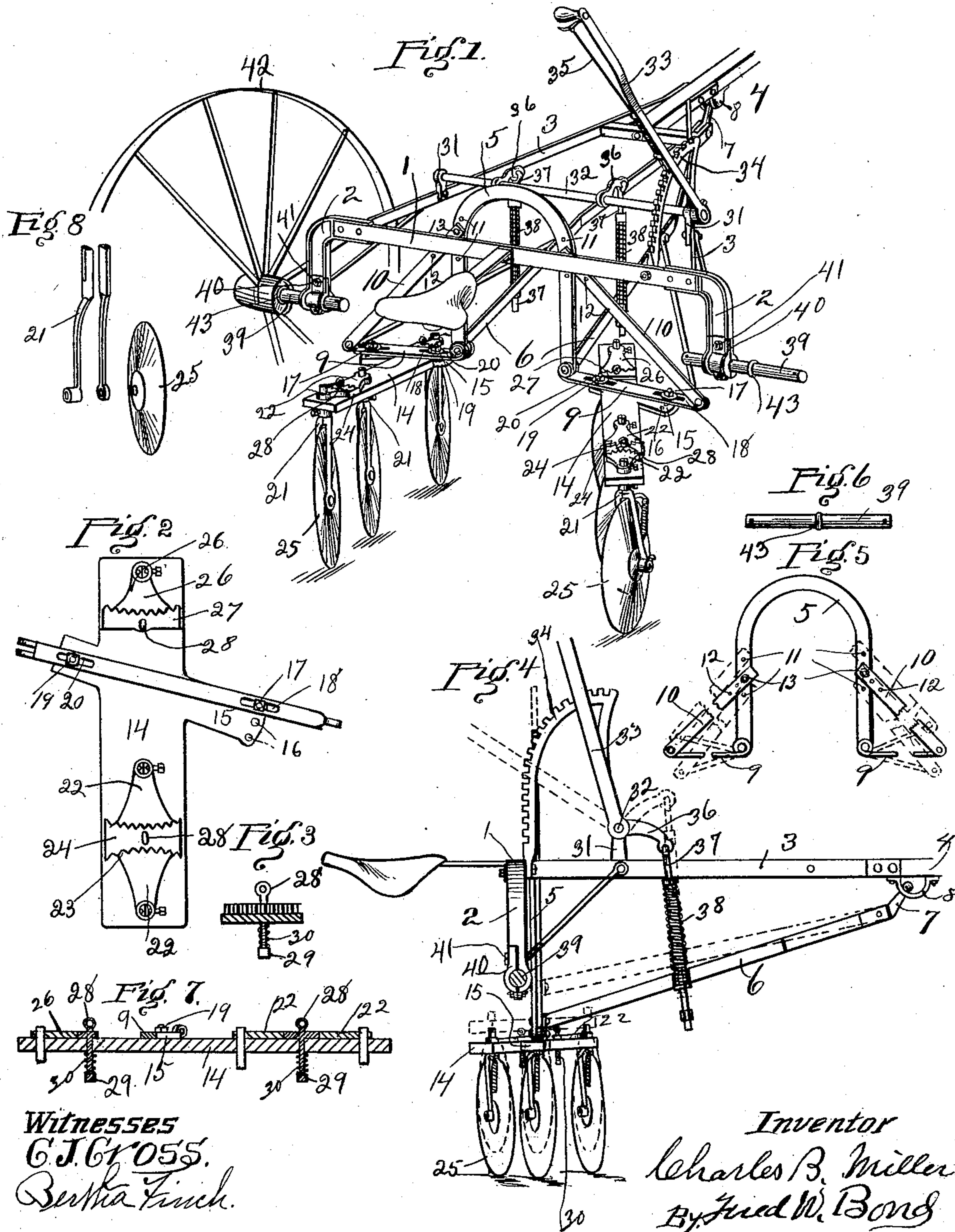


(No Model.)

C. B. MILLER.
DISK CULTIVATOR.

No. 591,484.

Patented Oct. 12, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES B. MILLER, OF CANTON, OHIO, ASSIGNOR TO ELI MILLER, OF
SAME PLACE.

DISK CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 591,484, dated October 12, 1897.

