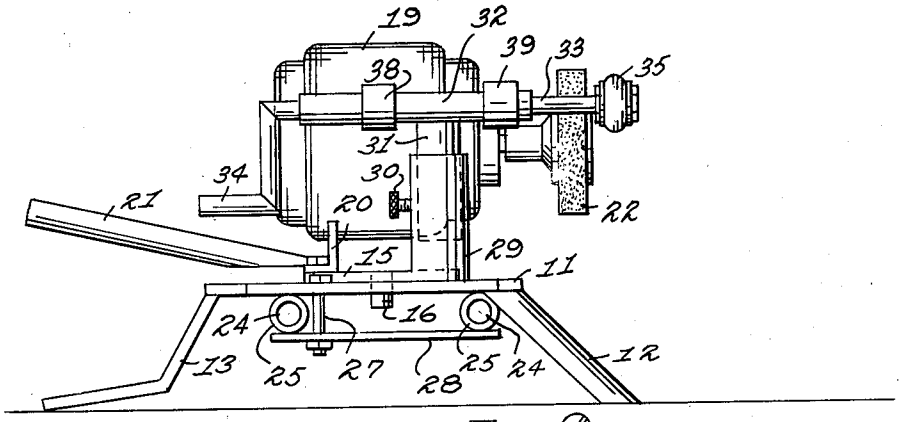
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DISK SHARPENER

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Fig. 1.



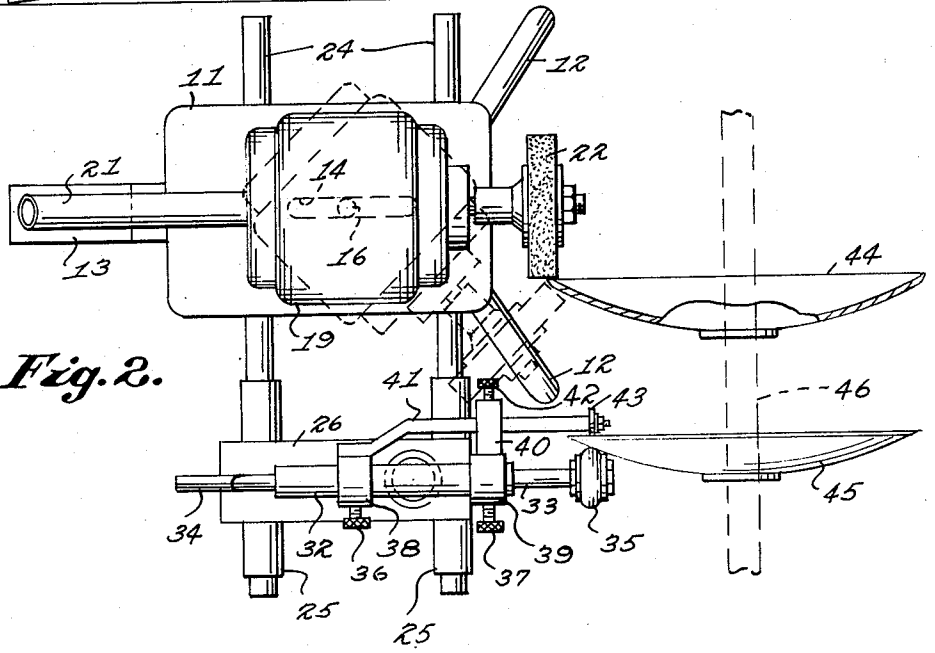


Fig. 2.

INVENTOR.
Herman Pater
BY

McMorrow, Berman & Davidson
ATTORNEYS

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Fig. 3.

