

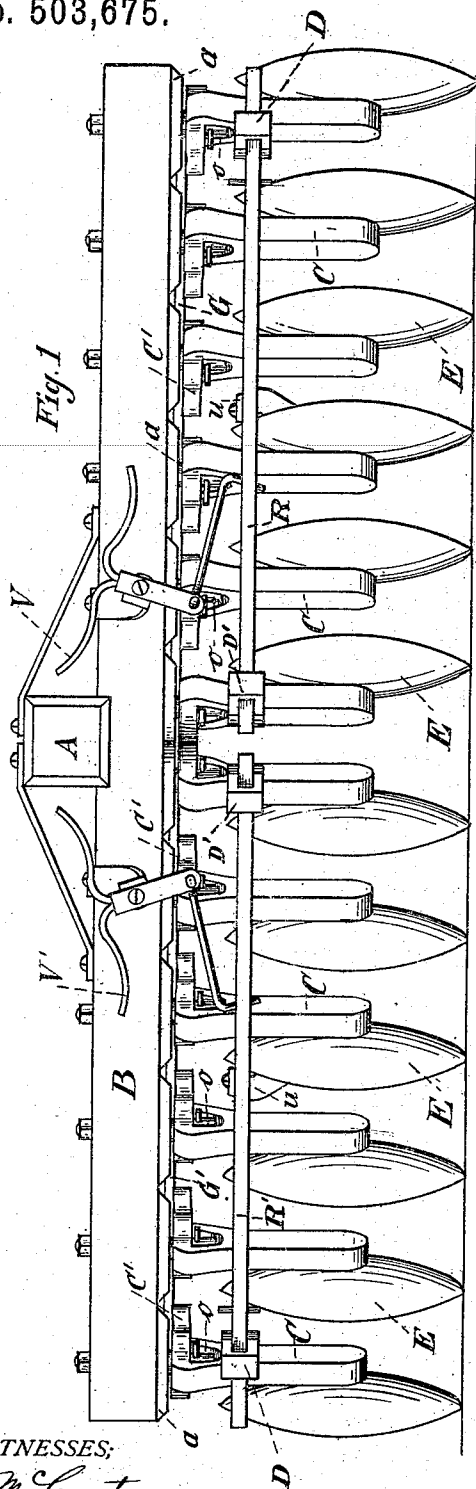
(No Model.)

C. PERRIN.
HARROW.

2 Sheets—Sheet 1.

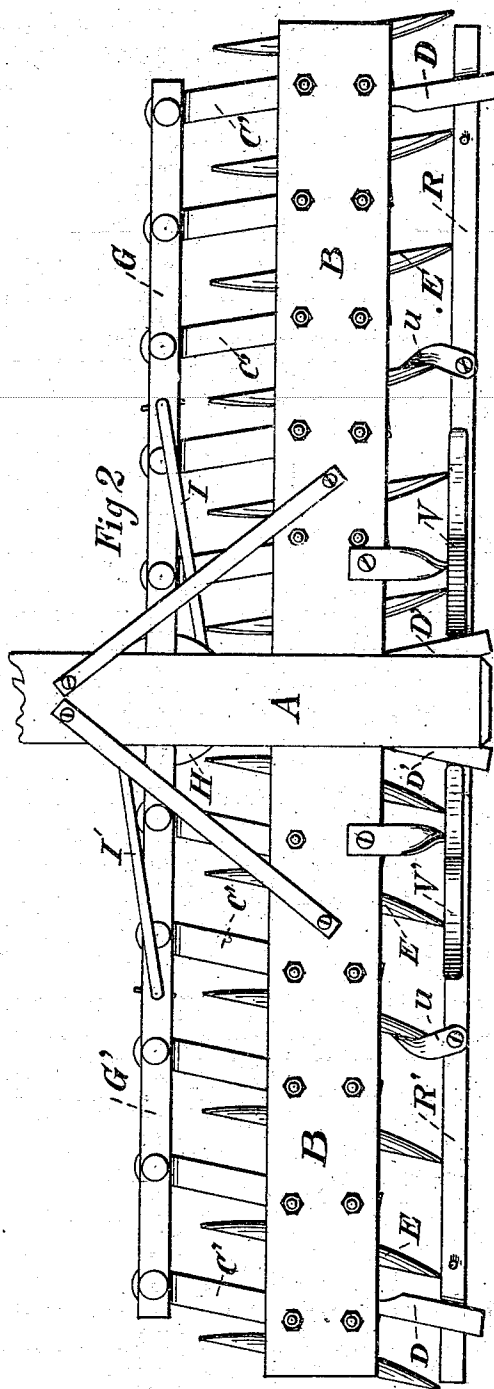
No. 503,675.