Application filed January 6, 1897. Serial No. 618,153. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. MILLER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Disk Cultivators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a perspective view of a disk cultivator, showing one of the traveling wheels removed. Fig. 2 is a detached view of the head-block or disk-carrying bar, showing the parts belonging to said head-block properly located. Fig. 3 is a transverse section of the head-block, showing an edge view of the disk-retaining block. Fig. 4 is a side elevation showing parts in cross-section. Fig. 5 is a detached view of the arch connecting-bar, showing the notched arms connected thereto and their parts. Fig. 6 is a detached view of one of the spindles. Fig. 7 is a longitudinal section of the head-block or disk-carrying bar, showing the different parts properly connected thereto. Fig. 8 is a detached view showing a portion of the disk-yokes.

The present invention has relation to disk cultivators; and it consists in the different parts and combination of parts hereinafter described and particularly pointed out in the claims.

Similar figures of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the center portion of the axle, to the ends of which are securely attached the spindle portions or arms 2. I prefer to form the spindle-bearing portions 2 separate from the center portion 1, and connect said parts together by suitable bolts or rivets; but it will be understood that the parts 1 and 2 may be formed integral without departing from the nature of my invention, inasmuch as the only object to be accomplished is to provide what is commonly known as an "arched axle." To the spindle-bearing portions 2 or to the center portion 1 are attached the draft-bars 3, which

draft-bars extend forward and toward each other and are connected in any suitable manner to the tongue 4.

The arch or connecting bar 5 is substantially of the form shown in the drawings, and, as shown, it is located midway between the spindle portions 2 and is held in an upright position by means of the brace-bars 6, which brace-bars extend forward and their forward ends connected to the tongue or its equivalent by means of the clevis-link 7 and the strap 8. The bottom or lower ends of the arch or connecting bar 5 extend some distance below the axle 1, and to the bottom or lower ends of said connecting-bar are hinged the lateral bars 9, said lateral bars being held at the desired points of adjustment by means of the brace-bars 10, which brace-bars are pivotally connected at their outer ends to the lateral arms 9 and are adjustably connected at their inner ends to the connecting-bar 5 by means of a series of apertures 11 and 12, formed in the arch 5 and the braces 10, said brace-bars being held at the desired point of adjustment by means of suitable clamping-bolts, such as 13.

Directly below the lateral arms 9 are located the head-blocks or disk-holding bars 14, which head-blocks are located substantially as illustrated in the drawings, and, as shown, they are each provided with the extensions 15, which extensions are provided with a series of apertures 16, through which apertures are passed suitable clamping-bolts 17. Said clamping-bolts are also passed through elongated slots 18, formed in the lateral arms 9. The clamping-bolts 19 are passed through elongated slots 20 and suitable apertures formed in the head-blocks 14.

The object and purpose of providing the elongated slots in the lateral arms 9 is to provide for any lateral adjustment of the head-blocks 14 with reference to the lateral arms 9. When it is desired to change the angularity of the head-blocks 14 to the lateral arms 9, the clamping-bolts 17 are removed, after which said blocks are free to be set at any angle within the limits of the series of apertures 16, by which arrangement the rear ends of said head-blocks, together with their different attachments, can be brought to or

from each other, thereby changing the angle to the line of draft. The disk-yokes 21 are preferably formed in sections, which sections are pivotally connected to the head-blocks 14 and extend upward through said head-blocks a short distance, and to the portions above the head-blocks are attached the segmental arms 22, which segmental arms are provided with the teeth 23. The arms 22 are so adjusted that the retaining-block 24 can be placed between said segmental arms, as illustrated in Fig. 2. The retaining-blocks 24 are concaved upon their edges and are provided with teeth to correspond with the teeth formed upon the segmental arms 22.

It will be understood that when the retaining-blocks 24 are placed in the position illustrated in Fig. 2 the segmental arms 22 will be held in the position to which they are adjusted, thereby securely holding the disks 25 at the desired angle.

To the forward end of the head-blocks 14 are connected disk-yokes, such as 21, and are provided with the segmental arms 26, which segmental arms are held against accidental displacement by means of the retaining-blocks 27, which retaining-blocks are formed substantially the same as the retaining-blocks 24, except that they are concaved only upon one edge. The retaining-blocks 24 and 27 are each provided with the handle-bars 28, which handle-bars extend downward through the head-blocks 14 and their bottom or lower ends provided with the heads 29, and between said heads 29 and the bottom or under side of the head-blocks 14 are located the springs 30, said springs being for the purpose of holding the retaining-blocks 24 and 27 in position to lock the segmental arms 22 and 26.

