

No. 695,950.

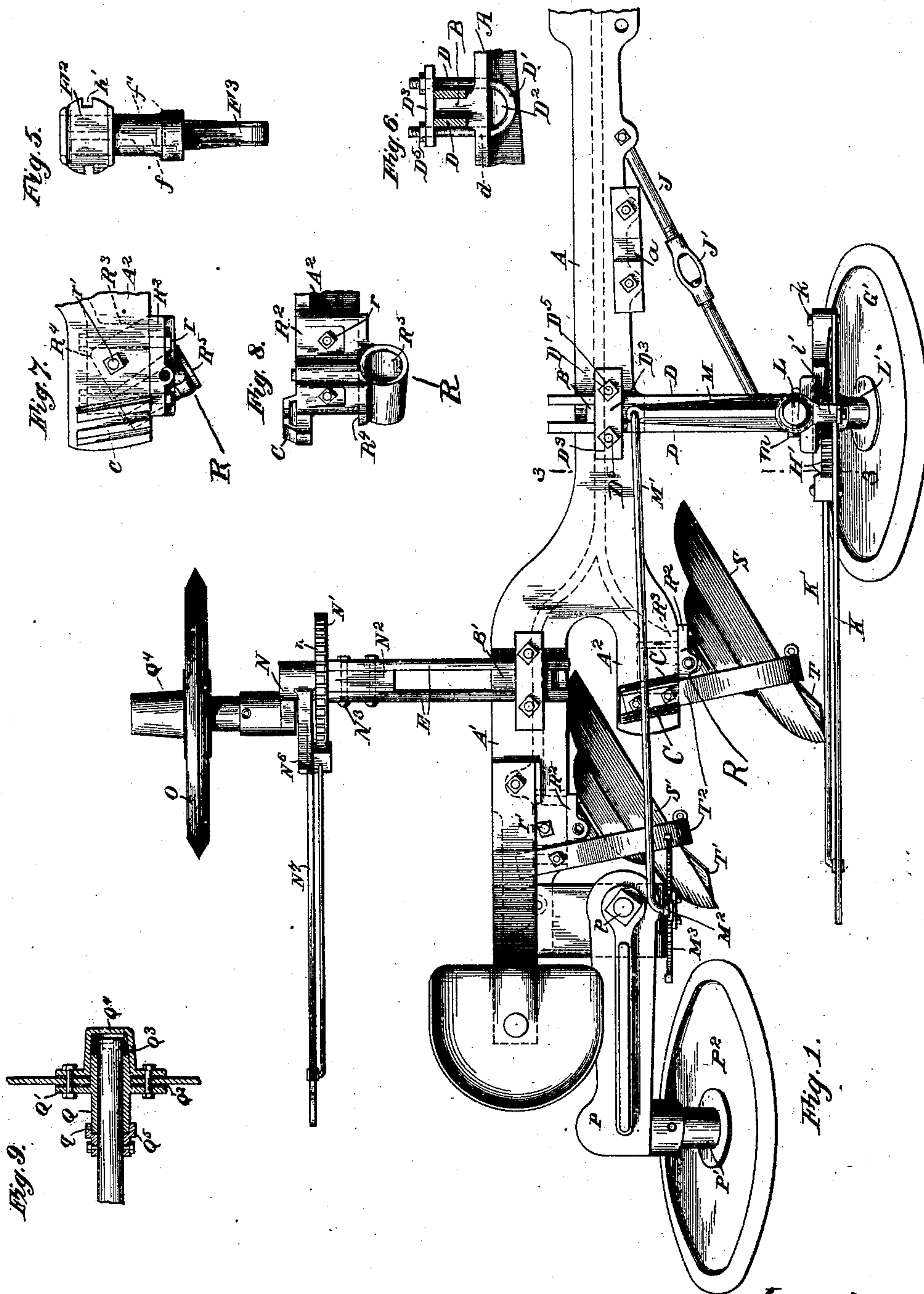
Patented Mar. 25, 1902.

