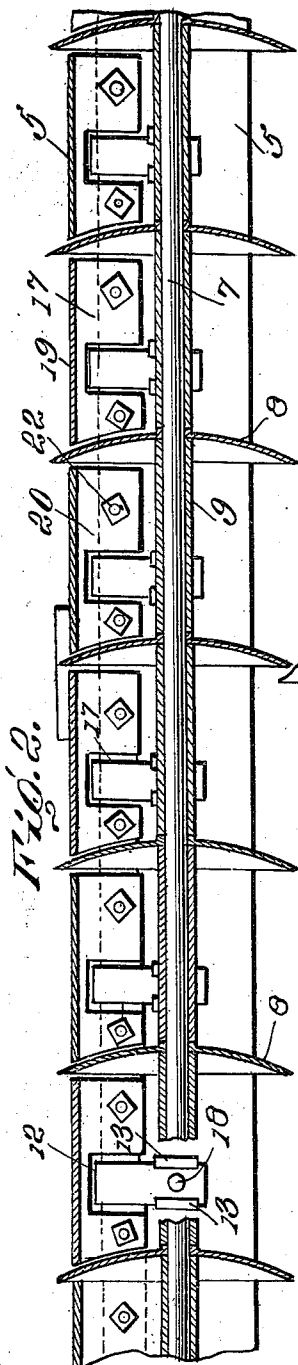


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CLEANER FOR DISK HARROWS.
APPLICATION FILED APR. 30, 1910.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.

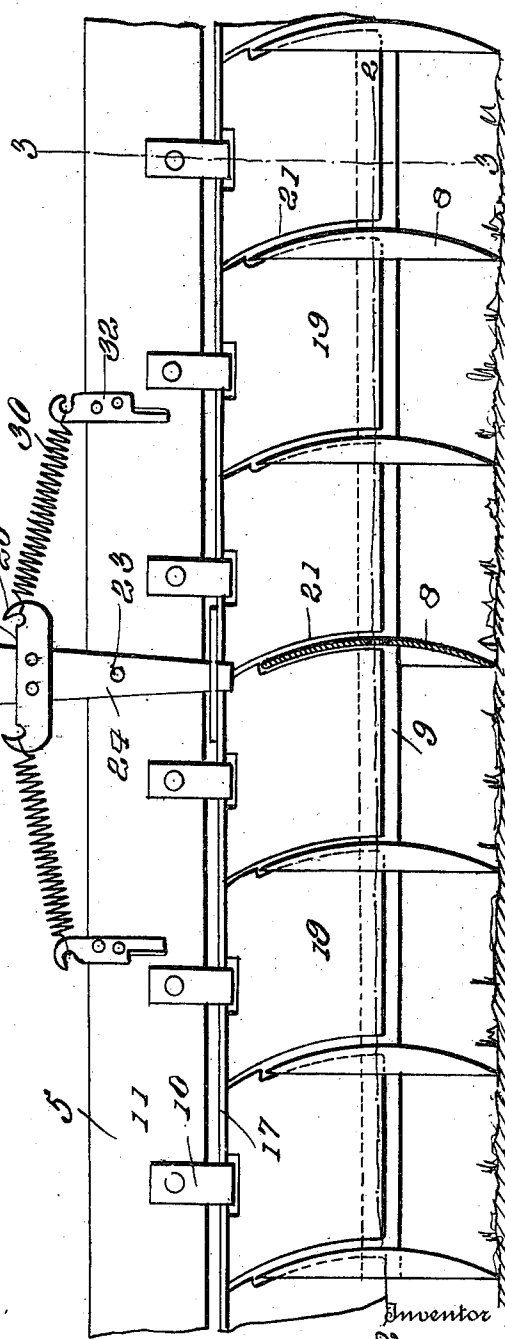


Witnesses

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Fig. 1.



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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

CHARLES E. ADAMS, OF MORRISON, ILLINOIS.

CLEANER FOR DISK HARROWS.

989,748.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed April 30, 1910. Serial No. 558,630.

To all whom it may concern:

Be it known that I, CHARLES E. ADAMS, citizen of the United States, residing at Morrison, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Cleaners for Disk Harrows, of which the following is a specification.