When it is desired to change the adjustment of the disks 25 with reference to the head-blocks, the retaining-blocks 24 and 27 are moved upward until their edges have passed the toothed ends of the segmental arms, at which time the segmental arms can be turned at any desired angle, after which the retaining-blocks 24 and 27 are placed in position to lock the segmental arms, thereby securely holding the disks 25 at the desired point of adjustment.

For the purpose of providing a means for adjusting the vertical inclination of the disks 25 the lateral arms 9 are elevated or lowered at their outer ends, by which arrangement the disks 25 can be changed from a true vertical position to any desired inclination within the limits of the movements of the lateral arms 9.

It will be understood that by providing the elongated slots 18 and 20 the head-blocks can be brought to or from each other without changing their angularity to each other, thereby changing the space between the disks 25.

To the braces 3 or their equivalents are attached the bearings or supports 31, to which bearings is journaled the rock-bar 32, to which

rock-bar is securely attached the operating handle or lever 33, said lever being held at the desired point of adjustment by the ordinary toothed segment 34 and the catch-bar 35. The rock-bar 32 is provided with the arms 36, to which arms are connected the rods 37, and when the lever 35 is pulled backward or toward the seat the arms 36 will be elevated at their outer ends, which in turn elevates the rod 37 and lifts the bars or braces 6, together with the arch 5 and all the different parts connected to and with said arch. For the purpose of forcing or crowding the arch 5, together with the different parts attached thereto, downward the springs 38 are provided, which springs act upon the bars 6 or their equivalents.

It will be understood that by my peculiar arrangement the parts connected to the arch 5 have no rigid connection at any point with the axle 1, and inasmuch as the braces 6 extend forward and are yieldingly connected to the tongue that the disks 25 will not be held in a fixed or rigid position. The spindles 39 are clamped to the spindle portions 2 by means of the caps 40 and the clamping-bolts 41.

The spindles 39 are preferably formed of uniform diameter throughout their entire length and are so formed for the purpose of providing a means for transposing or changing the ends of said spindles after they have become worn from use.

Another object of connecting the spindles 39, as above described, is to provide a means for changing the horizontal position of said spindles, thereby bringing the traveling wheels 42 to or from each other, by which arrangement I am enabled to change the width of the cultivator proper. For the purpose of providing a bearing for the traveling wheels 42 the spindles 39 are each provided with the collar or flanges 43.

It will be understood that by forming the spindles 39 of uniform diameter throughout their entire length, said spindles can be changed end for end, by which arrangement the traveling wheels 42 can be placed upon the part of the spindle formerly clamped to the spindle portions 2 by means of the caps 40, by which arrangement two spindles are provided. The worn portions of the spindles can be tightly clamped, as it will be understood that the caps can be drawn tightly down upon the worn portions of the spindles.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the axle 1, provided with the spindle portions 2, spindles adjustably connected to the spindle-bearing portions, an arched connecting-bar located between the spindles and provided with the lateral arms 9, hinged to said arched connecting-bar, and means for adjusting the head-blocks and their disks at an angle to the hinged arms, substantially as and for the purpose specified.

2. The combination of an axle provided with traveling wheels, a connecting-bar having attached to the bottom or lower ends thereof hinged arms, head-blocks connected
5 to the hinged arms, disk-yokes provided with segmental arms provided with teeth, retaining-blocks having attached thereto handle-bars, and springs located around said handle-bars, and disks journaled to the yokes, substantially as specified.

3. The combination of an axle having adjustably attached thereto spindles provided with traveling wheels, an arched connecting-bar independently attached to the truck or
15 frame of the cultivator, hinged arms connected to the lower ends of the arched connecting-bar, head-blocks having journaled thereto disk-yokes provided with disks, and means for adjusting and holding the disks

vertically or at an inclination to a vertical line, substantially as and for the purpose specified.

4. The combination of the head-blocks 14, carried by the hinged arms 9, disks carried by said head-blocks and independently adjustable to a line oblique to the line of draft, and adjustable in unison vertically, and means for holding said disks at the desired points of adjustment, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES B. MILLER.

Witnesses:

J. EDGAR JONES,
GEO. W. SPENCER.