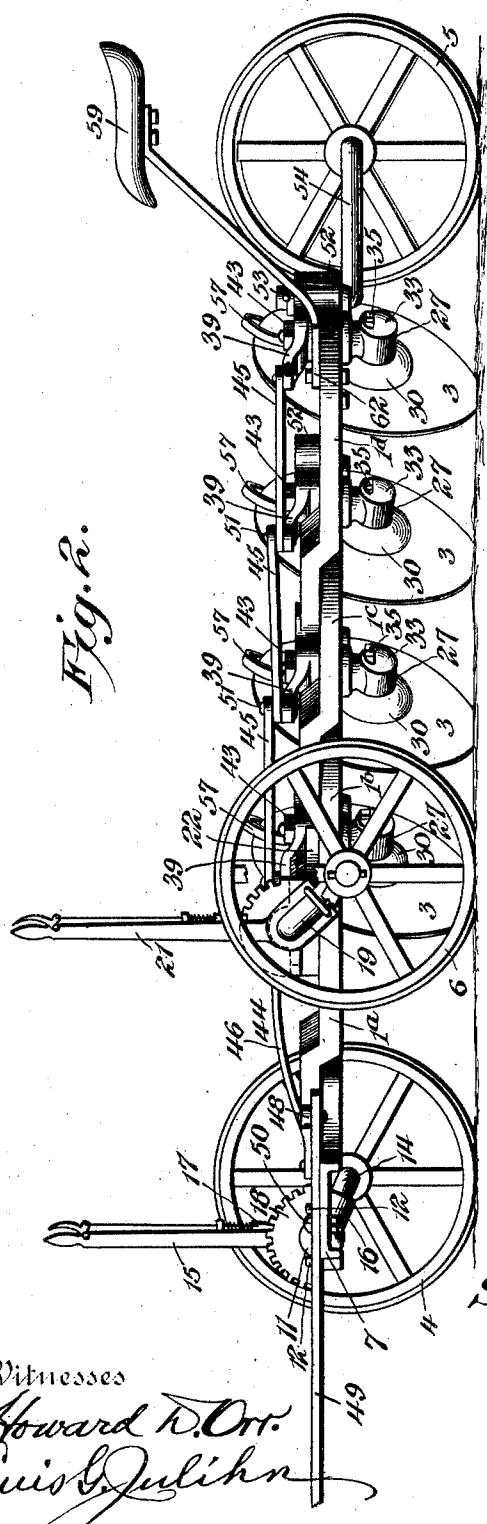


Fig. 6.

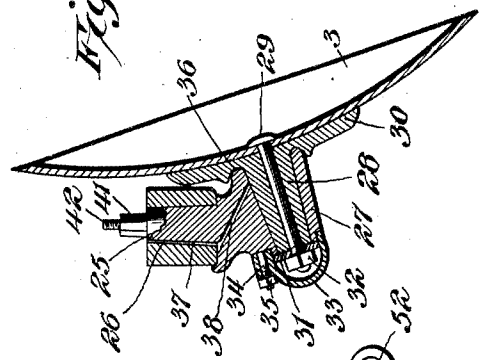


Fig. 8.



Fig. 4.

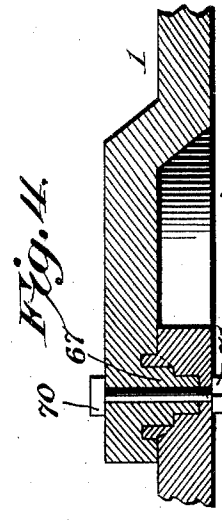
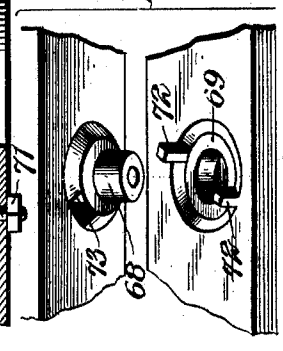


Fig. 5.



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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 10.

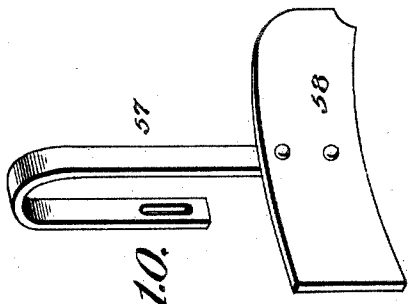


Fig. 3.

