No. 845,902. PATENTED MAR. 5, 1907.

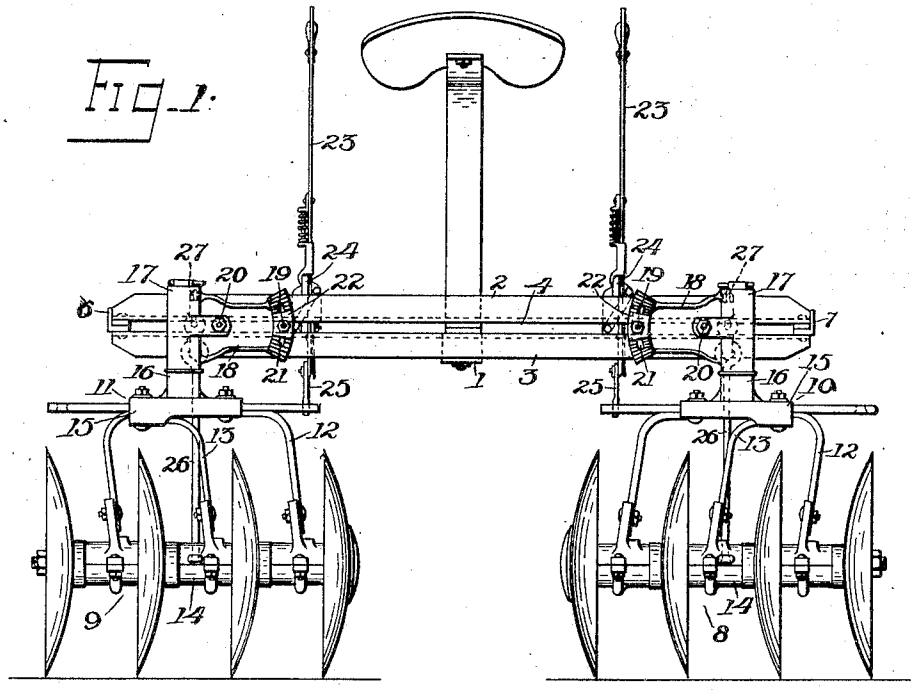
C. S. SHARP.

DISK HARROW.

APPLICATION FILED NOV. 26, 1906.

4 SHEETS—SHEET 1.

FIG. 1.



WITNESSES.

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F. W. Hoffmeister.

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4 SHEETS—SHEET 2.

Fig. 2.

