

No. 678,032.

Patented July 9, 1901.

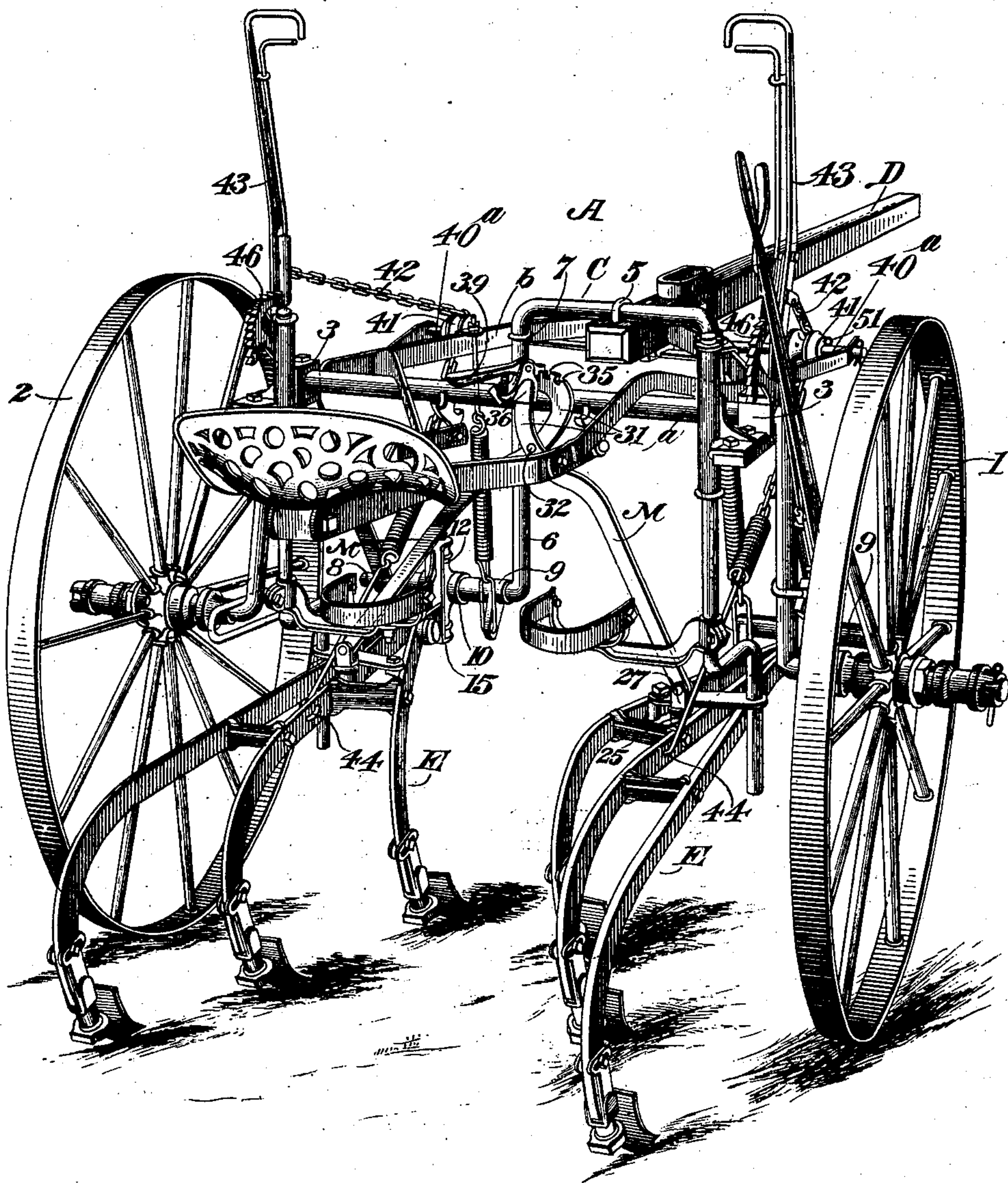
S. D. POOLE.  
DOUBLE CULTIVATOR.