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No. 759,489. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

SAMUEL V. WEEKS, OF CHATTANOOGA, TENNESSEE, ASSIGNOR OF ONE-HALF TO C. A. RAHT, OF CHATTANOOGA, TENNESSEE.

DISK PLOW.

SPECIFICATION forming part of Letters Patent No. 759,489, dated May 10, 1904.

Application filed May 22, 1903. Serial No. 158,347. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL V. WEEKS, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Disk Plow, of which the following is a specification.

This invention relates to a novel plow, and has for its primary object to produce an implement of this character composed of interchangeable sections or disk-carrying members, any number of which may be employed accordingly as it is desired to use a single disk or a gang comprising any desired number of units.

A further object is to provide means, associated with the tongue or other draft appliance, for shifting the disk or disks to properly position the latter with respect to the line of draft in making a turn in either direction, so that the depth of the furrow or furrows at the corners or turns will be substantially the same as the depth thereof at other points.

Another object is to provide for the shifting of the front and rear furrow-wheels for the purpose of training them with respect to the direction of movement of the opposite ends of the plow in making a turn.

A still further object of the invention is to construct the disk reversing or adjusting mechanism in interchangeable sections corresponding with the sections or elements of the plow proper, so that said mechanism may be lengthened or shortened to correspond with the number of disks to be reversed or adjusted thereby.

In addition to these recited objects are others subordinate thereto, as will appear during the succeeding description of the preferred embodiment of the invention, which is illustrated in the accompanying drawings and embraced within the scope of the appended claims.

In said drawings, Figure 1 is a plan view of my plow with the parts disposed in position for straightaway plowing and indicating in dotted lines the positions assumed by certain of the parts during a turn to the left or toward the unplowed land. Fig. 2 is a side elevation of the plow. Fig. 3 is a plan view thereof with certain of the parts positioned for a turn to the right or toward the plowed land. Fig. 4 is a detail sectional view of the connection between two beam-sections or disk-carrying elements. Fig. 5 is a detail perspective view of said connection or coupling with the parts separated but in juxtaposition. Fig. 6 is a detail sectional view of a disk and its mounting. Fig. 7 is a detail sectional view of one of the bearing-sleeves for the rear crank-axle. Fig. 8 is a detail of one of the disk-levers. Fig. 9 is a detail section on the line 9 9 of Fig. 3. Fig. 10 is a detail perspective view of a scraper and its mounting.

Like numerals are employed to designate corresponding parts throughout the views.

The beam 1 of the plow, when the latter is organized to carry a gang of disks, is made up of a series of interchangeable individual beams, beam-sections, or disk-carrying elements 1^a, 1^b, 1^c, and 1^d, which are exact duplicates, so that any desired number may be connected in series and may be freely interchangeable in the event of breakage or derangement of any particular element. Each of the several disk-carrying elements or sections is of substantially angular form to provide each with a laterally-extending arm 2^a, 2^b, 2^c, or 2^d, which supports at its outer end a disk, indicated by the numeral 3, and corresponding in number with the number of disk-carrying elements composing the beam.

The sections of the beam 1 are rigidly connected by coupling devices to be hereinafter described, and the straight rigid beam thus formed is supported by front and rear furrow-wheels 4 and 5 and the land-wheel 6, the furrow-wheels being located at opposite ends of the plow at the furrow side thereof, and the land-wheel being arranged at the opposite side of the plow and intermediate of the ends of the beam.

The immediate support for the front end of the beam 1 is an angular plate, constituting what may be termed the "front" wheel-frame 7, pivotally connected to the beam by a bolt 8 and provided with an upstanding stop-lug 9

received by an arcuate recess 10 in the front end of the beam and serving to limit the relative swinging movement of the beam and wheel-frame from the bolt 8 as an axis, in a manner to be described.

At a point in advance of the beam the wheel-frame 7 is equipped with a journal-box 11, adjustably retained by bolts 12, screwed into the frame 7 and passed through slots 13 in the box. This journal-box is designed for the reception of one end of the crank-axle 14, upon the opposite end of which the front furrow-wheel 4 is mounted in a manner well understood in the art. The vertical adjustment of the wheel 4 with respect to the frame is effected by means of an adjusting-lever 15, secured to the crank-axle 14 by a clamping device 16 and provided with a latch 17, engaging a toothed segment or rack 18 to retain the lever in its adjusted position. The land-wheel 6 is carried by a crank-axle 19, similar to the axle 14 of the front furrow-wheel and likewise journaled in an adjustable box 20 and arranged for adjustment by a lever 21, the means for adjusting the box 20, for securing the lever 21 to the crank-axle, and for retaining the lever in the adjusted position being identical with similar features of the mechanism associated with the front furrow-wheel.

