

(No Model.)

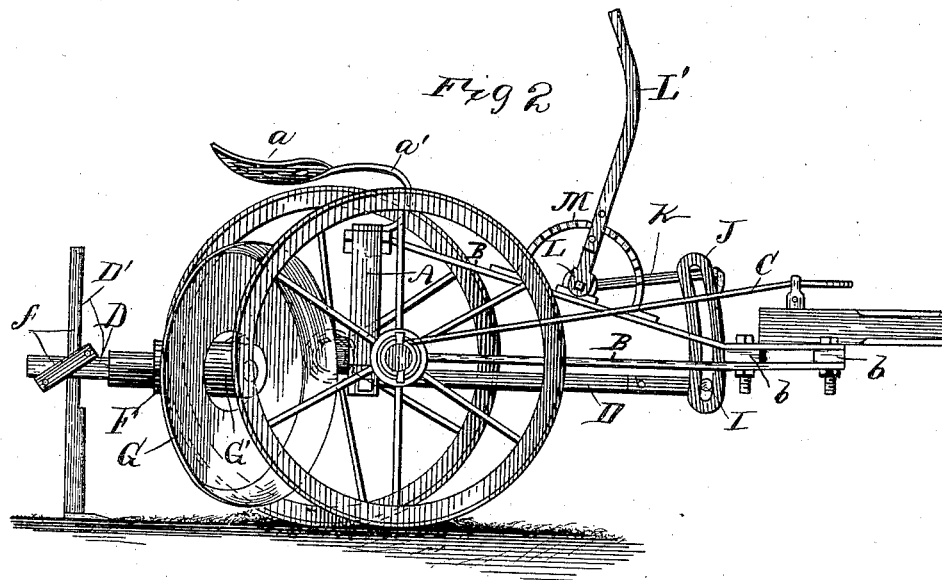
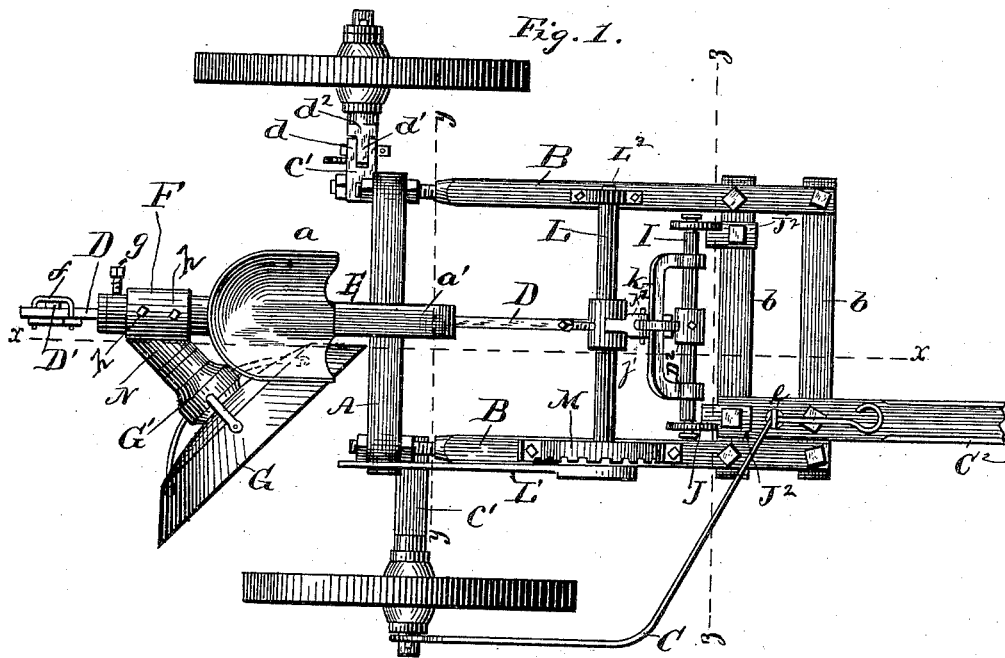
W. B. WILLIS.

3 Sheets—Sheet 1.

ROTARY PLOW.

No. 301,313.

Patented July 1, 1884.



WITNESSES

W. E. Bomen  
Chas. R. Burr

INVENTOR

W. B. Willis  
By *W. B. Willis*  
Attorneys.

(No Model.)

