

A. Friberg,

2. Sheets, Sheet 1.

Wheel Cultivator.

No. 111,627.

Patented Feb. 7. 1871.

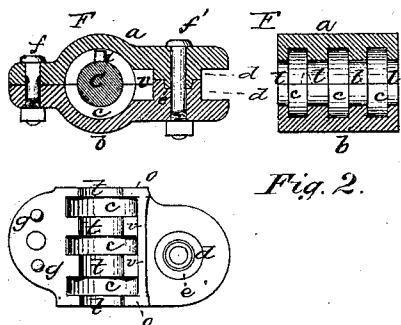
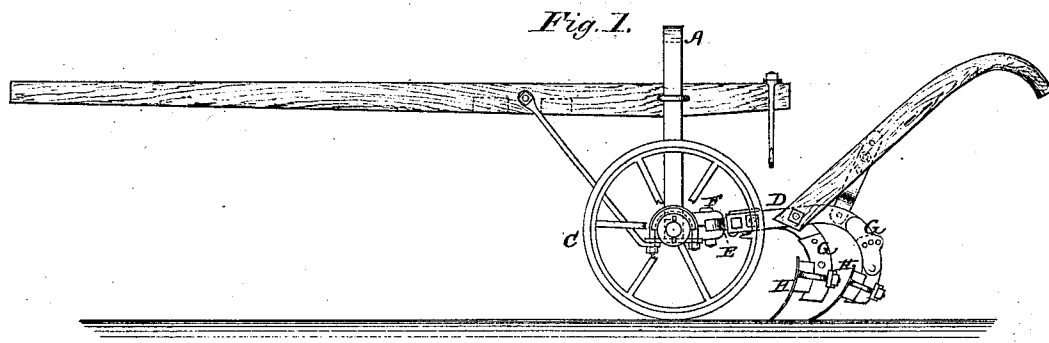


Fig. 3.

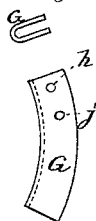


Fig. 4.

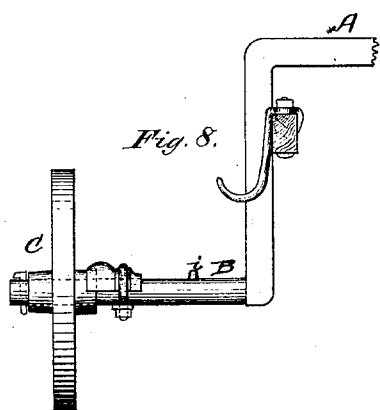
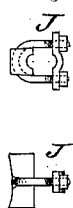


Fig. 5.

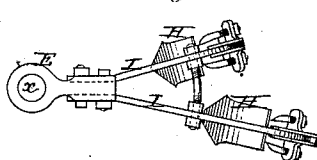
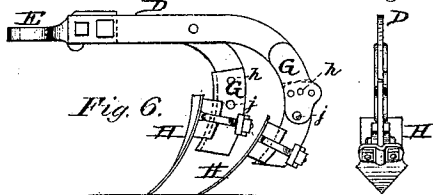


Fig. 7.



Witnesses:

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Wheel Cultivator.

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Fig 9.

