

E. H. SHOLAR.  
 REVERSIBLE DISK PLOW.  
 APPLICATION FILED MAR. 3, 1908.

Patented Nov. 30, 1909.  
 4 SHEETS—SHEET 1.

941,818.

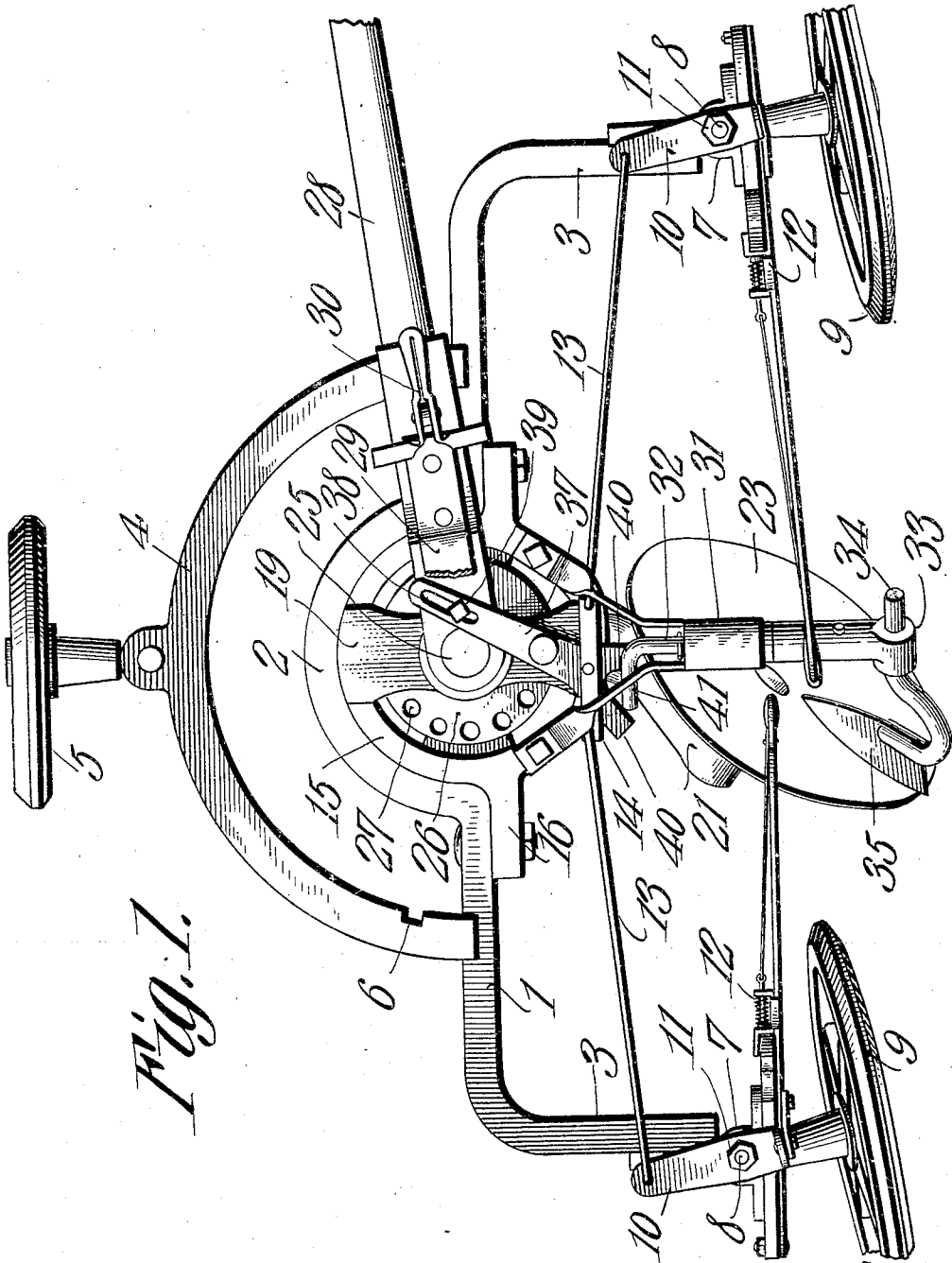


Fig. 1.

