No. 682,279.

Patented Sept. 10, 1901.

W. ROTH.

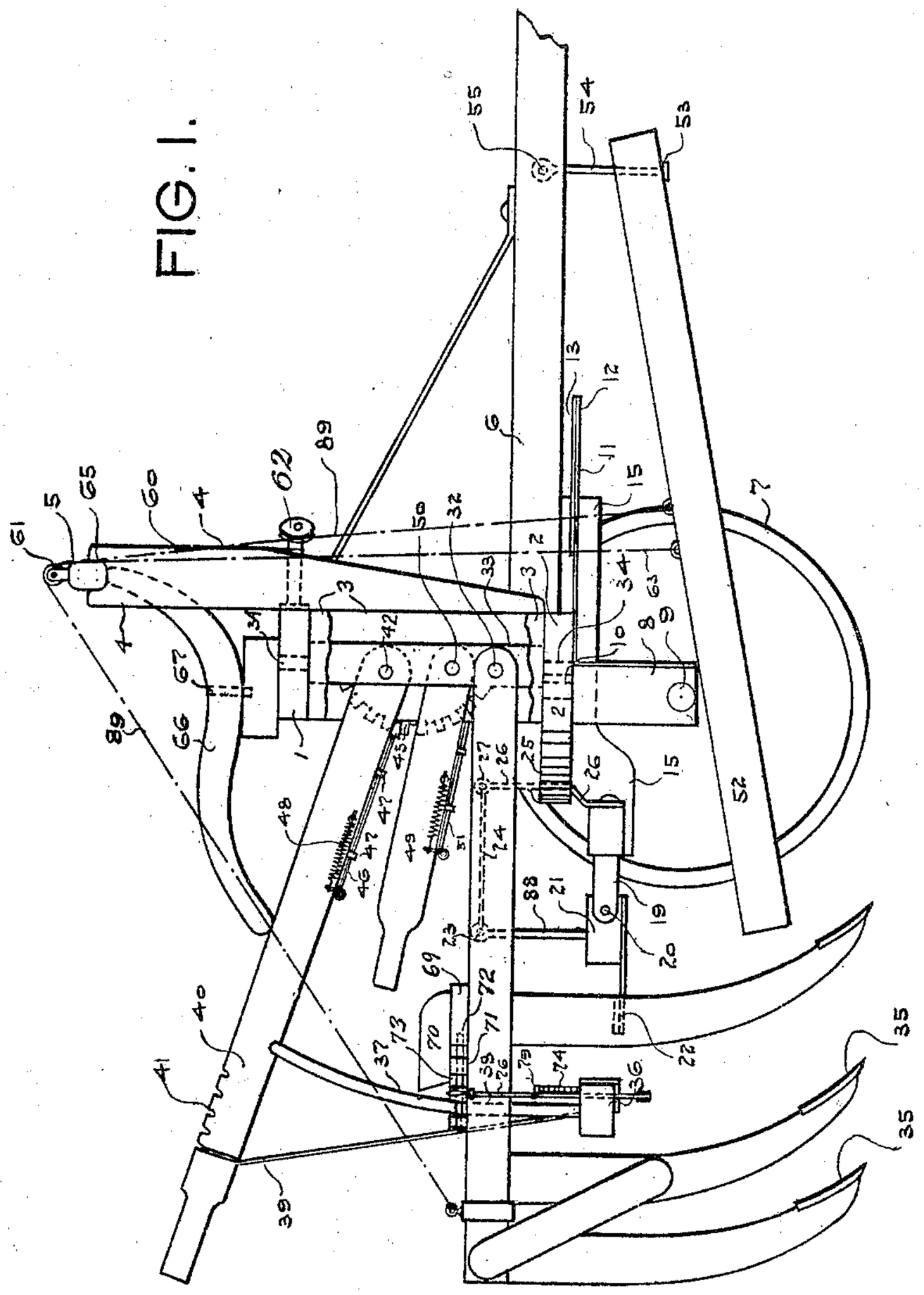
CULTIVATOR.

(Application filed May 13, 1899.)

(No Model.)

3 Sheets—Sheet 1.

FIG. 1.



