(No Model.)

S. RITCHIE.

DISK HARROW.

No. 443,793. Patented Dec. 30, 1890.

Fig. 1.

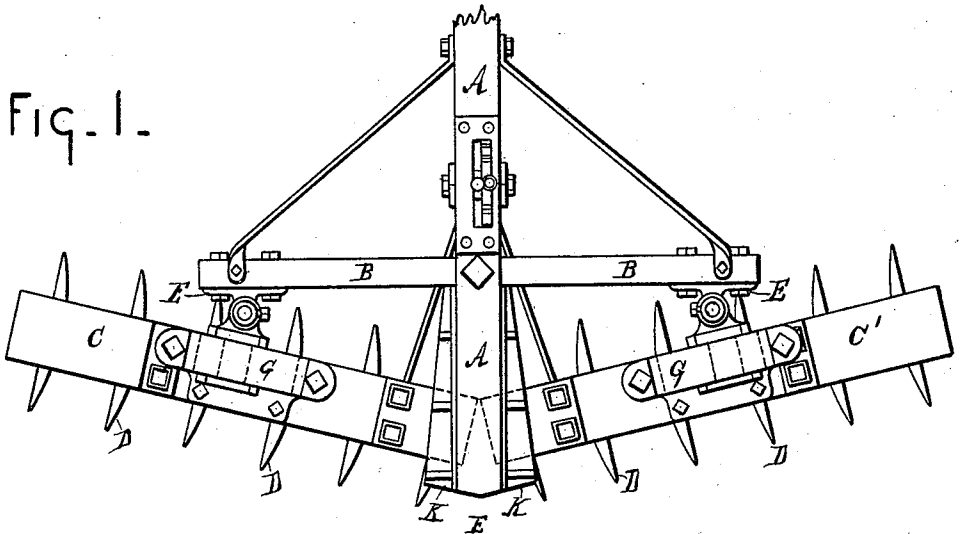


Fig. 2.

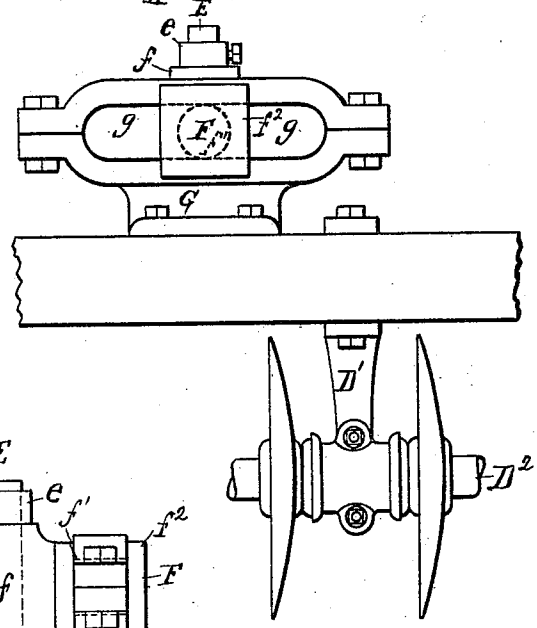
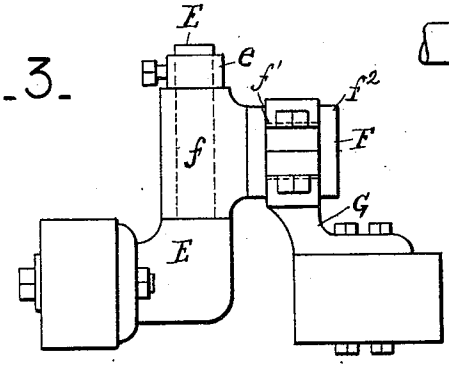


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL RITCHIE, OF ALBION, MICHIGAN, ASSIGNOR TO THE GALE MANUFACTURING COMPANY, OF SAME PLACE.

DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 443,793, dated December 30, 1890.

Application filed August 2, 1890. Serial No. 360,820. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL RITCHIE, a citizen of the United States, residing at Albion, county of Calhoun, State of Michigan, have invented a certain new and useful Improvements in Disk Harrows; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to disk harrows; and it consists of a combination of devices and appliances hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of my harrow. Fig. 2 is an elevation. Fig. 3 is a detail of the construction.

In carrying out the invention, A represents the main tongue, and B a cross-beam rigidly engaged thereto, and to which the disk-beams are pivoted.

C C′ are the disk-beams, to which the disks D are suitably engaged by the standards D′ and shaft D^2.

My invention relates particularly to the manner of engaging the disk-beams to the cross-beam B, and I will now describe the same.

E is an arm or block rigidly engaged to the cross-beam and formed into a shaft at the end. Embracing this shaft is the sleeved end *f* of the arm F. The collar *e* is provided to prevent the sleeve from slipping off from the arm E.

G is another standard or arm rigidly engaged to the disk-beam. The upper end of this standard is formed, as shown in Fig. 2, with an elongated opening or slot-bearing *g*. Through this slot is extended and in it bears the shank end *f′* of the arm F, the said shank end being provided with the rim or projection f^2, to prevent its slipping out of the said slot.

It will thus be observed that by means of the connection above set forth a universal joint is provided—that is, since the arm F is sleeved on the arm E, the latter will act as a vertical pivot on which the beam can swing horizontally, and since the arm F enters the sleeve or slot on the arm G the arm F will act as a horizontal pivot on which the beam can swing in a vertical plane to vary its angle of inclination. So, also, in addition to this universal action of the disk-beams, because of the play which the arm F has in the slot in the arm G, the beams are permitted to have a certain longitudinal motion, thus permitting them to pass any obstructions in their path, such as stones, stumps, &c., and allowing them to approach each other and keep their inner ends adjacent to each other, even when these inner ends are traveling in a furrow or other depression, and when, if the bearing were not slotted, they would move away from each other, as on the arc of a circle.

H are rods extending from the inner face of each disk-beam to a lever located within reach of the operator, whereby the latter is enabled to set the beams, and consequently the disks, at any angle desired.

In order that the rear end of the tongue may be protected from wear, I provide the plate K, against which the inner ends of the disk-beams may bear when they impinge against the tongue.

What I claim is—

1. In a disk harrow, the combination, with the main frame and disk-beams, of an arm E, connected with the main frame and having its end formed into a substantially vertical pivot, an arm F, pivotally engaged with the arm E and formed at one end into a substantially horizontal pivot, and an arm G, connected to the disk-beam and provided with a slot for the reception of the pivotal end of the arm F, substantially as described.

2. In a disk harrow, the combination, with the main frame and disk-beams, of a connection between the two, consisting of the arm E, engaged to the frame, arm G, engaged to the disk-beam and having its end slotted, and the arm F, sleeved to the arm E and playing in the slot in the end of the arm G, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

SAMUEL RITCHIE.

Witnesses:
W. H. CHAMBERLIN,
MARION A. REEVE.