

No. 767,148.

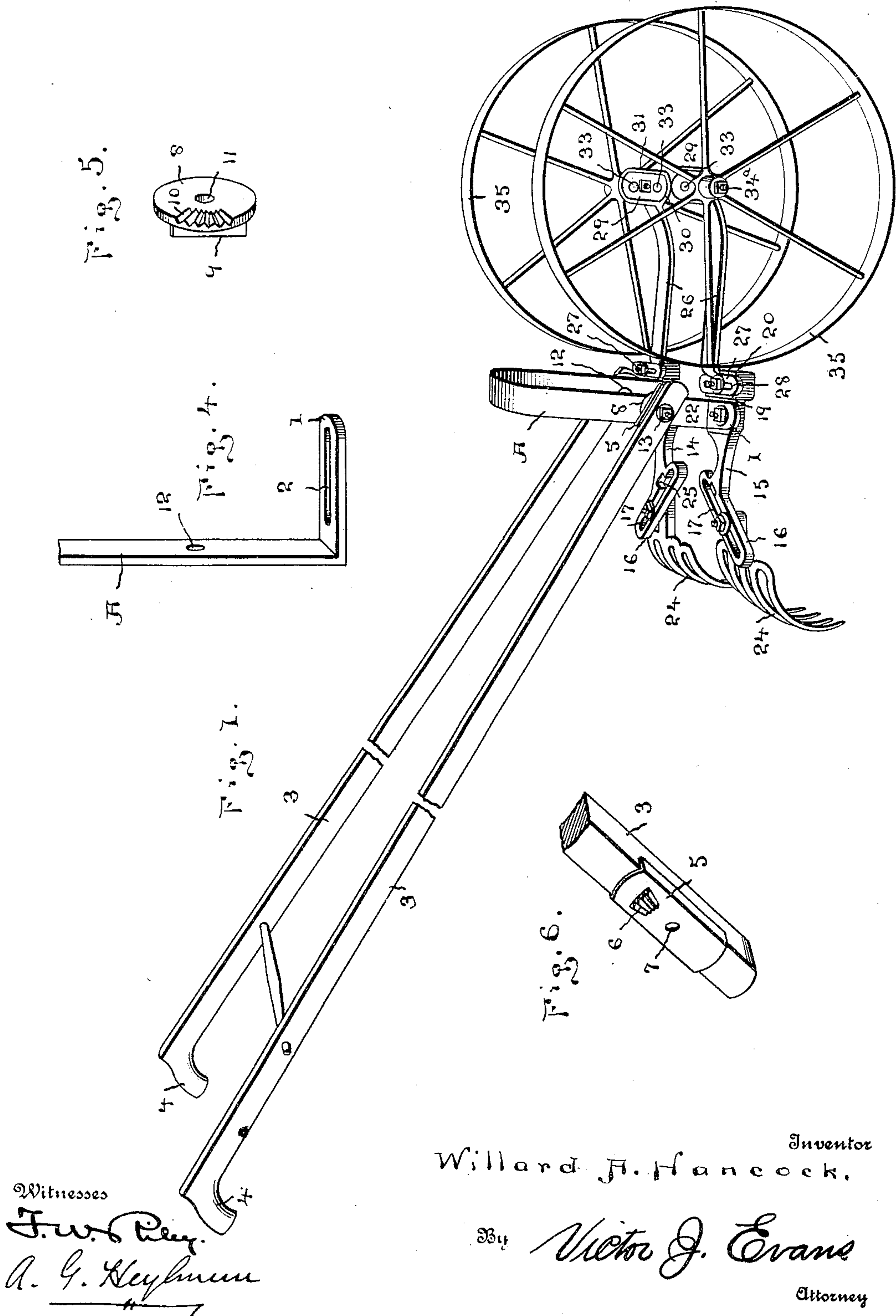
PATENTED AUG. 9, 1904.