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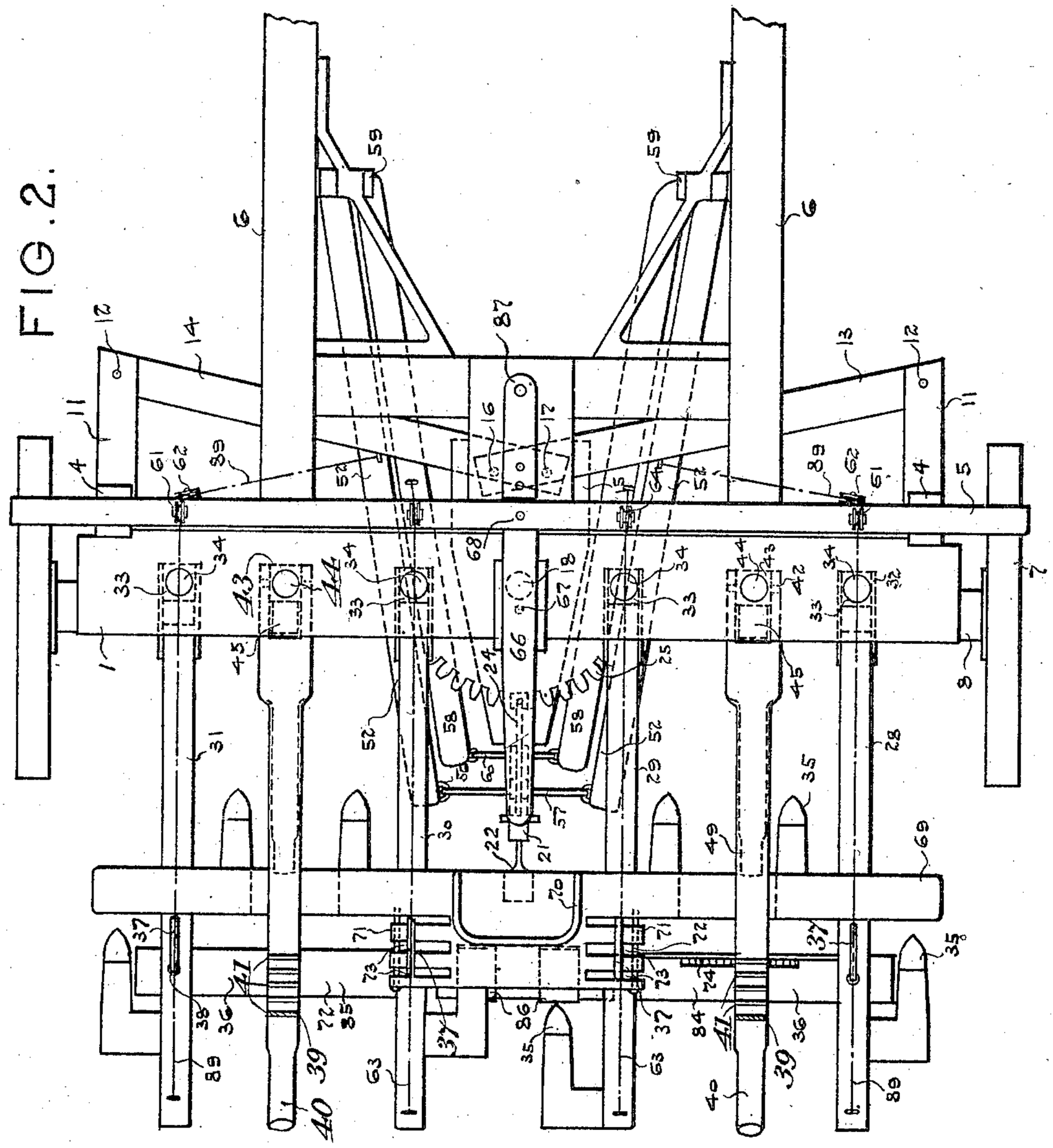
(No Model.) 3 Sheets—Sheet 2.

FIG. 2.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 3.

