(No Model.) 2 Sheets—Sheet 1.

S. J. GLASS.

DISK HARROW.

No. 427,855. Patented May 13, 1890.

Fig. 1.

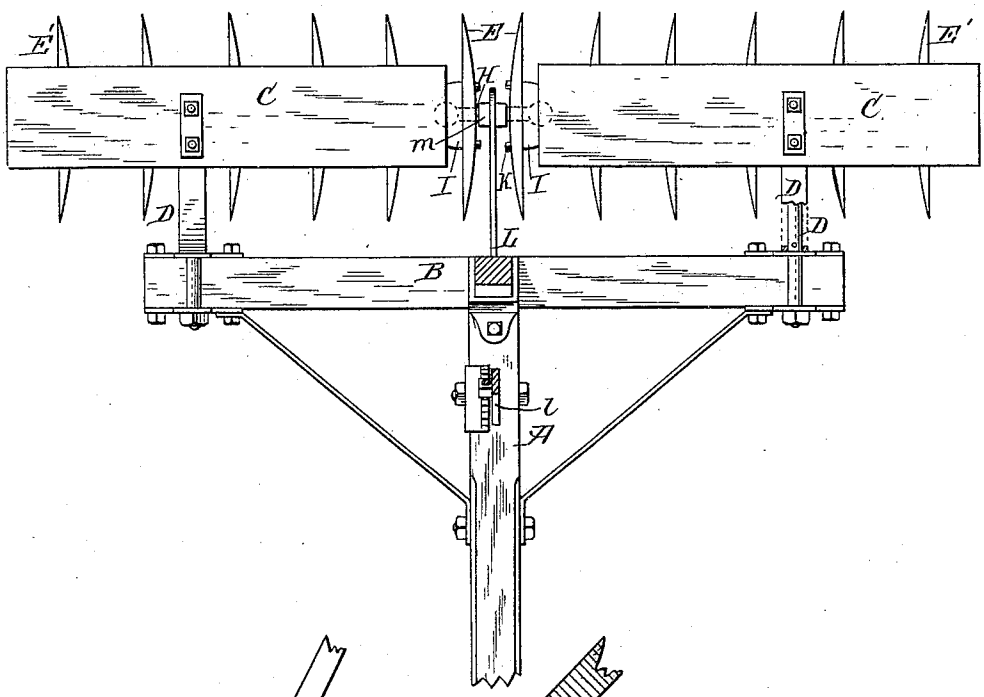
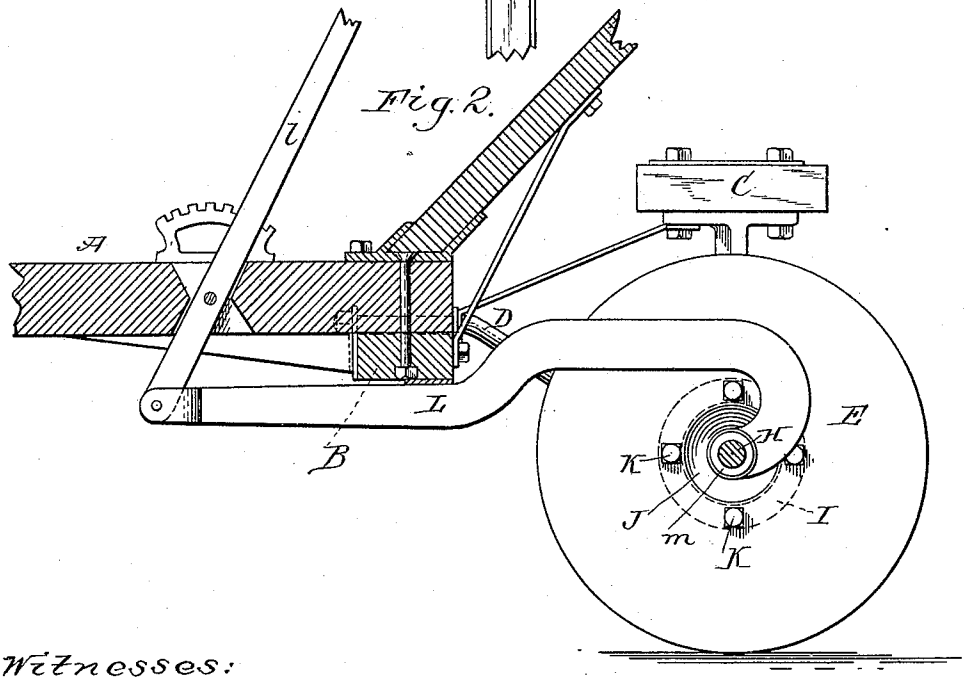


Fig. 2.



Witnesses:

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Emil. J. Neuhart

S. J. Glass Inventor

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Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

S. J. GLASS.

DISK HARROW.