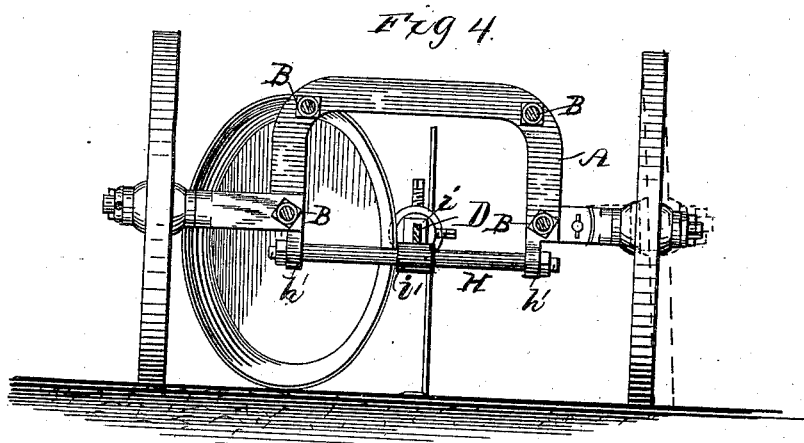
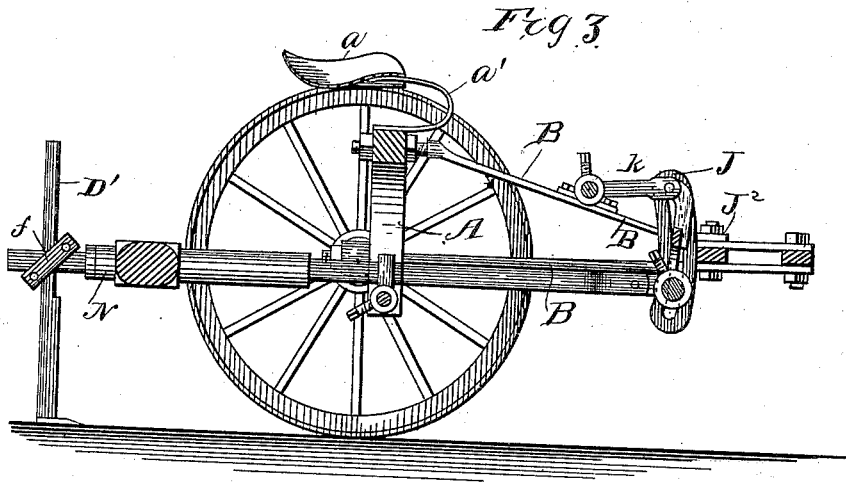
W. B. WILLIS.

