(No Model.)

F. A. HEAD & S. A. KERNS.

DISK CULTIVATOR.

No. 456,489. Patented July 21, 1891.

Fig. 1.

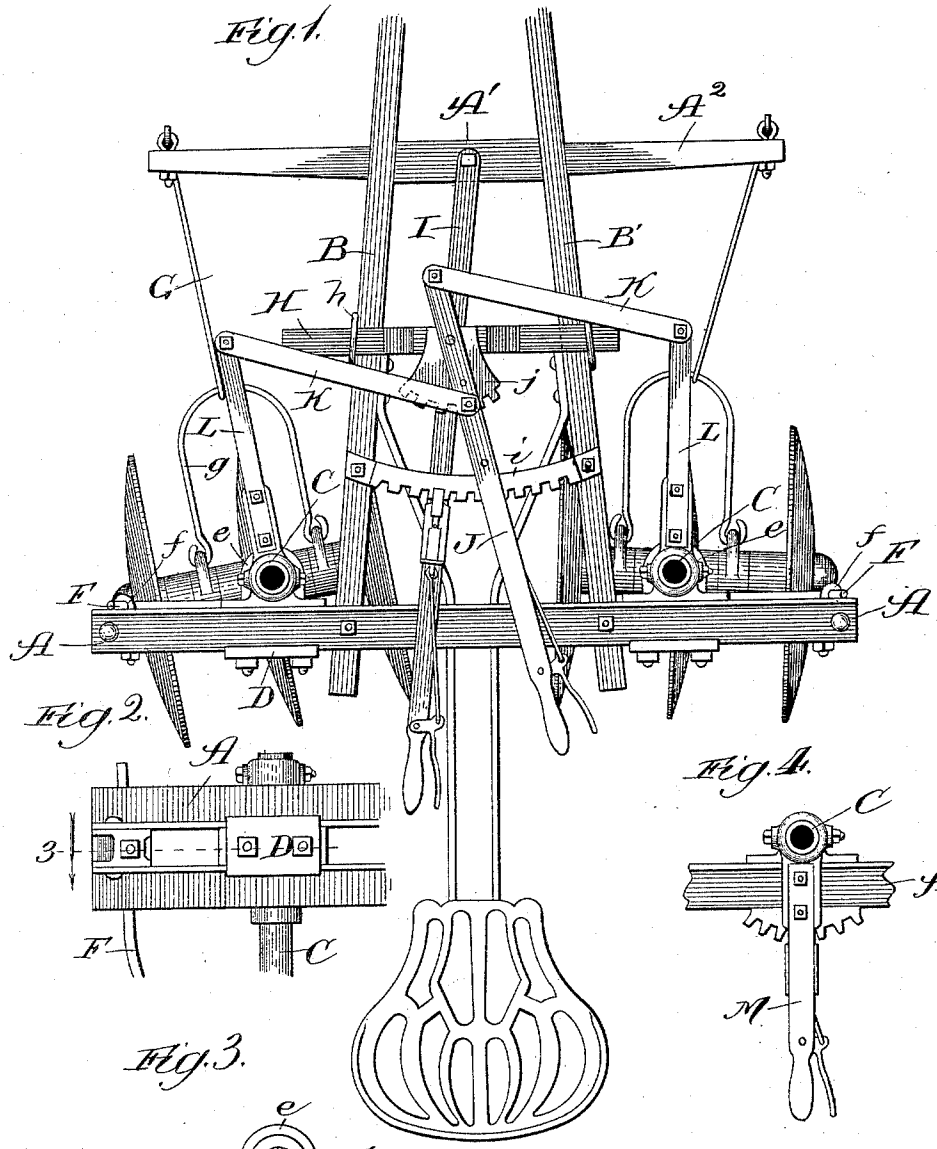
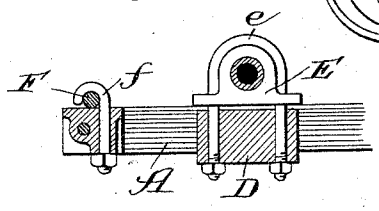


Fig. 2.

Fig. 4.

Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK A. HEAD AND SIMON A. KERNS, OF ROCK ISLAND, ILLINOIS.

DISK CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 456,489, dated July 21, 1891.

Application filed March 14, 1891. Serial No. 385,050. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK A. HEAD and SIMON A. KERNS, citizens of the United States, residing at Rock Island, Illinois, have invented certain new and useful Improvements in Disk Cultivators, of which the following is a specification.

The object of our invention is to make a cultivator in which the two disk-gangs can be adjusted at different angles relative to the direction of travel of the cultivator by one lever or set of mechanism and at different angles relative to each other, as may be desired, by another lever or set of mechanism, which laterally shifts the fulcrum from which the first adjustment is made; and the object of our invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 represents a plan view of our improved cultivator; Fig. 2, a rear elevation of a part of the main frame; Fig. 3, a plan view taken in line 3 of Fig. 2, looking in the direction of the arrow, and Fig. 4 a detail of one of the parts.