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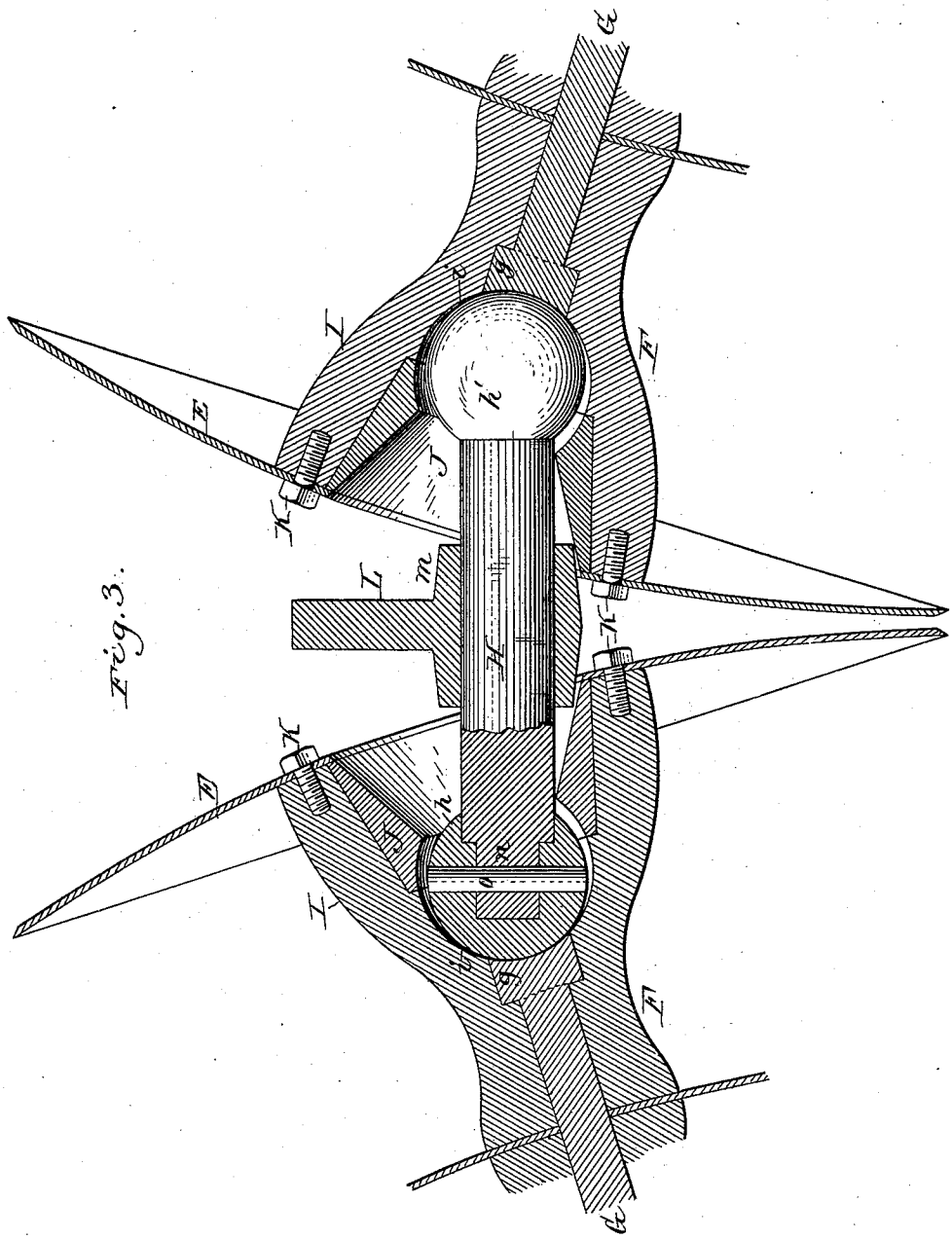


Fig. 3.

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UNITED STATES PATENT OFFICE.

SHELDON J. GLASS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ALBERT J. GLASS, OF BATAVIA, NEW YORK.

DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 427,855, dated May 13, 1890.

Application filed December 13, 1889. Serial No. 333,658. (No model.)

To all whom it may concern:

Be it known that I, SHELDON J. GLASS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented 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 the disk-gangs are adjustably connected with the main frame and in which the disk-gangs are connected together at their inner ends by a coupling which receives the inward thrust of the gangs.

The object of my invention is to improve the means for connecting the inner ends of the gangs in such a manner as to reduce the distance between the inner ends of the gangs and bring the front portions of the innermost disks closely together when the gangs are set at an angle, thereby reducing to a minimum the width of the strip of land between the gangs which is not cultivated by the disks.

