

R. K. SWIFT.
DISK CULTIVATOR.

No. 550,660.

Patented Dec. 3, 1895.

Fig. 1.

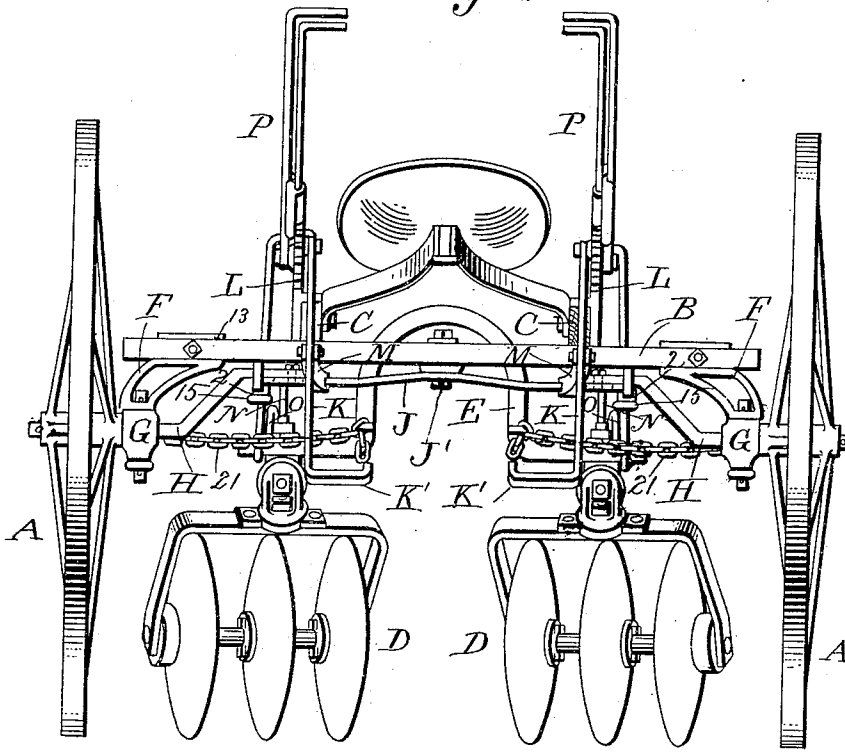


Fig. 6.

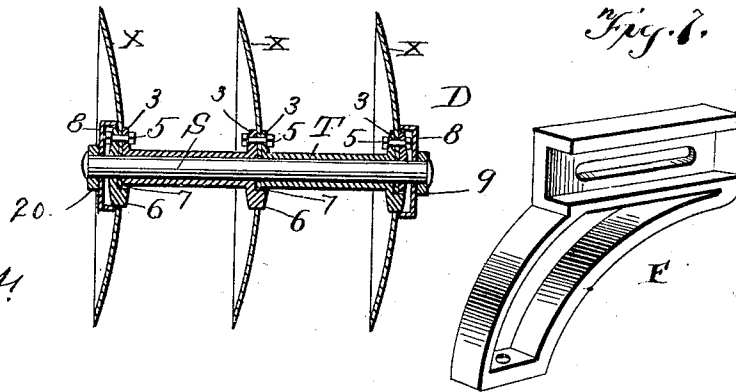


Fig. 4.

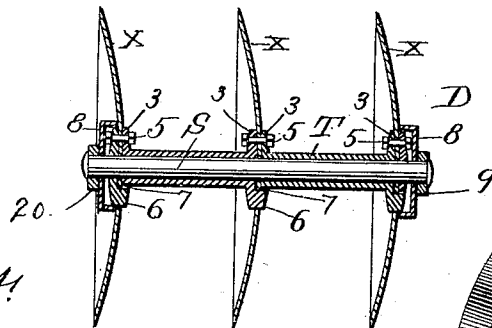
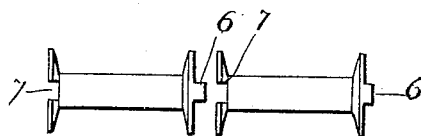


Fig. 5.



