(No Model.)

J. H. THOMAS.

DISK HARROW.

No. 503,178. Patented Aug. 15, 1893.

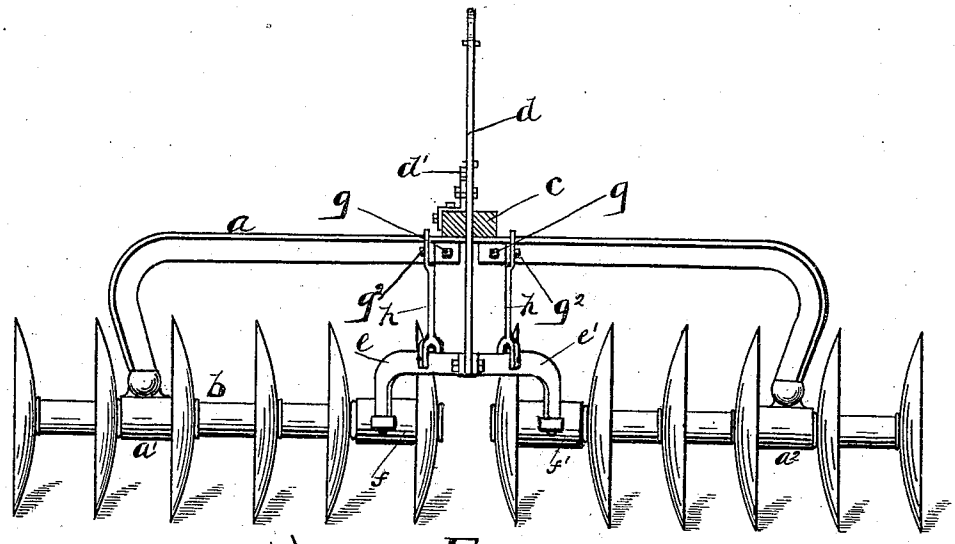

Fig. 1.

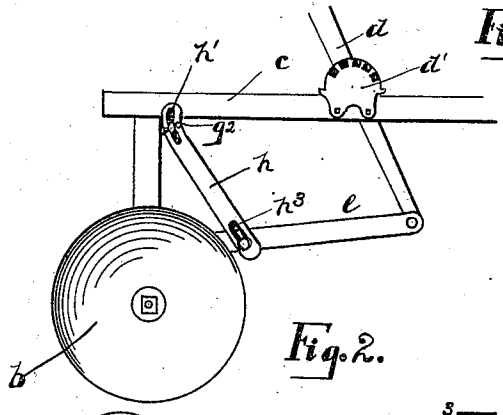

Fig. 2.

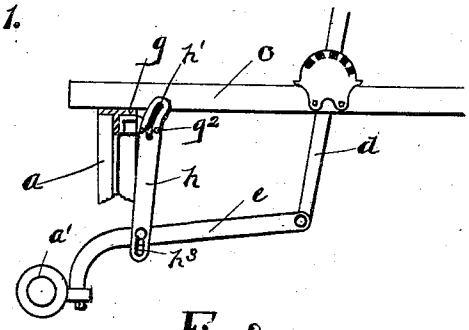

Fig. 3.

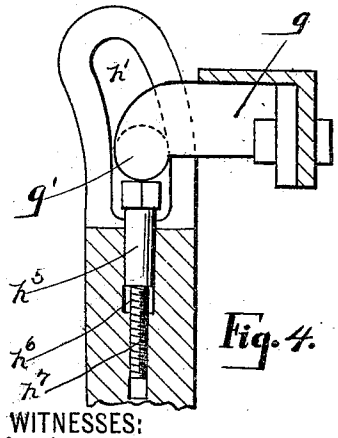

Fig. 4.

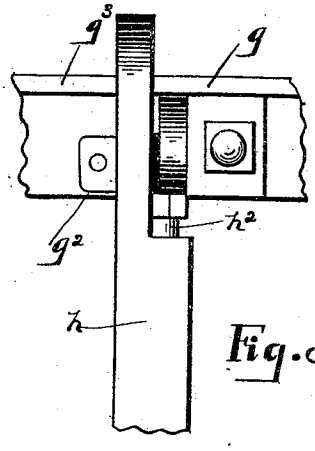

Fig. 5.

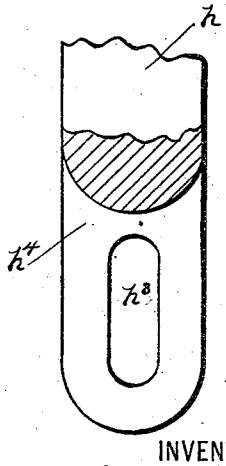

Fig. 6.

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DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 503,178, dated August 15, 1893.

Application filed November 21, 1892. Serial No. 452,734. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. THOMAS, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Disk Harrows, of which the following is a specification.

My invention relates to improvements in disk harrows, and the object of my invention is to prevent the raising of the inner end of the disk gangs when in their operative positions, the means employed for this purpose being such that when the disk gangs are shifted out of the operative position the holding devices shall be automatically disengaged.

My invention consists in the various constructions and combinations of parts hereinafter described and pointed out in the claims.

