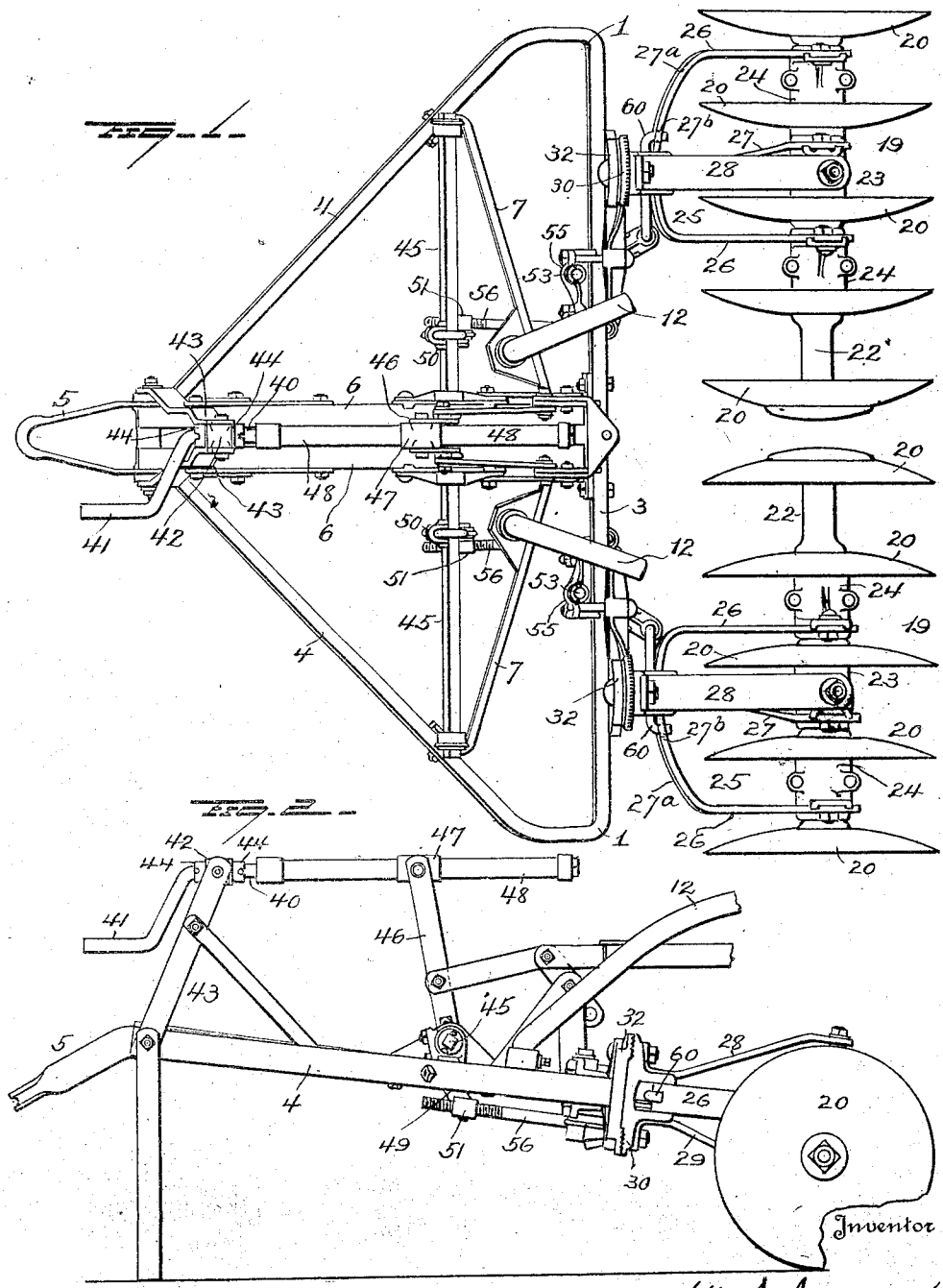
Aug. 18, 1925. 1,550,062

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DISK HARROW

Original Filed April 15. 1924 2 Sheets-Sheet 1



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Original Filed April 15. 1924 2 Sheets-Sheet 2

Fig. 3.

