

(No Model.)

J. F. PLATT.
DISK HARROW.

No. 493,182.

Patented Mar. 7, 1893.

Fig 1

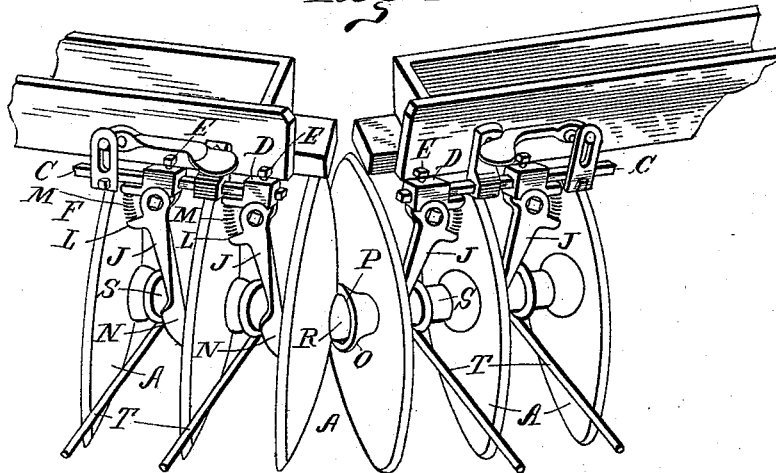


Fig 2

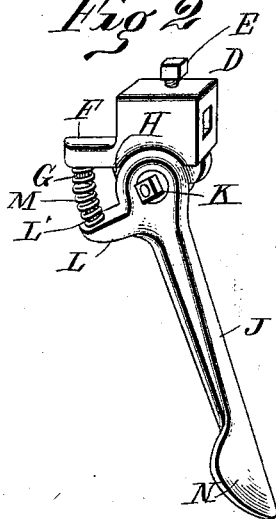


Fig 3

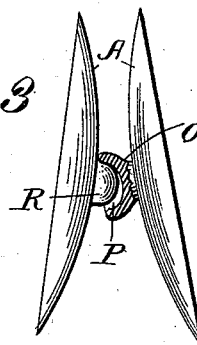
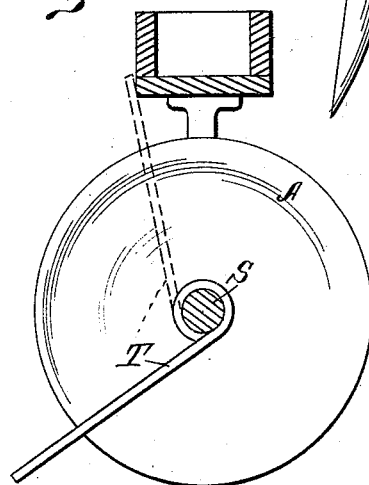


Fig 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES F. PLATT, OF STERLING, ILLINOIS.

DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 493,182, dated March 7, 1893.

Application filed July 18, 1892. Serial No. 440,389. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. PLATT, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in improvements in disk harrows, and has reference, first, to the means for holding the scraper blades adjustably in contact with the concave faces of their contiguous disks. This adjustment is several and distinct as to the scraper blades, and the advantage thereof is that each scraper blade is thereby compelled to follow the inequalities of the contiguous face of the disk.

Second, my invention further consists in a provision for resisting the normal in-thrust of the disk-gangs, occasioned by the pressure of the earth on the outer surface of the lower portion of each disk in both series, and for holding the inner ends of both gangs of disks in the same horizontal plane.

Third, my invention further comprises the provision of a bar or rod, loosely pivoted between the disks, and adapted to be forced, by reaction against the rotation of said disks, through any accumulation of earth or debris between said disks, and dislodge it.

As my invention is limited to the three departments of the harrow above mentioned, and is applicable, with obvious changes or provisions, to any of the disk harrows in common use, and as the constructions of the various types of such harrows are well known in the art, I do not deem it essential to particularly describe any of the parts other than those necessary to illustrate the location, construction, and operation of my improvements.

Referring to the first department of my invention, the adjustable quality of the scraper blades is attained by pivotally seating the same at the upper end of the shanks, in a line

transverse to the face of the disks, and in forming a lateral projection on said shanks below their pivotal seat, and on the side thereof opposite to the co-relative disk, and seating a coiled spring upon said projection, and thereby holding the scraper blade, with a uniform pressure, against the adjacent face of the companion disk; the pivotal seat aforesaid, of the shank of said scraper blade, affording the flexibility essential for that result.

In reference to the second department aforesaid of my invention, the effect of the intercrowding and vertical displacement of the disk-gangs is neutralized by the formation of a cup-like projection on the inner end of one disk-gang, and a circular protuberance or projection, on the inner end of the adjacent gang, both centrally located and adapted to co-act.

In explanation of the necessity for, and the operation and advantage of the third department of my invention, I would say; the disks, and the spools or thimbles between them, all rotating together, tend, when the earth is damp or mucky, to cause an accumulation of mud around the spools between the disks and behind the scraper shank, which, often intermixed with stubble, stalks, or dried weeds or grass, packs and gradually increases until it fills the entire space between the disks and extends to their peripheries, suspending the action of the scraper, and being held by the concave formation of one of the adjacent disks. To obviate this difficulty, I attach one end of a rod or bar loosely around the spool between the disks, and permit the other end of said rod to drag behind the harrow; said rod is of too great length to pass over the disk-gang, but will be arrested by contact with some part of the machine, above the disks. When the clog begins to form around the spool, it will press against the lower or front surface of said rod, and carry the latter backward and upward until its free end is stopped above the disks, when, said rod being stationary, the farther revolution of the disks and spools, splits the clog against said rod, and the lateral pressure of the clog being thereby ended it drops off of its own gravity, and the rod drops back to its original position. The same result would

be attained if the outer end of said rod were permanently attached above the pivotal point, in which event the lower end of said rod may be forked and straddle the spool.