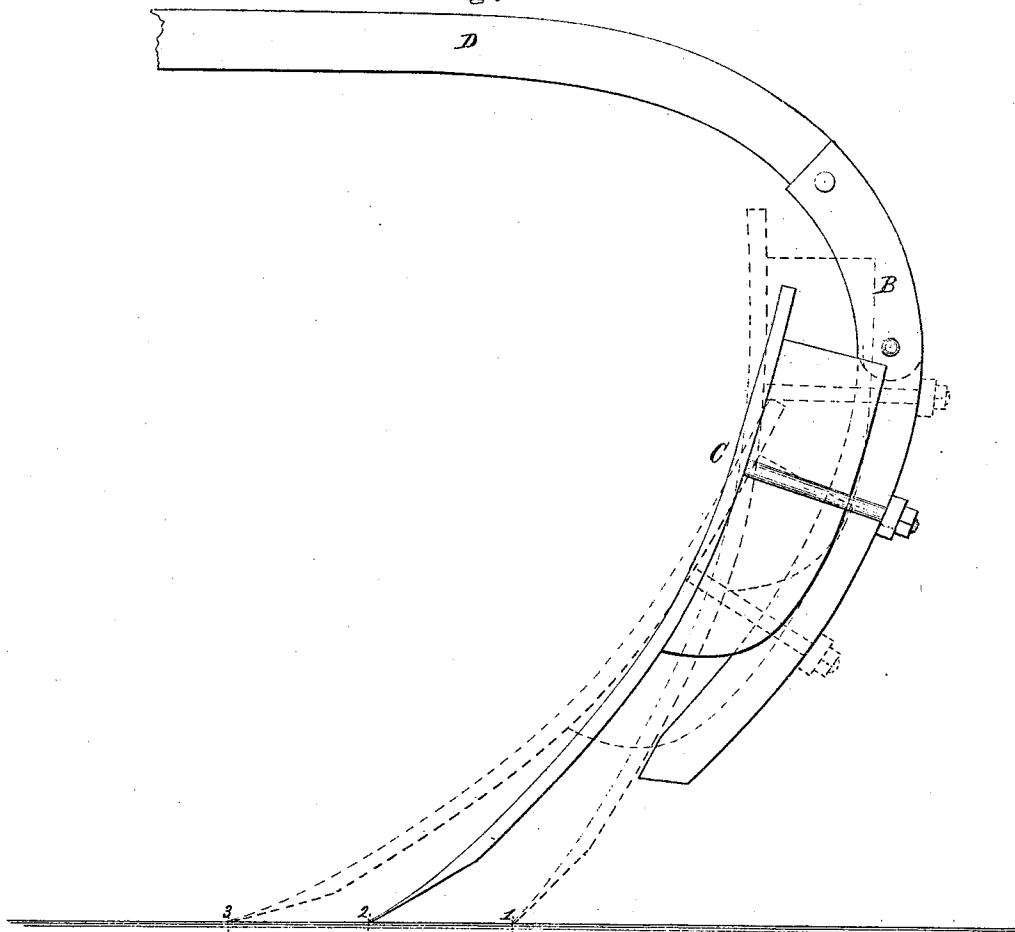
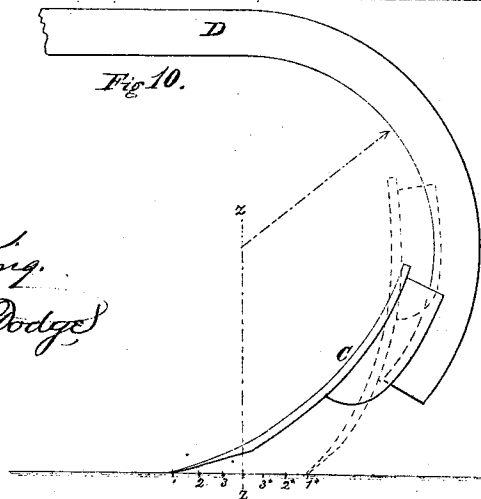


Fig 10.

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UNITED STATES PATENT OFFICE.

ANDREW FRIBERG, OF MOLINE, ILLINOIS.

IMPROVEMENT IN WALKING-CULTIVATORS.

Specification forming part of Letters Patent No. 111,627, dated February 7, 1871.

To all whom it may concern :

Be it known that I, ANDREW FRIBERG, of Moline, in the county of Rock Island and State of Illinois, have invented certain Improvements in Walking-Cultivators, of which the following is a specification, reference being had to the accompanying drawing.

My improvements consist, first, in an improved coupling-joint for connecting the cultivator-beams to the axle, which permits a free vertical and lateral movement of the beams, and a ready adjustment of the two pairs of beams at different distances apart, as necessary; second, in so curving the rear ends of the beams or arms to which the shovels are attached, that by adjusting the shovels up or down thereon the inclination of the shovels is changed while the height or elevation of the points remains unaltered.

Figure 1 is a side elevation of a cultivator having my improvements embodied therein; Fig. 2, a longitudinal vertical section of my coupling-head in position on the axle, a transverse section of the same detached, and a plan view of the lower half of the same; Fig. 4, a plan and side view of one of the clamps or joints for securing the shovels to the beams or arms; Figs. 5 and 6, respectively, a top plan view and a side elevation of one of the pairs of beams and shovels, detached; Fig. 8, a rear elevation of one-half of the main frame. Figs. 9 and 10 represent the plan of adjusting the shares on the curved bar or shank.