(Application filed Apr. 6, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES

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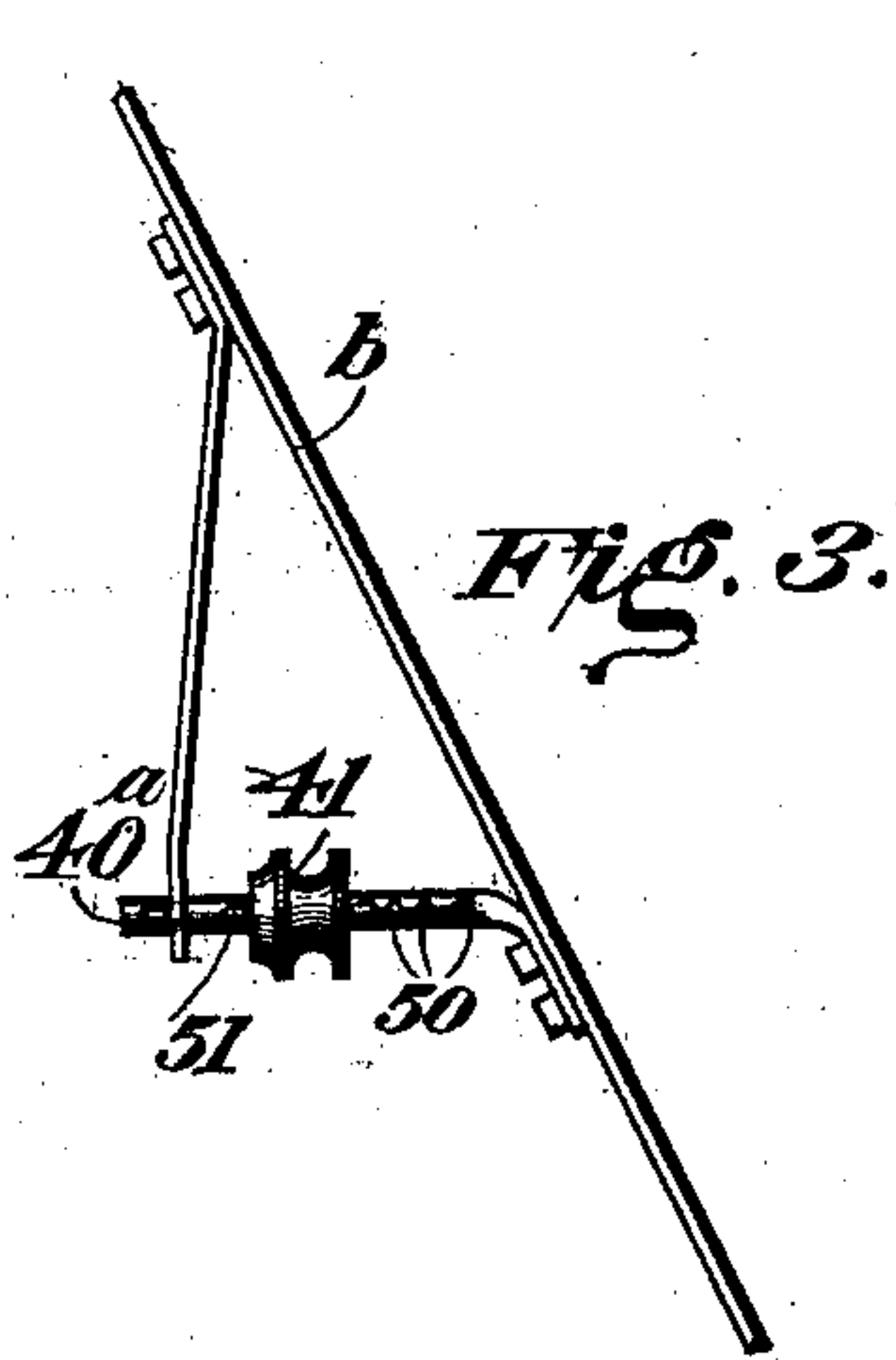


Fig. 3.