Inventor

*Edward H. Sholar.*

Witnesses

*E. J. Stewart*  
*C. Daniels*

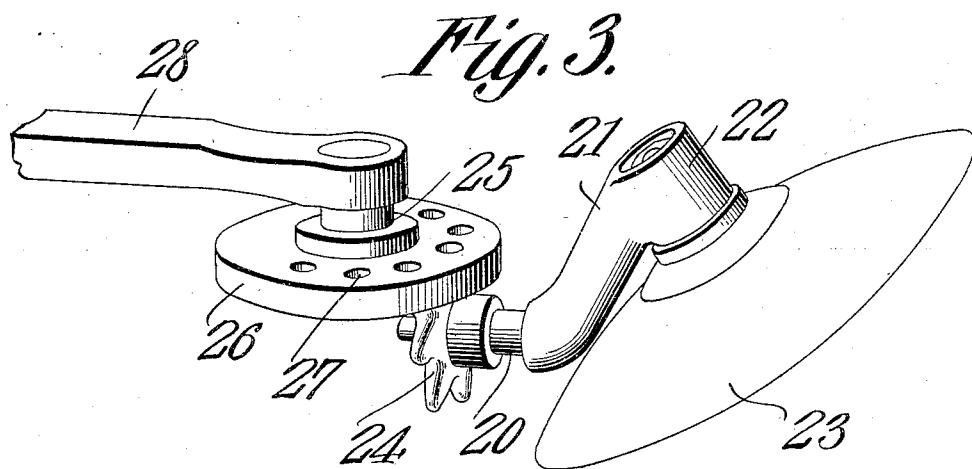
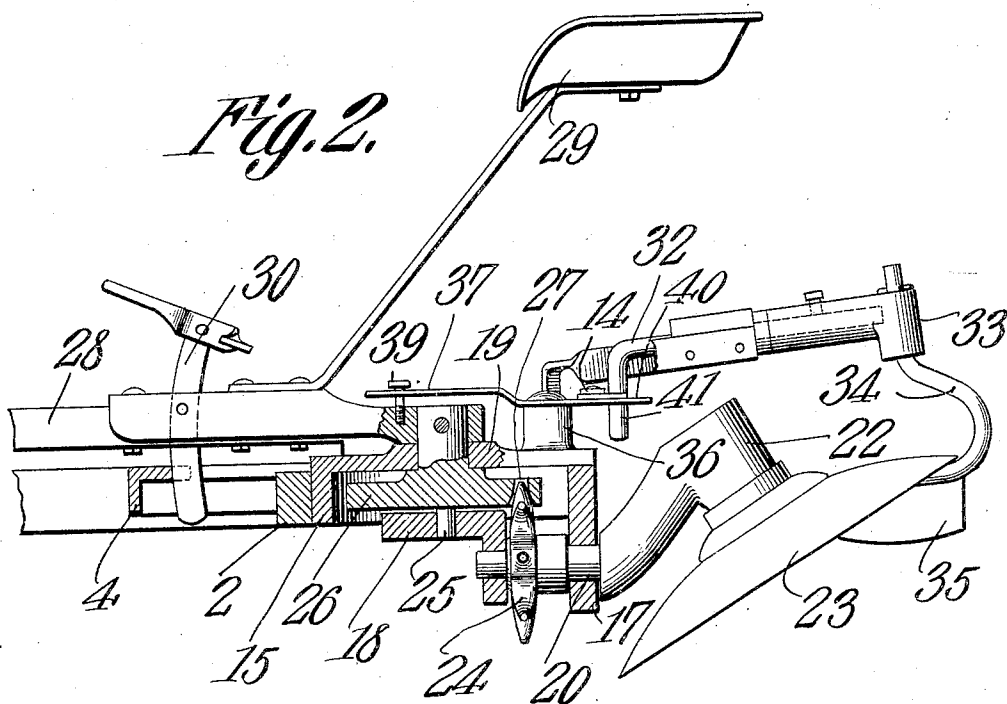
By

