

No. 628,648.

Patented July 11, 1899.

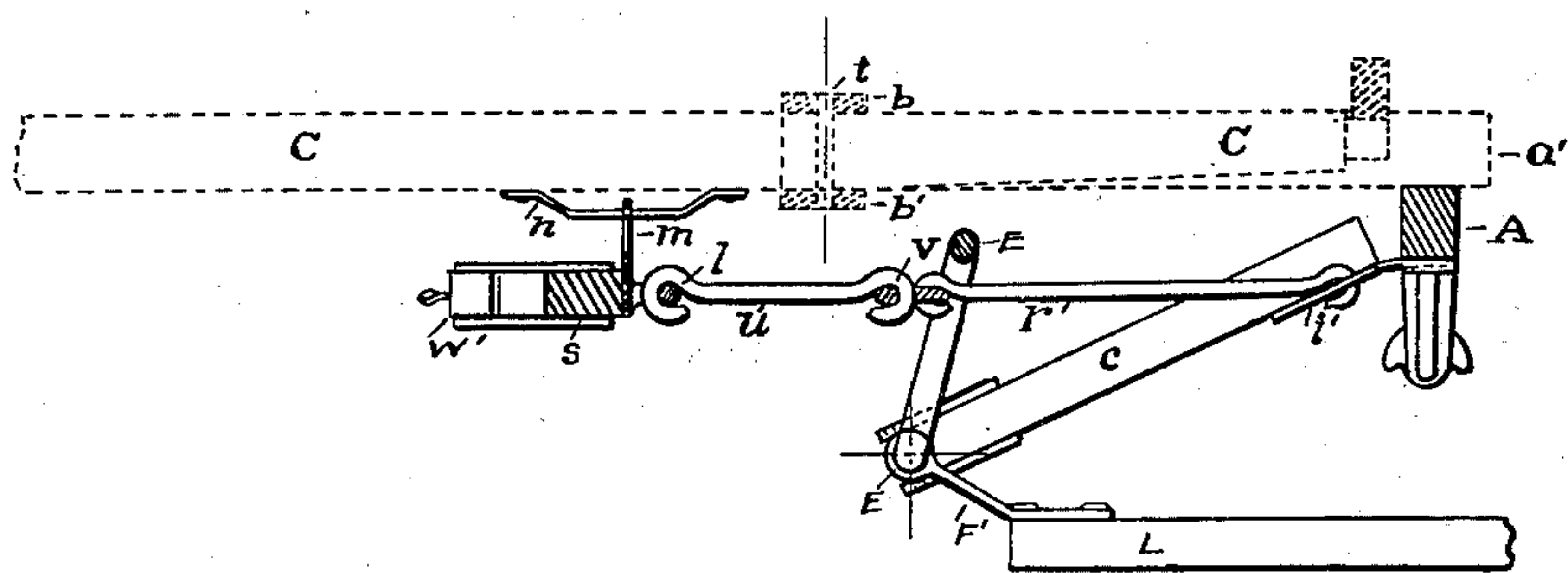
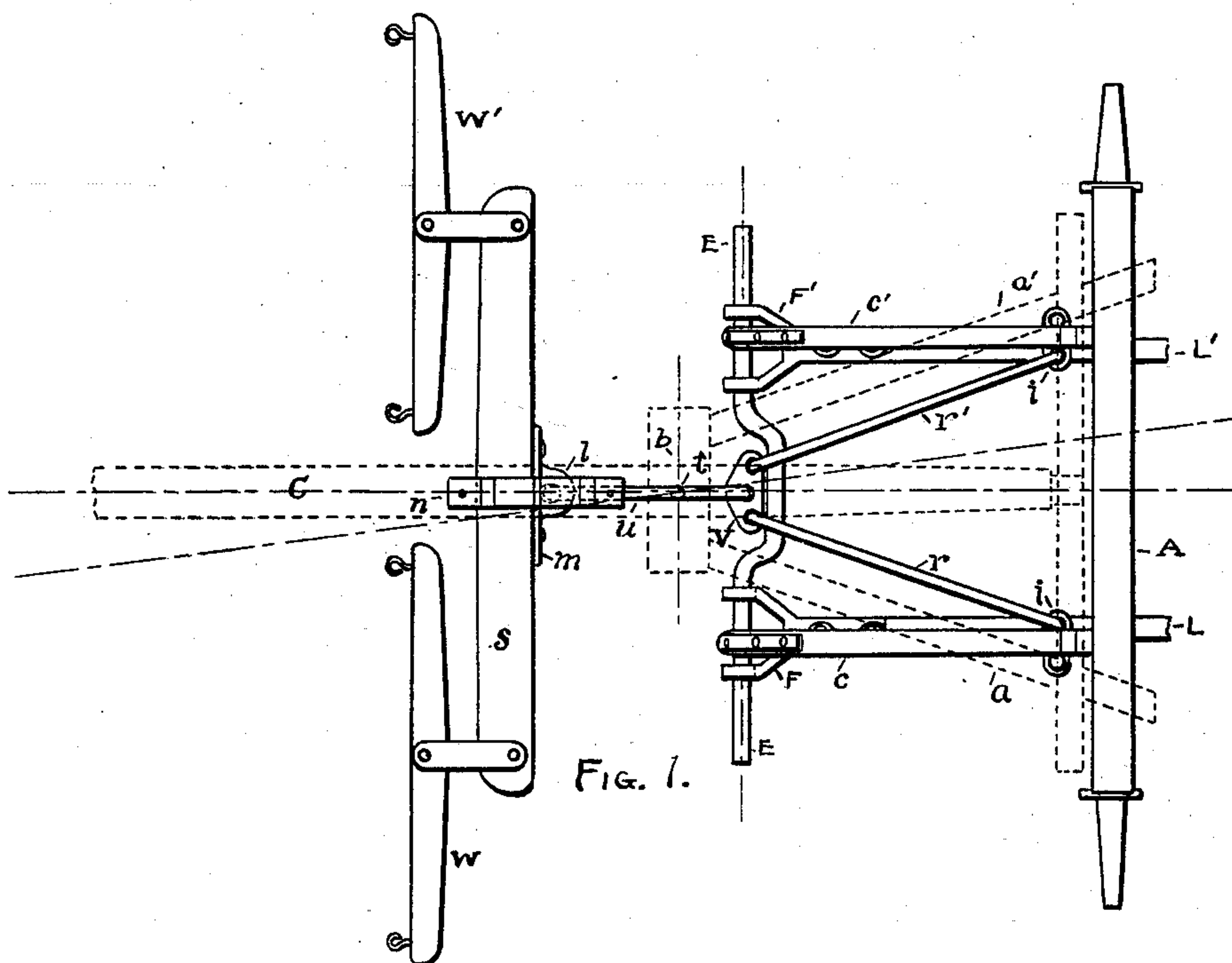
E. CHILDREN.