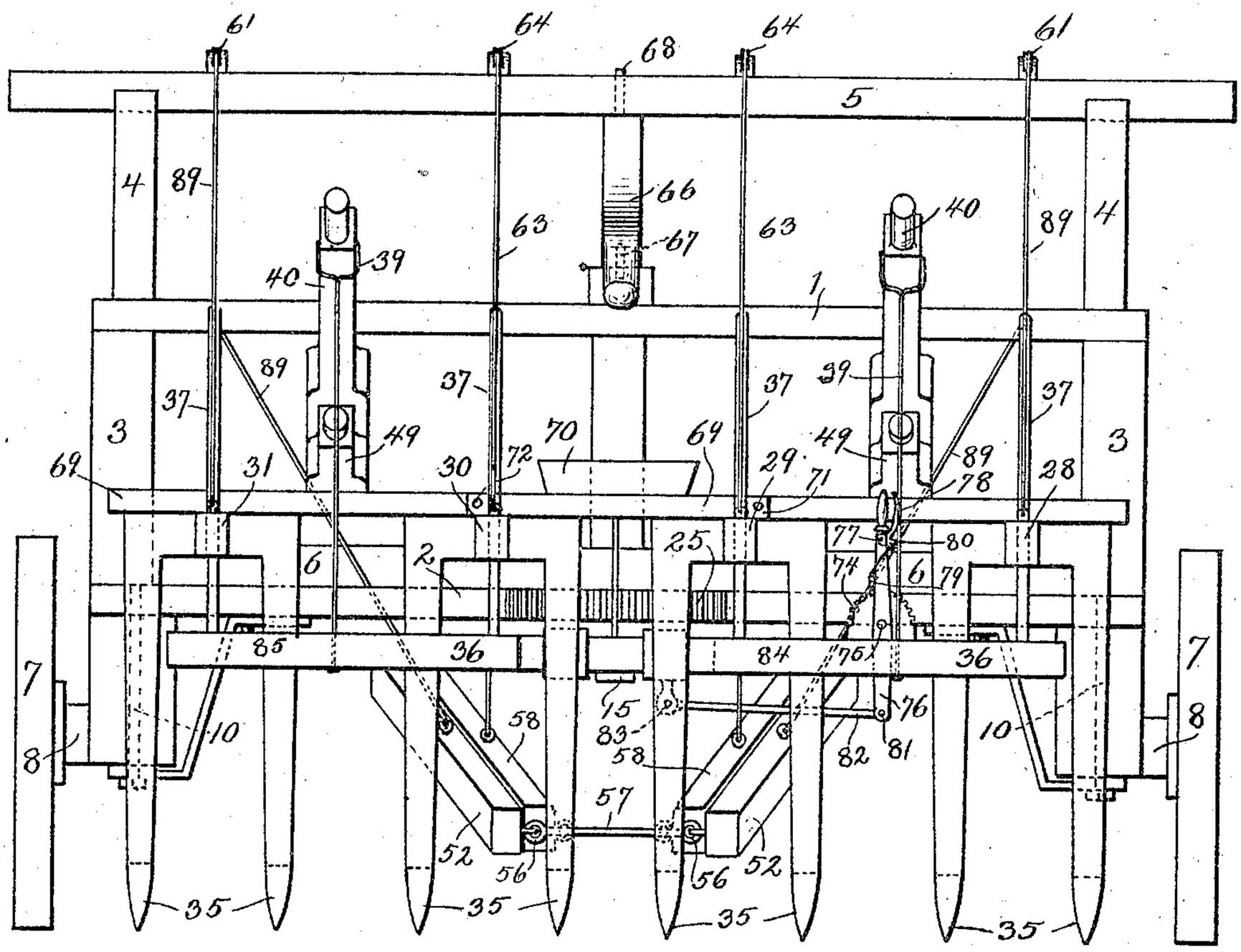
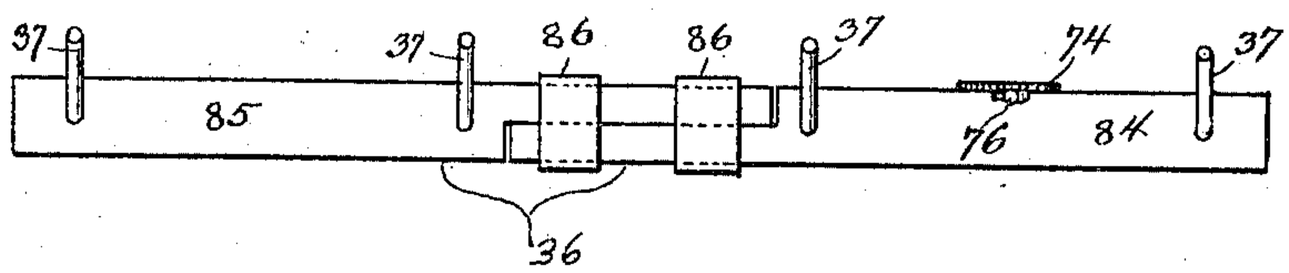


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILHELM ROTH, OF COLUMBUS, NEBRASKA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 682,279, dated September 10, 1901.