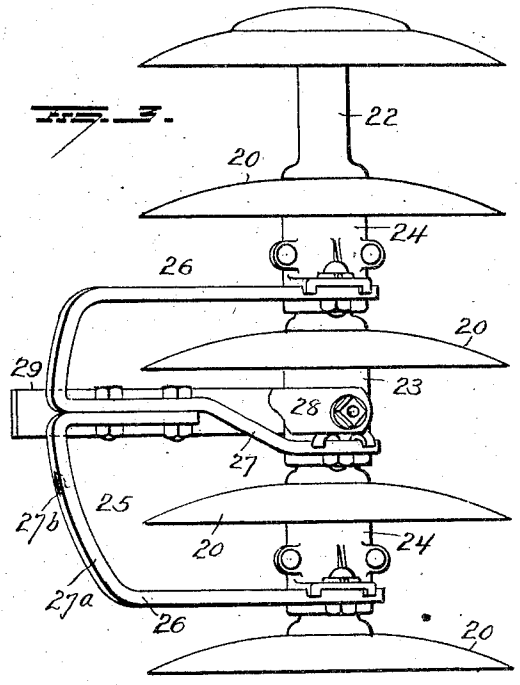


Fig. 4.

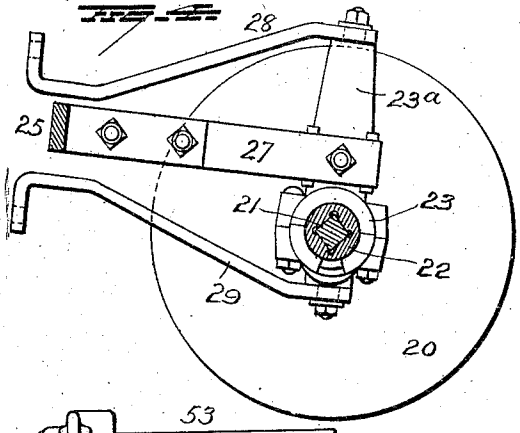


Fig. 9.

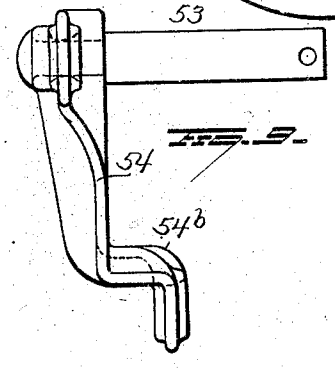


Fig. 5.

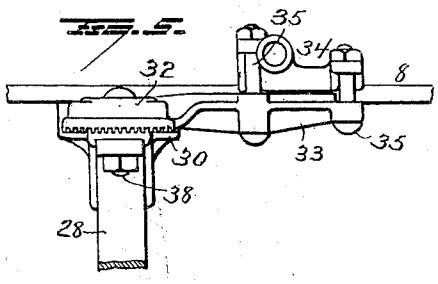


Fig. 6.

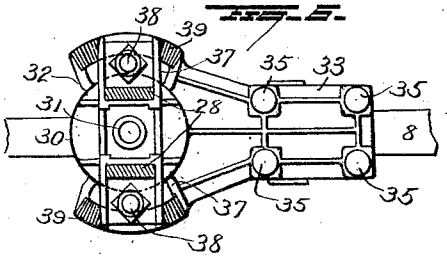
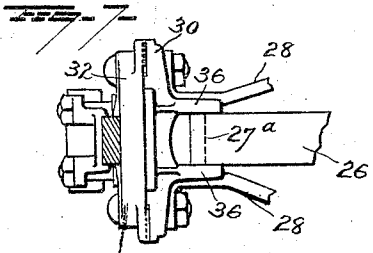


Fig. 7.



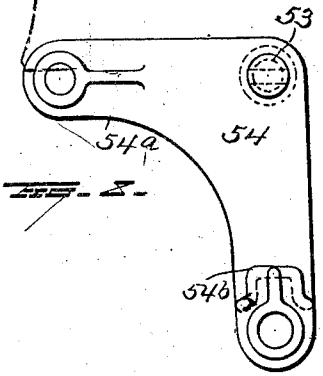


Fig. 8.