*Chas. Snow & Co.*  
 Attorneys

E. H. SHOLAR.  
REVERSIBLE DISK PLOW.  
APPLICATION FILED MAR. 3, 1908.

Patented Nov. 30, 1909.  
4 SHEETS—SHEET 2.

941,818.



Inventor

*Edward H. Sholar*

Witnesses

*E. H. Sholar*  
*C. Daniels*

By

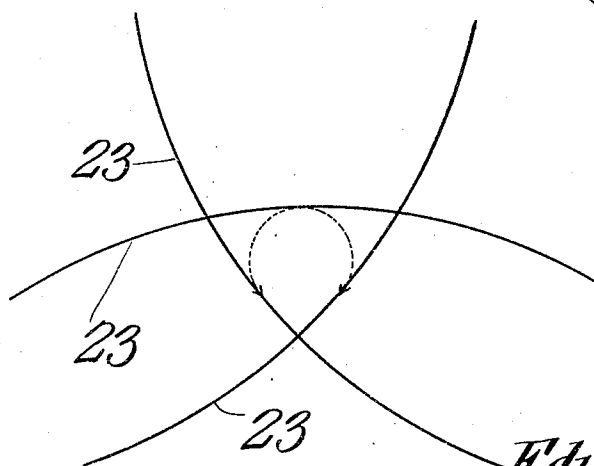
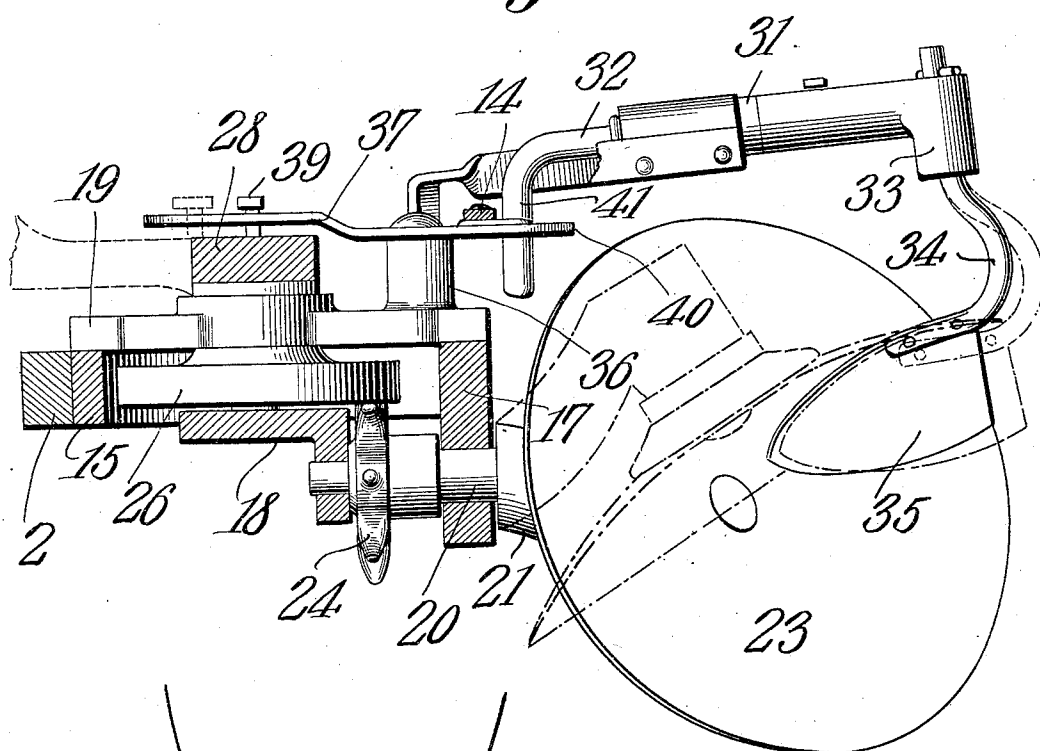
*Cash & Co*  
Attorneys