Attest;
C. B. Burdine
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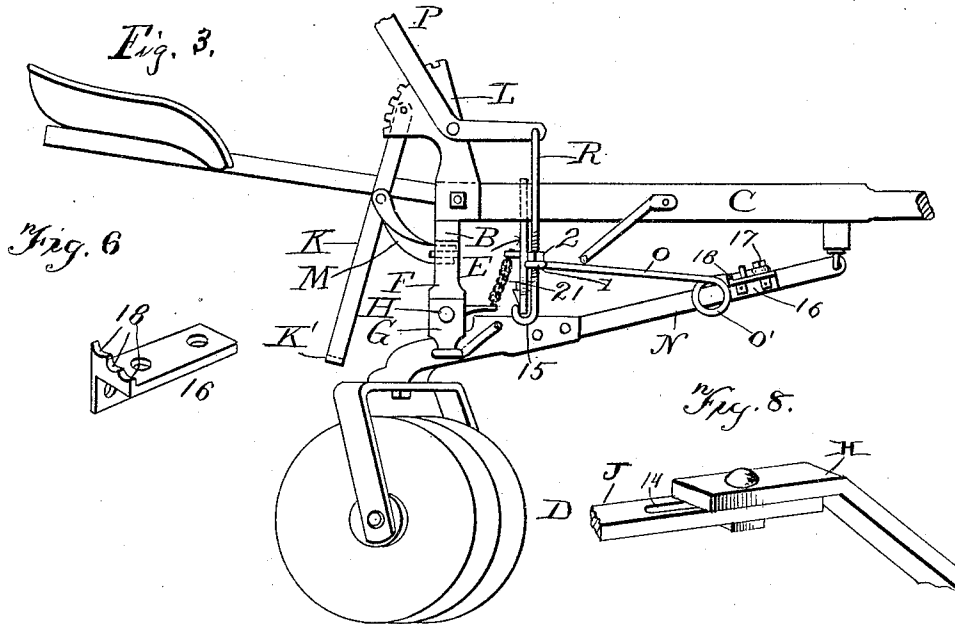
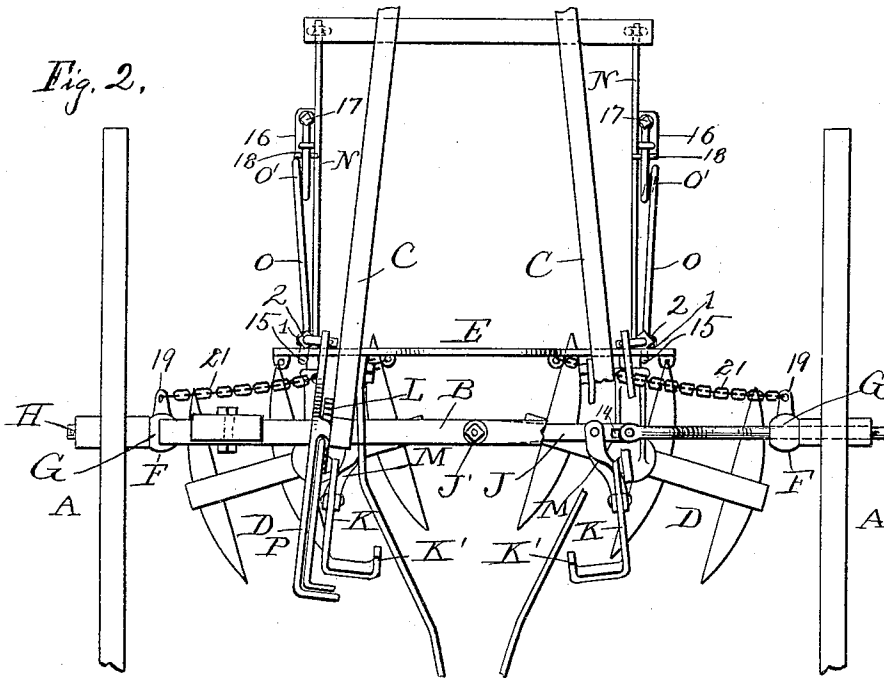
Inventor
R. K. Swift.

by John G. Manahan
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UNITED STATES PATENT OFFICE.