W. A. HANCOCK.  
CULTIVATOR.

APPLICATION FILED OCT. 17, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses  
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Inventor  
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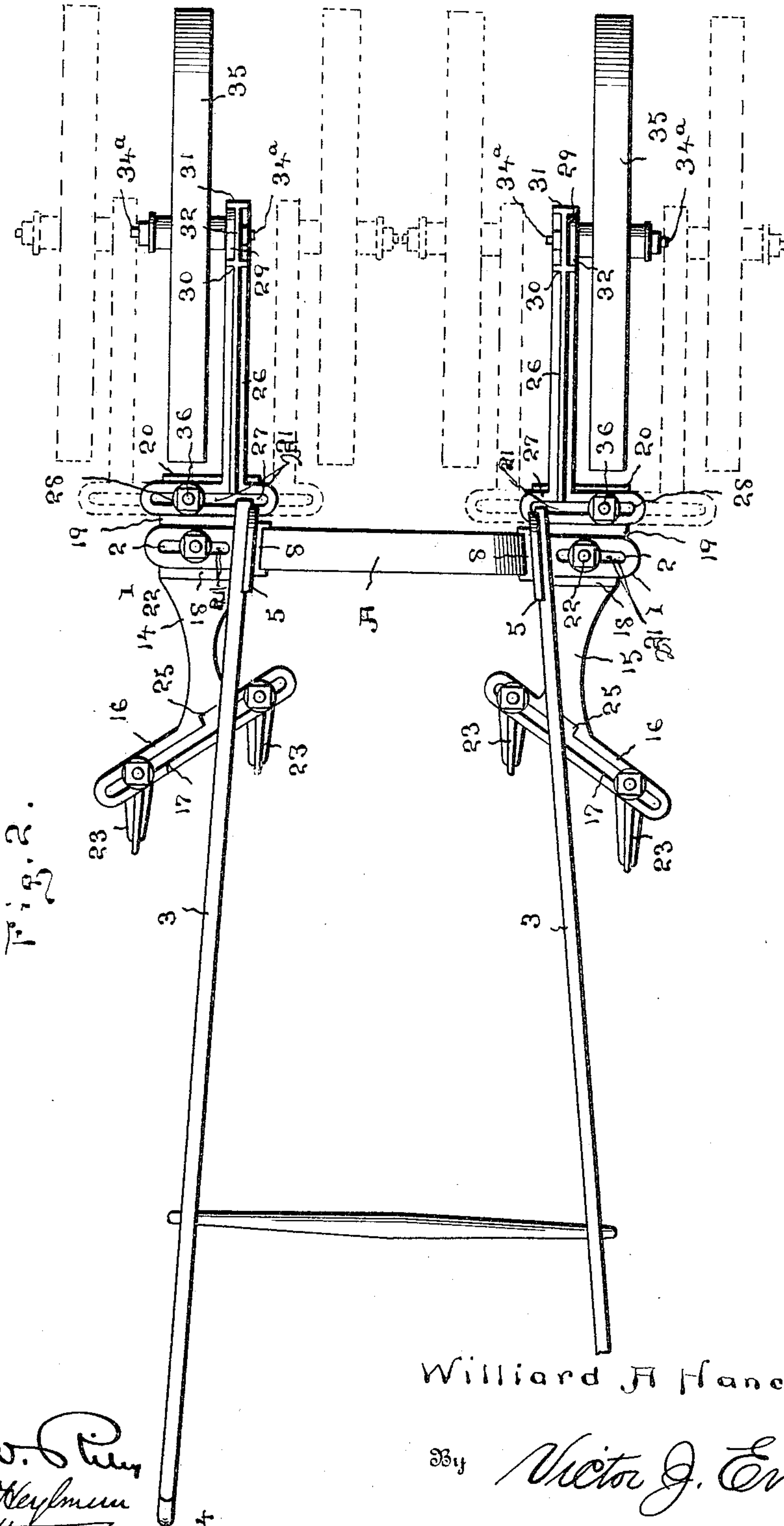
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3 SHEETS—SHEET 2.