J. SCHOFIELD.
PLOW.

(Application filed Oct. 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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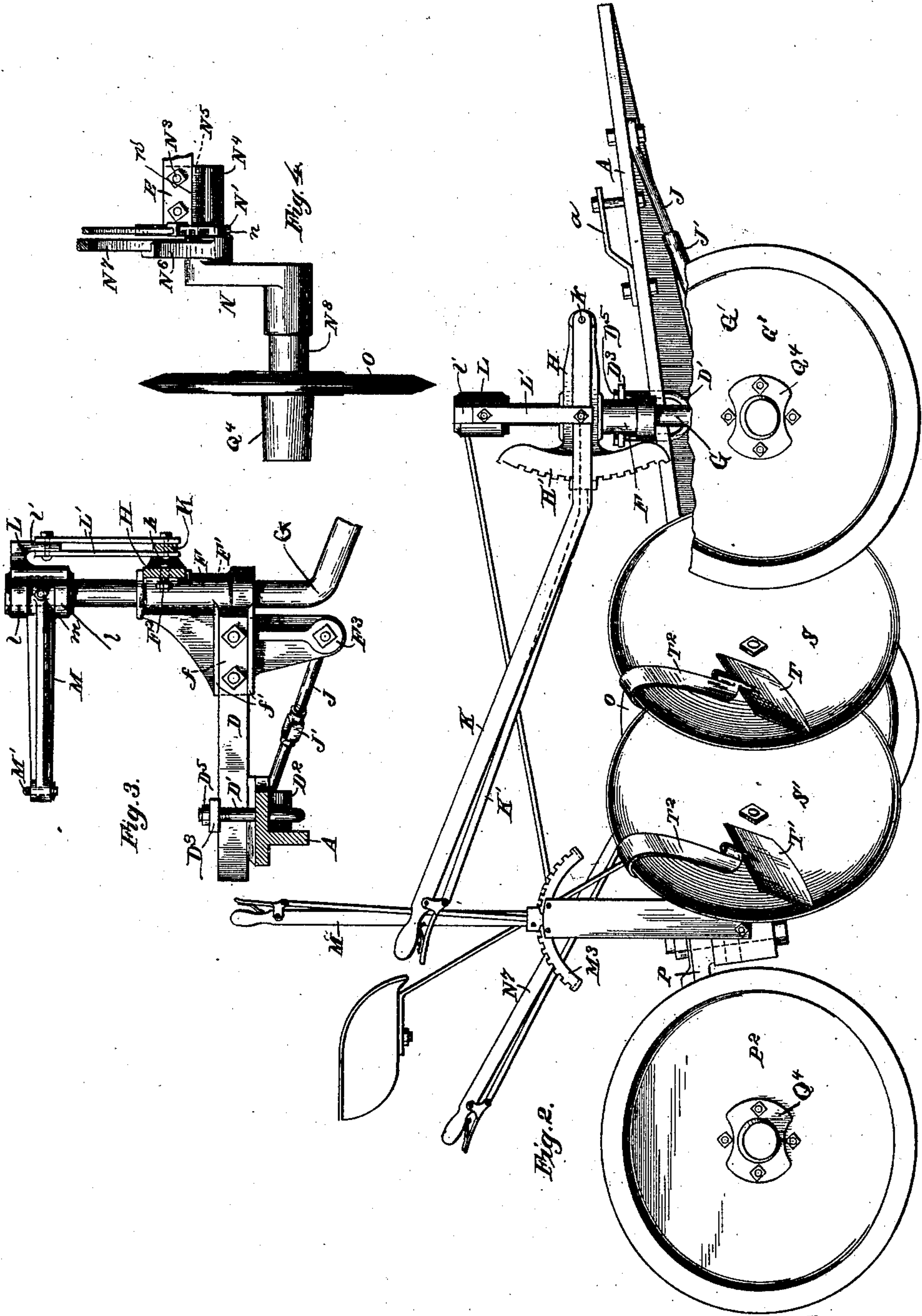
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UNITED STATES PATENT OFFICE.

JAMES SCHOFIELD, OF MARSHALL, TEXAS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 695,950, dated March 25, 1902.

