

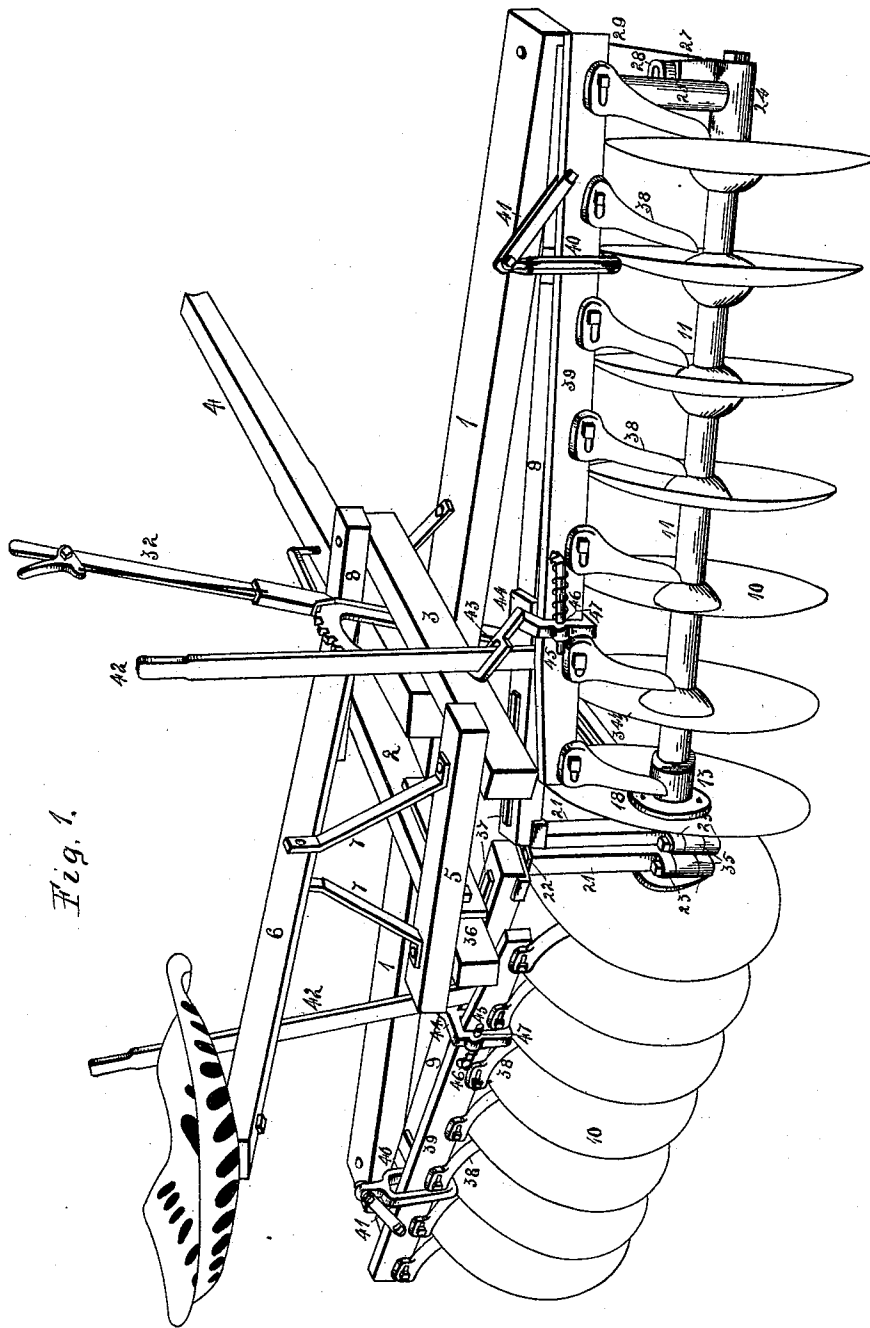
(No Model.)