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Patented Aug. 18, 1925. 1,550,062

UNITED STATES PATENT OFFICE.

WILLIAM D. DEWEND, OF SOUTH BEND, INDIANA, ASSIGNOR TO OLIVER CHILLED PLOW WORKS, OF SOUTH BEND, INDIANA.

DISK HARROW.

Original application filed April 15, 1924, Serial No. 706,765. Divided and this application filed September 4, 1924. Serial No. 735,858.

To all whom it may concern:

Be it known that I, WILLIAM D. DEWEND, a citizen of the United States, and resident of South Bend, in the county of Saint Joseph and State of Indiana, have invented certain new and useful Improvements in Disk Harrows; and I do hereby 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.

This invention relates to improvements in disk harrows,—this application being a division of application filed by me on the 15th day of April 1924 and designated by Serial No. 706,765. Objects of the present invention being to provide simple and efficient means whereby the disk gangs shall be adjustably mounted on each frame, and facilitate reversal of the disk gangs from out-throw to in-throw and vice versa.

A further object is to provide an improved yoke construction for each disk gang, which will give strength to the same as a whole and divide the draft of the gang equally among the bearing members for the disks.

With these and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings;

Figure 1 is a plan view of a portion of a tandem disk harrow embodying my improvements;

Figure 2 is a view partly in section and partly in elevation;

Figure 3 is a plan view of a disk gang showing the bearing and yoke construction;

Figure 4 is a sectional view of the same;

Figures 5, 6 and 7 are fragmentary top, side and rear views of the connecting means employed between the frames and disk gangs, and

Figures 8 and 9 are detail views showing one of the bell-crank levers 54.

The framework of the harrow includes a front frame 1 triangular in form. The frame 1 comprises a transversely disposed rear beam member 3; converging beam members 4, from the convergent ends of which, a draft connection 5 projects forwardly; center frame bars or beams 6, 6, and diagonal braces 7 between said center bars or beams and the converging frame beams 4 and secured to both. The frame 1 may be connected with a rear frame (not shown) by bars 12.

Disk gangs 19 are connected in pairs with the frame 1 and each disk gang comprises a plurality of earth-working disk blades 20 mounted upon a shaft 21 and spaced by spools such as indicated at 22. A center bearing 23 and two end bearings 24, 24 are mounted upon certain of the spools 22 and are rigidly connected by a yoke 25. As clearly shown in Figure 3, this yoke may be made in two parts rigidly bolted together and so formed as to provide three arms 26, 26 and 27 and an arcuate or curved connecting portion 27^a. The center yoke arm 27 is rigidly secured to the center bearing 23 and the yoke arms 26, 26 are secured to the bearings 24, 24 at respective sides of the center bearing 23. The yoke construction for each disk gang, as above described gives universal strength to the disk gang as a whole and divides the draft of the gang equally among the three bearings. The center bearing 23 of each disk gang unit is provided with a post 23^a, with which the rear end of an upper draw bar 28 is pivotally connected,—the rear end of a lower draw-bar 29 being pivotally connected with said center bearing under the same, as clearly shown in Figure 4. Each pair of draw-bars 28—29 are secured to a bracket 30 and the latter has a center mounting at 31 on a bracket 32. Each bracket 32 includes clamping members 33 and 34 and the brackets 32 are clamped to the rear beam of the frame 2, by means of bolts 35. By loosening the nuts on said bolts, the brackets 32 and parts connected therewith may be adjusted laterally on the frame beams to effect certain adjustments of the gang units, as will more fully hereinafter appear. It will be observed that the axes of the pivotal connections between the draw-bars and the disk gangs are of unusual length and very substantial pivotal connections for the disk gangs are afforded which will permit partial rotation of said disk gangs in a horizontal plane. To provide guiding means for the disk gang yokes 25,

the brackets 32 are provided with jaws or projections 36 between which the arcuate or curved portions 27ª of said yokes may move.