Application filed May 13, 1899. Serial No. 716,667. (No model.)

To all whom it may concern:

Be it known that I, WILHELM ROTH, a citizen of the United States of America, and a resident of Columbus, in the county of Platte and State of Nebraska, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

The main objects of my invention are to provide improved means for raising and lowering the cultivator-teeth or some of same, means for swinging the teeth-supporting arms or beams relatively to the main frame, and means for changing the direction of the supporting-wheels relatively to the main frame. I accomplish these objects by the construction shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a cultivator constructed according to my invention. Fig. 2 is a top plan of same. Fig. 3 is a rear elevation of same. Fig. 4 is a top plan of the cross-beam for adjusting the transverse distance between the teeth.

The main frame consists of the upper and lower cross-pieces 1 and 2, with the uprights 3 rigidly connecting same at each end, the arms 4 rigidly secured to each upright and supporting the upper cross-piece 5, and the shafts or tongues 6 rigidly secured to the cross-piece 2.

The supporting-wheels 7 are journaled on the blocks 8 on axles 9, which are rigid on the blocks. The blocks are pivoted on vertical axes 10 to the lower side of the cross-piece 2. To each block is rigidly secured an arm 11. The arms 11 are pivoted at 12 to the arms 13 and 14. The arm 13 is pivoted to the top of the member 15 at 16, and the arm 14 is pivoted to the lower side of the member 15 at 17. The member 15 is pivoted on a vertical axis at 18 to the lower side of the cross-piece 2. The member 15 has a rear extension 19, to which is pivoted on a horizontal axis at 20 a block 21, having rigid thereon a foot-lever 22. An arm 88, rigid on the block 21, extends upwardly and is pivoted at 23 to the arm 24. The cross-piece 2 has a semicircular rack 25 rigid thereon above the member 15. A spring-arm 26 is rigidly secured to the member 15, normally engages the teeth on the rack, and is pivoted at 27 to the arm 24. This arrangement provides for changing the direction of the wheels 7 relatively to the frame by depressing the foot-lever 22, so as to release the spring-arm 26 from the rack and moving said lever toward either side. This turns the member 15 on its pivotal center at 18 and through its connection with the blocks 8 turns the wheels so as to face at an angle to their former position. The cultivator-beams 28, 29, 30, and 31 are pivoted at 32 on horizontal axes to uprights 33, which are pivoted on vertical axes at 34 to and between the cross-pieces 1 and 2. The cultivator-beams each support a pair of cultivator-teeth 35, which are rigid on their respective beams. The cross-beam 36 is supported under the cultivator-beams and has the rods 37 rigid thereon and passing through the perforations 38 in the beams. The cross-beam 36 is supported by cables 39, secured thereto, each passing over one of the arms 40 and resting in a groove 41. The arms 40 are pivoted on horizontal axes at 42 in the uprights 43, which are pivoted between and to the cross-pieces 1 and 2 on vertical axes at 44. Each upright 43 is provided with a vertically-disposed semicircular rack 45, which is normally engaged by the arm 46, which is slidingly supported in guides 47 on its arm 46. A spring 48 urges said arm 46 into engagement with the rack. An arm 49 is pivoted at 50 to each upright 43 below the arm 40 and is provided with an arm 51, normally engaging the rack 45 in similar manner to the arm 46. This serves as an additional support and lock for the arm 46. A pair of outer levers 52 are each pivoted on a vertical axis at 53 to a link 54, which is pivoted on a horizontal axis at 55 to one of the shafts or tongues 6. The levers 52 are each linked at 56 to a cross-piece 57. A pair of inner levers 58 are similarly linked to the shafts 6 at 59 and similarly linked together by the cross-piece 60. The levers 52 are secured to the beams 28 and 31 by the cables 89 passing over sheaves 61 on the cross-piece 5 and sheaves 62 on the cross-piece 1. The levers 58 are similarly secured to the beams 29 and 30 by cables 63 passing over the sheaves 64 on the cross-piece 5. The cross-