DRAFT CONNECTION FOR WHEELED CULTIVATORS.

(Application filed Apr. 12, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES :

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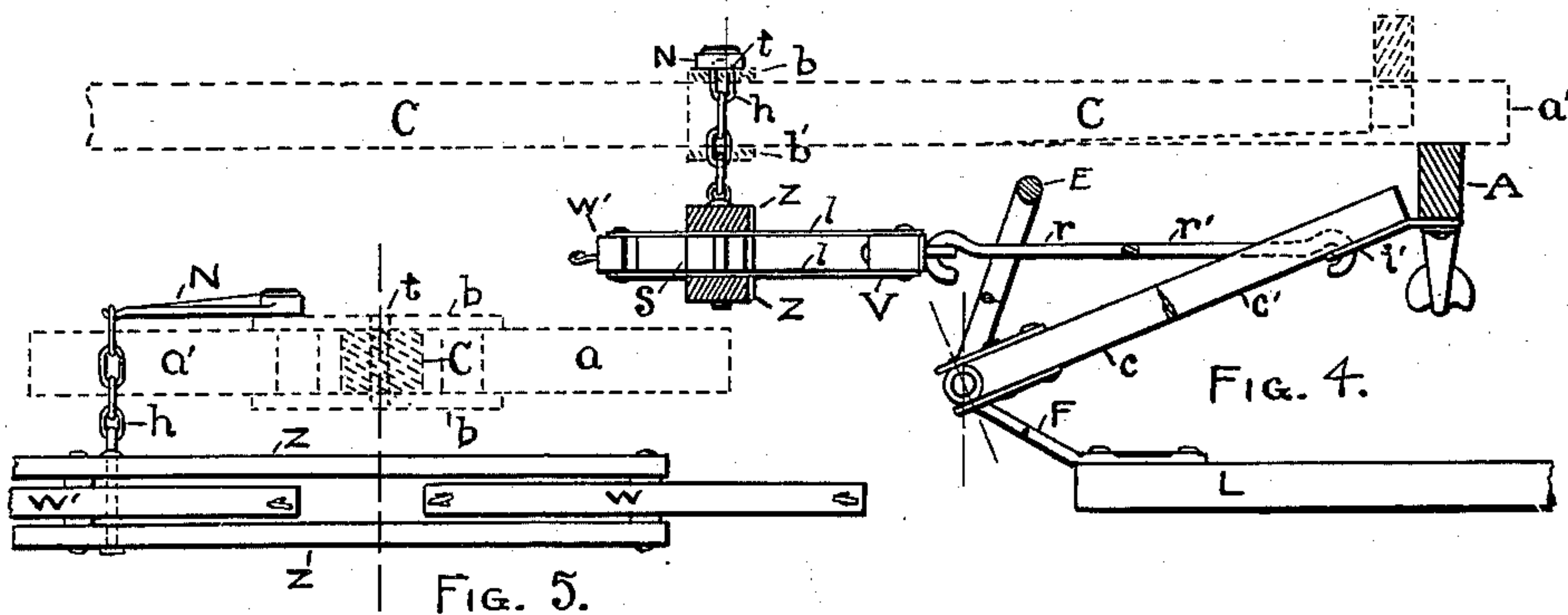