2 Sheets—Sheet 1.

A. BYINGTON.
HARROW.

No. 497,367.

Patented May 16, 1893.



Witnesses:
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L. C. Miller

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 1.

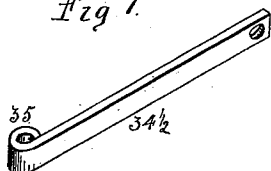


Fig. 2.

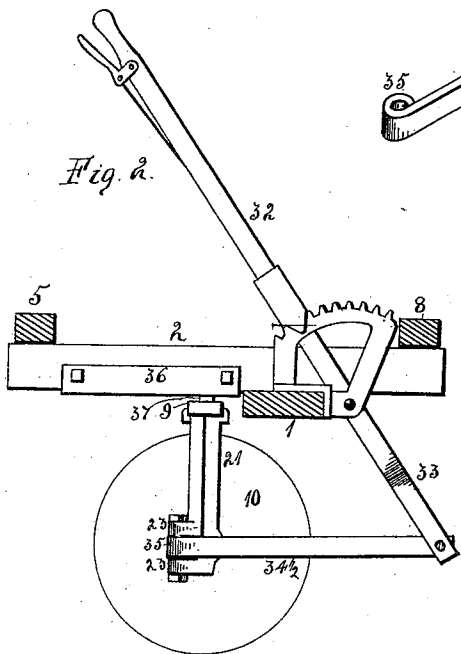


Fig. 3.

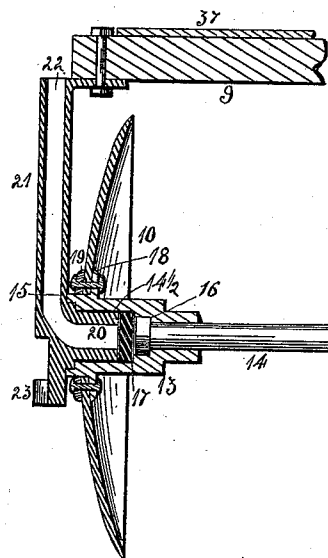


Fig. 6.

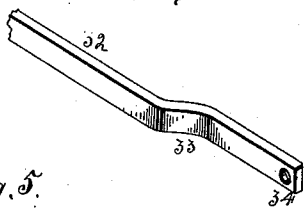


Fig. 4.

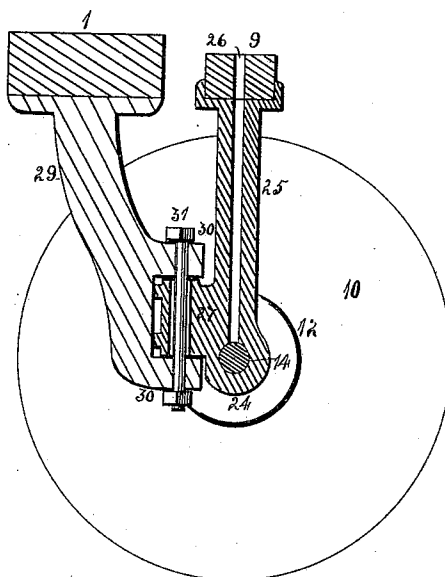
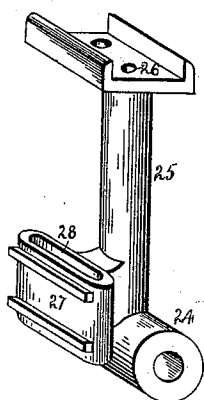


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALBERT BYINGTON, OF ROCHELLE, ILLINOIS.

HARROW.

SPECIFICATION forming part of Letters Patent No. 497,367, dated May 16, 1893.

Application filed March 12, 1892. Serial No. 424,725. (No model.)

