No. 829,558. PATENTED AUG. 28, 1906.

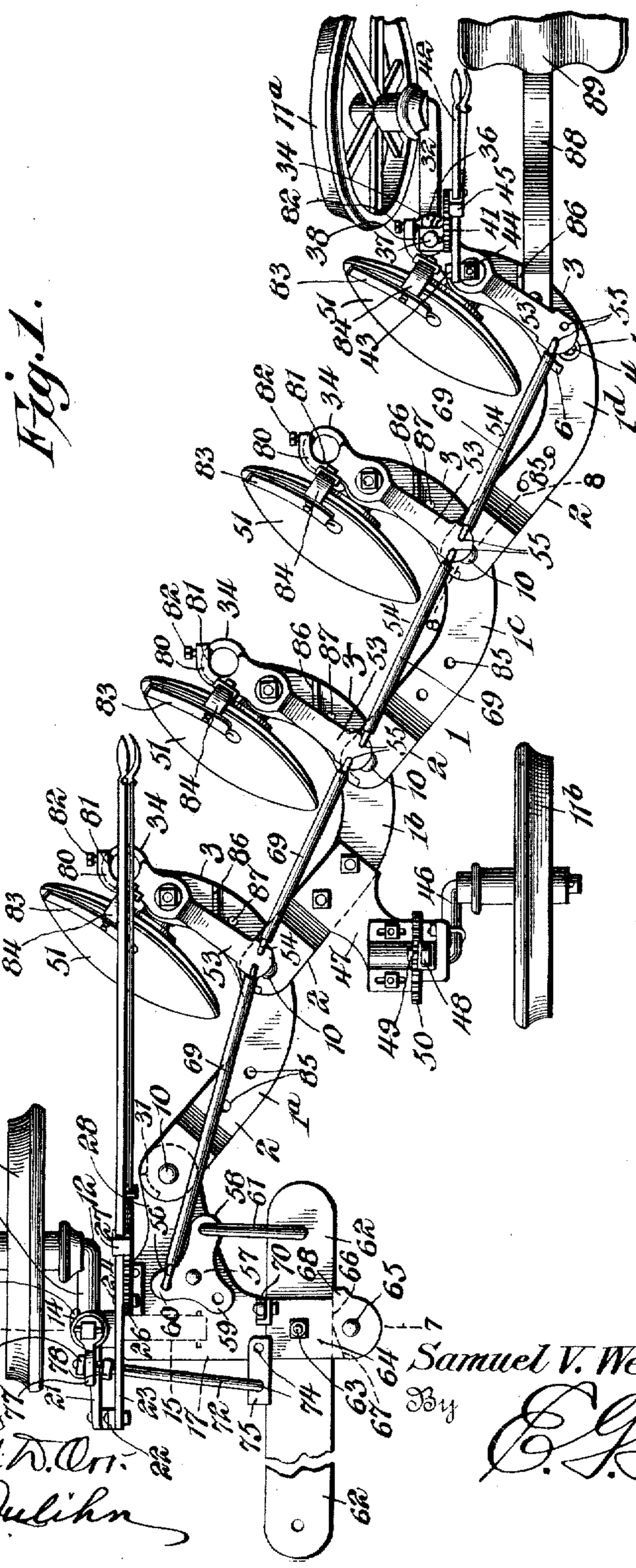
S. V. WEEKS.

DISK PLOW.