E. H. SHOLAR.  
REVERSIBLE DISK PLOW.  
APPLICATION FILED MAR. 3, 1908.

941,818.

Patented Nov. 30, 1909.  
4 SHEETS—SHEET 3.

*Fig. 4.*



*Fig. 6.*

Witnesses  
*E. H. Sholar*  
*C. Daniels*

Inventor  
*Edward H. Sholar.*

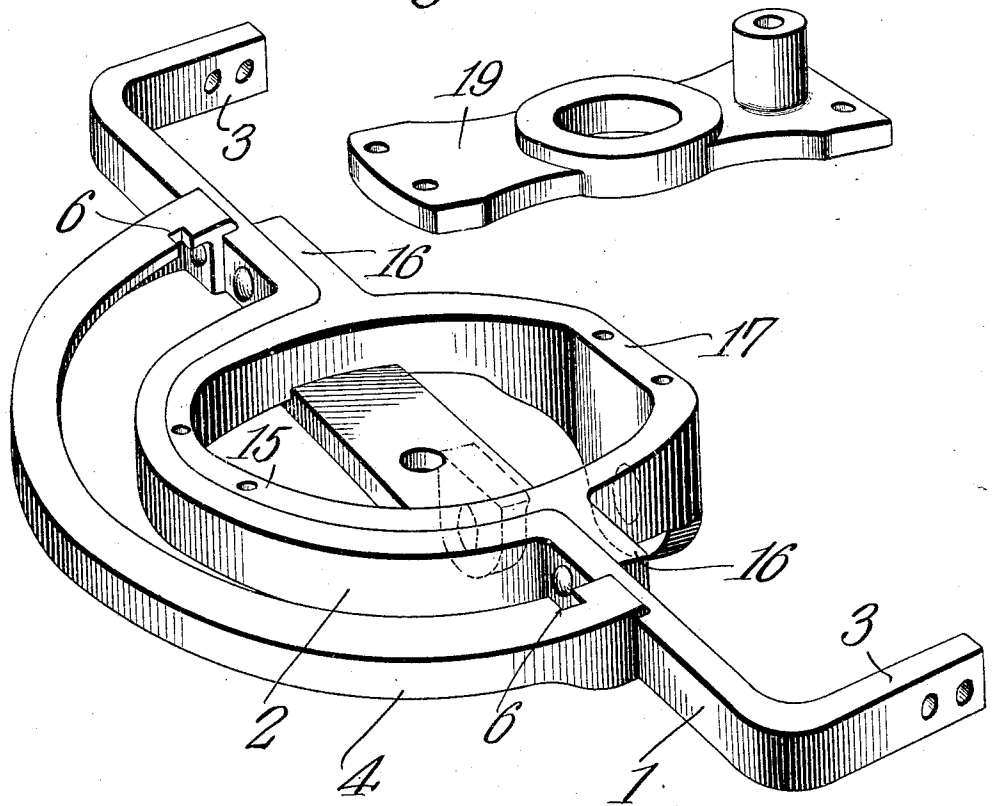
By *C. A. Snow*  
Attorneys

941,818.

E. H. SHOLAR.  
REVERSIBLE DISK PLOW.  
APPLICATION FILED MAR. 3, 1908.

Patented Nov. 30, 1909.  
4 SHEETS—SHEET 4.