The journal-box 20 of the land-wheel is carried by a wheel-bracket 22, extending in an angular direction from the box and secured to the beam 1 by bolts 23. These bolts are passed through bolt holes or apertures 24 in one of the beam-sections or disk-carrying elements, which latter, being of duplicate construction, are each provided with these bolt-holes, so that the wheel-bracket 22 may be attached with equal facility to any section of the beam.

It has been stated that one of the primary objects of the invention is to properly position the disk or disks with respect to the line of draft in making a turn in either direction in order that the plowing at the turns or corners will be effected and the furrows opened as deep at these points as at any other. In the present instance the desired end is accomplished by providing each disk with an individual rotatable standard 25, operatively connected with the draft appliance of the plow, so that when the latter is shifted in making a turn the disk-standard will be partially rotated for the purpose of swinging the disk to its proper position with respect to the changed line of draft.

By reference to Fig. 6, wherein one of the disks and its mounting is shown, it will be seen that each disk-standard 25 is passed upwardly through a correspondingly-formed opening 26 in the outer end of the lateral arm of the beam, and that said standard is provided at its lower end with an integral bearing-sleeve 27 of conical form for the reception of the spindle 28 of a disk. The axis of the sleeve 27 is somewhat inclined from the horizontal, so that the disk retained by a bolt 29 against the disk-plate 30 at the forward end of the spindle will assume its proper angular position with respect to the ground. The disk-spindle 28 is retained within the sleeve 27 by a washer 31, clamped against the rear end of the spindle by a nut 32 and bearing against the rear end of the sleeve 27. If desired, the bearing of the spindle may be protected by a dust-cap 33, inclosing the rear end of the sleeve 27 and the nut and washer and retained in place by a stud 34, projecting from the casting in which the standard and bearing-sleeve are formed and passed through an opening in the cap. The outer end of the stud 34 is threaded, as shown, for the reception of a nut 35, which may be quickly removed to permit the detachment of the dust-cap when access to the bearing of the disk is desired.

Dust is excluded from the opposite end of the bearing by extending the front end of the sleeve 27 into an annular groove 36 in the back of the plate 30. Any suitable provision may be made for oiling the bearing-faces of the spindle and sleeve; but by preference an oil-duct 37 is formed in the journal portion of the standard to deliver the oil to an inclined duct 38, extending into the bearing-sleeve at its upper or front end, as shown.

It will now be evident that by revolving the standard upon its vertical axis the disk may be swung to assume any desired position with relation to the line of draft, and for the dual purpose of confining the standard in the beam and for turning it upon its axis I provide each disk with what may be termed a "disk-adjusting lever" or arm 39^a, 39^b, 39^c, or 39^d, formed with an angular opening 40, fitting over the correspondingly-formed upper end 41 of the disk-standard projecting above the disk-carrying element, and provided with a threaded extremity 42 for the reception of a nut 43, which retains the adjusting lever or arm. The several disk-adjusting levers 39^a 39^b, &c., extend over to the beam 1, where they are connected at their extremities to a sectional shifting rod 44, comprising a series of interchangeable sections 45, equal in length to the distance between the levers, and a front section 46, which is curved to present its front end above the wheel-frame 7 for attachment to one end of the bell-crank lever 47, fulcrumed on the frame 7 and having its opposite end connected by a link 48 with the rear extremity of the draft appliance, draw-bar, or tongue 49, pivotally connected to the wheel-frame 7, as by a bolt 50.

The sections of the shifting rod 44 are disposed with their ends in lapping relation and are connected to each other and to the adjusting-levers by bolts 51, which permit such relative movement of the levers and bar as is necessary to effect the swinging of the levers and

the adjustment of the disks through the manipulation of the shifting rod in a manner to be explained.