R. K. SWIFT, OF STERLING, ILLINOIS.

DISK CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 550,660, dated December 3, 1895.

Application filed October 15, 1894. Serial No. 526,007. (No model.)

To all whom it may concern:

Be it known that I, R. K. SWIFT, 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 Cultivators; 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 and figures of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in disk cultivators of that class intended for the cultivation of corn or other crops planted in rows, although certain of the improvements herein described are also adapted for use in connection with the ordinary disk harrow and other parts with shovel-cultivators.

The objects of my invention are to provide a cultivator which shall possess certain new and improved means for manipulating the same, whereby the operation will be rendered more efficient and desirable.

I attain the aforesaid purposes by the employment of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation of a portion of a machine embodying my invention. Fig. 2 is a broken plan view. Fig. 3 is a partial side elevation of the same machine; and Figs. 4, 5, 6, 7, and 8 are detail views, one of which, 8, is a broken view.

Similar letters and figures refer to similar parts throughout the several views.

A A are the carrying-wheels; B, the main transverse beam, preferably made of two bars set edgewise.

C is a split tongue; D D, the disk-gangs interconnected by the usual arch E.

F F are brackets adjustably bolted to the ends of the beam B, respectively, and extending downward to form a pivotal seat G for the spindles H of the carrying-wheels A. Said spindles are horizontally pivoted in said brackets F at G and extend therefrom toward the center of the machine, and at their inner extremities are respectively pivotally attached to the cross-bar J, which is pivoted

in a horizontal plane at its center J' to the under side of the beam B. A vertical foot-lever K is pivoted at its upper end to the quadrant L, seated rigidly on the beam B and extending rearwardly therefrom. The lower end of the lever K is provided with a suitable foot-rest K' and is flexibly connected a suitable distance from its upper end by means of a pitman M to the swing-bar J, near the end of the latter. One of said levers K is seated over each disk-gang D.

It is obvious that by the operator placing his left foot upon the lower end K' of the lever K on the left side of the machine and pushing said lever forward the forward movement of the pitman M will oscillate toward the left end of the bar J, which will throw forward the inner end of the spindle H and turn the left wheel A to the left. The same movement will throw back the opposite end of the bar J, carrying with it the inner end of the opposite spindle H, and thereby throw the front end of the right wheel A to the left, coincidently turning both of the carrying-wheels obliquely in the same direction.

Slight pressure at the lower end of the lever K at the right of the machine will turn both of the carrying-wheels to the right, thus rendering it feasible for the operator to deflect the disk-gangs laterally in either direction by thus turning the carrying-wheels in the direction desired. In a corn-cultivator readiness of deflection is indispensable, so as to avoid cutting into the plants, and also to reach weeds which may be out of the direct line of movement. A slot 13 in brackets F and 14 in bar J permit of the lateral spacing of wheels A.

The beam N of the disk-gang D is pivotally connected at its forward end to the under side of one of the split tongues C. On the beam N a suitable distance from its forward end is seated the spring O, having the coil O' and provided at its rear end with the eye 1. Between the spring O and beam N there is interposed the adjustable shoe 16, an end view and side elevation of which are shown in Fig. 3. The shoe 16 is held in place by the bolt 17, which holds the spring O on beam N. The shoe 16 is provided with various recesses 18, of variant heights, in any one of which the spring O can be placed and which operate to