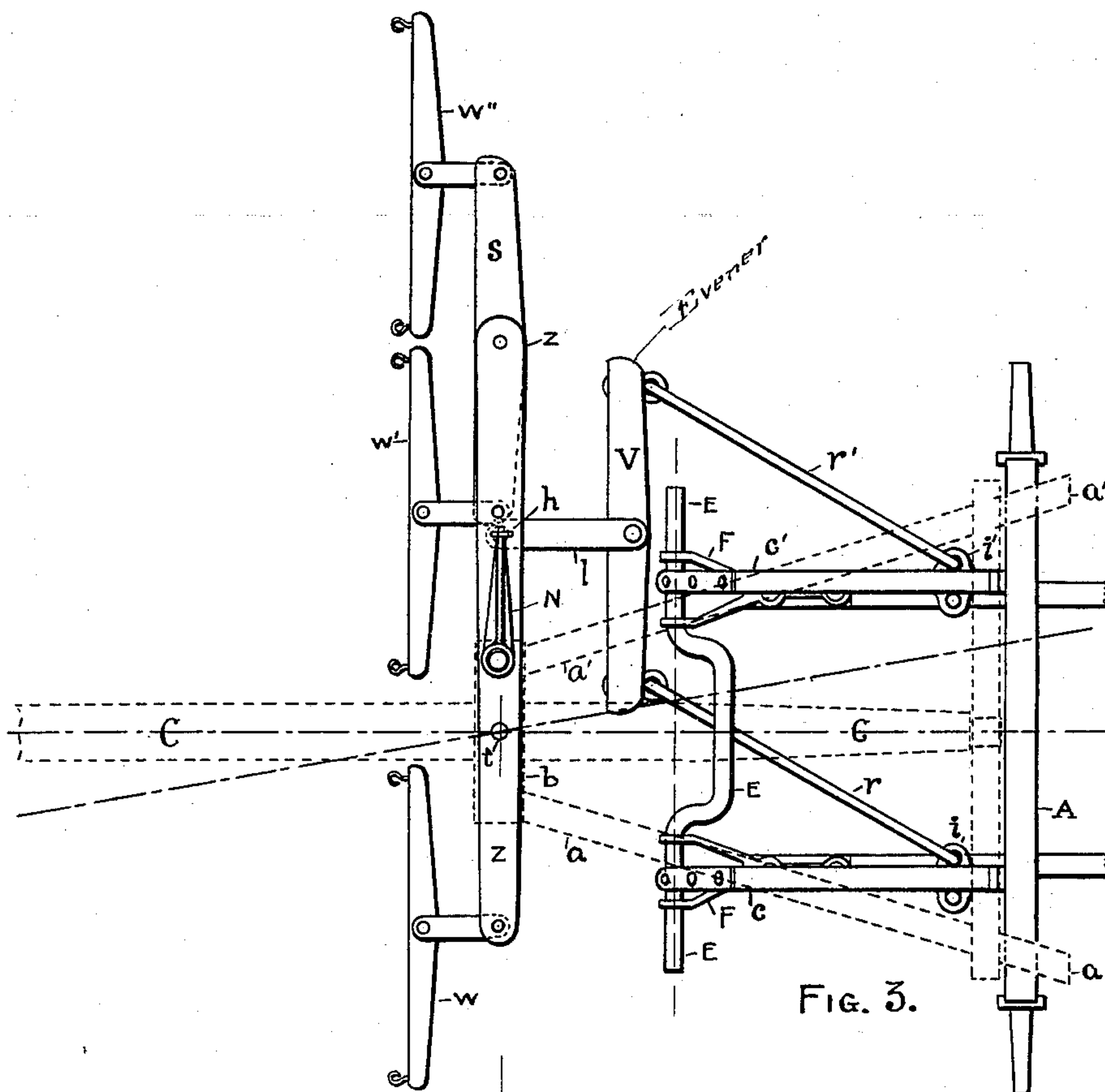
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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DRAFT CONNECTION FOR WHEELED CULTIVATORS.