Patented Aug. 22, 1893.



WITNESSES;

R. J. McCarty
Ewing French



INVENTOR,

Charles Perrin.

BY *Toulmin & Toulmin*

his ATTORNEYS.

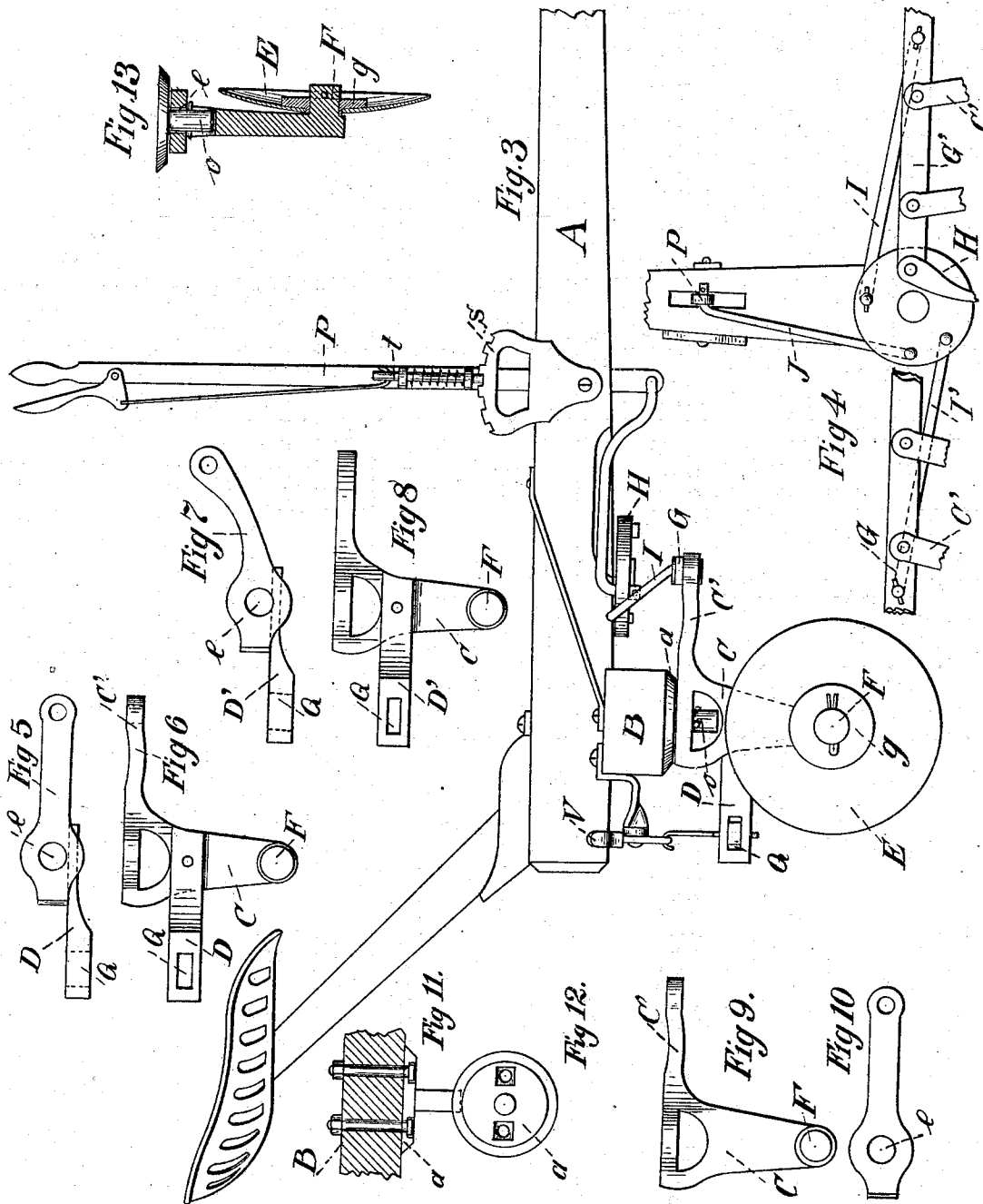
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UNITED STATES PATENT OFFICE.