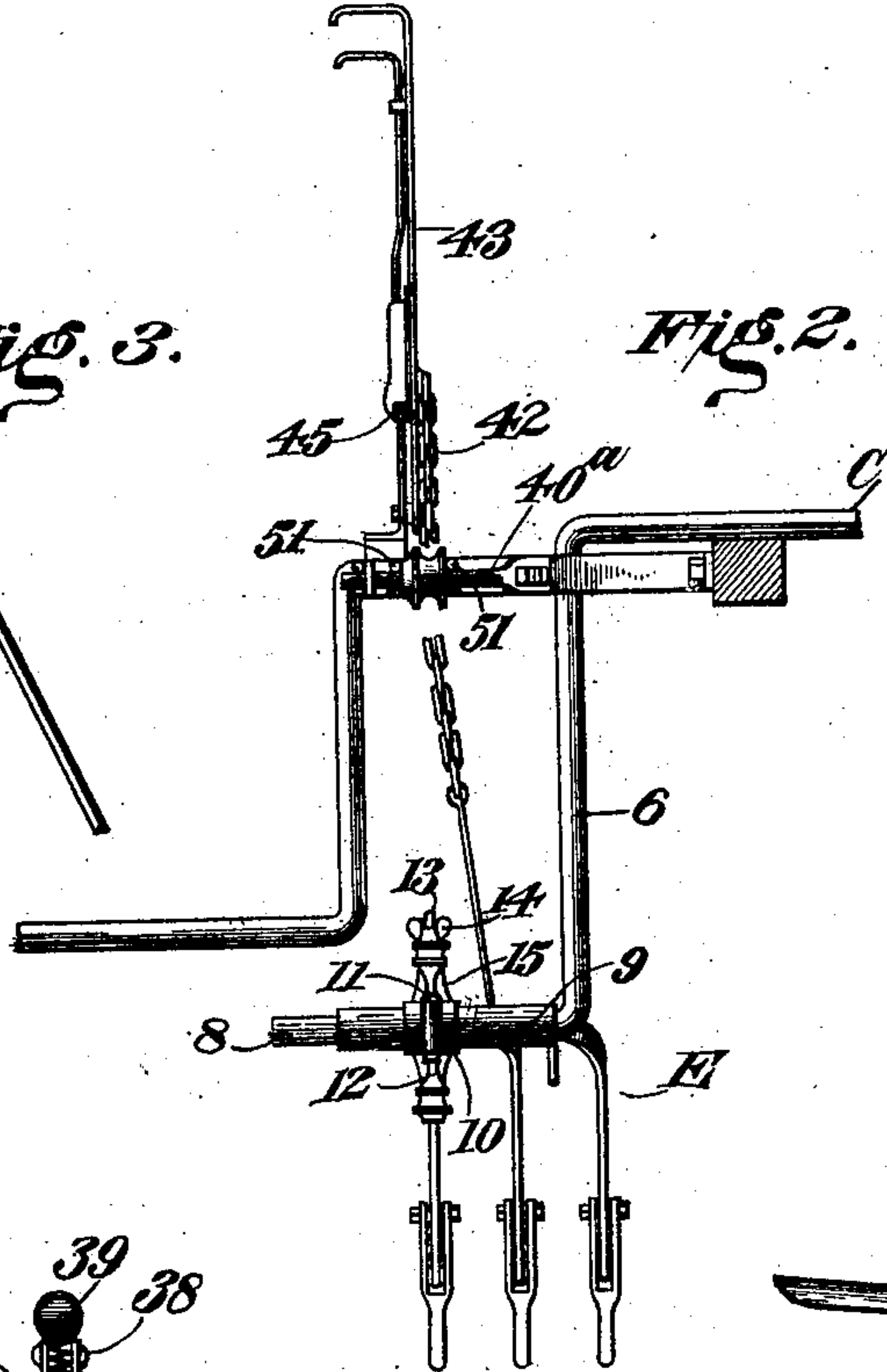


Fig. 2.