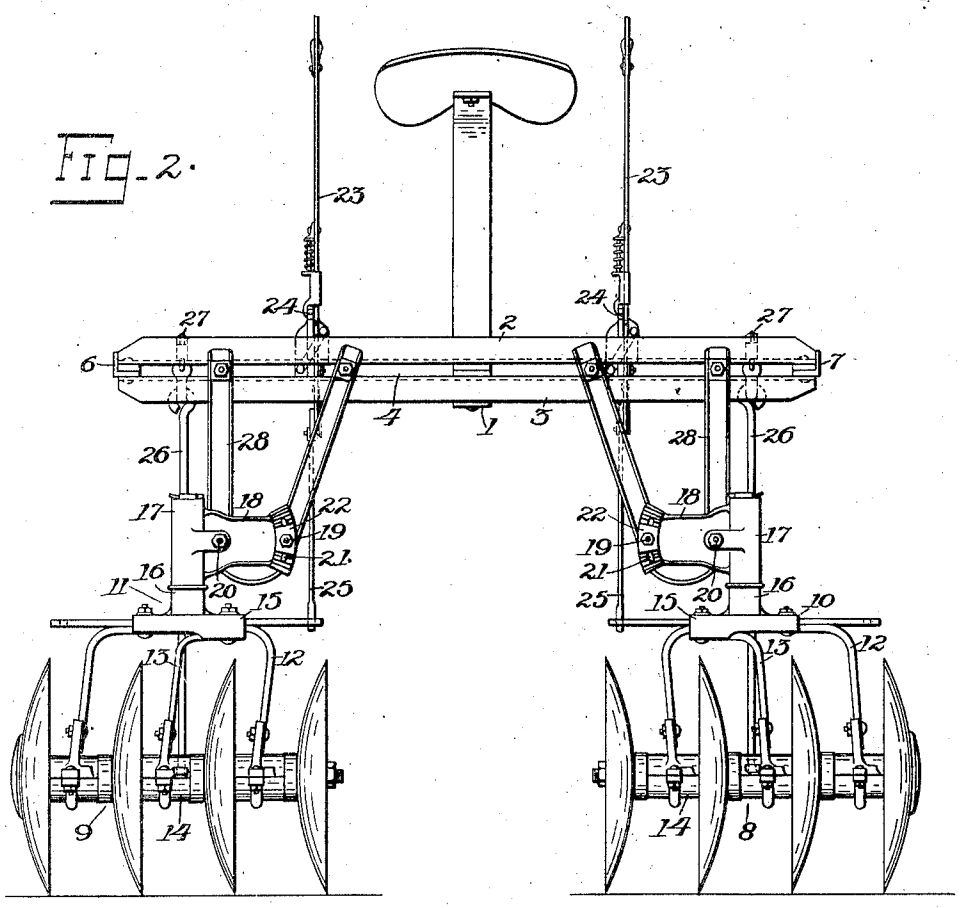


Fig. 3.

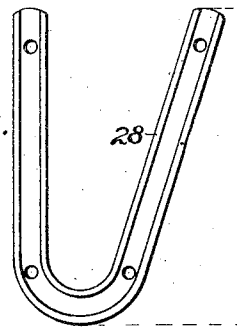
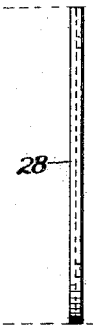


Fig. 4.



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4 SHEETS—SHEET 3.

Fig. 5.

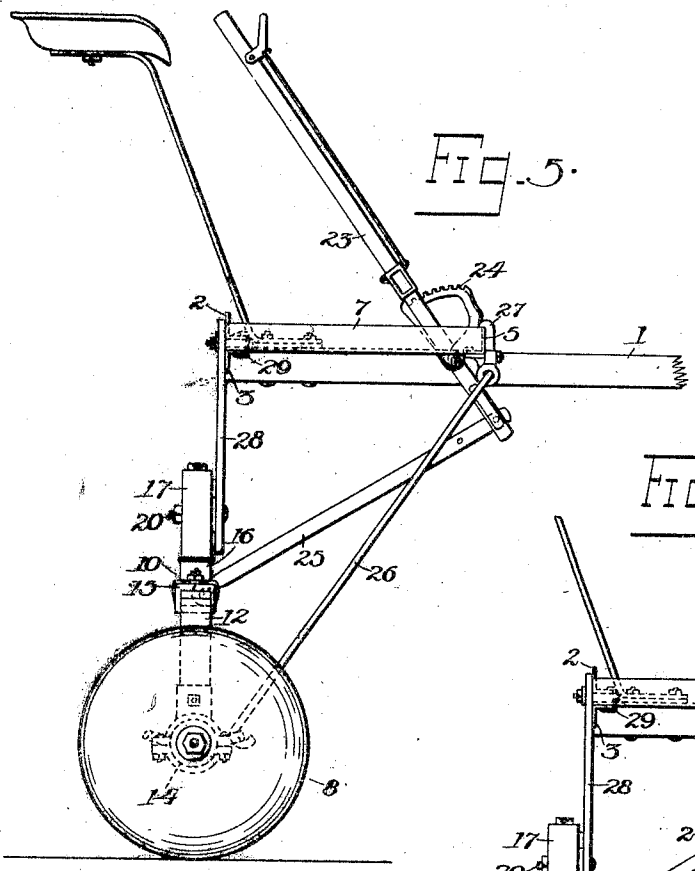


Fig. 6.

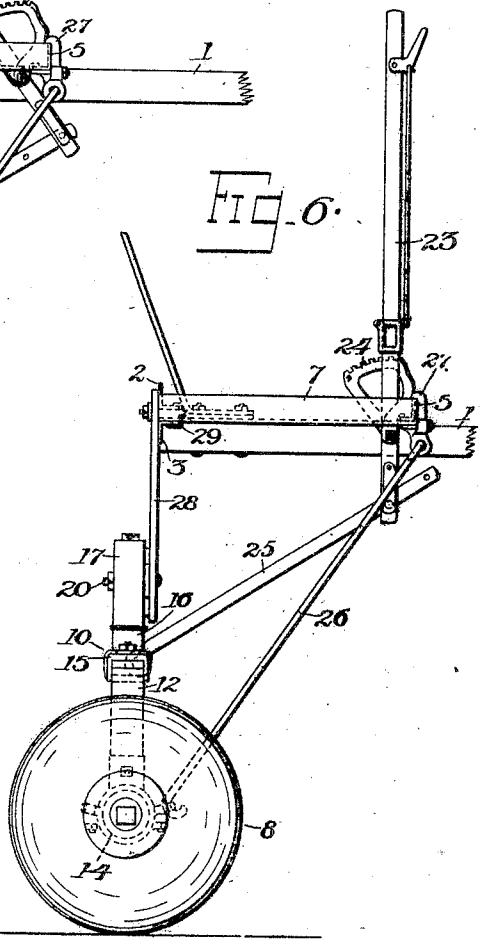
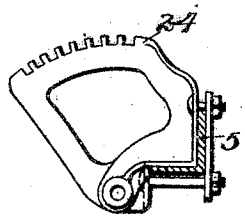


Fig. 7.