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WITNESSES

W. E. Bowen.  
Chas. R. Burr

INVENTOR

W. B. Willis  
By Myers  
Attorney

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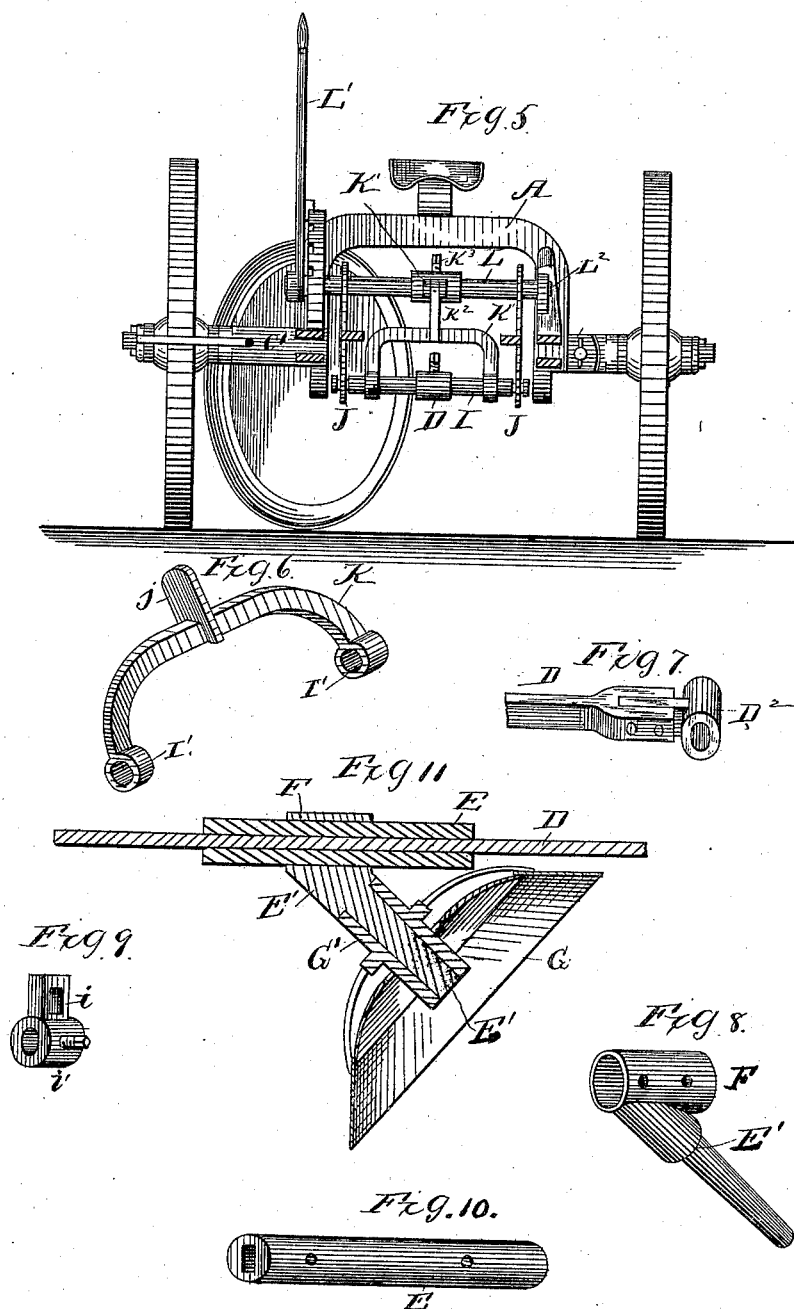
W. B. WILLIS.

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WITNESSES  
W. E. Bowen  
Chas. R. Burr

INVENTOR  
W. Beale Willis  
By *[Signature]*  
Attorneys.

# UNITED STATES PATENT OFFICE.

W. BEALE WILLIS, OF WACO, TEXAS.

## ROTARY PLOW.

SPECIFICATION forming part of Letters Patent No. 301,313, dated July 1, 1884.

Application filed October 19, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, W. BEALE WILLIS, a citizen of the United States of America, residing at Waco, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Rotary Plows, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention pertains to improvements in rotary plows, having for its object, among other things, to avoid side draft, to obviate downward pull on the neck of the team, to facilitate the adjustment of the plow-beam, to re-enforce or strengthen the beam, to vary the angle of presentation of the plow to the soil according as it is desired to plow deep or shallow, to secure the weight of the driver and the seat-supporting yoke upon the plow, and to effect the ready attachment to and detachment from the plow-beam of the plow; and to these ends my invention consists of the combination and disposition of parts, substantially as hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a plan view of my improved plow. Fig. 2 is a side view thereof. Fig. 3 is a section on the line X X of Fig. 1. Fig. 4 is a section on the line Y Y of Fig. 1. Fig. 5 is a section on the line Z Z of Fig. 1. Figs. 6, 7, 8, 9, and 10 are detail views; and Fig. 11 is a detail of the plow and its adjunctive parts in horizontal section.

In constructing my invention I employ a yoke, A, which may consist of two uprights and a horizontal connecting cross-piece rigidly secured together. Upon this yoke the seat *a* is mounted by a strong spring, *a'*, fastened to said cross-piece, so that the seat will be above and extend back of the yoke and bring the weight of the rider over the plow to prevent downward pull on the neck of the team by the action of the plow.

B B are four bars (part of the frame,) two of which are secured to corners of the yoke A and two to the lower ends thereof, while the opposite or forward ends of said bars are bolted to the front cross-bars, *b b*, two being disposed on the lower side and two on the upper side of said cross-bars *b*. (See Figs. 2 and 4.) Short axles C' are fixed or bolted to the lower vertical ends of said yoke—one to the rear and the other to the front of said yoke.