In addition to the characteristics mentioned each of the several disk-adjusting levers is formed at its rear extremity with a vertically-disposed bearing sleeve or socket 52, depending from the plane of the lever, as indicated in Figs. 1 and 8, for the reception of the vertically-disposed extremity or journal 53 of a crank-axle 54, upon the angular rear extremity of which the rear furrow-wheel 5 is mounted. The axle 54 is designed to swing upon its vertical axis for the purpose of training the rear furrow-wheel in accordance with the direction of movement of the adjacent end of the plow. This movement of the axle is limited by stop-shoulders 55 and 56, formed by the opposite ends of a cut-out portion or recess in the lower end of the sleeve 52.

When the disks are disposed in their normal positions for straightaway plowing, as indicated in Fig. 1, the last disk-adjusting lever of the series to which the wheel 5 is connected will be so disposed that the stop 55 will retain the rear furrow-wheel with its axis substantially at right angles to the line of draft; but when the disks are swung to the positions which they assume in making a turn the lever will be so disposed that the rear furrow-wheel may be permitted to assume the position indicated in Fig. 3.

In addition to the sleeve 52 each of the disk-adjusting levers is equipped with a scraper-yoke 57, extended over the edge of the adjacent disk and supporting a scraper 58 in contact with the front face thereof.

A driver's seat 59 is designed for attachment to the rear disk-carrying element or beam of the series, and as this position may be assumed by either beam each of the several beams, sections, or elements is provided with a bolt-hole 60 for the reception of a bolt 61, passed through the seat-spring, and with a rib 62, designed to engage one edge of the spring to prevent the latter from swinging on the bolt.

Lateral swinging movement of the tongue 49 with respect to the frame 7 is prevented in one direction by a stop 63, and in order that the lateral adjustment of the tongue may be provided for the frame 7 is formed with apertures 64, 65, and 66 for the reception of the bolt 50, the stop 63, and the fulcrum of the lever 47, respectively.

The foregoing is a complete description of the plow with the exception of the means for connecting the disk-carrying elements or beam-sections, and while any suitable character of coupling may be employed for this purpose I have devised a special connection which is preferable by reason of its durability and because of the facility with which the elements when thus connected may be interchanged. At the front end of each of the several disk-carrying elements is formed a male coupling member 67, having a reduced extremity 68 and designed to be received by a female coupling member or recess 69 of corresponding shape and size, formed in the upper side of each element at or adjacent to the angle thereof.

The coupling is effected by presenting the front end of one element in lapping relation with the angular portion of the element next in advance with the coupling members in interfitting engagement, where they are retained by a bolt 70, passed through the lapping ends of the elements at the axis of the coupling and retained by a nut 71. In order to prevent lateral movement or swinging of the disk-carrying elements or beam-sections, a pair of lugs 72 are associated with one member of each coupling and are disposed to be received within a pair of corresponding recesses 73, associated with the other member of the coupling and preferably located at diametrically opposite points. In the illustrated embodiment of this feature of the invention the lugs or projections 72 are shown upstanding from the lower element in which a female coupling member is formed, and the recesses 73 are shown at the base of the male member depending from the overlying disk-carrying element. It is obvious, however, that the members of the coupling may bear any desired relation which will effect an interfitting engagement capable of effecting the rigid connection of the adjacent portions of a pair of disk-carrying elements.

At this point attention is directed to the fact that the front end portions of the several disk-carrying elements are directly connected in substantial alinement to form a straight rigid beam, from which the rear end portions of said elements extend laterally to constitute disk-carrying arms. In other words, the connecting portions of the disk-carrying elements are in superposed relation and their front end portions or arms are disposed in the same vertical plane to produce a straight beam when viewed from above.

The operation of the plow is as follows: In the normal positions of the parts—that is to say, during straightaway plowing—the land and furrow wheels are disposed in or parallel to the line of draft, the disks are in substantially right-angular relation to the beam 1, and said beam is maintained in an angular position across the line of draft by the engagement of the lug 9 on the front wheel-frame, with the rear end of the recess 10 at the front extremity of the beam. If now it is desired to turn to the left or toward the unplowed land, the draft appliance or tongue 49 is swung around by the draft-animals, and as the stop 63 prevents relative movement of the tongue and frame said frame is swung, with the tongue, from the bolt 8 as an axis to the dotted posi-