*Fig. 5.*



Witnesses

*E. J. Stewart*  
*E. Daniels*

Inventor  
*Edward H. Sholar.*

By *Ca Snow*  
Attorney

# UNITED STATES PATENT OFFICE.

EDWARD H. SHOLAR, OF CHATTANOOGA, TENNESSEE, ASSIGNOR TO VOLUNTEER DISC PLOW COMPANY, OF CHATTANOOGA, TENNESSEE, A CORPORATION OF TENNESSEE.

## REVERSIBLE DISK PLOW.

941,818.

Specification of Letters Patent. Patented Nov. 30, 1909.

Application filed March 3, 1908. Serial No. 419,014.

*To all whom it may concern:*

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

This invention has relation to reversible disk plows and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide a plow of the character indicated in which the disk is so mounted as to be reversed in work facing positions as the draft means is turned from one end of the frame of the plow to the other end. In its reverse movement the disk turns over and is elevated above the surface of the ground. The object being that in the act of reversing the disk will assuredly free itself of all soil which otherwise might adhere to the work facing surface and interfere with the proper operation of the disk scraper with which the plow is provided.

A further object of the invention is to provide a plow of the character indicated having a rigid frame work the parts of which are effectually braced against all strains to which such an implement is subjected.

A still further object of the invention is to provide a disk shaft of peculiar configuration which when rotated imparts to the disk the peculiar reversing movement above described.

In the accompanying drawings: Figure 1 is a plan view of the plow. Fig. 2 is a transverse sectional view of an intermediate portion of the same showing the disk in the act of reversing. Fig. 3 is a perspective view of the angularly disposed shafts with their connections and attachments. Fig. 4 is a transverse sectional view of an intermediate portion of a plow showing the disk in heavy lines in work facing position and the disk in dotted lines in the act of reversing. Fig. 5 is a perspective view of the frame of the plow with parts separated, and Fig. 6 is a diagrammatic view illustrating the movement of the center of the disk during the act of reversal.

The frame of the plow comprises the beam 1 which is provided at its middle with an arcuate portion 2 and at its extremities with the laterally disposed end portions 3. The

arcuate portion 2 occupies the same plane as that occupied by the body portion of the beam 1 and the portions 3 but the portion 2 is disposed upon the opposite side of the body of the beam 1 from the end portions 3. The arcuate bracket 4 is attached to the beam 1 and is arranged concentrically with relation to the portion 2. The ground wheel 5 supports the outer portions of the bracket 4. The bracket 4 is provided at its inner edge and in the vicinity of its ends with the notches 6. The brackets 7 are attached to the ends of the portions 3 of the beam 1. The spindle shanks 8 pass vertically through the brackets 7 and the furrow wheels 9 are journaled upon the spindles at the lower ends of the shanks 8 in the usual manner. The arms 10 are normally held in fixed relation with the shanks 8 by means of the jam nuts 11 located upon the shanks 8. Lever mechanisms 12 are operatively connected with the outer ends of the arms 10 and may be operated to raise or lower the said arms and move the shanks 8 correspondingly for the purpose of raising or lowering the end portions 3 of the beam 1. The links 13 are pivotally connected at their outer ends with the arms 10 and at their inner ends are pivotally connected with the bar 14, which, in turn, is pivotally mounted as will be hereinafter explained.

The substantially circular saddle 15 fits at one side snugly within the arcuate portion 2 of the beam 1 and is provided at opposite sides with the lugs 16 which lie against the side of the beam 1 at points adjacent the arcuate portion 2. The said saddle is provided at that side diametrically opposite the part thereof which fits in the arcuate portion 2 of the beam 1 with the flattened portion 17. The plate 18 extends diametrically across the lower portion of the saddle 15 and is in alinement with the body portion of the beam 1. The plate 19 extends diametrically across the upper portion of the saddle 15 and is in cruciform relation to the plate 18. The disk carrying shaft 20 is journaled for rotation in parallel lugs which depend from the flattened portion 17 of the saddle 15 and from the plate 18. The outer portion of the shaft 20 is continued into the off set neck 21 which is angularly disposed with relation to the journaled portion of the said shaft and the outer extremity of the said off set neck merges into the disk journal box 22 which is