In making our improved disk cultivator we make a main frame consisting of two cross-bars A and A′ and two longitudinal bars B and B′, which are intended to be of the necessary length, size, and strength for the purpose intended. The cross-bar A preferably consists of two members, an upper and lower one, as shown in Fig. 2, which are preferably made of angle-iron, although any suitable material of any suitable form may be employed, if desired.

In arranging the disk-gangs we mount, preferably, three disks on an axle, so that they can rotate, although any desired number may be used. To connect the gangs to the framework of the cultivator we provide vertical standards C, which may be made of gas-pipe or other desired material and properly attached to the axles. The upper end of the standard is attached to the frame-bar A in any suitable manner. For effecting this attachment, however, we have shown a block D, arranged between the upper and lower members of the bar A, provided with a flange at its rear side to embrace the rear edges of the bar. The upper ends of the standard are provided with a plate E, adapted to rest against the front faces of the upper and lower members of the cross-bar A and to be held in place by means of a staple *e*, that embraces it and passes back through the block D, where it is secured in place by nuts. As an additional means of attachment, we also carry a rod F from the standard C, near where it is attached to the axle, up to near the end of the cross-bar A, where it is fastened by means of a clip *f*. (Shown in Fig. 3.)

The standard C, supporting the gang, is intended to be rotatable on its vertical axis, so that the position of the gang may be adjusted, as desired, by throwing either end forward or throwing them into a position equally advanced. The gangs are also attached to the evener A by means of rods G and bails *g*, so as to be drawn forward without interfering with their adjustability. A laterally-adjustable bar H is arranged on the longitudinal bars B and B′, to which it is attached by means of staples *h*, which permit it to be slid toward the one side or the other. A lever I, pivoted to the cross-bar A′ or other fixed fulcrum and attached to the sliding bar H, is carried back within reach of the driver, so that by moving it toward one side or the other the bar H may be laterally moved or adjusted in the direction and to the extent desired. A rack *i* is attached to the longitudinal bars B and B′ and the lever I engaged with it by means of a spring detent or dog, as shown. Another lever J is pivoted to the sliding cross-bar H, so as to have its fulcrum on it. A rack *j* is also attached to the sliding bar H, with which the lever J engages by means of a spring dog or detent. Links K are pivotally connected with this lever and with forwardly-extending arms L, rigidly attached to the standards, so that as the forward ends of these arms are moved in or out the position of the gangs will be correspondingly adjusted. When the sliding bar H is held in a central position, by adjusting the lever I also to a central position the gangs can be adjusted in a direction parallel to the direction of travel by moving the lever J also to a central position, and they can both be inclined outwardly or both inwardly by moving the lever J to the one side or the other. By moving the lever I their position of adjustment may be modified to the extent that the fulcrum of the lever J, which

is on the sliding bar H, is changed by the movement of the lever I. With only the lever J we could only adjust the gangs in three positions, so that they were directed both straight forward, both outwardly, or both inwardly; but by the use of the lever I in addition we are able to vary the adjustment which had been effected through means of the lever J. This is illustrated in Fig. 1 of the drawings, where, if the lever I were in a central position, the disk-gang at the left of the figure would correspond also in position.

It may be that in operation the position of the disk-gang at the right of the figure is the one best adapted to do the work desired on that side, and that the position of the disk-gang at the left of the figure is the one best adapted to do the work desired in plowing the row of corn or other thing being cultivated on that side. By employing means, therefore, to shift and adjust the position of the disk-gangs and additional means to shift or adjust the position of the fulcrum on which the first adjustment is made we are able to secure all of the positions of adjustment that may be found desirable in operation. By moving the lever J the gangs are adjusted to opposite angles, so that both incline outwardly or both inwardly; but by moving the lever I the inclination of one of them can be increased and that of the other diminished, thus enabling the operator to increase and diminish the inclination of the gangs, as circumstances may make desirable. Unless means be provided for shifting the fulcrum of one of the levers, single levers M, as shown in Fig. 4, would have to be employed to adjust and regulate the position of the disk-gangs.

What we regard as new, and desire to secure by Letters Patent, is—

1. In disk cultivators, the combination of two disk-gangs, a lever for adjusting the angle of the disk-gangs relatively to the direction of travel of the cultivator, and a lever for laterally adjusting the fulcrum on which the first-mentioned lever operates, substantially as described.

2. In disk cultivators, the combination of a cultivator-frame, two disk-gangs, standards connecting the gangs to the frame and by the turning of which the position of the gangs is determined, arms rigidly connected to the standards, by which they may be turned, a lever pivoted on a laterally-adjustable fulcrum, and links connecting the lever with the arms on the standards, substantially as described.

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