tion in Fig. 1. This swinging movement of the frame 7 with respect to the beam presents the front furrow-wheel in the position indicated in said figure, and by shifting the bell-crank lever 47 bodily effects the endwise movement of the shifting rod 44 and the swinging of the disk-supporting levers to the positions likewise indicated in dotted lines. The swinging of the levers will effect the partial rotation of the disk-standards to shift the disks to the dotted positions, and thus present them in proper position for effective plowing during the swinging of the plow with the land-wheel as an axis. It will thus be noted that the lateral movement of the draft appliance shifts the front furrow-wheel to a position in which it will move around with the front end of the beam without dragging, and as the distance between the stops 55 and 56 permits considerable free movement of the crank-axle 54 the rear furrow-wheel will assume the position indicated in dotted lines in Fig. 1 as soon as the rear end of the beam begins to move around. If instead of turning to the left or unplowed land it is desired to make a turn to the right or toward the plowed land, the tongue 49 is swung to the right with the bolt 50 as an axis. This movement of the tongue is independent of the frame 7 and swings the bell-crank lever 47 from its fulcrum to move the shifting rod 44 rearwardly, the extent of movement being substantially the same as in turning in the opposite direction. This movement of the shifting rod will therefore swing the disk-levers and disks to the positions indicated in Fig. 3, and the shifting of the last disk-lever will so change the position of the mounting of the rear furrow-wheel that the latter will be permitted to assume an angular relation to the line of draft, thus enabling said wheel to follow around with the rear end of the beam without material dragging as the plow is swung from the front furrow-wheel as a fulcrum. It will be noted that the shifting of the disks preparatory to making a turn in either direction presents them in the same angular relation to the beam and disposes them properly for effective plowing whether the turn is made toward the plowed or unplowed land.

It is thought that from the foregoing the construction and mode of manipulation of my plow will be fully comprehended; but while the illustrated embodiment of the invention is thought at this time to be preferable I wish to be distinctly understood as reserving to myself the right to effect such changes, modifications, and variations of the illustrated structure as may be fairly embraced within the scope of the protection prayed.

What I claim is—

1. A non-reversible plow including a beam, a rotary disk-support, a disk, and a laterally-movable draft appliance arranged to swing from an axis adjacent to the front end of the beam and operatively related to the disk-support to rotate the same when the line of draft is changed in making a turn.

2. A non-reversible plow including a beam, a rotary disk-support carried thereby, a tongue arranged to swing laterally independently of the beam from an axis adjacent to the front end of the latter, and an operative connection between the tongue and the disk-support to rotate the latter and adjust the disk when the tongue is moved laterally in turning a corner.

3. A non-reversible plow including a beam, supporting-wheels therefor, a rotary disk-support carried by the beam, a disk, a draft appliance arranged to swing from an axis adjacent to the front end of the beam, and means coöperating therewith to rotate the disk-support and to change the relation of a supporting-wheel with respect to the beam when the line of draft is changed in turning a corner.

4. A non-reversible plow including a beam, supporting-wheels therefor, a disk, a draft appliance located permanently at the front end of the beam, and means operated by the draft appliance for adjusting the disk and a plurality of the supporting-wheels when the line of draft is changed in turning a corner.

5. A non-reversible plow, including a beam, a plurality of supporting-wheels therefor, a rotary disk-support, a disk, a draft appliance located permanently at one end of the beam, and means operated by the draft appliance for changing the relation of a plurality of the wheels with respect to the line of draft and for simultaneously rotating the disk-support to adjust the disk when the line of draft is changed in turning a corner.

6. A plow, including a beam, front and rear furrow-wheels, and a land-wheel, a front-wheel frame having pivotal connection with the front end of the beam and carried by the front furrow-wheel, an adjustable disk carried by the beam, means associated with the front-wheel frame for adjusting the disk when said frame is moved relative to the beam, and a draft appliance connected to the frame.

7. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a front-wheel frame having pivotal connection with the front of the beam and carried by the front furrow-wheel, a rotary disk-support carried by the beam, a disk, and means associated with the front-wheel frame for rotating the disk-support to adjust the disk when the frame is moved relative to the beam.

8. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a shiftable mounting for the rear furrow-wheel, an adjustable disk carried by the beam, a draft appliance arranged to swing from an axis adjacent to the front end of the beam, and means operated by the draft appliance for adjusting the disk and for shifting the mounting of the rear fur-

row-wheel when the line of draft is changed in making a turn.

9. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a shiftable mounting for the rear furrow-wheel, a rotary disk-support carried by the beam, a disk, a draft appliance having permanent operative connection with the front end of the beam, and means operated by the draft appliance for shifting the mounting of the rear furrow-wheel and for rotating the disk-support to adjust the disk when the line of draft is changed in making a turn.

10. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a shiftable mounting for the rear furrow-wheel, a front-wheel frame movable relative to the beam, an adjustable disk carried by the beam, means associated with the front-wheel frame for adjusting the disk and for shifting the mounting of the rear furrow-wheel when the front-wheel frame is moved relative to the beam, and a draft appliance connected to said frame.

11. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a shiftable mounting for the rear furrow-wheel, a front-wheel frame having pivotal connection with the beam and carried by the front furrow-wheel, a rotary disk-support carried by the beam, a disk, and means operated by the front-wheel frame for shifting the mounting of the rear furrow-wheel and for rotating the disk-support when the front-wheel frame is moved relative to the beam.

12. A plow including a beam, supporting-wheels therefor, a rotary disk-support carried by the beam, a disk, a lever for rotating the support, a draft appliance, and a connection between the draft appliance and the lever to rotate the disk-support and adjust the disk.

13. A plow including a beam, supporting-wheels, a front-wheel frame, a tongue pivoted on said frame, an adjustable disk carried by the beam, and a connection between said disk and the tongue to effect the adjustment of the disk when the line of draft is changed.

14. A plow including a beam, supporting-wheels, a front-wheel frame, a tongue pivoted thereon, a rotary disk-support carried by the beam, a disk, and an operating connection between the rotary disk-support and the tongue.

15. A plow, including a beam, supporting-wheels, a front-wheel frame, a tongue pivoted thereon, a rotary disk-support carried by the beam, a disk, a lever connected to the support, means connecting both the tongue and the front-wheel frame to the lever to effect the adjustment of the disk when the wheel-frame is moved relative to the beam, or when the tongue is moved relative to the wheel-frame.

16. A plow including a beam, supporting-wheels, a front-wheel frame connected to the beam and having limited independent movement, a tongue mounted on the wheel-frame and having limited movement independent thereof, a rotary disk-support carried by the beam, a disk, a disk-lever for operating the support to adjust the disk, a bell-crank lever mounted on the wheel-frame and having link connection with the tongue, and a shifting rod connecting the bell-crank lever to the disk-lever.

17. A plow including a beam, supporting-wheels therefor, a rotary disk-support, a disk, a lever for rotating the disk-support, and a connection between said lever and one of the supporting-wheels.

18. A plow including a beam, land and furrow wheels therefor, a rotary disk-support carried by the beam, a disk, a lever connected to the disk-support to rotate the same, a rear furrow-wheel, and a crank-axle therefor journaled in the lever.

19. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a rotary disk-support carried by the beam, a disk, a lever connected to the disk-support to rotate the same, a crank-axle journaled in the outer end of the lever and supported by the rear furrow-wheel, a draft appliance, and an operative connection between the draft appliance and the lever to shift said lever when the line of draft is changed.

20. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a series of disks carried by the beam and rotatable on vertical axes, and a draft appliance operatively connected to the furrow-wheels and to the disks to shift said wheels and disks relative to the beam when the line of draft is changed.

21. A plow including a beam, front and rear furrow-wheels, and a land-wheel, a front-wheel frame pivoted to the beam and carried by the front furrow-wheel, a series of disks carried by the beam and rotatable on vertical axes, an operative connection between said disks and the front-wheel frame to shift the disks when said frame is moved relative to the beam, and a draft appliance connected to the frame.

22. A plow including a beam, a disk-support carried thereby and rotatable on a vertical axis, a disk, a tongue arranged to be swung laterally in opposite directions, and means operated by the tongue to shift the disk-support and thereby move the disk to the same position relative to the beam when the tongue is swung at an angle to the beam in turning a corner in either direction.

23. A plow including a beam, a front furrow-wheel, and a land-wheel, a series of disks carried by the beam and rotatable on vertical axes, a series of operatively-connected levers, each connected to a disk to rotate the same, and a rear furrow-wheel having connection with one of said levers.

24. A plow including a beam, a series of disks carried thereby and mounted to rotate on vertical axes, a front furrow-wheel, a land-

wheel, a front-wheel frame supported by the front furrow-wheel and pivotally connected to the beam, a series of operatively-connected levers for shifting the disks on their vertical axes, a rear furrow-wheel having connection with the last lever of the series, and a draft appliance connected to the front-wheel frame.