SPECIFICATION forming part of Letters Patent No. 628,648, dated July 11, 1899.

Application filed April 12, 1899. Serial No. 712,759. (No model.)

To all whom it may concern:

Be it known that I, EDWIN CHILDREN, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented a new and useful Improvement in Draft Connections for Wheeled Cultivators of the Pivoted-Pole Type; and I do declare that the following is a full, clear, and exact description of the invention for illustration and explanation, but not for limitation.

My invention relates to an improved means of connecting the draft or moving power to wheel-cultivators having a pivoted pole, and especially to those patented to me under Letters Patent numbered and dated as follows: No. 434,765, dated August 19, 1890; No. 334,641, dated January 19, 1886; No. 159,550, dated February 9, 1875, and No. 62,004, dated February 12, 1867; but my invention is not restricted to cultivators patented by me, but to any wheeled cultivator having a pivoted pole. In such cultivators the draft has heretofore been applied in the usual manner by pivoting the ordinary doubletree, when two horses are used, or tripletree, when three horses are used, to some point on the pole of the cultivator. I propose by my device to apply the draft transmitted to the doubletree or tripletree through the ordinary whiffletrees engaging the traces at two points on the axle of the cultivator, or, preferably, when reaches are used in connection with the axle and cultivator-beams to apply the same at a point on each reach near the axle. By this means the tripletree or doubletree is given a freedom of movement whereby the principal line of the draft more nearly follows the direction of the principal line of resistance and lessens the tendency of the draft to deflect the cultivating instruments against the manipulation of the driver or operator and accomplishes other results more particularly referred to hereinafter.

The objects of my invention are therefore to bring the principal line of draft to more nearly follow the direction of the principal line of resistance, to permit a freedom of movement of the doubletree or tripletree laterally, to relieve the whiffletrees and harness of the movement formerly caused by the operation of the cultivator, to make the manipulation of the cultivating instruments by the

operator more easy, and to relieve the stress upon the pole and frame of the cultivator. I attain these objects by the construction described in the accompanying drawings, in which the same letters refer to similar parts throughout the several views, in which—

Figure 1 is a plan of the draft connection with doubletree for two horses, showing the axle, reaches, and cultivator-beams and showing the frame and pivoted pole without the lever used to control the same, all in dotted lines. Fig. 2 is a side elevation of the same, showing the frame of the cultivator in section between the cultivator-beams. Fig. 3 is a plan of the draft connection as connected with tripletree for three horses and showing the parts as in Fig. 1. Fig. 4 is a side elevation of the same, but showing the frame in cross-section through the axle between the cultivator-beams; and Fig. 5 is an end elevation of the frame and axle of the cultivator, all in dotted lines, with dotted cross-section of the pole just in front of the pivot and showing broken elevation of whiffletree and tripletree and a side elevation of a method of suspending the tripletree or doubletree.

In cultivators of this kind the axle A is connected with the pole pivoted on a pin *t* through the flat pieces *b* and *b'* by means of the frame-pieces or hounds *a* and *a'*. The pivoted pole C is operated by a lever extending back within convenient reach of the driver and which lever is not necessarily shown in said drawings for the purposes of this description. The reaches *c* and *c'* are each pivoted to the axle above the cultivator-beams in such manner as to have both lateral and vertical movement and extend downward and forward, engaging trunnions on a sleeve fastened to the yoke E, upon which yoke E the cultivator-beams L and L' are hinged and which beams are shown in the various views broken at or near the points of application of the cultivating instruments.