A is the main frame of the machine; B B, the axles; and C C, the wheels mounted on the axles, these parts being old and in common use. D D are the two pairs of cultivator-beams, each pair of which consists of two diverging metal beams, I, connected at their front ends to a metallic head, E, in the form of a flat horizontal ring at its front end. F is one of the coupling-heads which is clasped around the axle C, and has the head E attached to it, there being, of course, one coupling for each pair of beams. This coupling F is made in two parts, *a* and *b*, so formed as to clasp around the axle C, as shown in Figs. 1 and 2. On their interior these parts *a* and *b* have formed three circumferential grooves, *c*, into either of which fits a pin or stud, *i*, on the axle C, as shown in Figs. 2 and 8. This

pin fitting in the grooves *c*, thus serves to hold the coupling F from sliding laterally on the axles.

Along the inner faces of the parts *a* and *b*, immediately in rear of the axle, a space is left, so that when the parts are united a lateral slot or opening, *v*, is formed, as shown in Fig. 2, this slot or space extending from the outside groove *c* on one side to the outside groove *c* on the other side, there being a flange or stop, *o*, at each end of this space. Now, to adjust the coupling with its beams and shovels laterally, the coupling is turned to nearly a vertical position, and until the space *v* comes in line with the pin *i*, when the coupling can be moved along until the pin *i* comes in line with another of the grooves *c*, when it is turned down to its original position.

In this way it will be seen that the cultivator-beams with their shovels can be adjusted laterally at any time, without loosening any of the bolts or releasing the coupling, thus enabling the operator to make the change in the field at any time, and without the use of any tool whatever, a very important feature in this class of implements.

In constructing my cultivator I use tubular-shaped shanks, G, to which the shovels are attached, and which shanks are to be pivoted to the beams; but as this shank will form the subject of a separate application, its further description is omitted.

H H are the shovels, which are each provided with a clamp, J, whereby they can be secured to the beams or arms at any point. The rear ends of the beams or of the arms, when the latter are used, are so curved that when the shovels are adjusted up or down on them the inclination of the shovels is changed, while the height of the shovel-point, or, in other words, its distance from the horizontal portion of the beam, remains the same.

In order to make this adjustment the rear portion of the bar D or the shank B, if one be used, may be made in either a parabolic curve, as represented in Fig. 9, or in the arc of a circle, as represented in Fig. 10. When made on a parabolic curve, as shown in Fig. 9, the shovel can be adjusted by simply moving it up or down on the shank, as shown by the dotted lines, where it is represented in three

different positions, indicated by the numbers 1, 2, and 3. By this means, as will be seen, a large number of adjustments may be made, so as to change the inclination of the face of the shovel with its point still in the same horizontal plane. If the curve be the arc of a circle, as shown in Fig. 10, then the shovel, in order to be adjusted and still have its point in the same horizontal plane, must be moved from a point on one side of the vertical line z , passing through the center of the circle to an equal distance on the opposite side of said vertical line; for instance, if the shovel stands with its point at 1, then, to adjust it and bring its point in the same horizontal plane, it must be moved to 1*; if at 2, then to 2*; and if at 3, then to 3*, and so on. Whichever form of curve be used, only the lower portion of the bar or shank need be thus curved, the length of the curved portion being only long enough to give the adjustments required, which, of course, will be within certain limits to be determined by experience and the will of the maker. This system of adjusting the shovels is believed to be the most perfect ever devised, as any desired or necessary inclination can

be given to the shovels without the use of wedges or any additional devices whatever. This adjustment is frequently necessary where it is required that one shovel shall throw up more earth than its mate, and where it is impracticable to set them at different heights. As the depth to which the shovels enter the ground is entirely governed by their inclination, this arrangement affords a ready means of regulating the same.

Having thus described my invention, what I claim is—

1. The coupling F, composed of the pieces a and b , having the circumferential grooves c with lateral space v , connecting said grooves, to enable the coupling to be adjusted laterally and held in position, as described.

2. The adjustable shovels H, in combination with a shank or beam so curved that the shovel may be adjusted thereon at different inclinations without varying the height of its lower point, substantially as described.

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Witnesses:

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