piece 5 is slidingly movable toward either end in the grooves 65 of the uprights 4. A lever 66 is pivoted at 67 on the cross-piece 1 and at 68 to the cross-piece 5. The cross-piece 69 rests on the cultivator-beams and has the seat 70 rigid thereon. Said cross-piece is provided at the rear of the seat with fingers 71 and bolts 72, passing through said teeth, thus providing different slots or spaces 73 for the rods 37, whereby the seat may be adjusted slightly forward or back by raising its cross-piece 69 from the rods and lowering same with the rods in different slots. The object of this arrangement, it will be seen, is to change the point of pressure of the cross-piece 69 upon the cultivator-beams in accordance with the weight of the operator. The free ends of the beams 28 and 31 are adjusted nearer together or farther apart by shortening or lengthening the cross-piece 36. This is formed of two parts 84 and 85, slidingly connected by the loops 86. The member 84 has a semicircular rack 74 rigid thereon and has pivoted thereto at 75 a lever 76. On the lever 76 is pivoted at 77 a lever 78. A gravity-catch 79 is pivoted to the lever 78 at 80 and normally engages the teeth on the rack 74. The lower end of the lever 76 is pivoted at 81 to the rod 82, which is pivoted at 83 to the member 85 of the cross-piece 36.

The operation of the device is as follows: The seat is first adjusted forward or back, as desired. The cross-piece 36 is then through the lever 76 adjusted to the proper length, and the arms 40 are adjusted so as to support said cross-piece at the proper height, limiting the depth to which the cultivator-beams can be lowered. The horses, as will be understood, are hitched to the shafts and the whiffletree-support 87 in the usual manner. The operator rests mainly on the seat, except when it is desired to raise the cultivator-teeth. To raise any of the cultivator-teeth, the operator steps on the foot-levers and partly releases his weight from the seat. To raise both beams 29 and 30, he steps on the cross-piece 60, thus operating both levers 58. To raise either beam 29 or 30 without the other, he steps on the lever 58 on the side of such beam and shifts the weight remaining on the seat toward the opposite side. The levers 52 are similarly operated for raising the beams 28 and 31, or either of them. To raise all of the teeth, the operator stands upon both cross-pieces 57 and 60, releasing his weight entirely from the seat 70. If it is desired to then fix the teeth in the raised position, the arms 40 and 49 are adjusted upwardly upon the rack 45. To swing the beams and teeth toward either side, the operator steps on the levers so as to raise same, pushing on the beam 29 or 30 and at the same time shifting the cross-piece 5 by means of the lever 66. To change the course of the wheels 7 toward either side, the operator steps on the lever 22 and pushes same over, as before described.

It will be understood that the details of construction of the device shown may be altered in numerous ways without departing from the spirit of my invention. I therefore do not confine myself to such details.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A cultivator comprising a main frame, a plurality of cultivator-beams carrying teeth and independently movable on horizontal axes on said frame and having a lateral movement on said frame, and means for raising any of said beams on said axes independently of the others.

2. A cultivator comprising a main frame, four or more cultivator-beams carrying teeth and independently movable on horizontal axes on said frame and having a lateral movement on said frame, and means for simultaneously raising the outer beams on said axes independently of the inner beams.

3. A cultivator comprising a main frame, four or more cultivator-beams carrying teeth and independently movable on horizontal axes on said frame and having a lateral movement on said frame, and means for simultaneously raising the outer beams on said axes independently of the inner beams, or raising either of said outer beams independently of the other.

4. A cultivator comprising a main frame, a plurality of cultivator-beams carrying teeth and independently movable on horizontal axes on said frame and having a lateral movement on said frame, means for raising any of said beams on said axes independently of the others, a cross-piece located under said beams whereby their downward movement is limited, vertically-disposed rods or arms slidingly engaging said beams and cross-piece.

5. A cultivator comprising a main frame, a plurality of cultivator-beams carrying teeth and independently movable on horizontal axes on said frame and having a lateral movement on said frame, means for raising any of said beams on said axes independently of the others, a cross-piece located under said beams whereby their downward movement is limited, vertically-disposed rods or arms slidingly engaging said beams and cross-piece, a seat-support loosely mounted on all of said beams and having slots for slidingly engaging two of said rods.

6. A cultivator comprising a main frame, a plurality of cultivator-beams carrying teeth and independently movable on horizontal axes on said frame and having a lateral movement on said frame, means for raising any of said beams on said axes independently of the others, a cross-piece located under said beams whereby their downward movement is limited, vertically-disposed rods or arms

slidingly engaging said beams and cross-piece, a seat-support loosely mounted on all of said beams and having slots for slidingly engaging two of said rods, and means for adjusting said cross-piece to increase or diminish the distance between the beams independent of their vertical movement.

Signed by me at Columbus, Nebraska, this 4th day of May, 1899.

WILHELM ROTH.

Witnesses:
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GUS. G. BECHER.