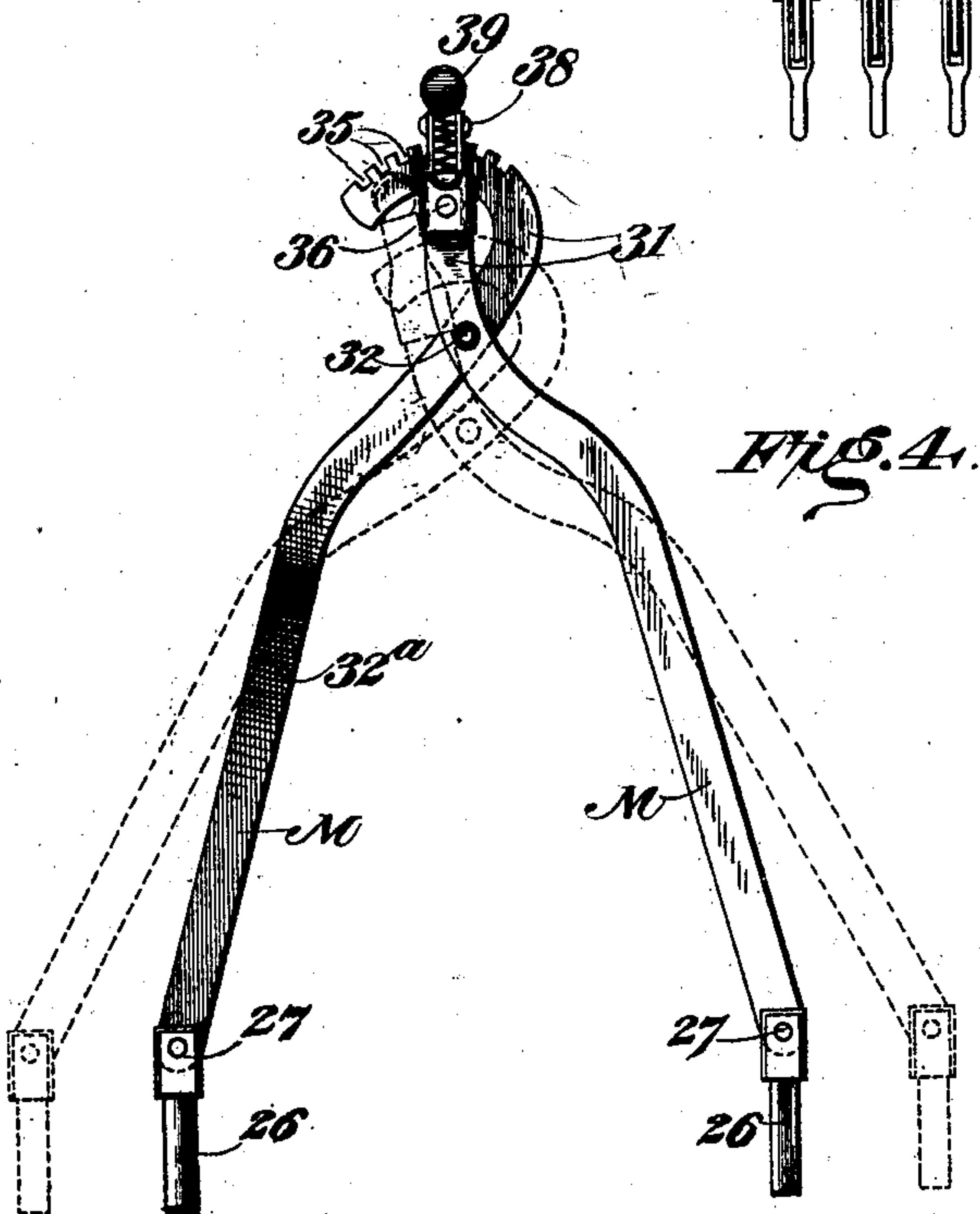


Fig. 4.