In the accompanying drawings, consisting of two sheets, Figure 1 is a top plan view of a disk harrow provided with my improvements. Fig. 2 is a longitudinal section on an enlarged scale. Fig. 3 is a horizontal section of the inner portions of the disk-gangs on an enlarged scale.

Like letters of reference refer to like parts in the several figures.

A represents the draft-pole; B, the cross-bar of the main frame secured to the pole; C, the gang-planks; D, the swiveling connecting-rods by which the gangs are attached to the cross-bar of the main frame, and on which the angle of the gangs can be adjusted. These parts may be of any ordinary or suitable construction.

E E represent the innermost disks of both gangs, and E′ E′ the outer disks.

F F represent the spools or sleeves which are interposed between the disks, and G the rods which pass through the disks and sleeves and tie these parts together in a well-known manner.

H is a coupling-rod, which connects the inner ends of the gangs, and which is provided with two spherical knuckles *h h′*, which are seated in spherical sockets formed in the innermost sleeves F. These sleeves are formed with inwardly-flaring enlargements I, which are provided in their deepest portions around the tie-rods G with spherical seats *i*, against which the knuckles bear. The heads *g* of the tie-rods are made spherically concave, and form parts of these seats. The portion *i* of the cavity of the sleeve which extends from the spherical seat to the open inner end of the sleeve is made tapering, and receives a collar J, which prevents the knuckle from being withdrawn from its seat. The inner surface of this collar is made spherical and forms a continuation of the spherical seat. The innermost disks E E are secured to the inner ends of the sleeves F by bolts K, and project inwardly over the inner ends of the collars J, whereby the latter are secured in the sleeves.

L represents the draw-bar, which is attached with its front end to the hand-lever *l*, mounted on the pole, and with its rear end to the coupling-bar H. The rear end of the draw-bar is provided with a bearing or eye *m*, which embraces the coupling-bar between the knuckles thereof. In order to pass the coupling-bar through this bearing, the ball *h* is made detachable from the shank of the coupling-bar and secured to the reduced end *n* thereof by a pin *o*. The draw-bar is bent upwardly from the bearing at its rear end in order to clear the converging front portions of the disks when the gangs are set at an angle, and is bent downwardly in front of the disks to connect with the hand-lever.

My improved construction of the coupling mechanism locates the knuckles and sockets outwardly from the innermost disk of each gang and between the innermost disk and the next outer disk, whereby the inner disks of both gangs are brought together as closely as possible. This reduces to a minimum the width of the strip of land between the inner ends of the gangs which is not reached by the disks. This construction also protects the knuckles, which are located in the cavities of the inner sleeves, from dirt and reduces the friction and wear of the parts. The coupling-bar turns with the gangs, so that no friction is created between the knuckles and the sockets, except when one gang turns faster than the other, and in that case the movement of

the knuckles in the sockets or of the sockets on the knuckles is only equal to the difference between the rotative speeds of the gangs, which is very slight. In turning with the gangs the coupling-bar turns in the eye or bearing of the draft-rod.

I claim as my invention—

1. The combination, with the draft-frame and the disk-gangs, of sleeves arranged at the inner ends of the gangs and provided with spherical sockets in their inwardly-opening cavities, a connecting-bar having knuckles at its ends which are seated in said sockets, and a draft-bar provided with an eye which embraces the shank of the connecting-bar and in which the latter turns, substantially as set forth.

2. The combination, with the draft-frame and the disk-gangs, of sleeves arranged at the inner ends of the gangs and provided with spherical sockets in their inwardly-opening cavities, a connecting-bar having knuckles at its ends which are seated in said sockets, collars arranged in the cavities of the sleeves whereby the knuckles are retained therein, and a draft-rod provided with an eye which embraces the shank of the connecting-bar and in which the latter turns, substantially as set forth.

3. The combination, with the draft-frame and the disk-gangs, of sleeves arranged at the inner ends of the gangs and provided with inwardly-opening spherical sockets, a connecting-bar provided at its ends with spherical knuckles which enter said sockets with their outer portions and receive the inward thrust of the gangs, and collars arranged in said sleeves, whereby the knuckles are retained in the sockets, substantially as set forth.

4. The combination, with the draft-frame and the disk-gangs, of sleeves arranged at the inner ends of the gangs and provided with sockets in their inwardly-opening cavities, a connecting-bar provided at its ends with knuckles which are seated in said sockets, collars arranged in said cavities, whereby the knuckles are retained in the sockets, and disks which are secured to the inner ends of said sleeves and which overlap said collars, whereby the latter are secured in the cavities of the sleeves, substantially as set forth.

Witness my hand this 11th day of November, 1889.

SHELDON J. GLASS.

Witnesses:
ELIAS R. BOWEN,
LOUIS E. LAFLIN.