Each frame bracket 32 is provided above and below its center with curved slots 37, through which bolts 38 pass, said bolts also passing through the adjacent bracket 30 for securing said brackets together and permit adjustment of the bracket 32. The bracket 32 is provided with toothed portions 39 and end portions of the brackets 30 are similarly toothed to mesh with the portions 39 of brackets 32 to insure retention of the bracket 30 in the position to which it may be adjusted. By loosening the nuts 38, the brackets 30 may be turned on their axes 31 and thus each gang unit including the yoke 25 may be turned on a horizontal axis in such manner that the disk gangs may be tilted or adjusted to work in ditches or on ridges.

The angling of the gangs is effected by a manually operable screw shaft 40 through the medium of mechanism which will now be explained. In the present instance, the screw shaft is provided at one end with a crank or handle 41 and is freely mounted near said crank or handle in a sleeve 42 pivotally supported by a standard 43,—longitudinal movement of said screw-shaft being prevented by collars 44 secured thereto. Aligned rock-shaft sections 45, 45 disposed transversely of the front frame are mounted n suitable bearings secured to said frame and to each of said shaft sections, an upwardly projecting arm or lever 46 is secured. A nut 47 is pivotally mounted between the upper end portions of these arms or levers, and through said nut, the threaded portion of the screw shaft 40 passes. Sleeves or tubes 48 project from respective ends of the nut 47 and serve to protect the threaded portion of the screw-shaft and to contain lubricant. Arms 49 are secured to the respective rock shaft sections 45 by means of clamping devices 50, so that said arms may be adjustable on the shaft sections. The arms 49 depend from the rock shaft sections and to their lower portions, internally threaded sleeves or nuts 51 are pivotally connected. The pintle 53 of a bell-crank lever 54 is mounted in bearings 55 with which the adjustably mounted brackets 32 are provided, so that when said brackets are moved from one position of adjustment to another on the frame 1, said bell-crank levers will move with them and effect adjustment of the gangs through the medium of devices presently described. The arms 54ª of each bell-crank lever 54 has loosely connected therewith, one end portion of a rod or link 56,—the other end portion of the latter being threaded and passing adjustably through the sleeve or nut 51 at the lower end of one of the depending arms 49. The arm 54ᵇ of each bell-crank is connected by a link 60 with the yoke 25 of the adjacent gang unit,—the point of connection of said link with the yoke being indicated at 27ᵇ in Figure 3.

By moving the frame brackets 32 laterally on the frames, the disk gangs may be spaced greater or less distances apart, and if said brackets be moved from the positions shown in Figure 1 toward the sides of the frame, the bell-crank levers 54 will move with them and they will be turned on their pivoted support so that motion will be imparted, through the medium of the links 60 to the yokes 25 of the disk gang units and the disk gangs will be angled.

The disks of the gangs may be set for either "out-throw" or "inthrow."

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

1. In an agricultural implement, the combination with a frame, pivotally mounted disk gangs, and an adjusting device, of brackets adjustable on said frame, bell-crank levers carried by the adjustable brackets, connections between said brackets and the disk gangs, connections between said bell-crank levers and said adjusting device, and connections between said bell-crank levers and the pivotally mounted disk gangs.

2. In an agricultural implement, the combination with a frame, and a disk gang, of a bracket carried by the frame and adjustable on a longitudinal axis, draw-bars secured to said bracket and having pivotal connection with the disk gang, a yoke secured to said disk gang, guiding means on said bracket for said yoke, and means connected with said yoke for angling the disk gang.

3. In an agricultural implement, the combination with a frame, and a plurality of disk gangs, of brackets adjustably secured to the frame, brackets connected with said first-mentioned brackets and adjustable on longitudinal axes, draw-bars secured to the second-mentioned brackets and pivotally connected with the disk gangs, such pivotal connections having vertical axes, and means for turning the disk gangs on such vertical axes.

4. In an agricultural implement, the combination with a frame, of a disk gang including three bearing members, a yoke having three members secured respectively to said three bearing members, draw bars connected with the frame, and having pivotal connection with the central of said bearing members, the pivotal connection between draw bars and central bearing member having vertical axis, and means connected with said yoke for turning the disk gang on said vertical axis.

In testimony whereof, I have signed this specification.

WILLIAM D. DEWEND.