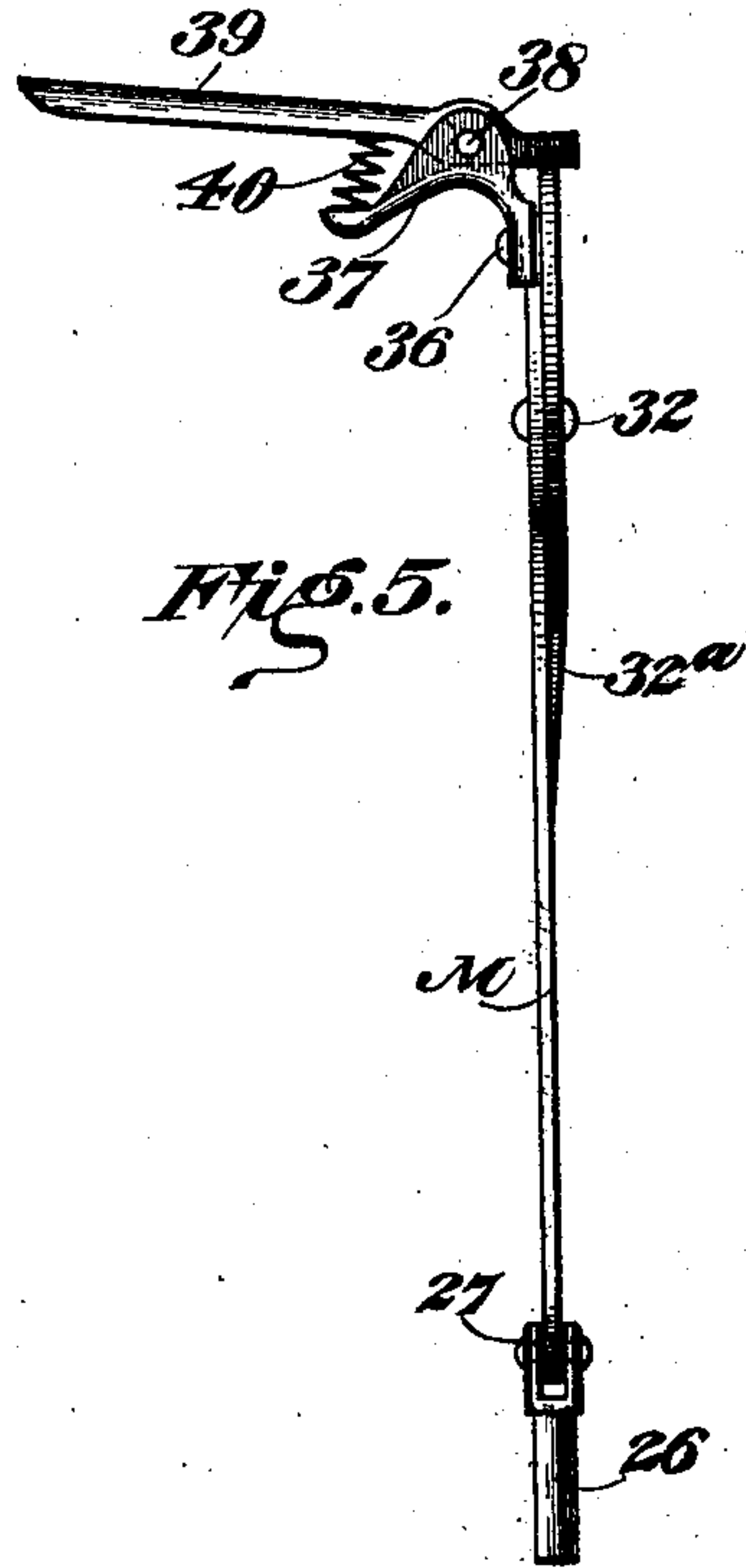


Fig. 5.

WITNESSES  
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# UNITED STATES PATENT OFFICE.

STALEY D. POOLE, OF MOLINE, ILLINOIS.

## DOUBLE CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 678,032, dated July 9, 1901.

Application filed April 6, 1901. Serial No. 54,735. (No model.)

*To all whom it may concern:*

Be it known that I, STALEY D. POOLE, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Double Cultivators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to double cultivators; and it consists, substantially, in the improvements hereinafter definitely described, and pointed out in the claims.

The invention has reference more particularly to that class or type of double cultivators in which the lateral adjustments of the cultivator devices are effected by means of a suitable mechanism actuated by the feet of the operator and in which the raising and lowering of the cultivator devices is effected by means of a chain or cable passing over a suitable guide or sheave pulley and connecting with a hand-lever in convenient reach of the driver. In this class of machines it is desirable during the working operation thereof that the two sets of cultivator devices shall be rigidly held together in proper relationship to each other, and for this purpose it has been usual in some instances heretofore to connect the cultivator rigs or beams by means of a rigid arch or brace extending transversely of the machine and having the ends thereof seated within suitable sockets arranged or mounted upon said cultivator-rigs in a manner and for purposes well understood in the art. Such a construction, however, only permits of limited lateral adjustments of the cultivator devices, due to the fact that the distance between the cultivator-rigs is invariable or unalterable. To overcome this, it has been usual also in some instances heretofore to construct the connecting-brace between the cultivator rigs or beams of two arms reversely curved and slotted at their inner ends and joined together by means of a bolt and a nut, said arms permitting said cultivator-rigs to be moved nearer together or farther apart by simply unscrewing the fastening-nut and loosening the bolt. It is obvious that in order to thus temporarily loosen

the rigid fastening or connection between the inner ends of the arms constituting the connecting-brace between the cultivator-rigs it is necessary to stop the machine, and which, as is evident, consumes much valuable time and very materially interferes with the work. Moreover, the use of a wrench or other implement is also rendered necessary by which to loosen the fastening between the connecting-arms and again tighten up the same. Also in this class of cultivators or machines considerable difficulty has been experienced heretofore in maintaining the connections between the cultivator-rigs and hand-levers in proper line, by which to enable the cultivator devices to be raised and lowered, since, due to the different positions to which said rigs are brought or set laterally, the connecting chain or cable very frequently slips off its sheave or guide pulley, and hence the raising and lowering devices are rendered temporarily inoperative and much time is frequently lost in rearranging or restoring the connection.