APPLICATION FILED APR. 20, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

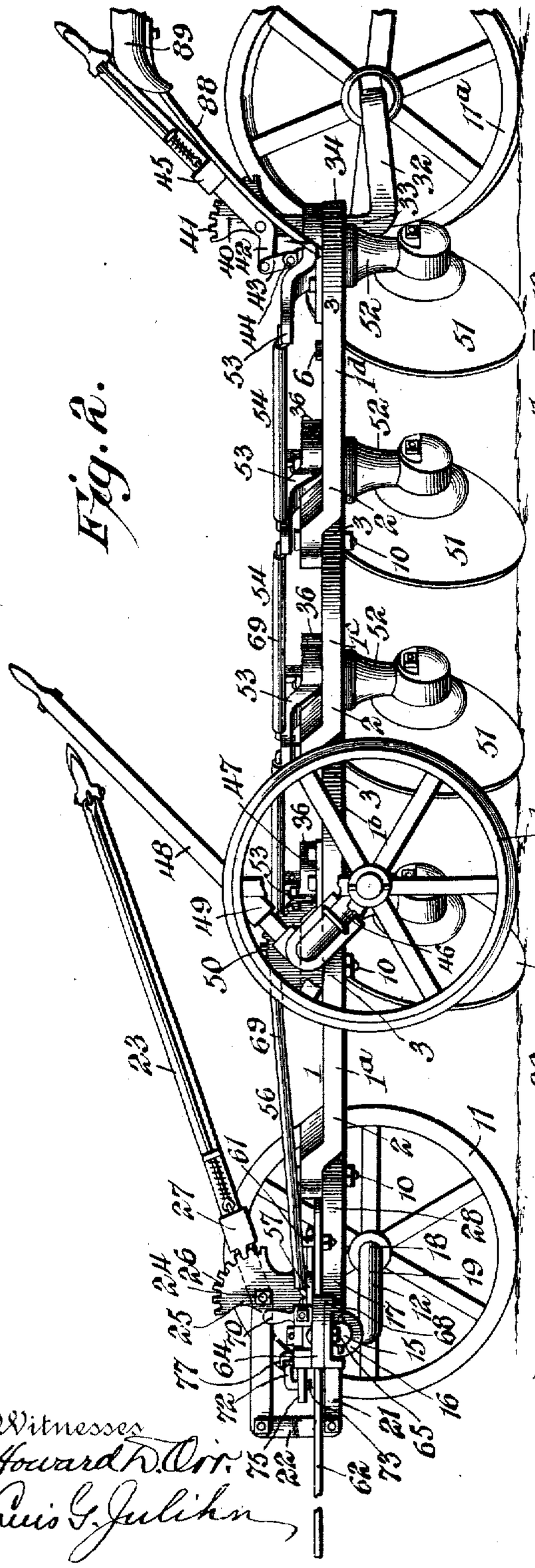

Fig. 4.

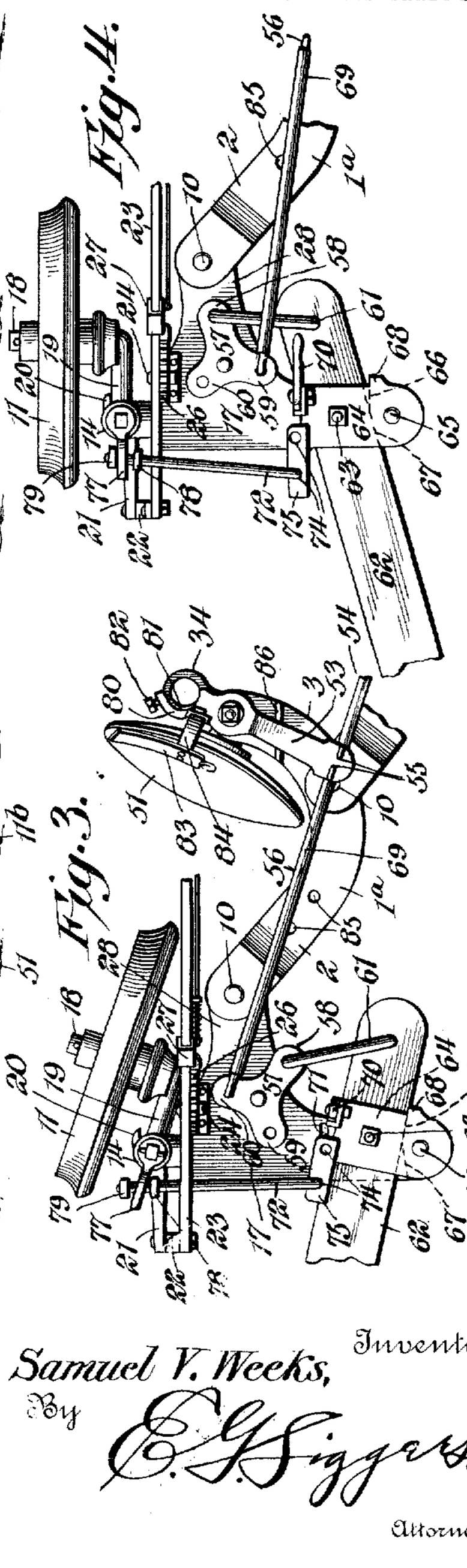

Fig. 3.

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3 SHEETS—SHEET 3.

Fig. 5.