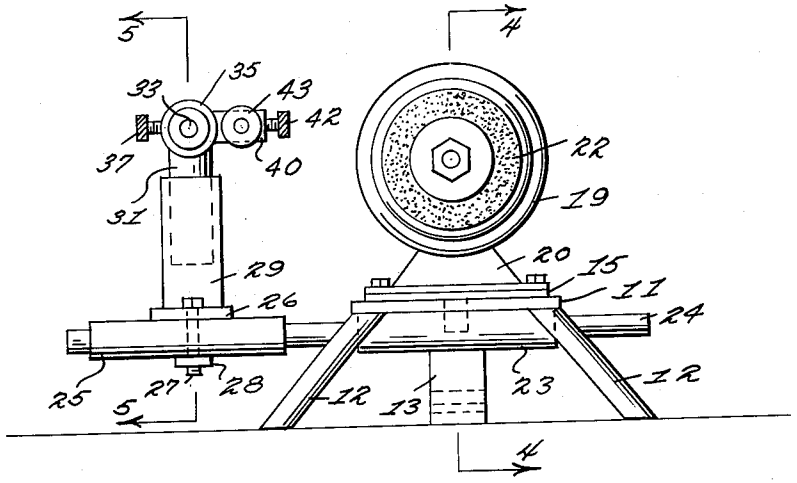
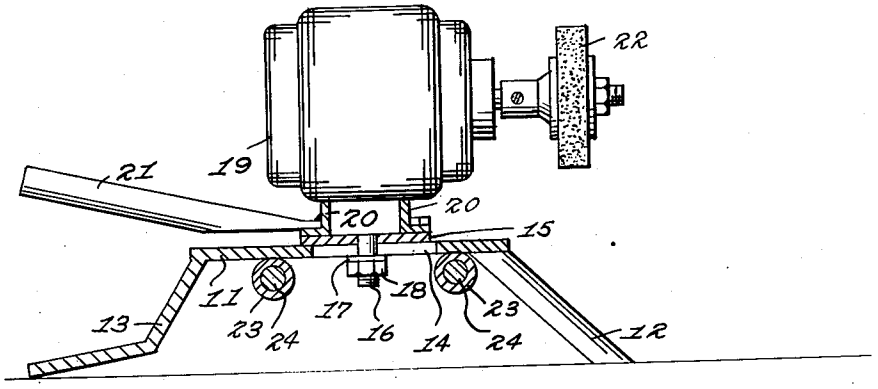


Fig. 4.



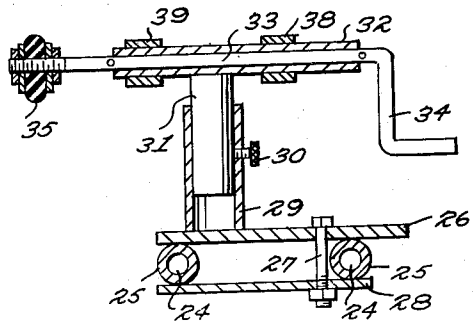


Fig. 5.

INVENTOR.
Herman Pater
BY
McMorrow, Berman & Davidson
ATTORNEYS

Patented June 6, 1950 2,510,601

UNITED STATES PATENT OFFICE

2,510,601

DISK SHARPENER

Herman Pater, Waltham, Minn.

Application June 8, 1948, Serial No. 31,751

2 Claims. (Cl. 51—104)

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This invention relates to sharpening apparatus for agricultural implements, and more particularly to a device for sharpening harrow discs.

A main object of the invention is to provide a novel and improved apparatus for sharpening harrow discs without requiring the discs to be removed from the harrow, said apparatus being very simple in construction, easy to operate, and providing means for rotating the disc while it is being sharpened.

A further object of the invention is to provide an improved harrow disc sharpener which enables the harrow discs to be sharpened without dismantling the harrow and which is adjustable so as to sharpen the discs on both sides, the device being inexpensive to manufacture, convenient to handle and being very rugged in construction.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a side elevational view of a harrow disc sharpener constructed in accordance with the present invention.

Figure 2 is is a top plan view of the disc sharpener of Figure 1 showing it in relationship to a disc being sharpened.

Figure 3 is a front end view of the disc sharpener of Figure 1.

Figure 4 is a cross-sectional view taken on line 4—4 of Figure 3.

Figure 5 is a cross-sectional detail view taken on line 5—5 of Figure 3.

Referring to the drawings, 11 designates a base plate which is provided with the front supporting legs 12, 12 secured to the forward corners of the plate and a rear supporting leg 13 secured to the midportion of the rear margin of the plate and forming a support. Plate 11 is formed with a longitudinal slot 14 and overlying the plate at said slot is a plate member 15 provided with a depending stud 16 passing through the slot 14. Mounted on the stud is a washer 17 and threaded on said stud is a securing nut 18. Designated at 19 is an electric motor provided with supporting legs 20, 20 fastened to plate member 15. Secured to the rear supporting leg 20 and projecting rearwardly therefrom is a handle 21 which is employed to move the motor 19 in a horizontal plane with respect to base 11, as will be subsequently described.

Secured to the motor drive shaft is a grinding wheel 22.

Secured beneath base plate 11 are a pair of transverse sleeve members 23, 23 in which are secured the elongated rods 24, 24. Secured on

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the rods 23, 23 at one side of base plate 11 are additional sleeve members 25, 25. Designated at 26 is a plate member which is supported on sleeve members 25, 25 and is adjustably clamped thereto by a clamping bolt 27 which passes through a clamping plate 28 underlying the sleeve members 25, 25.