The object of the present invention is to overcome all of the above-mentioned disadvantages and objections and to provide means whereby the cultivator rigs or beams are rendered capable of being adjusted laterally or moved nearer together or farther apart at will without stopping the machine for that purpose.

A further object is to provide a two-part connecting-brace between the cultivator-rigs, together with means for instantly securing the parts together rigidly and again loosening the connection between the parts at will from the driver's seat.

A still further object is to provide improved means for effecting the raising and lowering of the cultivator devices irrespective of the lateral positions occupied by said devices.

The above and additional objects I attain by the means substantially as illustrated in the accompanying drawings, in which—

Figure 1 is a rear perspective view of a double cultivator having my improvements embodied in connection therewith. Fig. 2 is an enlarged view of certain parts in elevation and looking at the same from the front of the machine. Fig. 3 is a top or plan view of a portion of Fig. 2. Fig. 4 is an enlarged



view in elevation of the two-part connecting-brace employed between the cultivator-rigs, the dotted lines showing the spread position; and Fig. 5 is a side view thereof, showing more clearly the means by which the locking or rigid connection between the two parts of the connecting-brace is made and broken by the devices extending to within reach of the driver or operator.

Before proceeding with a more detailed description it may be stated that I employ any of the usual devices or means for effecting the lateral adjustments or movements of cultivator-rigs in machines of this class. My connection between the cultivator-rigs comprises two curved arms or members, the outer or lower ends of which are seated or received in the usual way in sockets mounted or supported upon said cultivator-rigs, while the upper or inner ends thereof are preferably reversely curved, said arms or members crossing or overlapping each other at a suitable point and being pivoted or movably joined together, so as to permit the lower ends thereof to be carried outwardly or inwardly according to the direction of movement imparted to the cultivator-rigs. I provide suitable devices or means at the inner or upper ends of the movable arms or members whereby the latter are instantly locked together rigidly in any position of adjustment to which they may be brought or moved, and also whereby the said arms or members can be again instantly released in order to permit the cultivator-rigs to be adjusted or moved nearer together or farther apart, as may be desired in use. The construction and arrangement of the several parts or elements referred to are such that the rigid locking connection between the movable arms or members is made and broken without having to stop the machine and without in any manner interfering with the working or operation of said machine. Preferably the locking devices between the movable arms or members comprise a hand-lever extending to within convenient reach of the driver while seated upon the machine. I also employ a suitable laterally-adjustable guide or sheave pulley for each chain or cable employed in raising and lowering the cultivator devices, and thus said chains or cables are not liable to slip off said guides whatever may be the particular lateral positions occupied by the cultivator-rigs at the time the raising and lowering devices are operated.

Specific reference being had to the accompanying drawings, A represents a double cultivator of well-known construction in many respects and which is provided with two supporting-wheels 1 2, mounted on journals extending outwardly at the lower ends of a main arch *a* of the machine, said main arch being supported at 3 3 in suitable blocks or bearings mounted or secured in proper position upon the main frame *b* of the machine. Located forwardly of said main or wheel arch