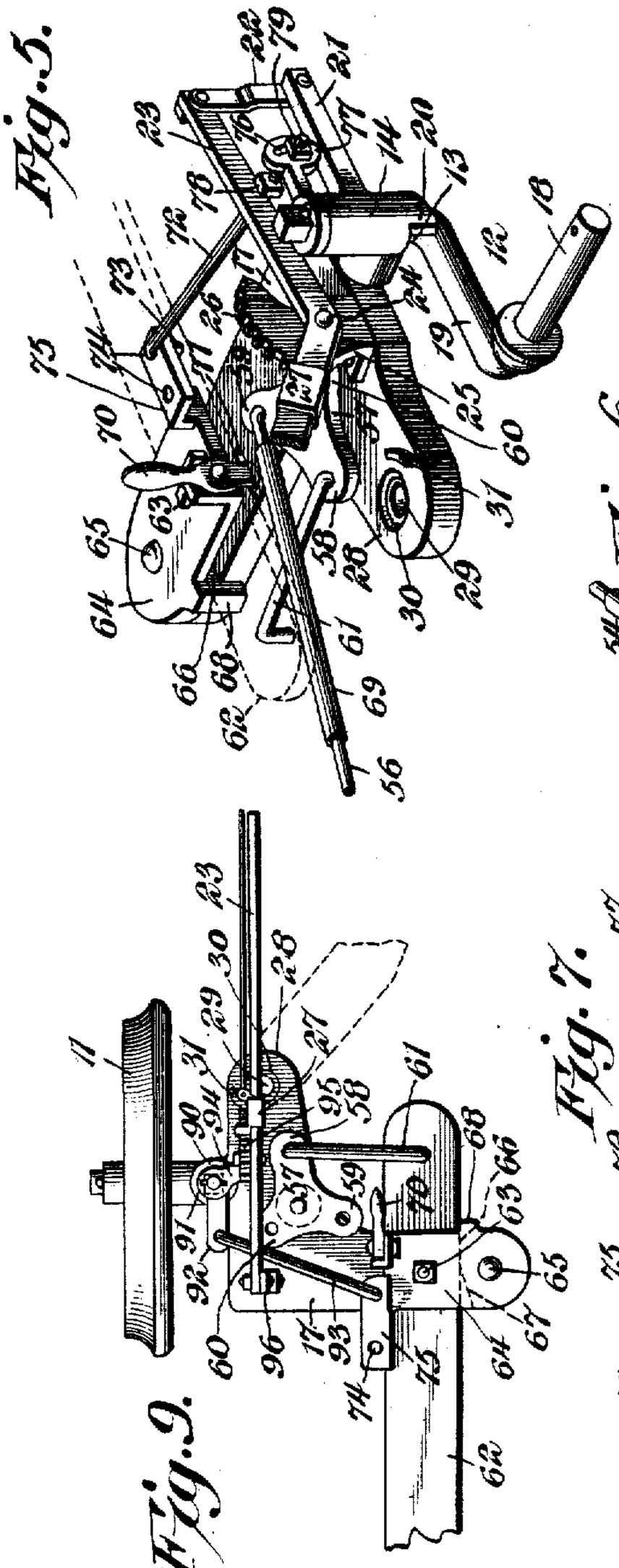

Fig. 6.

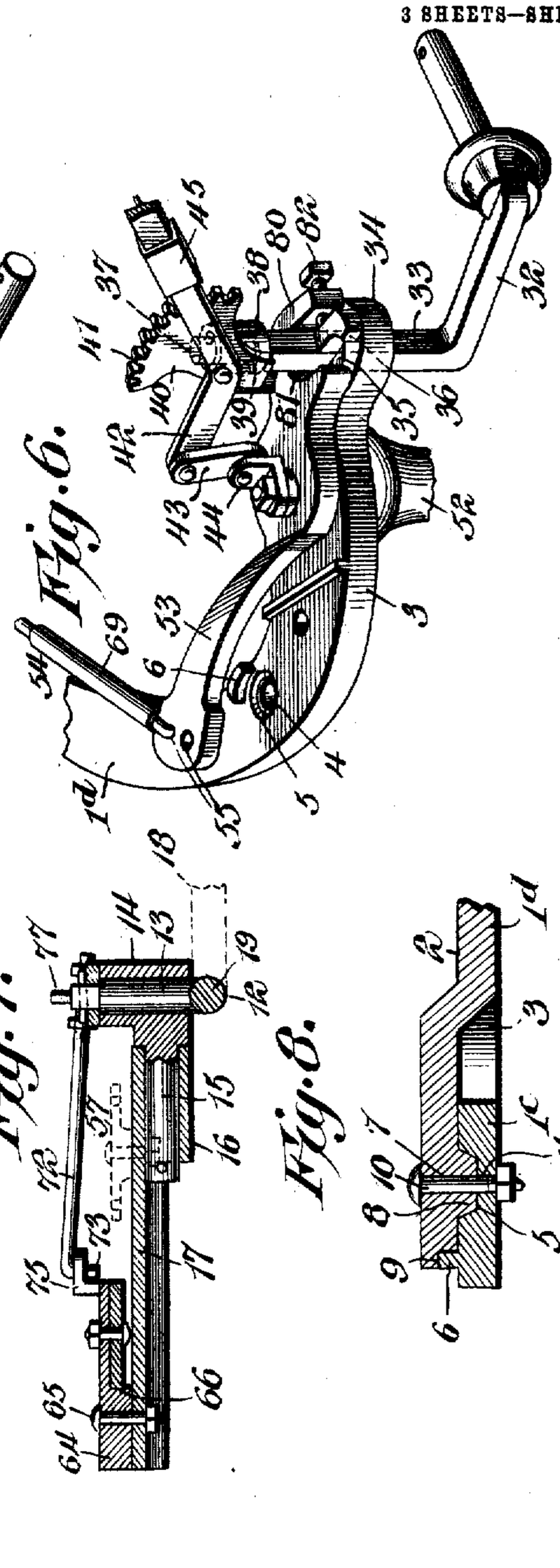

Fig. 9.

Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE.

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

DISK PLOW.

No. 829,558. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed April 20, 1904. Serial No. 204,057.

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 plow of that type which is characterized by a series of interchangeable beam members or disk-carrying units any number of which can be combined to produce a plow of proper size for the particular work to be done.

The primary objects of the invention are to improve the construction of the beam-sections and their connecting devices; to equip the beam with a rigidly-connected front-wheel frame; to provide simple and effective mechanism operated by the draft appliance or tongue to shift the disks, and thus properly position the latter with respect to the line of draft in making a turn in either direction in order to secure a full depth of cut at the corners or turns of the furrows; to improve the mountings of the furrow-wheels and the mechanism controlling the movements of their crank-axles, and to provide simple and effective means for raising and lowering the beam to regulate the depth of the plowing.