One of these axles is mortised or socketed, as at *d*, (see Fig. 1,) to receive a tongue or tenon, *d'*, on axle *d''*, to allow the wheel on the latter to assume an outwardly-inclined position to the plow, (see Fig. 4,) whereby, together with the draft-rod C, connected to the outer end of the axle and extended forward and through an eye, *e*, on the rear end of the tongue C', all side draft is effectually overcome. The wheel in its inclined position acts as a brace to resist the tendency of the machine to move sideways on account of the obliquity of the plane of the cutting-edge of the rotary plow (presently described) to the plane of the draft.

D is the plow-beam, with its rear end provided with a colter, D', to follow in the path of the rotary plow, and which is particularly designed for use in plowing hard ground to enable the easy entrance of the plow, the standard of said colter being clipped, as at *f*, (see Fig. 3,) upon said beam. Slipped upon and rendered removable from the plow-beam by set-screws *g* (see Fig. 1) is a re-enforcing or strengthening sleeve, E. Upon this sleeve is inserted the tubular portion F of the oblique axle E' of the rotary plow G, which is approximately of disk form, and has a sleeve or hub, G', fitting and held upon the axle E' by ordinary means. The plane of the cutting-edge of the plow is therefore by the above arrangement oblique or diagonal to the plane of the draft, whereby greater width of cut or furrow will be obtained. This plow is capable of adjustment by set-screws *h*, so as to change its angle of presentation to the soil, according as it is required to plow deep or shallow, without necessitating the varying of the width of the prospective furrow. The plow G is dish-shaped, the cavity of the dish facing outward. Its central portion is closed to form a shield against the passage of the plowed earth. The plow-beam passes near its middle through a slot-bar, *i*, cast integral with sleeve *i'*, (see Fig. 9,) adjustably connected to rod H, (see Fig. 4,) which rod is supported in sockets *h'*, provided in downward extensions of the yoke A, whereby the beam can be readily adjusted laterally, so as to enable the corresponding adjustment of the plow, as occasion may require. The forward or draft end of the plow-beam D has, as a continuation thereof and bolted there-

to, the sleeve D<sup>2</sup>, (see Fig. 7,) which encircles the cross-rod I, the ends of which fit into the segmentally-slotted cams or frames J, which have cast integral therewith the horizontal and orificed brackets J<sup>2</sup>, by which they are bolted to the adjoining bar b at the front of the machine, which construction is designed for the guidance of the forward end of the plow-beam when vertically adjusted.

10 K is a yoke, its ends (see Figs. 5 and 6) having the sleeves I', through which projects the cross-rod I, whereon by such connection it is pivoted, and it has projecting vertically from its center and cast integral therewith the perforated hinge-arm j, which projects into and is pivoted in sockets j' (see Fig. 1) of the sleeve-arm K<sup>2</sup> (see Fig. 5) on shaft L, which latter has its bearings in sockets L<sup>2</sup>, (see Fig. 1,) rigidly secured on the upper frame-bars, 20 B. The shaft L is provided with a handle, L', which is employed as a lever to adjust the plow-beam and plow as required.

A rack, M, is secured to the upper ones of the bars B contiguously to the handle or lever 25 L', to retain the lever which is adapted to engage therewith in its adjusted position.

Having thus fully described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the plow G, having sleeve or hub G', and oblique axle E', having 30 tubular portion F, adjustable by set-screws h, strengthening-sleeve E, and plow-beam D, substantially as shown, and for the purpose described.

2. The combination of plow G and its sleeve- 35 adjusting mechanism on beam D, beam D, sleeve D<sup>2</sup>, yoke K, having sleeves I', cross-rod I, hinge-arm j, slotted cams or frames J, having brackets J<sup>2</sup>, shaft L, having handle-lever L', and rack M, substantially as shown, and for 40 the purpose described.

3. The combination of the yoke K, having sleeves I' and hinge-arm j, slotted cams or frames J, having brackets J<sup>2</sup>, cross-rod I, beam D, having sleeve D<sup>2</sup>, sleeve-arm K<sup>2</sup>, shaft L, 45 handle-lever L', and rack M, substantially as shown, and for the purpose described.

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

W. BEALE WILLIS.

Witnesses:

ROSS MORGAN,  
L. C. PENRY.