5 In the drawings,—Figure 1 is a perspective rear view of a portion of a disk harrow embodying my invention. Fig. 2 is a detail of the scraper blade and its seat. Fig. 3 is a detail of the co-acting devices at the inner end of
10 the disk-gangs, aforesaid. Fig. 4 is a cross section of one of the disk-gangs exhibiting the clog preventing rod, in its two positions.

Similar letters refer to similar parts throughout the several views.

15 The several parts in Fig. 1, being the usual ones and well known, it will not be necessary to letter all of the same, nor to refer to them specially, and I will therefore confine the description specifically to those parts which are
20 associated with my invention.

A, A, are the disks arranged in gangs upon a common axle B. These disks are of the ordinary concavo-convex formation, seated in two series substantially transversely to the
25 line of draft, with their concave faces outward.

C is a bar suitably attached to the frame of the machine, above and substantially parallel to the axle B. At proper localities on the bar C are sleeved the boxes D, being ad-
30 justed on said bar by a set-screw E seated in the upper wall of said boxes, respectively. On the boxes, D, under the bar C, there is formed a horizontal projection F, and on the lower surface of said projection, a down-
35 wardly extending boss G. There is also formed on the boxes D a downwardly projecting ear H.

J is the scraper shank pivoted at its upper end to the ear H, by means of a transverse
40 bolt K. The shank J is provided with a lateral horizontal extension L, which is projected under the projection F of the box D. On the upper surface of the projection L there is formed the upwardly extending boss L', and
45 a coiled-spring M is seated on the bosses G and L' in a compressed condition, so that by its expansive force, pressing downwardly on the extension L of the shank J, it tends to hold the scraper blade N in constant contact with
50 the concave face of the contiguous disk A.

By means of the set-screws E the boxes D can be adjusted at any point on the bar C to give the scraper blades N the proper locality and degree of pressure to enable them to ef-
55 ficiently do their work.

On the inner end of the axle of one of the disk-gangs is formed centrally the cup-like projection O, having its opening P projected horizontally toward the inner end of the other
60 gang axle. On the inner end of the latter axle there is formed a circular boss or projection R, of somewhat less diameter than the opening P, and adapted to be at all times within said opening, to a greater or less extent, depending upon the mutual angle at
65 which said disk-gangs are worked. But the

boss R is not of sufficient height or width to fill the opening P, its function being simply, by its projection partially within said opening, to hold the ends of the disk-gangs in the
70 same horizontal plane, and thereby prevent the upward tilting on the inner ends of either of said gangs, which is the ordinary result of the inward crowding of said gangs. The boss R is made of less altitude than the depth of
75 the opening P in the cup O, and of less lateral diameter in said opening, so as to limit its function to simply that of a stop, to prevent the vertical displacement of the inner end of the gangs, as aforesaid.

80 When the disk-gangs are substantially in the same line the boss R will be almost or quite entirely within the opening P, but its outward end or crest will not reach the bottom of said opening, and the inward pressure
85 of the gangs will be received wholly upon the front rim of the cup O, and against the opposing disk A, at a locality thereon directly in front of the boss R. The disk A, which receives the pressure of the rim of the cup O,
90 takes such pressure so near its center as to be reinforced on its opposite side by the supporting flange of the spool S, one of which is interposed between each of the disks. The pressure of the cup O has, therefore, no effect
95 on the adjacent disk A to bend, break, or injure it. As there is a constant inward pressure of both gangs in whatever angle they are operated, the front edge of the cup O will always be in contact with the adjacent sur-
100 face of the inner disk A of the other gang, and therefore the boss R is always projected somewhat within the opening P of said cup, with the function and effect of holding the inner ends of the two disk-gangs in the same
105 horizontal plane. Therefore my invention, at this point, has the double advantage of resisting the ordinary inward thrust of the disk-gangs, and also holding the inner ends of both gangs in the same horizontal plane.

110 T is the clog reducing rod, before mentioned, which is hooked, looped, or otherwise loosely attached around the spools S, interposed between the disks A, with its other end either dragging behind the harrow, or held
115 against the rear of the machine from being carried around by the rotation of the disk-gangs.

What I claim as my invention, and desire to secure by Letters Patent of the United
120 States, is—

1. In a disk harrow, the combination of a transverse bar C, box D adjustably seated thereon, and provided with lateral extension F, and ear K, the scraper J pivotally attached
125 to ear K, and provided with a cutting blade N and lateral extension L, the spring M interposed between said extensions, and the disk A; substantially as shown, and for the purpose described.

130 2. In a disk harrow, the combination of the projection O, seated centrally on the inner

end of one of said disk-gangs, and provided with a cup-like opening P extended horizontally toward the center of the opposite disk-gang, and a substantially semi-spherical boss R formed centrally on the inner end of said opposing disk-gang, and of a less diameter than the width of the said opening P, and a less altitude than the depth of said opening; substantially as shown, and for the purpose described. 10

In testimony whereof I affix my signature in presence of two witnesses.

JAMES F. PLATT.

Witnesses:

JOHN G. MANAHAN,
MARTHA W. BARRETT.