Subordinate to these general objects are others, which will more fully appear during the succeeding description of the illustrated embodiment of the invention.

In the accompanying drawings, Figure 1 is a plan view of my plow complete. Fig. 2 is a side elevation thereof. Fig. 3 is a plan view of the front end of the plow, showing the parts in the positions they assume when the plow is being turned to the right, or toward the plowed land. Fig. 4 is a similar view showing the plow being turned to the left, or toward the unplowed land. Fig. 5 is a perspective view of the front-wheel frame and certain of its associated parts, the tongue being indicated in dotted lines. Fig. 6 is a perspective view of the rear end of the plow, showing the mounting of the rear furrow-wheel, the mechanism for limiting the movement of the rear crank-axle, and the device for raising and lowering the rear end of the plow-beam. Fig. 7 is a sectional view on the line 7 7 of Fig. 1. Fig. 8 is a detail section on the line 8 8 of Fig. 1. Fig. 9 is a plan view of a slightly-modified arrangement of the front furrow-wheel mounting and the mechanism for raising and lowering the front end of the plow.

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

The implement when organized as a gang-plow includes a beam 1, made up of a series of interchangeable sections, members, or disk-carrying elements 1^a, 1^b, 1^c, and 1^d, which are rigidly connected. These elements are of substantially angular form, since they each comprise an arm 2, disposed at an angle to the line of draft, and a laterally-extending arm 3, constituting the rear end of the element and deflected laterally from the beam proper, composed of the several arms 2 of the desk-carrying elements. The means whereby the several elements of the beam are rigidly connected in series may be varied within wide limits. By preference, however, the lateral arm 3 of each element is provided at points adjacent to the arm 2 with a bolt-opening 4, a concentric countersunk socket 5, and an eccentric holding-lug 6. To the arm 3 thus formed is secured the front end of the arm 2 of another beam section or element provided with a bolt-hole 7, coinciding with the hole 4, an annular projection 8, engaging the socket 5, and a terminal recess 9, engaged by the lug 6. Each pair of beam-sections or disk-carrying elements are brought into overlapping relation, as shown in Fig. 8, and are connected by a bolt 10. The adjacent elements of the bolt will thus be seen to be interlocked by the engagement of the projection 8 with the socket 5, retained in superimposed relation by the bolt 10, and held against relative pivotal movement by the engagement of the lug 6 with the recess 9. The beam 1 is supported by front and rear furrow-wheels 11 and 11^a and a land-wheel 11^b. The front furrow-wheel 11 is mounted on a crank-axle 12, having a vertical spindle 13 mounted to rotate in order to permit the axle to turn or train with reference to the plow in turning.

The spindle 13 is journaled in a vertically-disposed bearing-sleeve 14, carried at the outer end of the horizontal shaft or spindle 15, journaled in a bearing-sleeve 16, formed on the under side of a cast plate 17, which may be termed the "front-wheel frame" of the plow. This horizontal spindle 15 is de-

signed to rotate for the purpose of permitting the crank-axle 12 to swing from the wheel-spindle 18 as an axis for the purpose of effecting the raising and lowering of the front-wheel frame 17. It should be borne in mind, however, that in speaking of the rotation of the spindle 15 reference is had to the relative movement of the spindle and the front-wheel frame, since it is evident that the spindle has no actual turning movement except such as is produced by the swinging of the crank-axle 12 from the spindle 18 as an axis to effect the vertical adjustment of the frame 17. That portion 19 of the crank-axle 12 lying between and connecting the horizontal and vertical spindles 18 and 13 is disposed in rear of the spindle 15 and cooperates with a stop-lug 20, formed at the lower end of the sleeve 14, to limit the swinging movement of the crank-axle from the vertical spindle 12.

Extending forwardly from the sleeve 14 is an arm 21, (see Fig. 5,) connected by a link 22 to the front end of the front adjusting-lever 23. The lever 23 is fulcrumed at 24 upon a standard 25, rising from the front-wheel frame 17 adjacent to one end thereof and equipped with a toothed segment 26, disposed for engagement with a latch 27 of usual construction, carried by the lever 23. As long as the latch 27 is in engagement with the segment 26 the front-wheel frame will be supported at a fixed elevation by the front furrow-wheel. If, however, the latch is retracted, the front-wheel frame 17 will be permitted to drop, the crank-axle 12 swinging down with the wheel-spindle 18 as an axis, the movement of the lever 23 accommodating the change of relation between the arm 21 and the front end of the lever.

Adjacent to its right-hand end the front-wheel frame 17 is provided with a rearward extension 28, equipped with a bolt-hole, socket, and lug 29, 30, and 31, corresponding to the similar characteristics of the beam elements and designed to facilitate the rigid attachment of the front beam section or element to the front-wheel frame in a manner identical with the attachment of the several beam elements to each other.

The rear furrow-wheel 11^a is mounted on a crank-axle 32, (see Fig. 6,) having a vertical spindle 33 of squared cross-sectional contour mounted to rotate in a bearing 34, formed at the outer end of the arm 3 of the last beam element of the series. As the opening in the bearing 34 is necessarily circular, the spindle 33 is provided with a bearing-collar 35, fitting within the bearing 34 and provided with a stop-arm 36, extending radially from the spindle immediately above the bearing 34. The spindle 33 is formed with a reduced cylindrical upper end 37, upon which is revolubly mounted a collar 38, resting upon a shoulder 39 and provided with a plate 40, formed with a segmental rack 41.