*a* is an auxiliary or supplemental arch C of somewhat smaller dimensions and the horizontal member of which rests upon the inner or rear end of the tongue D of the machine, being secured thereto at 5 by means of a staple or other suitable fastening device. Said arch C is located between the usual forward convergent side portions of the main frame *b*, and the vertical members 6 6 thereof each passes through a loop 7, so as to securely hold the arch in position, and at near the lower end thereof each of the said vertical members 6 6 is turned outwardly substantially at right angles to form a journal 8, upon which is mounted or carried a sleeve 9 and upon which in turn is mounted or carried a collar or ring 10, which is adjustably secured in place upon said sleeve by means of a suitable fastening pin or bolt 11. Said sleeves are rotatable upon said journals 8 8, and formed with each of said collars or rings 10 is an arm or bracket 12, to which is swiveled, by means of a pin 13 and nut 14, a yoke 15, which yokes are rigidly secured in an obvious manner to the forward ends of the beams for the cultivator-rigs. Said cultivator-rigs are designated as a whole as at E, and the construction and arrangement of the same are substantially as heretofore. Thus it will be seen that the said cultivator-rigs are capable of being both raised and lowered on the journals 8 8, while the swivel connections for the yokes 15 15 render the said rigs capable of being moved or turned laterally or both inwardly and outwardly. As previously stated, I employ any well-known means for effecting the lateral adjustments of the said cultivator-rigs—for example, by actuating said rigs through the direct or indirect pressure of the driver's feet. Secured in place upon the upper part of any suitable portion of each cultivator-rig is the usual socket 25, in each of which is loosely received a pintle or stem 26, having a hinge connection at 27 with the lower or outer end of a curved arm or member M. Said curved arms or members cross or overlap each other, as shown, and they constitute a brace for holding the cultivator-rigs rigidly apart to whatever positions they may be adjusted laterally. They are each also preferably reversely curved at 31, as shown, and are movably joined together at near their upper or inner ends by means of a pivot 32 or other suitable connection. One of said arms is slightly bent or turned inwardly at 32<sup>a</sup> (see Figs. 4 and 5) to bring the lower ends of the two arms in substantially the same plane, the purpose of which is fully obvious. In order to rigidly connect the two said arms after lateral adjustments of the cultivator-rigs have been effected, and also to quickly disengage the same or render them capable of being moved relatively to each other in conformity with further or other lateral movements or adjustments of said cultivator-rigs, I employ suitable hand-operated locking devices, which are within con-



venient reach of the driver or operator while seated upon the machine. Thus the upper edge of the reversely-curved portion at the inner or upper end of one of said curved arms or members M is preferably formed with a series of notches 35, while secured at 36 to the inner side of the corresponding portion of the other curved arm or member is a bracket 37, between the two sides of which is pivoted at 38 a hand-lever 39, extending to within reach of the driver and having the outer or forward end thereof constructed to fit into or engage the said notches 35. Seated upon a projection of the bracket 37 and pressing against the under side of the inner and longer arm of the said hand-lever 39 is a spring 40, the tendency of which is to always throw or force the outer end of the lever into the notches, and thus it will be seen that the rigid connection between the said arms or members M M can be instantly made and broken without having to stop the machine and without interfering in any manner with the proper working thereof. It will be understood that my invention is intended to comprehend, broadly any locking device or means for accomplishing the same result in substantially the same way, and hence I am not to be understood as limiting myself to the details of construction herein shown and described. It will be seen that all the driver or operator has to do is simply to depress the inner end of hand-lever 39, and then after effecting the desired lateral adjustments of the cultivator-rigs to again release said lever, whereupon the two arms or members M M are rendered as rigid as though constructed of a single piece, and thus the cultivator-rigs are at all times securely held apart in the relative positions to which they may have been adjusted or moved. Each set of the cultivator devices is of course provided with suitable means for raising and lowering the same through the medium of a rope or chain passing over a suitable guide or pulley located at the front of the machine, said rope or chain being connected at one end to a hand-lever in reach of the driver and at the other end to a suitable part of the cultivator rig or beam. According to my invention means are provided for maintaining the connecting rope or chain in position upon its guide whatever may be the lateral positions of the cultivator rigs, and hence is obviated the great difficulty and inconvenience experienced heretofore in the slipping of said rope or chain from said guide. Thus secured to suitable portions of the main frame at each side of the machine near the front is a stationary rod or shaft 40<sup>a</sup>, upon which is carried or supported a guide pulley or sheave 41, over which passes the rope or chain 42, connecting at one end with a hand-lever 43 at the side of the machine and at the other end with the cultivator-rig at 44. Each of said hand-levers is provided with the usual locking-dog 45, engaging a toothed sector 46, supported on the frame b, and it is evident in what man-