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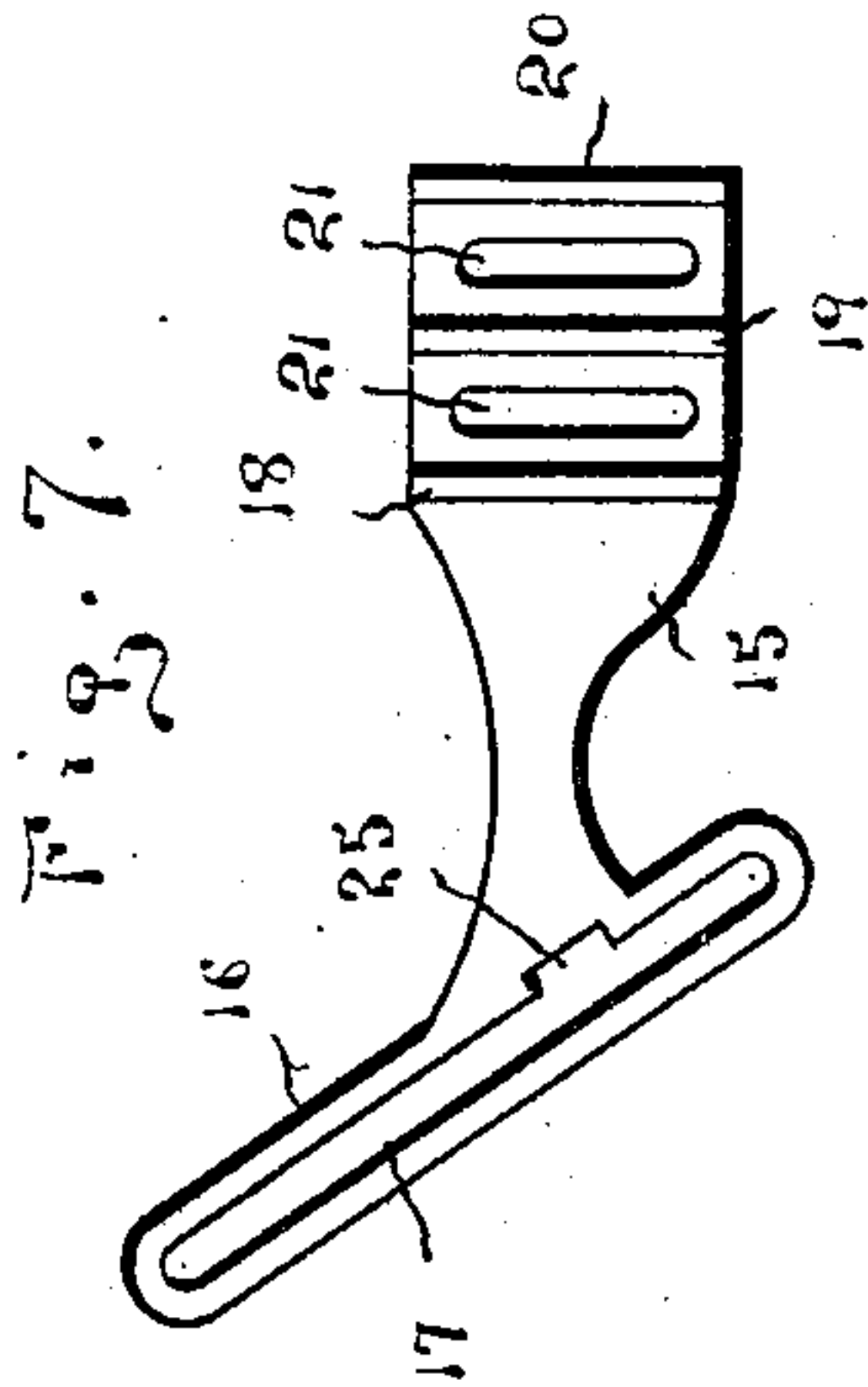


Fig. 7.