Upon the plate 40 is fulcrumed the rear adjusting-lever 42, connected by a link 43 to a bracket 44, connected to the upper extremity of one of the disk standards or supports, to be described. The lever 42 is provided with a latch 45, engaging the rack 41. Obviously as long as the lever 42 is locked to the rack the rear end of the beam will be maintained against depression; but as soon as the latch is withdrawn from the rack the beam will be permitted to drop to secure the proper adjustment, it being understood that as the rear end of the beam is raised or lowered the bearing-collar 36 will slide vertically upon the squared spindle 33.

We have now seen that the beam is composed of interchangeable disk-carrying elements arranged in a series across the line of draft and that it is supported by front and rear furrow-wheels, the former constituting the immediate support of a front-wheel frame rigid with the front end of the beam and the latter having its crank-axle afforded a bearing in one of the beam elements. We have also seen by what instrumentalities the front and rear ends of the beam are adjusted vertically in order to regulate the depth of the plowing, and it may be added that the crank-axle 46 of the land-wheel is afforded a bearing in a land-wheel bracket 47, bolted to one of the beam elements, and is swung by the land-wheel-adjusting lever 48, having a latch 49 engaging a rack 50 in an obvious manner.

It is next in order to describe the arrangement of the disks, the means whereby all of the disks are simultaneously shifted to maintain their proper relation to the line of draft in making a turn, and the means whereby the furrow-wheels are kept in proper position during straight-away plowing and are permitted to train when the plow is turning a corner.

The disks 51 are supported by the respective lateral arms 3 of the disk-carrying elements or beam members, each of which is provided adjacent to its rear end with an opening for the reception of a vertically-disposed rotary disk-standard 52, at the lower end of which the disk-spindle (not illustrated in detail) is mounted in a manner which constitutes no part of the present invention. Suffice it to say that each disk is supported by a vertical rotary standard having a bearing in the laterally-disposed arm 3 of one of the disk-carrying members and that to the upper end of each standard is attached a disk-adjusting lever 53, constructed as shown in Fig. 6 and designed to be shifted for the purpose of rotating the standard, and thus adjusting the disk to, maintain the proper relation thereof to the line of draft

when the plow is making a turn in either direction. The disks correspond in number to the number of beam-sections or disk-carrying elements employed, and the several disks are arranged for simultaneous automatic adjustment by the movement of the draft appliance or tongue as the line of draft is changed. I therefore connect the several disk-adjusting levers 53 for movement in unison. In the present embodiment of the invention such connection is effected by means of rod-sections or links 54, having angular extremities engaging openings 55 in the ends of adjacent levers, (see Fig. 1,) the foremost lever of the series being similarly connected by a somewhat longer rod-section or link 56 with a double bell-crank lever 57, fulcrumed upon the front-wheel frame 17, as shown. The lever 57 comprises three arms 58, 59, and 60 or their equivalents, and the front end of the rod-section or link 56 is connected to the arm 60 when turning to the right, or toward the plowed land, and is connected to the arm 59 when turning to the left, or unplowed land. In other words, plows of this type are usually employed for plowing around the four sides of a field. If the plowing is begun at the outer limits of the field and gradually draws toward the center thereof, the turns are made toward the left, or unplowed land. Therefore in this class of plowing the front end of the rod-section or link 56 will be attached to the arm 59 of the lever 57. If, however, the field is plowed from the center toward the outer limits thereof, the turns will be to the right, or toward the plowed land, in which event the link 47 would be connected to the arm 60 of the double bell-crank lever. The third arm 58 of the lever 57 is disposed rearwardly and is connected by a link 61 to the rear end of the draft appliance or tongue 62, fulcrumed at 63 upon a plate 64, pivoted at 65 to the front-wheel frame 17 beyond the left-hand side of the tongue. The tongue is interposed between the plate 64 and the front-wheel frame, and the left-hand side edge thereof abuts normally against a shoulder 66 on the plate 64, the front end of this shoulder being disposed at an angle, as indicated at 67, with respect to the normal position of the tongue. At the rear edge of the plate 64 is formed a stop-lug 68, which normally abuts against the rear edge of the front-wheel frame 17. It will now be seen that when a straight pull is being exerted on the tongue the side edge of the latter will abut against the shoulder 66, and as the stop-lug 68 on the plate abuts against the frame 17 the wheel-frame will be maintained in its proper position directly across or transverse to the line of draft.