Application filed October 23, 1900. Serial No. 34,089. (No model.)

To all whom it may concern:

Be it known that I, JAMES SCHOFIELD, a citizen of the United States, residing at Marshall, in the county of Harrison and State of Texas, have invented certain new and useful Improvements in Plows; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements especially adapted for disk plows, cultivators, or the like.

Among other objects it is the object of the present invention to provide a novel construction of beam for the plow and also means for connecting the furrow-side wheel and land-side wheel axles or spindles to the beam.

A further object is to so construct the securing means for the axles or spindles that the same may be readily and easily connected to the beam and adjusted to proper position thereon.

A further object of the invention is to provide a novel securing and guide bracket for the furrow-side wheel secured to the beam in a novel manner and constructed for the reception of a holding-rack for the lifting-lever for the furrow-side wheel.

A further object is the provision of a novel mechanism whereby the furrow-side axle or spindle can be raised and lowered and turned upon its vertical axis in order to raise and lower the wheel and to turn the same for turning the plow or cultivator.

A further object of the invention is the provision of a novel axle or spindle bearing for the land-side wheel and a holding-rack for the lifting-lever therefor.

Another object of the invention is to provide a novel construction of beam and bearing box or bracket for the plow-disks.

A further object of the invention is to provide a novel construction of adjustable attachment for the scrapers for the plow-disks.

The invention has for a further object to generally improve and simplify the construction of disk plows, cultivators, or the like.

With such and other objects in view the

invention is embodied in the novel parts, combinations, and arrangement of parts hereinafter described, and particularly set forth in the claims.

In the accompanying drawings is shown a practical embodiment of the invention; but I wish it understood that the improvements are not limited in their useful applications to the particular construction which for the sake of illustration is therein delineated.

In the drawings, Figure 1 is a plan view showing a plow embodying my invention. Fig. 2 is a side elevation of the plow shown in Fig. 1. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 1. Fig. 4 is an end elevation showing the land-side axle or spindle and its connection with its support. Figs. 5 and 6 are details of the guide-bracket for the furrow-side axle and its connection with the beam. Figs. 7 and 8 are details illustrating the connection of the disk-bearings with the beam. Fig. 9 is a longitudinal sectional view through one of the furrow-wheels, showing the construction of the hub and dust-caps.

Referring to the drawings, A indicates a beam for a plow, cultivator, or the like. This beam, as will be seen from Fig. 1, is provided at its under side with a strengthening-rib, and at its rear end it is bifurcated, forming two arms A' and A², the former of which is longer than and extends in rear of the latter. The beam is provided at its forward end with means for the attachment of a clevis or of a draft-rigging. In the drawings such means is shown as being a strap α , secured, as by a bolt, at its rear end and provided with a bolt at its forward end, the forward end being spaced from the beam.

B B' indicate lugs formed on or secured in any suitable manner to the upper face of the beam A. These lugs or brackets are for the purpose of securing to the beam the lateral supporting-arms for the furrow and land side axles, as will be hereinafter described.

C indicates slotted brackets or guideways formed on or secured to the beam A for the attachment thereto of the supporting-arms for the disk-scrapers.

D D indicate bars extending to one side of the beam and being spaced apart at the beam by means of the lug or bracket B. The bars

D D constitute a lateral support for the furrow-side axle and are secured on the beam by means of a U-bolt D', the lower bent end of which fits against a semicircular lug D² on the under side of the beam, the legs of the bolt passing up through apertures *d* in the beam A, one on each side of the lug B, the legs of the bolt lying at the sides of the bars D D.

D³ is a clamping plate or washer extending across the upper edges of the bars and having perforations through which the legs of the U-bolt pass. Nuts D⁵, screwed onto the ends of the U-bolt, complete the connection, and, as will be understood, will when turned down tightly on the bolt force the clamping-plate firmly against the bars D and form a permanent and rigid connection for the bars to the beam.

E E indicate bars similar to the bars D D and secured in a similar manner to the beam A. These bars project to the other side of the beam and constitute the lateral support for the land-side axle.