This invention relates to harrows and more particularly to a scraper or cleaner especially designed for attachment to disk harrows.

The object of the invention is to provide a harrow having scraping blades interposed between the revolving disks thereof and movable into engagement with said disks for the purpose of cleaning the same.

A further object is to provide means operatively connected with the scraping blades for simultaneously moving all of said blades alternately into engagement with the opposite sides of the disks.

A further object is to provide means for yieldably supporting the scraping blades on the harrow frame, and means for automatically returning the blades to normal or inoperative position after each scraping operation.

A still further object of the invention is generally to improve this class of devices, so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a rear elevation of a disk harrow provided with a scraper constructed in accordance with my invention; Fig. 2 is a horizontal sectional view taken on the line 2—2 of Fig. 1, and looking in the direction of the arrows; Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1; Fig. 4 is a perspective view of a portion of the harrow.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved scraper forming the subject matter of the present invention is principally designed for attachment to disk harrows and by way of illustration is shown in connection with a disk harrow of the ordinary construction, in which 5 designates the supporting frame, 6 the hangers, and 7 the transverse shaft journaled in said hangers and provided with a plurality of revolving disks 8 spaced apart by tubular members or sleeves 9.

Secured to the rear wall of the supporting frame 5 are spaced brackets 10, each preferably formed of a single piece of metal having one end thereof bolted or otherwise rigidly secured to the frame at 11 and its opposite end extended beneath the bottom of said frame and seated in a supporting clip 12, the latter being provided with overhanging flanges 13 which bear against the adjacent brackets and serve to assist in retaining said brackets in position on the bottom of the frame 5.

The intermediate portion of each bracket 10 is offset at 14 to form a pocket 15 in which is seated a guiding loop 16. The members 16 are each preferably formed of a single piece of flat metal, one end of which is interposed between the clip 12 and the end of the adjacent bracket, while the other end of the metal is bent upon itself to produce a loop for the reception of a reciprocating scraper carrying bar 17, there being alined openings formed in the clips 12 and ends of the loops 16 to permit the passage of bolts or similar fastening devices 18.

Interposed between the revolving disks 8 are a series of scraping blades 19 having their lower ends curved inwardly toward the axle 7 and their upper ends provided with attaching flanges 20 for engagement with the bar 17. The adjacent ends of the scrapers 19 are spaced apart to accommodate the revolving disks 8, the walls of the blades being curved, as indicated at 21 to conform to the shape of the opposite faces of the disks, as best shown in Fig. 1 of the drawings. The flanges 20 are preferably detachably secured to the bar 17 by bolts 22 so as to permit any one of the scraper blades to be readily detached should the latter become worn or broken, and replaced by a new blade.

Pivottally mounted at 23 on the rear wall of the supporting frame 5, is an operating lever 24, the lower end of which is deflected laterally at 25 and is extended through a slot

26 formed in a laterally extending ear 27 secured to the blade carrying bar 17. Extending transversely across the upper end of the lever 24 and secured thereto in any suitable manner, is a cross bar 28 having terminal hooks 29 to which are connected the adjacent ends of coil springs 30, the opposite ends of said springs being secured to the hooked ends 31 of anchoring plates 32 fastened to the rear portion of the supporting frame 5 on opposite sides of the operating lever 24, as best shown in Fig. 4 of the drawings.

The tension of the springs 30 is such as to normally and yieldably hold the curved edges 21 of the scraping blades out of contact with the revolving disks 8 so as not to offer any obstruction to the movement of the disks when the harrow is traveling over the surface of a field or other inclosure. The lever 24 is preferably in the form of a flat plate, the upper end of which is provided with spaced transverse incisions and the metal at said incisions bent or rolled upon itself to produce a socket 33 adapted to receive an operating handle 34. Thus it will be seen that by moving the operating handle 34 in one direction, the bar 17 will be shifted laterally so as to move the scraping blades into engagement with the adjacent faces of the disks 18, thus to dislodge dirt and the like deposited thereon when the harrow is employed for tilling moist or cloggy soil. When the operating handle 34 is moved in the opposite direction, the blades 19 will be moved into engagement with the opposite or concave faces of the disks, the coil springs 30 serving to return the blades 19 to normal or inoperative position, after each scraping operation.