CHARLES PERRIN, OF DAYTON, OHIO.

HARROW.

SPECIFICATION forming part of Letters Patent No. 503,675, dated August 22, 1893.

Application filed August 5, 1892. Serial No. 442,233. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PERRIN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Rotary Disk Harrows, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in harrows or cultivators of the class known as rotary disk harrows, and comprises a novel construction and arrangement of parts that will be hereinafter more fully set forth, and the essential features pointed out in the claims.

The object of my invention is to provide a harrow that is not only eminently adapted to all the ordinary work usually performed by this character of agricultural implements, but one that may also be employed with good results in the cultivation of corn and cotton.

A further object of my invention is to provide a harrow having each disk, independently of the rest, pivoted to the cross beam, by means that will hereinafter be described. This enables the removal of one or more disks from the gangs, without interfering with, or necessitating the removal of others. Thus it will be seen that the number of disks may be increased or decreased according to the requirements of the soil under cultivation. Should it become necessary to straddle a row, the two inner disks may be easily detached from their pivots and removed from the gangs, and the intervening row left undisturbed by the operation of the harrow, or should the extent of soil be such as to require the use of a less number of disks than the entire gang, they may be removed from the outer or inner ends of the gangs. In arranging the disks to work independently of each other, other objects are accomplished; the bearing incident to the angling of the gangs is distributed among the entire series of disks. Each disk being pivoted to a cross beam, furnishes its own independent bearings and stands independently, the pressure thereof. Thus it will be seen, the necessity of having the entire bearings of the gangs, confined to a single shaft with the usual number of boxes and their

standards to withstand the strain of the entire gangs, is avoided. In this individual attachment of the disks each disk is angled independently of the other, but all are subjected, simultaneously, to the same angle. The objectionable end thrust of the gangs, which greatly increases the strain on the two bearing points commonly found in disk harrows, by bringing the entire gangs with their frames, to an angle, is also avoided. By removing the cotters from the swivel connections the disks may be reversed and operated to throw the dirt in an opposite direction.

Reference is now made to the accompanying drawings and the detailed description to follow, in which other objects of the invention will appear.

Figure 1, is a view of the harrow from the rear, showing the disks at angle; Fig. 2, a plan view of the same; Fig. 3, a side elevation; Fig. 4, a detached detailed view showing the angle bar and means by which the angling of the disks is effected; Fig. 5, a detached plan view of the outer end disk standard with arms for scraper bar and angle bar; Fig. 6, a side elevation of the same; Fig. 7, a detached plan view of the inner end of the disk standard, with arm for scraper bar, and arm for angle bar; Fig. 8, a side elevation of the same; Fig. 9, a side elevation of a standard with arm for angle bar; Fig. 10, a plan view of the same; Fig. 11, a detailed sectional view of a pivot washer; Fig. 12, a plan view of the same. Fig. 13, is a sectional view of pivot washer, standard and disk.

In the views like letters of reference denote the same parts.

Letter A, indicates the tongue bolted and braced to the cross-beam B; to the under side of this cross-beam, is attached a series of pivot washers (a;) by means of counter-sunk bolts passing upwardly as shown in Figs. 11 and 12, through the cross-beam and made secure at the top thereof by nuts, or any other suitable means.

C, represents a series of standards with forwardly extending parallel arms C'. Four of these standards are also provided with backwardly extending arms D and D', the standards and said arms being integral parts or one casting. These standards are provided

with an aperture (*e*,) adapted to receive the pin (*o*,) of the pivot washer (*a*,) which is secured therein by means of a split cotter or other suitable means; this is the pivotal point on which the standard swivels. The lower end of the standard is provided with a stud *F*, cast solidly thereon. A washer (*g*,) having a sleeve, is adapted to rigidly fit in the center opening of the disk *E*, by being riveted thereto, and forms the box or bearing for the disk. This washer in turn is adapted to receive the stud *F*, and become thereto secured by a cotter or other suitable means passing through the eye on the outer end of said stud, and on the outside of the disk, thus, securing the same in an operative position. The angle bars *G* and *G'* are connected with the arms *C'* of the disk standards by means of bolts. The inner ends of these angle bars are bolted to the angle disk or plate *H*, which is pivoted to the under side of the tongue *A*.