By reference now to Figs. 3 and 4 the manner in which the disks are automatically shifted or adjusted when the plow is turning in either direction will be understood. In Fig. 3, for instance, the front end of the tongue is shown thrown around to the right in making a turn toward the plowed land. The engagement between the tongue and the shoulder 66 of the plate obviously prevents independent pivotal movement of the tongue to the right. Therefore when the tongue is moved in this direction it swings from the pivot 65 of the plate 64 as an axis, the tongue and plate moving in unison. This pivotal movement of the tongue is necessarily communicated to the double bell-crank lever 57, which causes the rod-section or link 56 to be moved back, thus effecting the swinging of the several disk-adjusting levers 53 in unison to turn the disk-standards, and thus properly adjust the disks to maintain their most effective relation with respect to the line of draft while the plow is turning the corner. Similarly, in making a turn toward the unplowed land the front end of the tongue is swung to the left, as shown in Fig. 4, from the fulcrum 63 as an axis. This shifts the double bell-crank lever 57 in an opposite direction; but as the rod-section or link 56 will have been shifted to the arm 59 the movement imparted to the disks will be precisely the same as before. In order to prevent buckling or bending of the rod-sections or links 54 and 56, which are comparatively light, they are preferably incased in reinforcing-tubes 69.

In transferring the plow from one field to another or over the roads it is desirable to lock the tongue against swinging movement in either direction. To effect this end, the tongue is equipped with a locking device in the form of a locking-lever 70, fulcrumed at one end of the swinging plate 64 and disposed to engage a recess 71 in the upper face of the front-wheel frame 17, as shown in Fig. 5.

As has been premised, the invention includes in addition to the features described the provision of means whereby the swinging movements of the crank-axles of the furrow-wheels are controlled in order to compel said wheels to remain in proper position during straight-away plowing and to permit them to train properly during the turning of the plow in either direction.

The stop-lug 20 at the lower end of the sleeve 14 (see Fig. 5) normally limits the outward swing of the front crank-axle 12, as heretofore recited. During straight-away plowing—that is to say, when the plow is being advanced with the tongue in the position shown in Fig. 1—the normal tendency of the front furrow-wheel is to move outwardly, and as this movement is resisted by the lug 20 the wheel maintains its proper position. In making a turn to the right, however, as shown in Fig. 3, the front end of the plow tends to move in that direction and the crank-axle is free to assume an angular position, because its tendency is to recede from the stop 20. In making a turn to the left, on the con-

trary, it is desirable to hold the front crank-axle securely in its normal position—that is, against the stop 20. This, however, necessitates the employment of some positive means, and I therefore provide a stop-rod 72, having an angular end 73 engaged in one of a pair of openings 74 in a bracket 75, integral with the swinging plate 64. The opposite end of this rod 72 is threaded and is passed through an arcuate slot 76 in the end of an arm 77, projecting forwardly from the squared upper extremity of the spindle 13 of the front crank-axle. (See Figs. 3, 4, and 5.)

Secured upon the end of the rod 72 are a pair of stop-nuts 78 and 79, located at opposite sides of the arm 77 and separated by a sufficient interval to permit limited independent movement of the stop-rod 72. Both in straight-away plowing and during a turn to the left (see Figs. 1 and 4) the crank-axle 12 is held against the stop 20 by reason of the fact that the stop-nut 79 opposes such movement of the arm 77 as would be necessary to permit the crank-axle 12 to swing away from the stop. When, however, the plate 64 is swung with the tongue during a turn to the right, (see Fig. 3,) the stop-rod 72 is moved endwise, thus withdrawing the nut 79 sufficiently to permit the axle 12 to swing away from the stop 20 as the front furrow-wheel automatically trains for the turn. If the natural tendency of the front furrow-wheel to train properly in making a turn to the right should be resisted—as, for instance, by a clod or other obstruction—it will be forced to assume a proper position by reason of the fact that the arm 77 will be engaged and swung positively by the stop-nut 78 as the stop-rod is moved longitudinally by the swinging of the plate 64. Thus it will be seen that the crank-axle of the front furrow-wheel is not only arranged to be held rigidly in proper position by means associated with the draft appliance, but that, furthermore, the draft appliance by reason of associated means is caused when necessary to positively shift the crank-axle to secure the proper training of the front furrow-wheel when turning toward the plowed land.

The position of the rear furrow-wheel 12, like that of the front furrow-wheel 11, is automatically controlled by means operated by the draft appliance.

By reference to Fig. 6 it will be seen that the disk-adjusting lever for the last disk of the series serves additionally as means for controlling the position of the rear-crank axle 32. This lever 53 is provided with a recessed outer end 80, which normally straddles that portion of the spindle 33 disposed directly above the bearing 34. The recess 81 in the lever is sufficient size to permit the rotation of the spindle and the consequent swinging of the rear-crank axle 32 within prescribed limits. This swinging movement of the rear-crank axle is limited by the stop-arm 36, which arm is disposed to play between one side wall of the recess 81 and an adjustable stop 82 in the form of a set-screw at the opposite side of the recess. The stop 82 performs much the same function with respect to the rear-crank axle that is performed by the stop 20 with respect to the front-crank axle 12. In other words, the normal tendency of the rear end of the beam is to swing outwardly—that is, toward the left—by reason of the side draft, and this tendency is resisted by the engagement of the arm 36 with the stop 82, so that the beam and rear furrow-wheel are kept in proper position. When turning a corner, however, we have seen that all of the levers 54 are shifted, the shifted position of one of the levers being shown in Fig. 3. Therefore when the draft appliance or tongue is swung in making a turn the recessed end of the rear lever 53 will be withdrawn more or less from the position shown in Fig. 6, and as a consequence the rear-crank axle will be permitted to swing out, and thus enable the rear furrow-wheel to train properly.