F indicates a bearing and guide bracket for the furrow-side axle, (indicated at G.) The bracket F, as will be seen, has a lateral web portion *f*, extending between the bars D D and secured to the latter by means of bolts passing through the web and through the bars. The web is provided with flanges *f'*, extending from the faces and adapted to engage the edges of the bars D D to make a more rigid connection. The bracket F is provided with a vertical bore or opening F', through which the vertical portion of the furrow-side axle extends. At or near its upper end the bracket F is provided with a seat F², in which is located the horizontal arm H of a segmental rack H'. Bolts *h*, passing through the horizontal arm H and engaging in slots or openings *h'* in the bracket F, secure the arm H to the bracket. Depending from the main or body portion of the bracket is a part F³, to which is secured one end of a brace-rod J, the other end of which is secured, as by a bolt, to the beam A. The brace-rod is provided between its ends with a turnbuckle J' for an obvious purpose.

For the purpose of raising and lowering the furrow-side axle I employ a lever K, pivoted at *k* to the horizontal arm H. The lever is provided with a holding-pawl adapted to engage the teeth of the rack H' and with operating means K' of any preferred or suitable construction for disengaging the pawl from the rack. On the upper end of the vertical portion of the furrow-axle G is sleeved a cap-plate L, having separated portions provided with vertical perforations *l*, through which the axle extends, and a depending hook *l'*, spaced from the body of the cap-plate. The cap-plate is connected to the lever K by means of two straps L', one on each side of the hook and lever and pivoted to the hook and to the lever.

M indicates an arm sleeved on the axle G

between the separated portions of the cap-plate and secured to the axle, as by means of a taper-bolt *m*. The arm thus holds the cap-plate from vertical movement on the axle, but permits of the turning of the axle within the cap-plate.

To the outer end of the arm M is secured a link M', connected at its other end to a steering-lever M², suitably pivoted to a part carried by the beam A and having a holding-pawl and operating-handle therefor, which pawl is adapted to engage with the teeth of a segmental rack M³.

A detailed description of the lever and rack is not thought necessary, it being sufficient to understand that by a movement of the lever the arm M is swung, turning the furrow-side axle and wheel G' carried thereby.

For pivotally mounting the crank-axle N for the land-side wheel I employ the following instrumentalities: N' indicates a plate having a segmental upper edge provided with rack-teeth or slots *n*. Secured to or formed with and projecting laterally from the plate N' is a portion or web N², which is provided with seats on opposite sides (indicated at *n'*) for the bars E E, which latter are connected to the web N² by means of bolts or the like N³, passing through the bars and through the web. Below the bars and concentric with the rack *n* is a bearing-opening N⁵ for the horizontal portion N⁴ of the crank-axle N, which portion is journaled in the opening and held from disengagement by means of a cotter-pin or the like. The crank-axle is provided with an upwardly-extending arm N⁶, to which is secured an operating-lever N⁷, which is provided with a pawl adapted to disengage the rack N' and suitable operating means for the pawl.

It will be understood that the land-side wheel (indicated at O) is journaled on a second horizontal portion N⁸ of the crank-axle N.

P indicates a swinging arm, which is pivoted to the rear portion of the beam A or to a plate secured thereto at *p* in any preferred manner, as by means of a pivot-bolt. At its outer end the swinging arm P carries a spindle P' for the rear-furrow wheel, (indicated at P².)

The forward-furrow wheel, (indicated at G',) the rear-furrow wheel, and the land-side wheel are journaled on their respective spindles in the following manner. The construction in each instance is similar and a description of one is believed to be sufficient.

Q indicates a hub provided with a flange Q', to which the wheel is bolted or riveted, a soft packing-gasket Q² being interposed between the flange and the wheel. The hub Q is held to the spindle by means of a washer Q³ and cotter-pin or key passing through the end of the spindle. Surrounding the end of the spindle and the hub Q is a dust-cap Q⁴, provided with a flange bolted or riveted to the wheel on the side opposite to the flange of the hub, a suitable packing-gasket being

interposed between the wheel and the flange of the cap.