also pitched at an angle to the journaled portion of the shaft 1 and at an angle to the longitudinal axis of the offset neck 21. The disk 23 is journaled for rotation upon the journal box 22 and the parts are so proportioned that the center of the disk 23 is located to one side of the axis of the journaled portion of the shaft 20 and upon the same side of the said axis as that upon which the offset neck and the disk journal box lie. The neck 21 is of such length that no portion of the inner edge of the disk 23 at any time overhangs or lies within the plane of the flattened portion 17 of the saddle 15. The spur wheel 24 is fixed to the journaled portion of the shaft 20 and lies between the plate 18 and the flattened portion 17 of the saddle 15. The vertically disposed shaft 25 is journaled for rotation in the plates 18 and 19 and is disposed at a right angle to the journaled portion of the shaft 20. The shaft 25 is provided with a disk 26 which in turn is provided with a series of perforations 27 arranged in an arc and which are adapted to receive the spurs of the wheel 24. Thus the said disk and wheel intermesh. The perforations 27 pass entirely through the disk 26 and are slightly cone shaped. By being so arranged they cannot accumulate dirt and will snugly receive the spurs of the wheel 24. The draft tongue 28 is fixed to the shaft 25 and extends in a substantially horizontal position over the arcuate portion 2 of the beam 1 and the bracket 4. The operator's seat 29 is mounted upon the tongue 28 and the foot trip 30 is pivotally mounted upon the tongue 28 and is adapted to engage either of the notches 6 in the bracket 4 for the purpose of locking the parts in fixed relation. The bearing 31 is supported upon the saddle 15 and the shaft 32 is journaled in the said bearing. The sleeve 33 is attached to the outer end of the shaft 32 and the scraper arm 34 is loosely journaled in the sleeve 33. The scraper blade 35 is attached to the lower end of the arm 34. The post 36 is erected upon the plate 19 and the lever 37 is fulcrumed to the said post. The power end of the said lever is slotted as at 38, and receives the pin 39 which is mounted upon the tongue 28 out of alinement with the axis of the shaft 25. The working end of the lever 37 is provided with the spaced fingers 40 which receive between them the depending end 41 of the shaft 32. The bar 14 is pivotally mounted upon the working end portion of the lever 37.

From the foregoing description it is obvious that a plow of the character indicated is provided which possesses a thoroughly braced and rigid frame work and that the parts are so arranged that the moving elements are securely held in proper relation to each other. When the draft tongue 28 is swung horizontally around from one end

of the frame to the other the shaft 20 is partially rotated through the instrumentality of the shaft 25 and the meshing members 24 and 26. As the said shaft 20 rotates the disk 23 is turned over and lifted above the ground in passing from one work facing position to a reversed position and the center of the said disk moves in a vertical arc as illustrated by the dotted line in Fig. 6. This peculiar movement on the part of the disk is attended by minimum frictional resistance on the part of the soil as it leaves and approaches the same and positively assures that none of the soil is lifted and lodged between the disk and the scraper as the disk assumes a reversed work facing position. The peculiar arrangement of parts also enables the scraper supporting bearing 31 to be located low for by the arrangement the said bearing does not interfere with the movement of the disk notwithstanding the fact that it turns over and moves above the surface of the ground during the act of reversal. At the same time that the tongue 29 is swung around the lever 37 is swung upon its fulcrum through the instrumentality of the pin 39 working in the slot 38. The working end of the said lever moves the bar 14 which in turn swings the arm 10 through the links 13 and as the said arms are normally fixed to the spindle shanks 8 by the jam nuts 11 the wheels 9 are turned into different planes at the same time that the disk 23 is reversed. If at any time it should be desired that either one of the furrow wheels 9 should be freely castered or permitted to swing the upper jam nut 11 upon the spindle shank 8 of the particular wheel desired to be released may be loosened when that wheel becomes freely castered while the other wheel 9 remains fixed in its adjusted position. While the movement of the disk 23 and the wheels 9 is simultaneous the movement of the scraper shaft 32 does not occur until after the initial movement of the aforesaid parts. This is due to the fact that the fingers 40 do not snugly receive the depending portion 41 of the shaft 32 and consequently there is some lost movement of the lever 37 before it positively actuates the shaft 32 to cause the scraper blade 35 to follow the disk 23 into a reverse position.