As shown in Fig. 1, each disk is provided with a scraper 83, carried by a scraper-yoke 84, supported by the adjusting-lever 53. It has been stated that the several disk-carrying elements or beam members are interchangeable, so that any number may be employed and any one incorporated in the plow at any desired point. Each of these elements is therefore provided with a bearing 34, and each of the several levers 53 is a substantial duplicate of the last lever of the series, which has been described in detail.

Attention may also be called to the fact that since it is desirable to have the main portions of the several beam members in the same horizontal plane the front end of each member is slightly upset, so as to overlap the member next in advance, as shown in Fig. 2. Similarly each member is provided with bolt-openings 85 to facilitate the attachment of the land-wheel bracket 47 and with a rib 86 and bolt-hole 87 in order to provide for the attachment of the seat-spring 88, carrying the driver's seat 89.

In Fig. 9 of the drawings I have illustrated slightly-different arrangement of the front furrow-wheel, the mechanism for controlling the position thereof, and the means for raising and lowering the front end of the plow. In this construction a vertical bearing-sleeve 90 is cast on the front-wheel frame and receives the vertical spindle 91 of the front-crank axle. From this spindle 91 extends in a forward direction an arm 92, connected by a link 93 with the bracket 75, so that the crank-axle is held against swinging movement during straightaway plowing or during a turn to the left, but is positively swung to properly train the front furrow-wheel when making a

turn to the right. To the upper end of the spindle 91 is secured a bracket 94, provided with an arcuate rack 95, designed to be engaged by the spring-latch 27, carried by the front adjusting-lever 23, which in this instance is fulcrumed upon the bracket 94 and is connected at its front end to a bearing 96, upstanding from the front-wheel frame.

If desired, one only of the beam elements may be equipped with the bearing 34, in which event said element will always occupy the rearmost position in the beam, any desired number of elements being interposed between it and the front-wheel frame. In that event it will be unnecessary to equip all of the levers 53 with the stop mechanism at their rear ends and only that lever mounted on the beam element having the bearing 34 will be thus equipped.

It is thought that from the foregoing the construction and many advantages accruing from the use of my plow will be fully comprehended; but while the illustrated embodiments of the invention are thought at this time to be preferable I desire to reserve the right to effect such changes, modifications, and variations of the illustrated structure as may come clearly within the scope of the protection prayed.

What I claim is—

1. A plow including a beam comprising a series of interchangeable elements, each having a laterally-disposed arm at its rear end, the front end of each element being disposed above and rigidly connected to the laterally-disposed arm of the element next in advance thereof.

2. A plow including a beam disposed at an angle across the line of draft and comprising a series of interchangeable disk-carrying elements, the rear ends of which extend laterally in the same direction from the beam to support the disks or plows, the front end of each element being disposed above and rigidly connected to the laterally-extended portion of the element next in advance thereof.

3. A plow including a beam, a front-wheel frame rigid therewith, a rotary disk-support, a disk, and a draft appliance arranged to swing from different axes and operatively related to the disk-support to rotate the same.

4. A plow, including a beam, a front-wheel frame rigid therewith, a rotary disk-support, a disk, a draft appliance arranged to swing from different axes when the plow is turned in different directions, and means for operatively connecting the disk-support with the draft appliance to rotate the former when the line of draft is changed in making a turn.

5. A non-reversible plow including a beam, a front-whee lframe rigid therewith, a rotary disk-support, a disk, and a laterally-movable draft appliance arranged to swing from a plurality of axes 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.

6. A non-reversible plow including a beam, a rotary disk-support carried thereby, a front-wheel frame rigid with the beam, a tongue arranged to swing laterally from an axis adjacent to the front end of the beam, 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.

7. A plow including a beam, a front-wheel frame rigid therewith, a rotary disk-support carried by the beam, a disk, a tongue-supporting member pivoted on the front-wheel frame, a tongue pivoted on said member, and means for rotating the disk-support when the tongue is moved laterally in turning a corner.

8. A plow including a beam, a front-wheel frame connected thereto, a rotary disk-support carried by the beam, a swinging plate carried by the front-wheel frame, a tongue pivotally mounted on said plate, said tongue being arranged to swing independently of the plate in one direction and to swing with the plate in the opposite direction, and means operatively connecting the disk-support with the tongue.

9. A plow including a beam, a front-wheel frame, a rotary disk-support carried by the beam, a plate pivoted upon the front-wheel frame, means for limiting the movement of said plate in one direction, a tongue having pivotal connection with said plate, means for limiting the pivotal movement of the tongue with respect to the plate in one direction, and means operatively connecting the tongue with the disk-support.

10. A plow including a beam, a rotary disk-support carried thereby, a front-wheel frame, a plate pivoted at one end of the wheel-frame and provided with a stop-lug engaging said frame and with a shoulder, a tongue pivoted to said plate and disposed to abut against the shoulder thereof, and an operative connection between the tongue and the disk-support.

11. A plow including a beam, a rotary disk-support, a laterally-movable draft appliance, a double bell-crank lever connected to the draft appliance for acutation thereby, and means for connecting either of a plurality of the arms of the bell-crank lever to the rotary disk-support.

