(No Model.)

E. PRIDMORE.

DISK HARROW.

No. 433,654. Patented Aug. 5, 1890.

Fig. 1

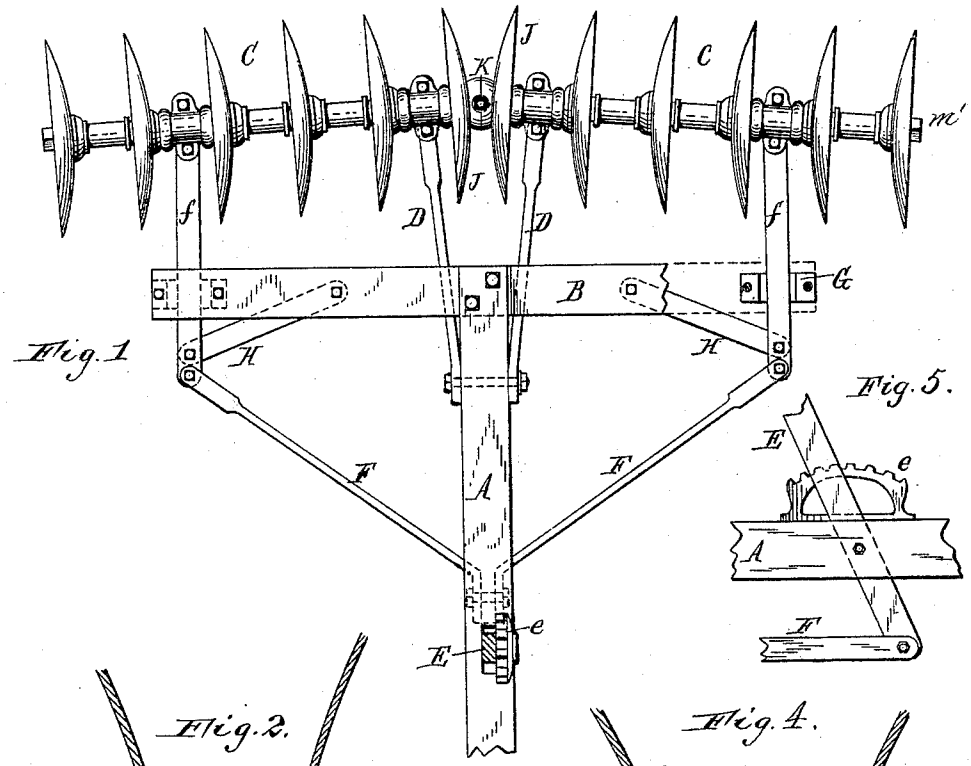


Fig. 5.

Fig. 2.

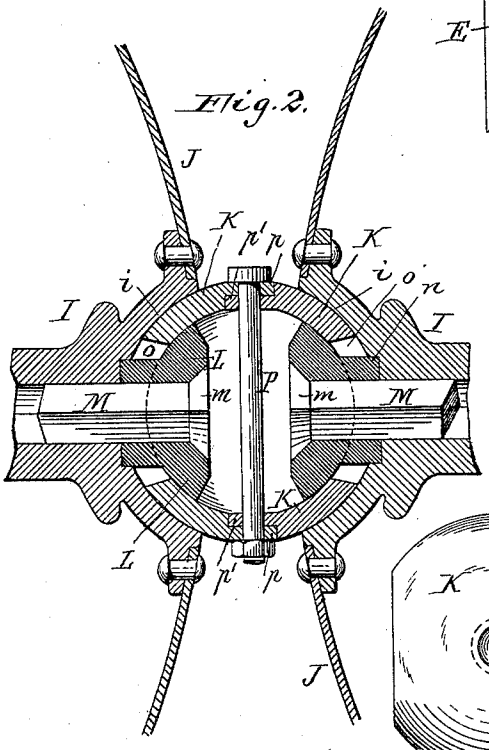
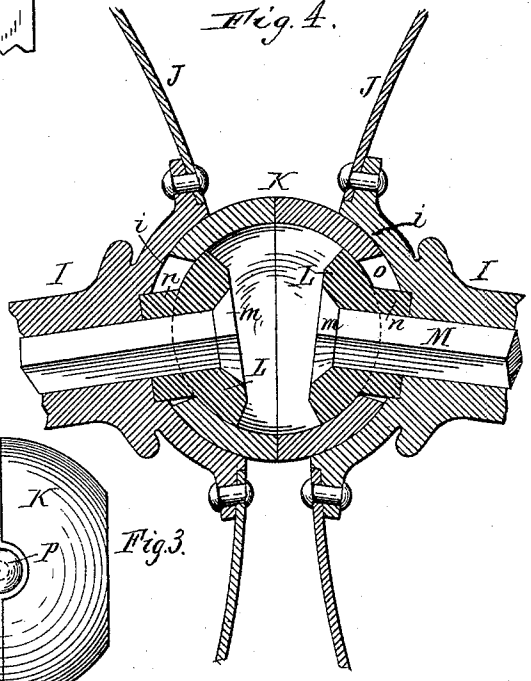


Fig. 4.



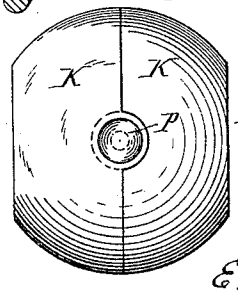


Fig. 3.

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UNITED STATES PATENT OFFICE.

EDWARD PRIDMORE, OF BATAVIA, NEW YORK, ASSIGNOR TO THE JOHNSTON HARVESTER COMPANY, OF SAME PLACE.

DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 433,654, dated August 5, 1890.

Application filed May 5, 1890. Serial No. 350,597. (No model.)

To all whom it may concern:

Be it known that I, EDWARD PRIDMORE, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, 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 disks are arranged in two gangs adjustably connected with the draft-frame, and in which the inner ends of the gangs are provided with buffer-connections, by which the inward thrust of the gangs is received.

The objects of my invention are to improve the construction of the buffer-connection, so as to render the same simple and durable, and to simplify the construction of the devices whereby the angle of the gangs is adjusted.

In the accompanying drawings, Figure 1 is a top plan view of a disk harrow provided with my improvements. Fig. 2 is a vertical section of the buffer-connection on an enlarged scale. Fig. 3 is a detached top plan view thereof. Fig. 4 is a vertical section showing a modified construction of the buffer-connection. Fig. 5 is a fragmentary side elevation of the adjusting-lever and connecting parts.

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

A represents the pole, and B the cross-bar secured to the rear end thereof in the usual manner.

C C represent the disk gangs, and D D the draft-rods, whereby the inner portions of the gangs are connected with the draft-frame.

E represents the usual adjusting-lever mounted on the pole, and *e* the toothed segment on which the lever is adjustably secured.

F represents rearwardly-diverging rods having their front ends connected with the adjusting-lever and their rear ends with longitudinal rods *f f*, which connect with the outer portions of the gangs. The longitudinal rods *f f* are loosely guided in straps G G, secured to the under side of the cross-bar B, near the ends thereof.

H represents links, which are pivoted with their inner ends to the under side of the cross-bar and connected with their outer ends to the longitudinal rods *f f*, near the front ends of the latter, for guiding and supporting these rods and the diverging rods.

I I represent the innermost thimbles of the disk gangs, provided in their inner ends with spherical sockets *i*, to the flanges of which the innermost disks J are secured.

K K represent two hollow hemispherical buffers arranged in the sockets *i*, and held therein by spherical washers L, which bear against the inner spherical surface of the buffers. These washers are held in place by tie-rods M, which pass through the gangs and are provided at their inner ends with heads *m*, countersunk into the washers, and at their outer ends with screw-nuts *m'*. Each washer is provided at its inner end with a circular collar *n*, which is seated in a circular recess in the inner end of the thimble, whereby lateral displacement of the washer is prevented. The opening *o* in the buffer, through which the collar passes, is made somewhat larger than the collar, so that the buffer can move on the collar or the collar in the opening as the angle of the gang is changed; but this opening is smaller than the spherical head of the washer, so that the buffer is held in the socket in any position which the gang may assume. Each buffer bears with its outer spherical surface against the socket and with its inner spherical surface against the washer, and is capable of a limited movement between these two surfaces. I prefer to couple both buffers together by a diametrically-arranged bolt P, which passes through interlocking lugs *p p'*, formed on the opposing straight faces of the buffers, as represented in Fig. 2. In this construction the buffers receive not only the inward thrust, but also prevent spreading of the gangs. The two hemispherical buffers bearing against each other with their straight or abutting faces and secured together by the bolt, form a hollow spherical coupling, which is connected with the gangs by the washers and prevents both inward and outward movement of the gangs, while affording the requisite flexibility.

If preferred, the two buffers may be disconnected, as represented in Fig. 4. In this construction the buffers bear against each other with their straight inner sides and can pass by each other, so as to stand eccentric-

ally with reference to each other when the gangs move out of line, either horizontally or vertically. This construction has therefore the advantage of allowing each gang a limited independent movement; but it does not prevent the gangs from spreading.

The buffers turn with the gangs, and when both gangs turn with the same speed there is no movement of the buffers in their sockets. When one gang turns faster than the other, a limited movement of the buffers in the sockets takes place, caused by the differential movement between the gangs.

I claim as my invention—

1. The combination, with the disk gangs and the draft-frame, of draft-rods connecting the inner portions of the gangs to the draft-frame, an adjusting-lever mounted on the draft-frame, rearwardly-diverging rods attached with their front ends to the adjusting-lever, longitudinal rods extending from the rear ends of the diverging rods to the outer portions of the disk gangs, and links pivoted with their inner ends to the draft-frame and attached with their outer ends to the longitudinal rods, substantially as set forth.

2. The combination, with two disk gangs provided in their inner ends with spherical sockets, of buffers seated in said sockets and having external and internal spherical surfaces, and spherical heads bearing against the inner sides of the buffers and confining them in the sockets, substantially as set forth.

3. The combination, with two disk gangs provided in their inner ends with spherical sockets, of hemispherical buffers seated with their outer spherical surfaces in said sockets and bearing against each other with their straight inner faces, substantially as set forth.

4. The combination, with two disk gangs provided in their inner ends with spherical sockets, of hemispherical buffers seated in said sockets, washers in the cavities of the buffers, whereby the latter are confined in the sockets, and means whereby both buffers are secured together, substantially as set forth.

5. The combination, with two disk gangs provided in their inner ends with spherical sockets, of hemispherical buffers seated with their outer spherical surfaces in said sockets and having their straight abutting faces provided with interlocking lugs, spherical washers bearing against the inner spherical surfaces of the buffers, and a fastening-bolt passing through the lugs of both buffers, substantially as set forth.

6. The combination, with two disk gangs provided in their inner ends with spherical sockets, of a hollow spherical coupling seated in said sockets, and fastening-washers attached to the gangs and engaging against the inner side of the spherical coupling, substantially as set forth.

Witness my hand this 25th day of April, 1890.

EDWARD PRIDMORE.

Witnesses:
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