To all whom it may concern:

Be it known that I, ALBERT BYINGTON, a citizen of the United States, residing at Rochelle, county of Ogle, State of Illinois, have invented a certain new and useful Improvement in Disk Harrows, of which the following is a specification.

The object of this invention is to simplify the construction of harrows of this class, at the same time increasing their durability and strength.

The improvements herein detailed consist in the novel mechanism for throwing the scrapers into contact with the concave faces of the disks, in the form of the journals, the means by which oil is introduced therein and dust and dirt excluded therefrom, in the general form of the harrow frame and in the means whereby the draft is exerted upon the rear side of the inner journal boxes, instead of from the forward side thereof, including also the lever for varying the inclination of the disk shafts.

In the drawings,—Figure 1, is a perspective representation of my improved disk harrow. Fig. 2, is a transverse central view partially in section on a line, passing between the two series of disks. Fig. 3, is a longitudinal central vertical section through the inner end of one of the disk shafts, its bearing and the supporting hanger. Fig. 4, is a vertical transverse section through the outer hanger showing the connection between the main frame and the disk section. Fig. 5, is an isometrical representation of the outer hanger, for supporting the disk sections. Fig. 6, is an isometrical representation of the lower end of the lever, by which the inclination of the disk section is regulated. Fig. 7, is an isometrical representation of one of the connecting draft bars, extending between the lever mentioned in the preceding paragraph and the inner journals of the harrow sections.

In the construction of this harrow, I build a main frame by uniting with the transverse beam 1, the longitudinal bars 2, 3, and 4. The latter extending forward forms the tongue of the harrow. The rear ends of the bars 2 and 3, are connected by the brace 5, the latter forming a seat for the braces 7, of the seat bar 6, which is connected at its forward end to the bar 8. All of these pieces mentioned

are secured rigidly together by bolts and form the main frame of the harrow. The disk sections are located under this frame and have a connection therewith, at the outer ends of the bar 1, through the brackets, secured to its under side and by draft bars which extend between the inner ends of the sections and a spring latch segment lever, by means of which their angle to the bar 1, of the main frame may be increased or diminished, all of which parts will be described in detail in their order.

The disk sections are composed of a horizontal top beam, the disk shaft, and the hangers connecting the shaft to the beam. The first, the top beam 9, requires no particular notice. The disk shaft is composed of disks 10, and spools 11, 12 and 13, mounted upon a large bolt 14, by means of which bolt, the parts are held rigidly together. The form of the spools 12 and 13, is varied slightly to form bearings for the shaft in the supporting hangers. The body of that spool numbered 12, being somewhat smaller than the spools 11, and unlike those has a flange at one end only. The spool 13, has a central recess 14½, extending to some distance from its outer end the edge of the spool provided with the ring 15, constituting a sand box for the bearing. In the opposite end of the spool, the central opening contracts and a recess 16, is formed for holding the head of the connecting bolt 14, and a removable plate 17, is placed over the head to take up wear of the bearing. From the body of the spool the annular flange 18, extends, between which flange and the independent washer 19, I bolt the disk. The bearing at this, the inner end of the section therefore is the stud 20, entering the central opening 14½, of the spool 13, and this stud has an enlarged portion, corresponding to the ring 15, and preventing the sand from working into the bearings.

Supporting the bearing stud 20, and of which it forms a part is the hanger 21, secured by bolts to the upper beam 9, and through its center and through the stud, I form the oil tube 22, by means of which oil is introduced within the bearing. At the rear side of this bracket, two ears 23, extend. The bearing at the opposite, the outer end of the disk shaft is of ordinary pattern, the sleeve

24, encircling the body of the spool 12, the hanger 25, extending between the bearing and the beam 9, to which it is secured. An opening 26, through the hanger and onto the journal renders the oiling of the bearing easy and effective. Extending forwardly from the hanger 25, I provide a projecting portion 27, bearing the elongated opening 28. A bracket 29, extending downward from the under face of the beam 1, on the outer ends of which it is secured, has two rearwardly projecting, perforated ears 30, through the perforations of which and through the opening 28, a bolt 31, extends, forming a sliding pivotal connection, between the outer ends of the disk sections and the bar 1, of the main frame.