12. A plow including a beam, a rotary disk-support carried thereby, a tongue arranged to swing from a plurality of axes, a double bell-crank lever connected to the tongue, and a connection between said lever and the rotary disk-support.

13. In a plow, a frame structure including a beam, front and rear furrow-wheels and a

land-wheel, laterally-swinging crank-axles for the furrow-wheels, stops for limiting the movements of said crank-axles, a draft appliance, and means operated by the draft appliance for moving the stops.

14. In a plow, a frame structure including a beam, front and rear furrow-wheels and a land-wheel, laterally-swinging crank-axles for the furrow-wheels, stops for limiting the movements of said crank-axles, a draft appliance, means operated by the draft appliance for moving the stops, and a rotary disk-support carried by the beam and operatively connected with the draft appliance to be rotated thereby.

15. In a plow, a frame structure including a beam, front and rear furrow-wheels and a land-wheel, swinging axles for the furrow-wheels, movable stops limiting the movement of said axles, a rotary disk-support carried by the beam, and a movable draft appliance arranged to move both of said stops and the rotary disk-support.

16. A plow including a beam, front and rear furrow-wheels and a land-wheel, a front crank-axle having a vertical spindle provided with an arm, a fixed stop for limiting the movement of the crank-axle in one direction, and a movable stop associated with said arm to limit the movement of the axle in the opposite direction.

17. A plow including a beam, front and rear furrow-wheels and a land-wheel, a front crank-axle having a vertical spindle provided with an arm, a fixed stop limiting the movement of the axle in one direction, a movable stop associated with said arm to limit the movement of the axle in the opposite direction, a movable draft appliance, and an operative connection between said draft appliance and the movable stop.

18. A plow including a beam, front and rear furrow-wheels and a land-wheel, a rear crank-axle having a vertical spindle journaled in the beam, a rotary disk-support carried by the beam, a lever arranged to rotate the disk-support and to constitute a stop device for the crank-axle, and a draft appliance arranged to operate the lever.

19. A plow including a beam, front and rear furrow-wheels and a land-wheel, a rear crank-axle having a vertical spindle journaled in the beam, a lever constituting a stop device coöperating with the crank-axle and a draft appliance connected to the lever to swing the same.

20. A plow including a beam, front and rear furrow-wheels and a land-wheel, a rear-crank axle having a vertical spindle journaled in the beam, an arm extending laterally from the spindle, a lever mounted on the beam, and a stop member adjustable on the lever and disposed to coöperate with the arm.

21. A plow including a beam, front and rear furrow-wheels and a land-wheel, a rear-crank axle having a vertical spindle journaled in the beam, an arm extending from the spindle, a lever having an adjustable stop member disposed to coöperate with said arm, a rotary disk-support arranged to be shifted by the lever, and a draft appliance operatively connected with the lever to shift the same.

22. A plow including a beam, a rotary disk-support, a pivoted tongue arranged to rotate the support, and a lock for holding the tongue against pivotal movement during the transportation of the plow from one point of use to another.

23. A plow, including a beam disposed at an oblique angle across the line of draft and comprising a series of interchangeable elements each having a laterally-disposed arm at its rear end, the front end of each element being disposed at the same angle with respect to the line of draft and rigidly connected to the laterally-disposed arm of the element next in advance thereof, a draft appliance at the front end of the beam, and disks carried by the arms of the beam elements.

24. A plow, including a beam comprising a series of interchangeable elements each having a laterally-disposed arm at its rear end, the front end of each element being rigidly connected to the laterally-disposed arm of the element next in advance thereof, and the connected portions of adjacent elements being disposed one above the other.

25. A plow including a beam, supporting-wheels, a draft appliance, a collar journaled in the beam, a crank-axle having a squared spindle slidably engaging the collar, a stop-arm projecting from the collar, and a stop located in the path of said arm to limit the movement thereof, said stop being arranged to be moved by the draft appliance.

26. A plow including a beam comprising a series of elements each having a laterally-disposed furrow-opener-supporting arm at its rear end, the front end of each element being in lapping relation with and connected to the laterally-disposed arm of the element next in advance thereof.

27. A plow including a beam comprising a series of furrow-opener-supporting elements each having a laterally-disposed arm at its rear end, the front end of each element and the laterally-disposed arm of the element in advance thereof being disposed one above the other and rigidly connected.

28. In a plow, a beam, supporting-wheels therefor, a swinging axle for one of the wheels, an adjustable stop for said axle, an adjustable furrow-opener supported from the beam, and means for effecting the simultaneous adjustment of the furrow-opener and the stop.

29. In a plow, a beam, furrow-wheels and a land-wheel supporting the beam, trailing

axles for the furrow-wheels, adjustable stops for said axles, an adjustable furrow-opener carried by the beam, and means for effecting the simultaneous adjustment of both stops and the furrow-opener.

30. In a plow, a beam, supporting-wheels therefor, a swinging axle for one of said wheels, an adjustable stop arranged to limit the swinging movement of said axle, a rotary disk-support carried by the beam, and means for simultaneously rotating the disk-support and adjusting the stop.

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:
RALPH DUFFY,
MAX MILLIGAN.