ner the raising and lowering of the cultivator devices is effected. Now in order to keep said rope or chain 42 in proper line or position to effect the work required of it and to prevent the same from slipping off its guide or pulley, due to changes in the positions of the cultivator-rigs, I mount the said guide or pulley 41 loosely on the shaft or rod 40<sup>a</sup> and provide means whereby the same can be moved or adjusted in one direction or the other. Any suitable construction can be resorted to for this purpose, but preferably I provide the said rod or shaft 40<sup>a</sup> with a series of openings 50, (see Fig. 3,) and in said openings on each side of the pulley I insert, preferably, split pins or other suitable devices 51 for holding the pulley in any position on the shaft to which it may be adjusted or moved. In this way I obviate or overcome a difficulty heretofore very frequently encountered in this class of machines, and the raising and lowering devices can be more thoroughly relied upon to properly perform their functions at all times.

The construction and operation of my improvements will be fully understood from the foregoing description, taken in connection with the accompanying illustrations, and it is apparent, of course, that I am at liberty to make immaterial changes therein without limiting the scope of invention intended to be embraced.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising overlapping arms or members, and devices rigidly securing said arms together and adapted to release the same by pressure of the hand, substantially as described.

2. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members movably joined together, and devices rigidly securing said arms together and adapted to release the same by pressure of the hand, substantially as described.

3. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members, and spring-actuated locking devices for rigidly securing said arms together in different positions of adjustment, substantially as described.

4. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members movably joined together, and hand-operated spring-actuated locking devices for rigidly securing said arms in different positions of adjustment, substantially as described.

5. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms



or members reversely curved at near their upper or inner ends, and overlapping each other and movably joined together, and hand-operated spring-actuated locking devices for rigidly securing said arms together in different positions of adjustment, substantially as described.

6. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members movably joined together, one of said arms having notches, and the other provided with means for engaging said notches, substantially as described.

7. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms movably joined together, one of said arms having notches, and the other arm provided with a spring-actuated locking device for engaging said notches, substantially as described.

8. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members in movable connection with said rigs and being themselves movably joined together, one of said arms having notches, and the other having means for engaging said notches, substantially as described.

9. In a double-row cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms movably joined together, one of said arms having notches, and the other arm provided with a spring-actuated device engaging said notches and having an operating hand-lever, substantially as described.

10. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members reversely curved at near their upper or inner ends and movably joined together, one of said arms having notches in the upper edge thereof, and the other arm provided with a spring-actuated locking-lever engaging said notches, substantially as described.

11. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two arms movably joined together, one of said arms provided with notches, and the other with a locking device for engaging and disengaging the notches, said device comprising a bracket secured to the arm, a hand-lever pivotally supported on the bracket, and a spring seated upon said bracket and bearing against the

under side of said hand-lever, substantially as described.

12. In a double cultivator, the combination with the cultivator-rigs, of a connecting-brace between the rigs comprising two curved arms or members crossing each other and movably joined together, one of said arms being bent or turned to bring the lower end thereof into substantially the same plane with the other arm, and a hand-operated locking-lever on one arm engaging suitable means on the other arm, substantially as described.

13. In a double cultivator, the combination with the cultivator-rigs, of means for moving or adjusting the same laterally, a connecting-brace between the rigs comprising two overlapping arms movably joined together, and devices rigidly securing said arms together and adapted to release the same by pressure of the hand, substantially as described.

14. In a cultivator, the combination with the cultivator rigs or devices, of means for raising and lowering the same comprising a suitable connecting rope or chain, and a laterally-adjustable guide or pulley for said chain, substantially as described.

15. In a cultivator, the combination with the cultivator rigs or devices, and means for laterally adjusting the same, of means for raising and lowering said rigs or devices comprising a suitable connecting rope or chain, and a laterally-adjustable guide or pulley therefor, substantially as described.

16. In a cultivator, the combination with the cultivator rigs or devices, of means for raising and lowering the same comprising a suitable connecting rope or chain, a horizontally-disposed rod or shaft, and a guide or pulley movable in either direction on said shaft, and means for setting the same at different positions thereon, substantially as described.

17. In a cultivator, the combination with the cultivator rig or devices, of means for raising and lowering the same comprising a suitable connecting rope or chain, a rod or shaft having transverse openings, a guide or pulley laterally movable on said rod or shaft, and pins or other fastenings inserted in said openings for holding said guide in different positions, substantially as described.

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

STALEY D. POOLE.

Witnesses:

CHAS. H. POPE,  
CHAS. T. MOREY.