I bolt a spring latch section lever 32, to the beam 1, of the main frame, which lever extends downward beside the tongue, off setting in the bend 33, to bring the lower end of the lever on the middle line of draft and having in this lower end the hole 34. A bolt passing through this latter hole and through holes in the draft bars 34½, pivotally attach the latter 25 to the lower end of the lever 32, and these draft bars extending backward, terminate in eyes 35, one on each bar.

The portion of each of the draft bars, forming the eye, lies between the perforated ears 30, of the inner hangers 21, of the harrow sections and a bolt passing through the ears and through the eye of the draft bar, completes the connection between the inner end of each of the harrow sections and the sector lever 32, whereby the inclination of the sections is varied.

It will be seen that the inner ends of the harrow sections are held down by the weight of the frame, the upper faces of the beams 9, being adjacent to and lying under the longitudinal bars 2 and 3. To prevent undue wear between these contiguous surfaces, I interpose the rub irons 36, on the bars 2 and 3, and the iron plates 37, on the beams 9, by which means this objection is obviated.

The concavity of the disks, when the harrow is used in gummy soil, is liable to gather dirt and clog, limiting the efficiency of the harrow in cutting deep into the ground and to overcome this objection, I provide a series of scrapers 38, for each harrow section which though normally held away from the disks, may be thrown against their faces at the will of the operator. These scrapers are secured to the bar 39, by bolts passing through holes in the bar and through a horizontally elongated opening in each scraper, whereby each is adjusted to touch its disk when thrown into operation by the driver. A bracket 40, extends rearward from the beam 9, near the outer end thereof and a link connection 41, is formed between each bracket and the scraper bar 39. A lever 42, is pivoted to the inner

ends of each of the scraper bars and passes through an opening 43, in a bracket 44, secured to the bar 1, and both the brackets 40 and 44, inclose the scraper bar, limiting its movement to a lengthwise direction of the bar. In a hole in the side of each scraper bar, I drive the short arm of the "L" shaped rod 45, placing over its long arm the coil spring 46. The bracket 44, is provided with a hole 47, on its rear side, through which the long arm of the rod 45, extends and by the elasticity of the spring the scrapers are held away from the disks. The levers 42, by which the scrapers are manipulated, are on the inner ends of the harrow sections and within easy reach from the driver's seat.

I claim as my invention—

1. A disk harrow, having a main frame, two disk sections, a bracket depending from each end of the main frame, a sliding pivotal connection between the outer ends of the sections of the brackets, and means for changing the inclination of the sections relative to the main frame.

2. A disk harrow having a main frame, two disk sections, a bracket depending from each end of the main frame, said bracket having two projecting ears, a bolt passing through the ears and through the elongated opening in the outer end of each disk section and means for changing the inclinations of the sections relative to the main frame.

3. A section for disk harrows composed of a top beam, a series of disks centrally perforated, spools between the disks, a bolt for holding the spools and disks together, the spool at one end of the shaft projecting beyond the disk and the spool at the opposite end recessed, two hangers secured to the top beam, one having a stud for the recess the other having a bearing for the opposite end of the shaft, said hangers having oil holes through their centers for conducting oil to the bearings.

4. A disk harrow having a main frame, two disk sections, a series of scrapers for the disks of each section, said scrapers secured to a scraper bar, two brackets for supporting the bar, a link connection between one bracket and the bar and a sliding engagement with the remaining bracket.

5. A disk harrow having a main frame, two disk sections, brackets depending from the frame forming bearings for the disk sections, the inner brackets having a horizontal portion upon which that end of the disk section is supported, said bracket and horizontal portion being hollow, forming an oil duct to the bearing surface.

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Witnesses:

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