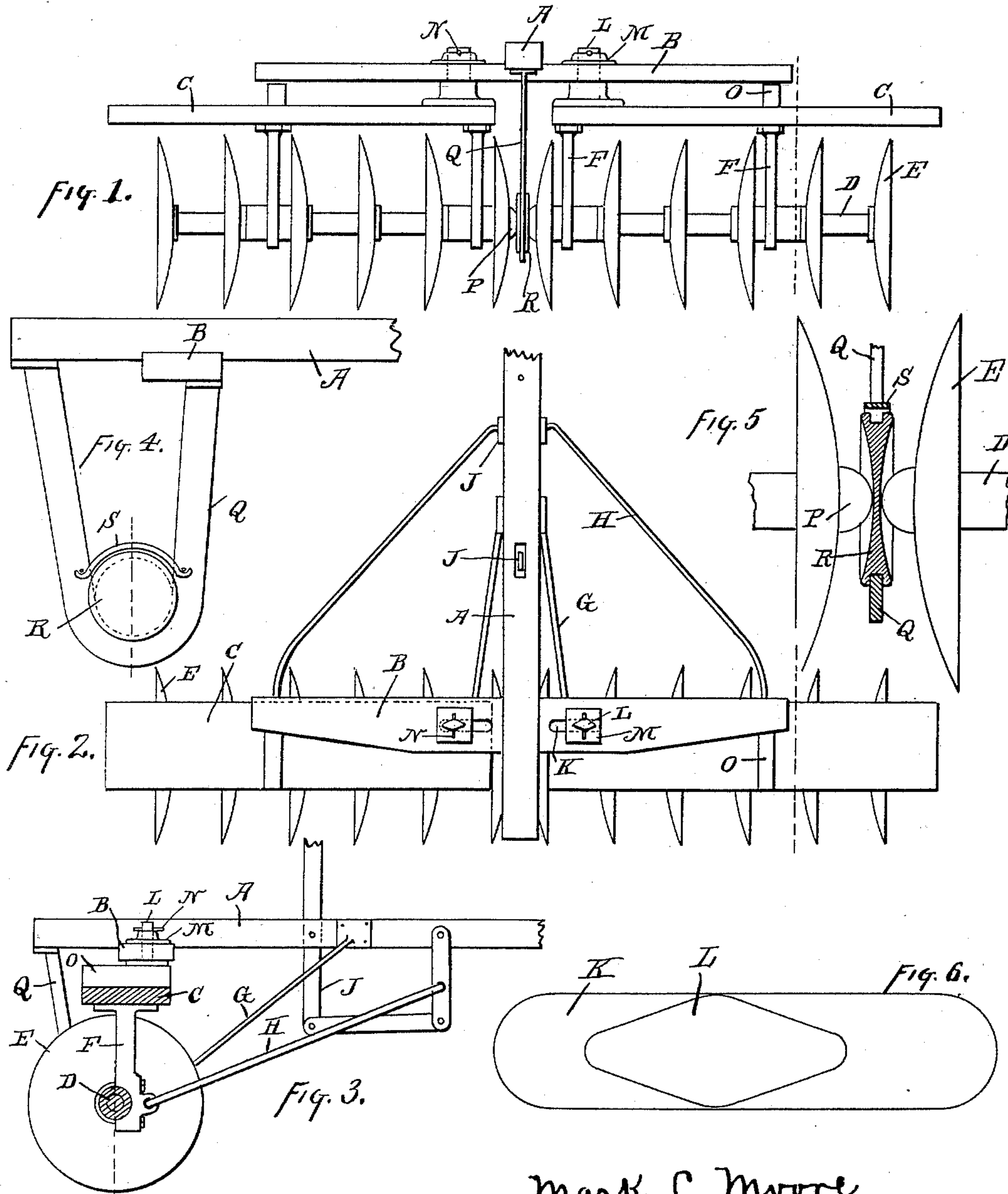


(No Model.)

M. C. MOORE.  
DISK HARROW.

No. 468,395.

Patented Feb. 9, 1892.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

MARK C. MOORE, OF HAMILTON, OHIO, ASSIGNOR TO THE H. P. DEUSCHER COMPANY, OF SAME PLACE.

## DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 468,395, dated February 9, 1892.

Application filed February 2, 1891. Serial No. 379,905. (No model.)

*To all whom it may concern:*

Be it known that I, MARK C. MOORE, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Disk Harrows, of which the following is a specification.

This invention relates to that class of disk harrows in which two disk gangs are coupled to a main beam, the inner ends of the two gang-shafts being in close approach.