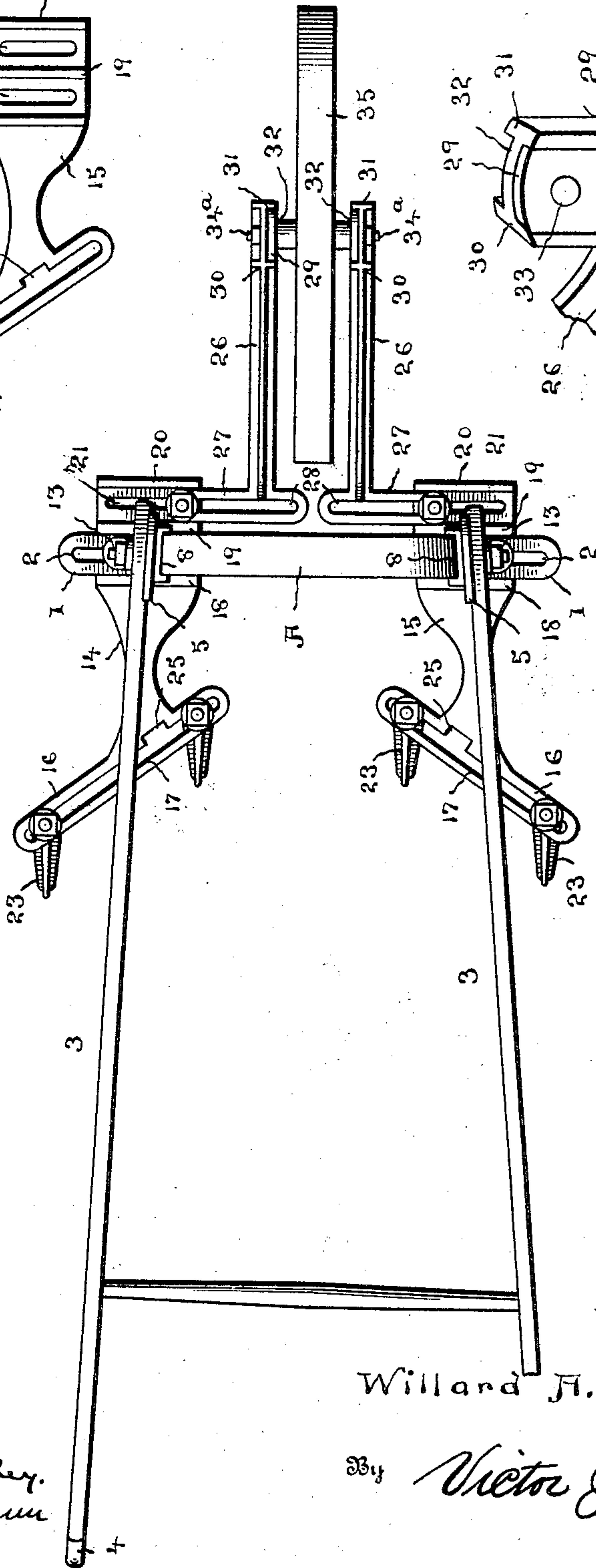


Fig. 3.