25. A plow including a beam, a series of disks carried thereby and mounted to rotate on vertical axes, a front furrow-wheel, a land-wheel, a front-wheel frame supported by the front furrow-wheel and pivotally connected to the beam, a series of operatively-connected levers for shifting the disks on their vertical axes, a rear furrow-wheel having connection with the last lever of the series, a draft appliance mounted on the front-wheel frame, and means operatively connecting said draft appliance with the levers to operate the latter.

26. A plow including a beam, a series of disks carried thereby and rotatable on vertical axes, a series of levers, each of which is connected to a disk to rotate the same on its vertical axis, a shifting rod connecting the several levers, a front-wheel frame pivoted to the beam, a tongue pivoted on said front-wheel frame, a bell-crank lever fulcrumed on said frame and operatively connected to the tongue and shifting rod respectively, a front furrow-wheel supporting the front end of the beam, a land-wheel supporting the beam at a point intermediate of its ends, a rear furrow-wheel, and a crank-axle therefor, journaled in the last lever of the series.

27. A plow including a front-wheel frame, disposed transverse to the line of draft, a rigid beam extending obliquely across the line of draft from the front-wheel frame, land and furrow wheels supporting the beam and frame, a series of disks carried by the beam at one side thereof, a draft appliance, and means operated by the draft appliance for shifting the disks with respect to the line of draft.

28. A plow including a beam, composed of a series of connected interchangeable disk-carrying elements, a disk adjustably carried by each of said elements, and adjusting means common to a plurality of said disks.

29. A plow including a beam, composed of connected interchangeable disk-carrying elements, a disk carried by each element and mounted to rotate on a vertical axis, and means for simultaneously adjusting a plurality of said disks.

30. A plow including a beam, composed of a series of rigidly-connected interchangeable disk-carrying elements, a disk carried by each of the elements and mounted to rotate on a vertical axis, and a shifting rod common to the disks and composed of interchangeable sections.

31. A plow including a beam, composed of a series of interchangeable disk-carrying elements, interchangeable disks carried by said elements and adjustable relative thereto, and a sectional shifting rod operatively connected to the disks to effect the adjustment thereof.

32. A plow including a beam composed of a series of interchangeable disk-carrying elements, an adjustable disk carried by each element, interchangeable levers for operating the disks, and a sectional shifting rod connecting the levers.

33. A plow including a beam composed of a series of interchangeable disk-carrying elements, a disk carried by each element and mounted to rotate on a vertical axis, a series of interchangeable levers for operating the disks, and a sectional shifting rod for swinging said levers.

34. A plow including a beam composed of a series of interchangeable disk-carrying elements, said elements being formed with co-operating coupling devices including means for preventing relative lateral movement thereof.

35. A plow including a beam composed of interchangeable disk-carrying elements, a rotary disk-standard mounted in each element, disks carried by the standards, and interchangeable levers connected to the disk-standards.

36. A plow including a beam composed of interchangeable disk-carrying elements, a rotary disk-standard mounted in each element, disks carried by the standards, and interchangeable levers connected to the disk-standards, each of said levers being formed with a vertical bearing-sleeve adapted for the reception of a crank-axle.

37. A plow including a rigid beam extending across the line of draft, land and furrow wheels supporting the beam, a series of disks carried by the beam at one side thereof, a draft appliance, and means operated by the draft appliance for simultaneously shifting the disks with respect to the line of draft.

38. A plow including a beam composed of a series of rigidly-connected interchangeable disk-carrying elements, a disk carried by each of the elements and mounted to rotate on a vertical axis, and a shift-rod common to the several disks.

39. A plow including a beam composed of a series of interchangeable disk-carrying elements and an adjustable disk carried by each element, interchangeable levers for operating the disks, and a shifting rod connecting the levers.

40. A plow including a beam disposed at an angle across the line of draft and composed of interchangeable disk-carrying elements, the rear end of each element extending laterally in the same direction from the beam, and the front end of each element, except the first, being located above and rigidly connected to the element next in advance thereof.

41. A plow including a beam disposed at an

angle across the line of draft and composed of interchangeable disk-carrying elements, the rear end of each element extending laterally in the same direction from the beam, and the front end of each element, except the first, being located above, directly imposed upon and rigidly connected to the element next in advance thereof.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL V. WEEKS.

Witnesses:
S. W. LLEWELLYN,
HARRY S. HEY.