Plate member 26 carries a vertical tubular post member 29 and adjustably secured in said post member by a set screw 30 is a post element 31. Rigidly secured to the top of post element 31 is a horizontal longitudinal sleeve member 32 in which is journaled a shaft 33 formed at its rear end with a crank handle or hand actuable means 34. At its forward end, shaft 33 carries a rubber friction disc 35.

Adjustably secured on sleeve member 32 by means of respective set screws 36 and 37 are the collar members 38 and 39. Collar member 39 carries a radial apertured bracket 40 and secured to collar member 38 is an offset rod 41 passing through bracket 40 and secured therein by a set screw 42. Rotatably secured to the end of rod 41 opposite friction disc 35 is a roller disc 43.

In sharpening a harrow disc the harrow shaft, shown in dotted view at 46 in Figure 2, is elevated so that the discs clear the ground. The sharpener is then positioned behind the disc to be sharpened, as shown in Figure 2 at 44, and the friction disc 35 and roller disc 43 are engaged with the marginal portion of the next adjacent disc on the shaft, shown at 45. As the grinding wheel 22 abrades the edge of the disc 44, the crank handle 34 is manually rotated, causing disc 45 to be rotated by friction disc 35, which rotates the disc shaft 46 and the disc 44. After the rear side of the edge of disc 44 has been completely ground, the operation is repeated with the grinding wheel 22 in engagement with the front side of the disc edge, as shown in dotted view in Figure 2. The wheel 22 may be swung into this position by retracting the motor 19 slightly and employing the handle 21 to swing motor 19 and the grinding wheel 22 to the above mentioned dotted line position. Slot 14 allows the motor to be retracted from its first postion and then to be returned to the second angled position thereof wherein grinding wheel 22 engages the front side of the disc edge. The position of the grinding wheel may be controlled at all times by means of the handle 21 whereas the rate of rotation of the disc being ground may be controlled by handle 34.

When the sharpening operation has been completed on the first disc, the procedure may be repeated on the succeeding discs.

While a specific embodiment of an apparatus

for sharpening harrow discs has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a sharpening device a support, a horizontally disposed plate member positioned upon said support and mounted thereon for sliding movement longitudinally thereof and for rotatable movement about a vertical axis, a motor superimposed upon said plate member and fixedly secured thereto, a drive shaft carried by said motor, a grinding wheel on said drive shaft adapted to engage an edge of one of a plurality of spaced harrow discs carried by a harrow disc shaft when the latter is positioned in transverse spaced relation with respect to said support, a second horizontally disposed plate member arranged in spaced parallel relation with respect to said first plate member and fixedly supported on said support, a vertically disposed tubular post member carried by said second plate member, a post element mounted within said post member and secured to the latter, a second horizontally disposed shaft extending longitudinally of said support and rotatably supported on said post element, a friction disc carried by one end of said second shaft and adapted to frictionally engage the adjacent face edge of the next succeeding one of said harrow discs, a rod arranged in parallel spaced relation with respect to said second shaft and having one end fixedly secured to said post element, a roller disc carried by the other end of said rod and adapted to engage the opposite adjacent face edge of said next succeeding disc of said harrow discs, and hand actuable means on the other end of said second shaft for effecting rotation of the latter whereby rotation of said second shaft causes rotation of said harrow shaft and consequent rotation of said one of said harrow discs in engagement with said grinding wheel.

2. In a sharpening device a support, a horizontally disposed plate member positioned upon said support and mounted thereon for sliding movement longitudinally thereof and for rotatable movement about a vertical axis, a motor superimposed upon said plate member and fixedly secured thereto, a drive shaft carried by said motor, a grinding wheel on said drive shaft adapted to engage an edge of one of a plurality of spaced harrow discs carried by a harrow disc shaft when the latter is positioned in transverse spaced relation with respect to said support, a second horizontally disposed plate member arranged in spaced parallel relation with respect to said first plate member and fixedly supported on said support, a vertically disposed tubular post member carried by said second plate member, a post element mounted within said post member and secured to the latter, a horizontally disposed sleeve member extending longitudinally of said support and fixedly secured to the top of said post element, a second shaft rotatably supported in said sleeve member, a friction disc carried by one end of said second shaft and adapted to frictionally engage the adjacent face edge of the next succeeding one of said harrow discs, a rod arranged in parallel spaced relation with respect to said second shaft and having one end fixedly secured to said sleeve member, a roller disc carried by the other end of said rod and adapted to engage the opposite adjacent face edge of said next succeeding disc of said harrow discs, and hand actuable means on the other end of said second shaft for effecting rotation of the latter whereby rotation of said second shaft causes rotation of said harrow shaft and consequent rotation of said one of said harrow discs in engagement with said grinding wheel.

HERMAN PATER.

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