My improvements relate to the couplings uniting the gang-beams to the main beam and to the thrust-bearing for the gang-shafts.

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a rear elevation of a disk harrow embodying my improvements; Fig. 2, a plan of the same; Fig. 3, a vertical transverse section of the same; Fig. 4, a face view of the thrust-bearing; Fig. 5, a vertical diametrical section of the thrust-bearing, and Fig. 6 a plan of one of the coupling-studs and its slot.

In the drawings, A indicates the tongue; B, the main beam secured rigidly across the rear end of the tongue; C, the gang-beams under the main beam; D, the gang-shafts under the gang-beams; E, the disks fast on the gang-shafts; F, the hangers secured to the gang-beams and carrying bearings for the gang-shafts; G, the inner drag-braces rigidly secured at their forward ends to the tongue and having their rear ends hooked into eyes in the inner hangers; H, the outer drag-braces having their rear ends hooked into eyes in the outer hangers and having their forward ends connected with lever mechanism by which these braces can be adjusted forward or back to set the disk gangs straight or at angles, and J lever mechanism (shown in part only) for effecting this adjustment. All of the parts thus far referred to and their general arrangement and general mode of operation may follow well-known constructions, and are so illustrated, and hence extended description is not called for.

Proceeding with reference to the drawings, K indicates a pair of slots through the main beam B, one slot being disposed at each side

of the tongue or at each side of the central line of the machine, these slots being parallel with the main beam; L, studs rigidly secured one to the inner end of each gang-beam and projecting up through the slots in the main beam, the studs being shouldered just below the main beam so that their upward movement is limited, these studs having a diamond-shaped cross-section with rounded angles, as clearly seen in Fig. 6; M, washers on these studs over the main beam, the main beam being thus held vertically between the shoulders and washers of the studs; N, pins put through the studs over the washers to hold the washers in place against the main beam; O, rub-blocks, one on each gang-beam over the outer hanger and adapted to make rubbing contact under the outer ends of the main beam; P, the rounded inner ends of the gang-shafts; Q, a stirrup secured at the rear end of the tongue, its lower portion forming a semicircular bearing concentric with the gang-shafts; R, a disk peripherally grooved to fit the stirrup, the bottom of the groove thus forming the journal of the disk running loosely in the stirrup as a bearing, the two faces of the disk being concave so that its center is very thin; S, a strap secured to the stirrup over the disk to prevent the disk from improperly rising in the stirrup. The disk revolves in the stirrup and forms the thrust-bearing for the gang-shafts, the rounded ends of the shafts rocking on the disk as the disk gangs are adjusted angularly, the thinness of the disk permitting the inner ones of the harrow-disks E to be brought very close together, and permitting the rounded ends of the shafts to be but little separated from each other.

The gang-beams are adjusted to angles by the lever mechanism in the usual manner and for the usual purpose, and the studs L form pivoted couplings uniting the gang-beams to the main beam, the studs moving endwise in their slots so as to permit the gang-shafts to always bear against the thrust-disk R. A round stud would perform certain offices of the diamond-shaped studs L, and when the parts are in the position shown in the drawings these diamond-shaped studs bear against the walls of the slots in the



same manner as if they were round; but the implement is most used with the gangs set at angles, and when this is done the diamond-shaped studs bring extended surfaces against the walls of the slots and thus greatly decrease the liability of the strains mutilating the walls of the slots and interfering with the snugness of fit and freedom of endwise motion in the slots.

10 I claim as my invention—

1. In a disk harrow, the combination, substantially as set forth, with a tongue, main beam, gang-beams, hangers, harrow-disks, and gang-shafts having rounded inner ends, of a stirrup forming a bearing at the inner ends of the gang-shafts, and a disk disposed between the inner ends of the gang-shafts and peripherally grooved to form a journal engaging the bearing formed by the stirrup.

20 2. In a disk harrow, the combination, substantially as set forth, with a tongue, main beam, gang-beams, hangers, harrow-disks,

and gang-shafts, of coupling-studs rigidly secured to the inner ends of the gang-beams and projecting upwardly through longitudinal slots in the main beam at each side of the central line of the implement, said studs being provided with horizontal surfaces engaging above and below the main beam and rubbing blocks at the outer ends of the gang-beams.

3. In a disk harrow, the combination, substantially as set forth, with a tongue, main beam, gang-beams, hangers, harrow-disks, and gang-shafts, of studs secured to the inner ends of the gang-beams and projecting up through slots in the main beam at each side of the central line of the implement and having a horizontal cross-section similar to a diamond shape with rounded angles.

MARK C. MOORE.

Witnesses:

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