Q⁵ is a dust-collar sleeved on the spindle inside of the hub Q and encircling the end thereof. The dust-collar is secured in any desired manner (by means of a set-screw) to its spindle and is provided with an oil-opening, (indicated at q.) In this manner an eminently satisfactory and practical dust-proof bearing is provided for the furrow and land-side wheels.

R indicates bearing brackets or boxes, each provided with a vertical flange R², adapted to lie against a bearing portion R³ on the beam A and be secured thereto by means of horizontal bolts r. Each bearing box or bracket is also provided with a horizontal flange R⁴, adapted to engage beneath the bearing portion R³ on the beam and secured thereto by means of a vertical bolt r', passing through vertical openings in the horizontal flange and bearing portion of the beam. Each bearing box or bracket R is provided with a suitable bearing-opening R⁵ for the spindle of the plow-disks, which are indicated at SS'.

It will be understood that one, two, or more plow-disks can be provided and mounted in a manner similar to that just described, it being only necessary to have a beam-arm for each disk spaced or separated from the other arm or body of the beam.

T T' indicate scrapers for the disks. Each scraper is carried by a bent spring-arm T², which is provided at its end with bolt-holes, through which pass bolts or the like having heads engaging in the slots in the brackets or guides C, carried by the beam and above referred to. This construction provides a very simple and sufficient means for securing the scraper-arms adjustably to the plow-beam.

It is believed that from the above description the operation of the various parts will be readily understood by those skilled in the art to which this invention appertains.

Having thus described my invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a plow, in combination, a single metallic bar having a strengthening-rib on its under side and a lug projecting from its upper face, and laterally-adjustable wheel-carrying bars clamped to the beam on each side of the lug.

2. In combination with a plow, of a metallic beam, a lug projecting from the upper surface of the beam, oppositely-disposed bars D the inner ends of which embrace the lug on the beam, means associated with the bars for supporting the plow, a plate D³ bearing upon the upper edges of the bars, and bolts engaging the beam and plate to clamp the bars therebetween, substantially as described.

3. In combination with a plow, and scraper therefor, of means for supporting the same comprising a metal beam, lugs C on the upper surface of the beam to which the scraper is secured, and bearing-brackets R for the plow also secured to the beam in close proximity to lugs C, substantially as described.

4. In combination with a flanged metal beam, of a plow, a spindle therefor, and a bracket adapted to secure the plow to the beam comprising a spindle-bearing, a portion R² integral therewith contacting with one edge of the beam, and an oppositely-disposed integral portion rigidly secured to the flange of the beam, substantially as described.

5. In a plow, a beam having on the upper face thereof a lug, a support for the wheel-axle comprising separated arms secured to the beam on each side of the lug by means of a U-bolt passing through holes in the beam and a clamp-plate above the bars through which said bolt passes, and nuts for the bolt, substantially as described.

6. In a plow, the combination of a beam, separated bars secured to said beam, an axle-bracket secured to said bars and provided with a portion lying between and spacing the bars apart, an axle in said axle-bracket, and means for turning said axle in said bracket, substantially as described.

7. In a plow, the combination of a beam, separated bars secured to said beam, an axle-bracket having a web portion extending between and secured to said bars, said bracket having an opening, an axle extending within said opening, a rack secured to said axle-bracket, a lever pivoted to said bracket, and a connection between said lever and said axle for raising and lowering the same, substantially as described.

8. In a plow, the combination with a beam, a lateral support secured thereto, a bracket secured to the outer end of said support, a brace from said bracket to said beam, a rack secured to said bracket, a lever pivoted to said rack, an axle passing through said bracket, a connection from said lever to said axle, said lever having holding means adapted to engage said rack, substantially as described.

9. A plural disk-plow beam comprising a bar terminating in a plurality of arms at the rear end thereof, laterally-adjustable wheel-carrying bars clamped to the beam, and a strengthening-flange on the underside of said bar and arms terminating in bearing-supporting enlargements at the rear end of the arms.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES SCHOFIELD.

Witnesses:

W. L. MARTIN,
W. C. PIERCE, Jr.