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

1. A plow including a support, a journaled disk operative in reversed positions in the line of draft of the plow and movable at its axis in an anticlinal path in the act of reversal.

2. A plow including a support, a journaled disk operative in reversed positions and movable at its axis in an anticlinal path with its work-facing surface toward the ground in the act of reversal.

3. A plow including a support, a disk operative in reversed positions and movable at its center in an anticlinal path in the act of reversal, and a draft appliance movable to reverse the disk.

4. A plow including a support, a disk operative in reversed positions and movable at its center in an anticlinal path with its work-facing surface toward the ground in the act of reversal, and a draft appliance movable to reverse the disk.

5. A plow including a support, a disk operative in reversed positions and movable out of the ground in the act of reversal, said disk being also movable at its center in an anticlinal path in the act of reversal, and a draft appliance movable to reverse the disk.

6. A plow including a support, a disk operative in reversed positions and movable out of the ground in the act of reversal, said disk being also movable at its center in an anticlinal path with its work-facing surface toward the ground in the act of reversal, and a draft appliance movable to reverse the disk.

7. In a plow the combination with a support of a reversible plowing member journaled thereon, intermeshing gears having angularly disposed axes of movement, and intermeshing at a point between the plowing member and the point of intersection of the angularly disposed axes, one of said gears being connected to the plowing member, and a reversible draft member cooperating with the other gear to move the same.

8. In a plow the combination with a rotatable substantially horizontal plow-carrying shaft, of an upright shaft, gearings connecting the shafts and intermeshing at a point between the upright shaft and the outer extremity of the horizontal shaft, and means for rotating the upright shaft to reverse the horizontal shaft and the plow carried thereby.

9. A plow comprising a beam provided with an intermediate arcuate portion, a substantially circular saddle fitting in the arcuate portion and having at its upper and

lower sides transverse plates, a plow-carrying member journaled in the saddle, a reversible draft means journaled to the saddle and being operatively connected with the plow-carrying member.

10. A plow comprising a frame having a beam provided with an intermediate arcuate portion, a substantially circular saddle fitting in the arcuate portion and having at its upper and lower sides transverse plates in cruciform relation to each other, a plow-carrying member journaled in the saddle, and a reversible draft means journaled in the saddle and being operatively connected with the plow-carrying means.

11. A plow comprising a frame having a beam provided with an intermediate arcuate portion, a substantially circular saddle fitting in the arcuate portion and having at its upper and lower sides transverse plates which are in cruciform relation to each other, a plow-carrying member journaled in the saddle, one of said plates being in alignment with the plow-carrying member, and the other plate being in alignment with the portion of the beam adjacent the arcuate portion thereof, a reversible draft means journaled in the saddle and being operatively connected with the plow-carrying member.

12. A plow comprising a frame having a beam provided with an arcuate portion, a saddle fitting in said arcuate portion and being substantially circular, said saddle having at its upper and lower sides transverse plates in cruciform relation to each other, a plow-carrying member journaled in the side of the saddle and the lower plate, and a reversible draft means journaled in the saddle and being operatively connected with the plow-carrying member.

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

EDWARD H. SHOLAR.

Witnesses:

E. W. CADY,  
H. S. AUSTIN.