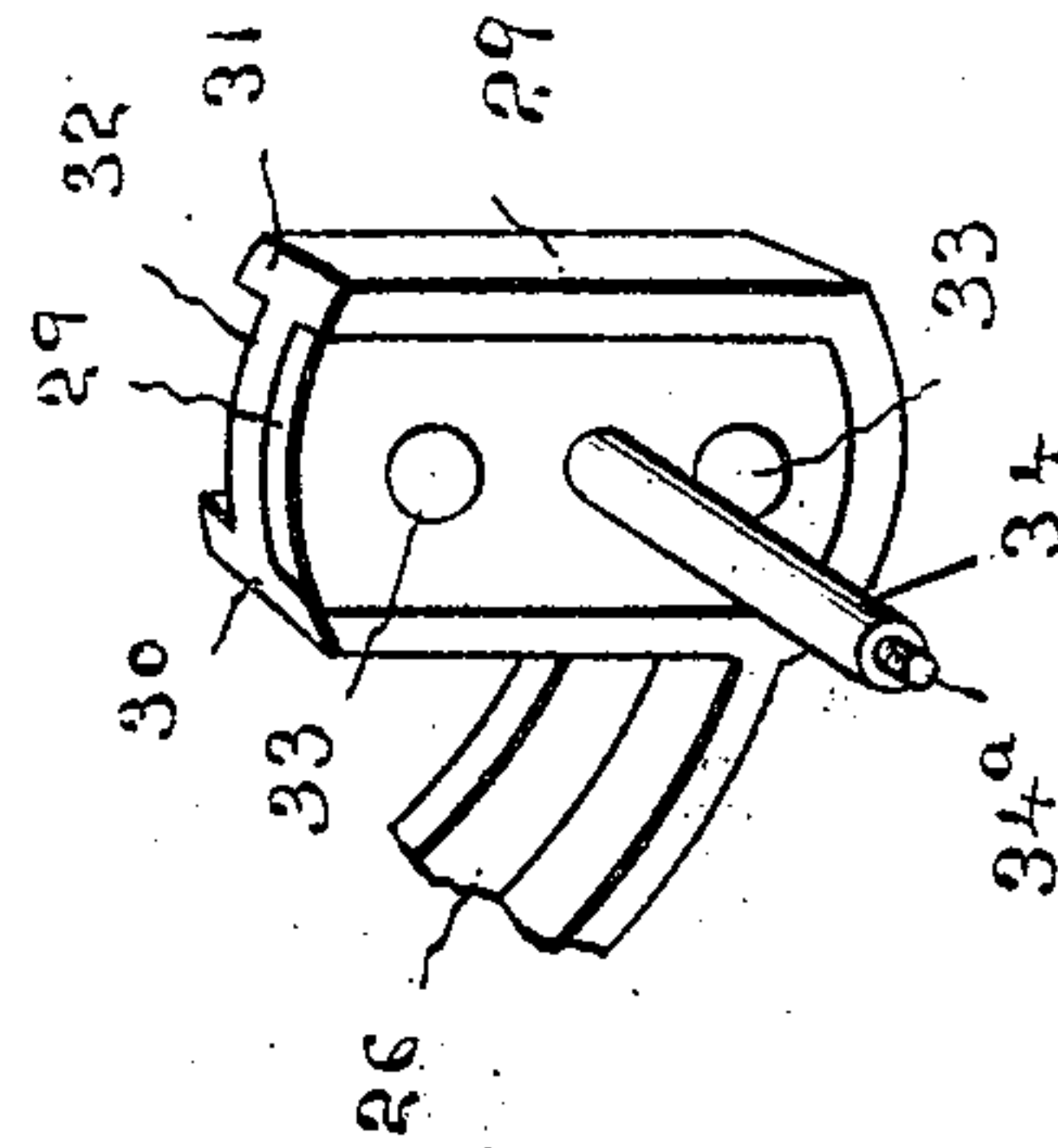


Fig. 8.

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# UNITED STATES PATENT OFFICE.

WILLARD A. HANCOCK, OF MONTROSE, IOWA.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 767,148, dated August 9, 1904.

Application filed October 17, 1903. Serial No. 177,468. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD A. HANCOCK, a citizen of the United States, residing at Montrose, in the county of Lee and State of Iowa, have invented new and useful Improvements in Cultivators, of which the following is a specification.

My invention has relation to improvements in plows, (subclass, hand-cultivators;) and the objects are to provide an improved machine for cultivating growing crops by running between the rows or by straddling the rows and which may be readily converted to either condition of adaptation.

Another object is to make wheel-carriers conveniently adjustable to different widths of rows and also to provide means for adjusting the plows to rows of different widths.

With these objects in view the invention resides in the novel construction of parts and their aggroupment in operative combination, as will be hereinafter fully specified and the novelty asserted, then be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated the invention in the annexed drawings, to be taken as a part of this specification and reference being thereto had.