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4 SHEETS—SHEET 4.

FIG. 8.

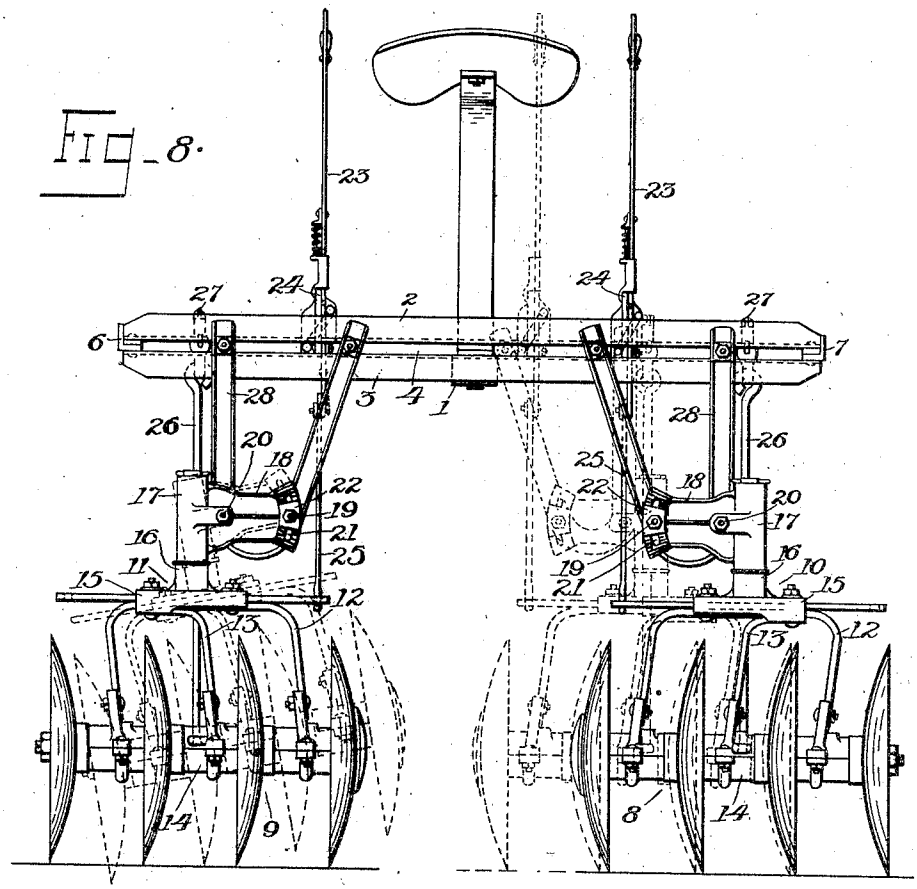
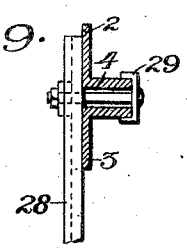


FIG. 9.



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UNITED STATES PATENT OFFICE.

CHARLES S. SHARP, OF AUBURN, NEW YORK, ASSIGNOR TO INTERNATIONAL HARVESTER COMPANY, A CORPORATION OF NEW JERSEY.

DISK HARROW.

No. 845,903. Specification of Letters Patent. Patented March 5, 1907.

Application filed November 26, 1906. Serial No. 345,247.

To all whom it may concern:

Be it known that I, CHARLES S. SHARP, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Disk Harrows, of which the following is a specification.