Attention is here called to the fact that the loops 16 not only form a guide for the scraper carrying bar 17, but also serve to yieldably support the scrapers so as to prevent injury thereto in case the scrapers should strike a stone or other obstruction in the path of travel, the sockets 15 being of sufficient size to permit a slight vertical movement of the loops together with the scraper carrying bar for this purpose. It will also be noted that the scraping blades are imperforate and occupy approximately the entire space between the disks 8 so as to form in effect earth guards which serve to deflect the dirt downwardly and prevent the latter from clogging or otherwise obstructing the scraper shifting mechanism.

The device is extremely simple in construction and may be used in connection with any number of disks, without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. The combination with a disk harrow, of imperforate scraping blades occupying

approximately the entire space between the harrow disks and forming intermediate earth guards, means operatively connected with the scraping blades for moving the latter into engagement with the opposite sides of said disks, and means for automatically returning the blades to normal position after each scraping operation.

2. The combination with a disk harrow, of a scraper carrying bar mounted for reciprocation on the harrow frame, scraping blades depending from said bar and occupying approximately the entire space between the harrow disks, said blades forming intermediate earth guards, means operatively connected with the bar for moving the blades into engagement with the opposite sides of said disks, and means for automatically returning the blades to normal position after each scraping operation.

3. The combination with a disk harrow, of brackets secured to the harrow frame, a scraper carrying bar mounted for reciprocation in said brackets, scraping blades depending from the bar, a lever pivotally mounted on the harrow frame and operatively connected with the bar for moving the scraping blades into engagement with the harrow disks, and springs forming a yieldable connection between the opposite sides of the lever and the harrow frame for automatically returning the blades to normal position after each scraping operation.

4. The combination with a disk harrow, of spaced brackets secured to the harrow frame and provided with offset portions, guiding loops seated in the offset portions of the brackets, a scraper carrying bar mounted for reciprocation in the guiding loops, scraping blades depending from the bar, means operatively connected with the bar for moving the scraping blades alternately into engagement with the opposite faces of the adjacent harrow disks, and means for returning the blades to normal position after each scraping operation.

5. The combination with a disk harrow, of brackets secured to the harrow frame and provided with offset portions, guiding loops seated in the offset portions of the brackets, a scraper carrying bar mounted for reciprocation within the loops and provided with a perforated ear, scraping blades depending from the bar and interposed between the harrow disks, a lever pivotally mounted on the harrow frame and having its lower end extended within the perforation of said ear, a handle secured to the lever for tilting the latter to move the scraping blades into and out of engagement with the disks, and springs forming a connection between the opposite sides of the lever and the harrow frame for automatically returning the blades to normal position after each scraping operation.

6. The combination with a disk harrow, of clips secured to the harrow frame and provided with overhanging flanges, brackets engaging said flanges and each provided
 5 with an offset portion, guiding loops seated in the offset portions of the brackets, and provided with shanks interposed between the clips and the adjacent brackets, a scraper carrying bar mounted for reciprocation in
 10 said loops, scrapers depending from the bar and interposed between the harrow disks, fastening devices piercing the brackets and shanks of the adjacent loops, a lever operatively connected with the bar for moving
 15 the blades into engagement with the harrow disks, and springs forming a connection between the opposite sides of the lever and harrow frame for returning the blades to normal position after each scraping operation.
 20 tion.

7. The combination with a disk harrow, of a scraper carrying bar mounted for reciprocation on the harrow frame and pro-

vided with a laterally extended perforated ear, scraping blades depending from the bar
 25 and interposed between the harrow disks, a lever pivotally mounted on the frame and having its lower end reduced and seated in the perforation of the ear and its other end provided with a socket for the reception of
 30 an operating handle, a cross bar secured to the lever above the pivotal axis of the latter and provided with terminal hooks, anchoring plates secured to the harrow frame on
 35 opposite sides of the lever and also provided with hooks, and coil springs engaging the hooks of the anchoring members and cross bar, respectively, for returning the blades
 40 to normal position after each scraping operation.

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

CHARLES E. ADAMS. [L. s.]

Witnesses:

AUGUST JAEGER,
 GUSTAV A. JAEGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