I and *I'* are angle rods or levers having their outer ends pivoted in the angle bars *G* and *G'*; the inner ends of these rods are likewise pivoted to the angle disk *H*, as shown in Fig. 4. In this view the ends of the angle rods *I* and *I'* are shown as pivoted to the disk *H*, in an oblique position to each other. In this position the disks are straight. A rod or lever *J*, is pivoted at its inner end to the angle disk *H*, and has its forward end pivoted to the lower end of the upright hand-lever *P*, as shown in Fig. 3. By throwing this lever, the power is transmitted to the angle disk *H*, and from thence to the angle bars *G* and *G'* by the rods *I* and *I'*, and the disks simultaneously angled and locked by means of the segment rack *s*, and locking bolt *t*. The angle to which the disks may be adjusted, can be increased by enlarging the circumference of the angle disk, *H*; it being readily seen, that the larger this disk is, the greater will be the angle to which the disks may be brought. The movement imparted by the lever *P*, compels each and every disk to effect the same angle. The backwardly extending parallel arms *D* and *D'* are designed as supports for the scraper bars *R* and *R'* which are adapted to slide back and forth in adjusting the scrapers *u*, to and from the disks. I have, for the purpose of this specification, only shown two scrapers, but each disk will be provided with one, their purpose being to free the sides of the disks from dirt during the operation of the machine.

The oblong apertures *Q*, of the arms *D* and *D'*, are constructed so as to allow the scraper bars *R* and *R'*, to adjust themselves therein, when the disks are brought to an angle. The adjustment of these scrapers is effected by means of pedals *V* and *V'*, arranged in a convenient place for the driver to keep his feet on one or the other during the working of the harrow.

I wish now to call attention to the inner arms *D'*. It will be noted the angle arms ef-

fect a change of contour or a curve, not shown in the outward arm *D*. This construction is to enable them to work free of each other, when the disks are brought to an angle.

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

1. In a disk harrow, the combination with the cross-beam, of a washer secured to the under side of said cross-beam, said washer provided with a downwardly projecting pin, a standard provided with an integral forwardly extending arm and an aperture adapted to receive the pin of said washer, and thereupon and against said washer become adapted to vibrate on a pivotal point below said cross-beam, by the action of the angling bars *G*, and *G'* attached to the forwardly extending arms of the standard, substantially as described.

2. In a disk harrow, the combination with the cross-beam and a washer with a downwardly projecting pin, bolted to the under side of said cross-beam, of a standard provided with a forwardly extending arm integral therewith, and a stud projecting laterally from the lower extremity thereof, affording a bearing for a disk, the pivotal point of said standard with its arm, being on a plane below the cross-beam, the horizontal bars *G*, and *G'* rigidly attached to said arms, and intervening means between said bars and the vertical lever *P*, by which the disks are set at various angles, substantially as herein described.

3. In a disk-harrow, the combination with the cross-beam, and the disk with washer (*g*) forming the box therefor, of a standard with forwardly extending arm, the angle bars *G*, and *G'* attached to said arm the said standard also provided with a laterally projecting stud *F*, by means of which a bearing is afforded the disk *E*, with the washer (*g*), substantially as herein described.

4. The combination with the beam and the washer (*a*) with the downwardly projecting pin (*o*), of the standards *C*, and integral forwardly extending arm *C'*, and the laterally projecting stud *F*, the disk *E*, with washer (*g*), and the angle bars *G*, and *G'* and the rods *I*, and *I'* pivoted to said angle bars, and the plate *H*, pivoted to the lever *P*, by the bar *J*, substantially as herein described.

5. The combination with the cross-beam, the washers with downwardly projecting pins, the disks and the standards with laterally projecting studs *F*, adapted to receive a sleeve washer (*g*) rigidly attached to said disk and comprising the hub thereof, the forwardly extending arms of said standards, adapted to be rigidly attached to the bars *G*, and *G'* which bars are in turn pivoted to the angle plate *H*, by the rods *I*, and *I'*, and the plate *H* to the lever *P*, by the rod *J*, substantially as herein described.

6. In a disk harrow, the combination with

the cross-beam, and the washer (a) with downwardly projecting pin (o), said washer bolted to the under side of said cross-beam, the standards having forwardly projecting arms, 5 and the standards having both forwardly and rearwardly projecting arms, all of which are provided with laterally projecting studs F, at their lower extremities, which studs af-

ford bearings for the disks E, with washer (g), substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses. 10

CHARLES PERRIN.

Witnesses:

GEORGE H. WOOD,
R. J. MCCARTY.