My invention relates to disk harrows having separate gangs of disks mounted in independent frames that are adjustably connected to the draft-frame in a manner permitting the disk gangs to be turned about a vertical axis in a common way and also permitting a lateral adjustment of the gangs relative to the draft-frame, the object of my invention being to provide means whereby the draft-frame may be adjusted to a higher or lower plane relative to the disk-frames. I attain this object by the mechanism illustrated in the drawing, in which—

Figure 1 represents a rear elevation of a common form of disk harrow having an extensible frame and reversible disk gangs adjustably mounted thereon and to which my invention may be applied. Fig. 2 is a rear elevation of Fig. 1, representing an embodiment of my invention. Fig. 3 is a detached detail of an extension-bracket, and Fig. 4 is a side elevation of Fig. 3. Fig. 5 is a side elevation of Fig. 2, showing the adjustable connections between the draft-frame and the disk gangs. Fig. 6 is a view similar to Fig. 5, showing the adjusting mechanism in a different position. Fig. 7 is a side view of a common form of sector-rack forming a part of the adjusting mechanism. Fig. 8 is a rear view similar to Fig. 2, showing the manner of adjusting the gangs relative to the draft-frame, and Fig. 9 is a sectional detail showing the manner in which the extension-bracket is secured to the draft-frame bars.

Similar reference-numerals denote like parts throughout the several views.

1 represents the draft-tongue, having secured thereto at its rear end the cross-bars 2 and 3 of the draft-frame, with an intervening space 4 between the bars, and forward of said bars is a cross-bar 5, secured to the tongue, and 6 and 7 represent draft frame members secured to the outer ends of frame-bars 2 and 3 and the cross-bar 5, forming a rectangular draft-frame, to which are connected right and left gangs of disks 8 and 9, mounted in suitable frames 10 and 11, said frames comprising vertically-arranged U-shaped members 12 and L-shaped members 13, secured at their lower ends to sleeves 14, in which the journals of the disks are mounted, and at their upper ends to horizontally-arranged head-pieces 15, having vertically-arranged shanks 16 journaled in sleeves 17, having laterally-disposed arms 18 secured to the rear frame-bars 2 and 3 by means of bolts 19 and 20 passing through the arms and the intervening space between the cross-bars, the bolts 19 being received by slots 21 in the arms that are concentric with the axes of the bolts 20, and the face of the arms at opposite sides of the slots being provided with radial corrugations adapted to receive corrugated washers 22.

The disk gangs may be adjusted laterally along the frames in a manner to vary their distance apart. They may be turned about their vertical pivots, or the pivot may be angularly arranged relative to the vertical.

To turn the disk gangs about their vertical axes, they are connected in a common way to hand-levers 23, pivotally mounted on sector-racks 24, secured to the frame-bar 5, the lower ends of the hand-levers being connected with the gang-frames by means of links 25. Draft-rods 26 have their upper ends secured to the frame-bar 5 by means of clips 27, that may be adjusted laterally thereon and their lower ends flexibly connected to the sleeves 14 of the gang-frames.

The harrow as so far described is one having a common form, and my invention consists in providing means whereby the draft-frame may be adjusted to a higher plane relative to the gang-frames without disarranging the operative parts of the harrow, and such means consists, essentially, of vertically-arranged U-shaped extension-brackets 28, having their upper ends secured to the cross-bars 2 and 3 by means of bolts passing through the brackets and the intervening space between the bars and the clip 29, as shown in Fig. 9, in a manner permitting the brackets to be adjusted laterally upon the bars and the lower ends of the brackets provided with openings to receive the bolts 19 and 20 by means of which the arms 18 of the head-pieces 15 are secured thereto, the arms being adjustable about the axes of the bolts 20 in the same manner as when secured to the frame-bars 2 and 3, and the gangs may be adjusted about their ver-

tical axes also by means of the link connections with the hand-levers.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A disk harrow comprising, in combination, a draft-frame substantially rectangular in form comprising front and rear members, independent disk gangs, suitable frames in which said disk gangs are mounted, means for connecting said gang-frames with the rear members of said draft-frame, said means comprising vertically-arranged stems secured to said gang-frames, sleeves in which said stems are journaled, laterally-extending arms integral with said sleeves, means for securing said arms to the rear members of said draft-frames, comprising extension-brackets adapted to be secured at their upper and lower ends respectively to the rear members of said draft-frame, and said arms.

2. A disk harrow comprising, in combination, a draft-frame substantially rectangular in form comprising front and rear members, independent disk gangs, suitable frames in which said disk gangs are mounted, means for connecting said gang-frames with the rear members of said draft-frame, said means comprising vertically-arranged stems secured to said gang-frames, sleeves in which said stems are journaled, laterally-extending arms integral with said sleeves, means for securing said arms to the rear members of said draft-frames, comprising U-shaped extension-brackets adapted to be secured at their upper ends to the rear members of said draft-frame, and have their lower ends adjustably secured to said arms.

CHARLES S. SHARP.

Witnesses:
ELMER W. STUPP,
CHARLES W. EMBODY.