The draft connection consists of the draft-bars *r* and *r'*, which may be made of any suitable form or material for tension; but I prefer to use rods, as shown, so hooked into the eyelets or loops *i* and *i'* and pivoted therein that said draft-bars may be moved both vertically and laterally, the said eyelets or loops being fastened to the axle of the cultivator

or to the reaches near the axle when reaches are used, and preferably so, said means of fastening the said eyelets or loops being the same in either case. The other ends of the two draft-bars r and r' , at a convenient distance from the axle, engage, similarly as they engage the eyelets or loops i and i' , the evener V . This evener V consists of a bar of any suitable material or shape to sustain the transverse stress of the draft and has three eyelets, loops, or holes through it, which for convenience may be called "pivot-holes." Into two of these pivot-holes the draft-bars r and r' are respectively hooked or pivoted. The third pivot-hole is slightly in front of the line joining the other two and on a line bisecting said line at right angles and into which pivot-hole is pivoted in any suitable manner to give it lateral movement therein a draw-bar l , made of any suitable material or form for tension and which may be made of a single piece with hooks at each end or of two pieces bolted together with the bar of the evener between them, as shown, respectively, in Figs. 1, 2, 3, and 4 and as may be most convenient. The other end of this draw-bar l engages the doubletree s or the tripletree z , as the case may be, in the same manner as it is pivoted to the evener V , so that the doubletree s or the tripletree z shall have free lateral movement within a given latitude. The doubletree s or the tripletree z is not fastened rigidly to the pole or framework to which the pole is attached, but is suspended in any suitable manner from the pole or frame of the cultivator, so as to not interfere with the freedom of its lateral movement within said range. I prefer, however, to suspend the same by a crane N and a chain h , engaging the tripletree, Figs. 3, 4, and 5, or in case of a doubletree by means of two elongated loops in planes at right angles linked together and fastened to the frame or pole and the part suspended, respectively, as shown in Figs. 1 and 2.

When the cultivator is deflected either to one side or the other from the center line of the pole by the operator or driver in the ordinary manner, the draft of the horses is transmitted through the traces, whiffletrees, and doubletree or tripletree, if three horses are used, to the pole, thence to the framework, to the axle, and from the axle to the cultivating instruments. In this way the "principal line of draft," by which expression the resultant of the parallel lines of draft may be indicated, is broken at the pivot-point of the pivoted pole with a resultant force acting upon this pivot and against the action of the driver operating the cultivator and at a considerable distance from the principal points of resistance made by the earth against the cultivating instruments and against the wheels. The

principal line of resistance may be said to be the resultant of the parallel lines from the horses' feet to the points of resistance of the cultivating instruments and the wheels. By the described device the doubletree carrying the whiffletrees or the tripletree carrying the usual doubletree and whiffletrees are given a lateral freedom of movement and by reason thereof do not follow the deflection of the center line of the pivoted pole relative to the center line of the cultivator-frame, but adapt themselves to a position on the principal draft-line, the general direction of which line is parallel to the principal line of resistance, thereby decreasing the stress upon the pole and frame and enabling the driver operating the cultivator to more easily manipulate the same and with less change of direction of draft upon the horses.

What I claim, and wish to secure by Letters Patent, is—

1. In a draft connection for wheeled cultivators having a pivoted pole, the combination of two draft-bars r and r' engaging pivot holes or eyelets i and i' , suitably fastened to the axle or to the reaches near the axle, with an evener V at a convenient distance from said axle, and the draw-bar l connecting the same to the usual tripletree or doubletree suitably suspended, all for the purposes described.

2. In a draft connection for wheeled cultivators having a pivoted pole, the elongated loop n , linking into the elongated loop m , and suspending the tripletree or doubletree, in combination with the draw-bar l engaging said tripletree or doubletree; the evener V and the two draft-bars r and r' ; all substantially as described.

3. In a draft connection for a wheeled cultivator having a pivoted pole; an evener V , having three pivot-holes, engaging the draft-bars r and r' pivoted therein and the draw-bar l similarly connected; said draw-bar l engaging a tripletree or doubletree suspended from pole or frame; all substantially as set forth and described.

4. The combination in a draft connection for a wheeled cultivator having a pivoted pole, of a crane N , with a suspending-chain h attached thereto and connecting with tripletree or doubletree; with draw-bar l , pivoted to said suspended tripletree or doubletree, and to the evener V ; said evener V ; the draft-bars r and r' and the eyelets or loops i and i' , all connected and arranged substantially as described for the purposes stated.

In testimony whereof I hereunto set my hand this 5th day of January, 1899.

EDWIN CHILDREN.

Witnesses:

KATHRYN L. WILLIAMS,
CARROLL W. KIMBALL.