Figure 1 is a perspective view of the complete machine, showing rake-teeth stirrers secured to the plow-brackets as the tilling means. Fig. 2 is a top plan view of the machine, wherein is indicated in dotted lines some of the wheel-adjustments capable of being made. Fig. 3 is a top plan view showing the machine as converted into a single-wheel machine. Fig. 4 is a detail view of the lower portion of one of the side limbs of the yoke or arch which connects the plow-holding brackets, showing the horizontal slotted base-piece. Fig. 5 is a detail perspective view of one of the sector-face gears for locking the handles in adjusted position. Fig. 6 is a detail perspective view of the lower portion of one of the handles with the sector-rack bracket secured thereto for engagement with the sector-face gear or rack secured to the limbs of the yoke. Fig. 7 is a plan view of one of the plow-holding brackets. Fig. 8 is a detail perspective view of the outer end of the wheel-

arm and the detachable and reversible spindles united.

In the drawings similar elements appearing in the several illustrations are designated by like reference-notations.

A designates a metal yoke or arch of such height and width between the arms as may fit it for the purposes intended. The limbs of the arch at their lower end are carried outwardly in horizontal direction, as at 1, and formed with longitudinal slots 2 to afford means for the adjustable securement of the plow frames or brackets thereto.

3 3 designate the handles, made of wood and formed with proper hand-grasps 4 at their outer ends, which are utilized by the workman to push the machine along during the work required of it. These handles, made of such length as required, are arranged at a desired incline and braced in relative position by a cross-bar or round, substantially as shown. To adjust the position of the handles to suit the height or convenience of different operators, I have devised the following-described means: To the lower end of each handle is secured a flanged plate 5, on the outer face of which is secured a radially-disposed rack 6, and a bolt-hole 7 is provided which corresponds with another hole which extends through the handle. The flanges embrace two side faces of the handle and keep it from splitting by any strain at this point. To each limb of the arch at a determined point is secured a metal disk 8, formed with flanges 9 on its plain face, which flanges lie snug against the edges of the arch and keep the disk from turning. On the outer face of the disk is made a rack of radially-disposed teeth 10, (see Fig. 5,) which engage with the teeth of the rack 6 of the plate 5 on the handle. A bolt-hole 11 is centrally made in the disk. In each limb of the arch or yoke is a bolt-hole 12, and a suitable clamping-bolt 13 is provided. This bolt is projected through the limb of the yoke, the disk, and the plate and handle and a clamping or fastening nut applied to hold the parts together and the teeth of the racks in engagement. It will readily be seen that if the handles are to be adjusted to a higher or lower position it may be accomplished by loosening



the bolt, so as to let the teeth of the racks pass, and then when the desired position is reached the bolt is clamped up and the handles will again be firmly secured in position.

14 15 designate plow-holding brackets, plates, or frames, which consist of suitable metal plates made rectangular at their forward portion, whence they extend in reduced neck portions and terminate in outwardly-extending diagonally-disposed pieces 16, provided with lengthwise slots 17. The said rectangular portions of these plow-brackets are formed with transversely-arranged vertical ribs or flanges 18 19 20, between which are formed slots 21. The horizontal portions 1 of the yoke are arranged in the seats thus formed between the flanges 18 and 19 and adjustably secured therein by bolts 22, projected through the slots 2 and those of the slots 21 registering therewith and provided with washers straddling the slots and clamping-nuts, substantially as shown. It will thus be seen that the plow-holding brackets may be adjusted toward and from each other to accommodate them to carry the plows for different widths of rows. In the diagonal slots 17 are arranged and secured the stems or standards of the plows. The plows may be of any desirable shape or style, or any tilling implement suited to the work may be secured in operative position in said slots 17. I have shown generally proper stirring-teeth 23, provided with threaded stems projected through these slots and clamped by washers and nuts, and in Fig. 1 are shown rakes 24, the stems of which lie under the diagonal pieces 16 and at the ends are provided with vertical bolts secured in the slots, as above stated. In the one edge of each of the slots 17 the metal of the pieces 16 is cut away, forming a recess 25, so as to afford room through which the nut and washer on the end of the plow-stem may be inserted and then the nut clamped down. This provision of having the diagonal slots made with the recesses 25 obviates the necessity of entirely removing the fastening-nuts from the plow-stems and prevents them becoming accidentally detached and lost. It will be further seen that by the arrangement of the plows, Figs. 2 and 3, they traverse the ground without interference with each other and on different parallel lines and that they may be adjusted to travel between the rows, or they may be positioned to straddle the rows.