In the accompanying drawings Figure 1 is a front elevation of a harrow embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a side elevation of the shifting devices with the disks removed. Figs. 4 and 5 are detail views of the holding or pressure bars, showing the means for connecting the upper ends of the same. Fig. 6 is a detail view, partly in section, of the lower end of the holding or pressure bars.

Like parts are represented by similar letters of reference in the several views.

In the said drawings *a*, represents the main frame, which is preferably formed of T iron of a U-shape, and is connected at each end to bearings a' a^2, which support the disk gangs *b* b', in such a manner that the said gangs may be turned in line with or at an angle to each other in a well known manner.

c, is the tongue, which is secured to the frame *a* and carries a pivoted hand-lever *d*, and a ratchet stand d', adapted to hold said lever in different positions of adjustment. The hand-lever *d*, preferably extends through the tongue and is pivoted to the ratchet stand d', the lower end of the lever being connected by link connections *e* e', to the disk gangs *b* b', through the medium of suitable bearings f f', in which the shafts of the respective disk gangs turn, the link connections *e* e', being preferably curved downwardly at their rear ends and pivoted to projecting lugs on the bearings f f', so that a movement of the handle *d*, causes a forward or backward movement of the inner ends of the respective disk gangs *b* b', to change the angularity thereof with reference to each other and to the frame *a*.

Secured to the frame *a*, at each side of the center thereof, are bearing blocks *g*, each of which is provided at its outer extremity with a curved bearing g', and a projecting stud g^2. Extending from each of the blocks *g*, to the respective link connections *e* e', are pressure bars *h*, each of which is provided at the top with a curved slotted opening h', adapted to fit over the projecting stud g^2, on the bearing block, and to be held thereon by a suitable pin g^3. These pressure bars are each offset below the slotted projection and in the shoulder thus formed are provided with an adjustable bearing support h^2, preferably in the form of a set-screw, the end of which is adapted, under certain conditions, to contact with the rounded bearing surface g', of the bearing block *g*. The lower end of the pressure bar *h*, is bifurcated so as to engage on opposite sides of the respective links *e* e', and is also provided with a slotted opening h^3, adapted to receive a pin which projects through the respective sides of said bifurcated bar and the connecting links *e* e'. That portion of the bar *h*, between the projecting forks, is rounded, as shown at h^4, to form a bearing seat, adapted to contact with the top of the connecting links *e* e'. The result of this construction is that when the lever *d*, is shifted so as to move the disk gangs at an angle to each other and in the working position, the pressure bar assumes a substantially vertical position with the adjustable bearing seat h^2, resting against the bearing block at one end, and the curved bearing surface h^4, against the link connection *e*, at the opposite end, thus forming a rigid connection between the frame and the inner end of the disk gang, which prevents the same from rising beyond the normal position while in operation; the slotted openings at the respective ends of the pressure bars permitting the necessary movement of the said bars when the angularity of the disk gangs is shifted, and at the same time pre-

vents any strain or pressure on the projecting stud g', or the connecting pin between the link e, and the bar h.

As before stated the movable bearing seat h^2, is preferably formed in the nature of a set-screw, which is preferably constructed and arranged as shown in Fig. 4, with the upper portion h^5, turned to a cylindrical shape and adapted to fit snugly in an opening h^6, in the nature of a bar, which is bored out to receive the same, the lower portion h^7, of the screw being reduced and screw-threaded, the bar being tapped out below the opening h^6, to receive the screw-threaded portion. The result of this construction is that the threaded portion, which furnishes the necessary adjustment of the bearing seat, is completely incased within the bar, and a long snug bearing is secured for the upper portion of the screw or bolt, thus strengthening the same and reducing the probabilities of breakage.

By the construction as above described it will be seen that the inner ends of the disk gangs, when shifted to the working positions, are held firmly against upward movement by the pressure bars, which bars may be adjusted as desired, the constructions being such that the gangs are relieved as soon as shifted out of the working position.

Having thus described my invention, I claim—

1. In a disk harrow, the combination with the main frame and a disk gang adapted to be shifted to different positions, of a pressure bar having an adjustable bearing seat and loose connections, said pressure bar being adapted, as the gang is moved to an angular position, to be brought to a substantially vertical position, and thus form a connection from the gang to the frame, substantially as specified.

2. The combination, with the main frame and the disk gangs journaled therein, a shifting lever having link connections to said disk gangs, and pressure bars from said lever to said frame having adjustable bearing seats and loose connections, said pressure bars being adapted, as the link connections are moved longitudinally, to engage at each end with the main frame and the said links respectively, substantially as specified.

3. The combination, with the main frame and the disk gang, a shifting lever and a connecting link, a pressure bar having an adjustable bearing and a curved slotted extension, a projection on said bar adapted to fit in said slotted extension, said bar being bifurcated at its lower extremity and provided with slotted openings, as described, and a rounded bearing face adapted to bear on said link, substantially as specified.

4. The combination, with the adjusting lever and a link connection, of a pivoted pressure bar having a screw-threaded adjustable bearing therein, a bearing block on the frame and a rounded bearing adapted to engage said link, slotted openings in the respective ends of said bar, and a disk gang connected to the said link, substantially as specified.

In testimony whereof I have hereunto set my hand this 14th day of November, A. D. 1892.

JOHN H. THOMAS.

Witnesses:
A. N. SUMMERS,
GEORGE A. BEARD.