vary the height of the free end of said spring. The ordinary lifting-lever P is seated to lock on the quadrant L and projected forward therefrom. To the forward end of the lever
 5 P there is pivoted the upper end of the vertical rod R, which passes downward through the eye 1 of the spring O and is provided at its lower extremity with a hook 15, adapted to engage the horizontal portion of the yoke E,
 10 so as to raise or suspend the disk-gang D when desired. The eye 1 of the spring O guides the rod R in its vertical movement, so that when the hook 15 is forced below the yoke E, as hereinafter described, said spring O will
 15 guide the hook 15 back to engagement with yoke E when the rod R is raised. A nut 2 is seated adjustably on threads formed on the rod R above said eye 1, and when the disks D are on or in the ground by throwing the lever P forward any amount of pressure may
 20 be exerted upon said disk-gangs through the medium of the spring O and the lever P locked with such pressure at any desired point on the quadrant L. At the same time any necessary elevation of the disk-gang by reason of passing over roots, stones, or other obstacles is permitted by the flexibility of the spring O. By means of the adjustability of the nut 2 upon the rod R and the degree of
 30 oscillation of the lever P great range and detail are afforded as to the degree of pressure to be exerted on the disk-gangs D.

S is the axle of the disk-gang, connected to the yoke E in any suitable manner, and upon
 35 which are loosely seated the pipe-boxes T. The latter are provided with flanges 3 at each end, between which the disks X are rigidly seated by means of transverse bolts 5, passed through such opposing flanges 3 and the disk
 40 X. The boxes T are also provided at their respective ends with a projection 6 and recess 7, the projection 6 of one box passing through the disk X and engaging the recess 7 of the adjacent end of the adjoining box T. All of
 45 the boxes T and disks X are thus united in one rotative body upon the axle S. Caps 8 are placed over the extremity of the disk-gang to exclude dust, and the structure is further held together by the head 20 and the nut 9 on
 50 the axle S.

The chains 21, which connect the yoke E and thereby the disk-gangs D laterally to the carrying-wheel spindles, are normally used in a slack condition to permit vertical play to
 55 the disk-gangs D. To instantly take up this

slack, so the new direction of the carrying-wheel will be imparted at once to the disk-gangs, I project forwardly from the spindle H at about its pivotal seat a short horizontal arm 19, the front end of which is connected
 60 by the chain 21 to the yoke E, whereby the oscillation of the arm 19 takes up said slack at the initiative of the change of direction of the wheel A, which turns outward, and the outward movement of the wheels in their new
 65 direction carries the disks laterally at once.

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

1. The combination, with the frame of a
 70 cultivator, of two beams pivotally connected therewith, a yoke for connecting said beams, a disk gang secured to the rear end of each beam, a graduated shoe upon each beam, a spring secured at one end upon the shoe, and
 75 provided at the opposite end with a guide, a lever pivotally secured to the frame, a rod secured to one end of the lever and having its opposite end passed through the guide, and in detachable engagement with the yoke, and
 80 a stop upon the rod above the guide, whereby downward pressure may be applied to the disk gang through the lever, substantially as set forth.

2. The combination of the tongue C, disk
 85 gang D, beam N connecting said disk gang pivotally with said tongue, spring O provided with coil O' and eye 1 and seated on beam N, lever P adapted to be adjustably locked to the quadrant L, rod R pivotally connected at
 90 its upper end, to the operating end of lever P, and provided with nut 2 and projected downwardly through the eye 1 of spring O substantially as shown and for the purpose
 95 described.

3. The combination of the beam B, the bar J, centrally pivoted thereto, a spindle H pivotally secured to each end of the beam, the inner end of which is connected directly with
 100 the end of the bar J, a wheel, A, upon the outer end of each spindle, and means for oscillating the bar and the spindles, whereby deflection is imparted to the wheels, substantially as set forth.

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

R. K. SWIFT.

Witnesses:

JOHN J. A. ZELLER,
 JOHN G. MANAHAN.