26 designates the wheel-arms, consisting of suitable bars of metal formed at their inner ends with horizontally and laterally disposed extensions 27, having longitudinal slots 28 and adapted to lie on the plow-brackets between the flanges 19 20, with the slots 28 in alinement with the slots in the plow-brackets.

The arms may be extended straight from their union with the extensions 27; but I prefer to give them a short curve upward and then direct them slightly upward at the outer

end portions, substantially as seen in Fig. 1, and form on their ends vertical brackets 29, consisting of plates having bottom and vertical edge flanges 30 31, which take and receive plates 32, detachably secured in the brackets, as by screws 33. From the plates 32, at right angles thereto, extend sleeves 34, constituting spindles, on which the hubs of the wheels 35 are mounted, and through the webs of the brackets 29 and the sleeves 34 are passed fastening-bolts 34<sup>a</sup>. The wheels are held on the sleeves or spindles and the plates 32 in their seats in the brackets by the bolts 34<sup>a</sup>, which are provided with the usual washers and fastening-nuts, substantially as seen. The wheel-arms are held adjustable in the plow-brackets by bolts 36, projected through the alining slots of the brackets and the extensions. It will be perceived that when the wheels are mounted as seen in Fig. 2 they may be moved farther apart by simply loosening the clamping-bolts which hold the wheel-arms in position and that by sliding the extensions outward the arms are carried with the wheels to the positions indicated by the outer dotted lines, and if it be desired to bring the wheels into closer relation between the rows the spindles are taken out and reversed, and the wheels then mounted and the arms adjusted until the wheels and arms assume the position seen in dotted lines between the wheels, as shown in Fig. 2 of the drawings.

Should it be desired to convert the machine into one having a single wheel, then both wheels are taken off and the arms are loosened and moved inward. The wheel may then be inserted between brackets and the spindle or bearing-bolt arranged and secured in place, and then the wheel-arms may be clamped to the plow-brackets, as shown in Fig. 3 of the drawings.

Having described my improvements, what I claim is—

1. In a cultivator, the combination with handles, and a yoke connecting the same at their inner ends, and provided with lateral horizontal members having longitudinal slots therein, of brackets comprising portions having slots registering with said first-named slots, and provided with upstanding flanges, said members being seated on said portions between said flanges, and means passing through said registering slots, for securing the parts together, said brackets also comprising rearwardly-extending branches having cultivator devices adjustably secured thereto.

2. In a cultivator, the combination of plow-holding brackets formed with flanged seats across their front ends having slots therein, a yoke formed with horizontal base-pieces provided with longitudinal slots and slidably disposed in the seats in the plow-holding brackets, means in the slots to clamp the parts together, transverse seats in said brackets in ad-



vance of the yoke, seats having slots therein, wheel-arms having slotted lateral extensions at their base to engage in said forward seats, and brackets at their free ends, reversible  
5 spindles secured in the end brackets of the arms, and wheels on the spindles.

3. In a cultivator, the combination with handles, and a yoke connecting the same at their inner ends, of brackets supported by the limbs  
10 of the yoke, comprising forwardly-projecting portions formed with slots, and having ribs on either side of the slots, forwardly-extending arms having at their rearward ends substantially right-angled members seated be-  
15 tween each pair of said ribs, and formed with slots registering with the slots first named, means for adjustably securing said members in place, and wheels mounted at the forward ends of the arms.

4. In a cultivator, the combination with handles, and a yoke connecting the same at their inner ends, of forwardly-projecting arms supported from the yoke, and provided at the forward ends thereof with brackets each having vertical edge flanges and a connecting  
20 bottom flange on either side thereof, a plate adapted to fit between the flanges of each bracket, and means for securing the same in place, said plates having sleeves extending at right angles thereto, fastening-bolts extend-  
25 ing through the brackets, and wheels mounted on said sleeves. 30

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

WILLARD A. HANCOCK.

Witnesses:

LOUIS WAHRER,  
ED. H. KERR.