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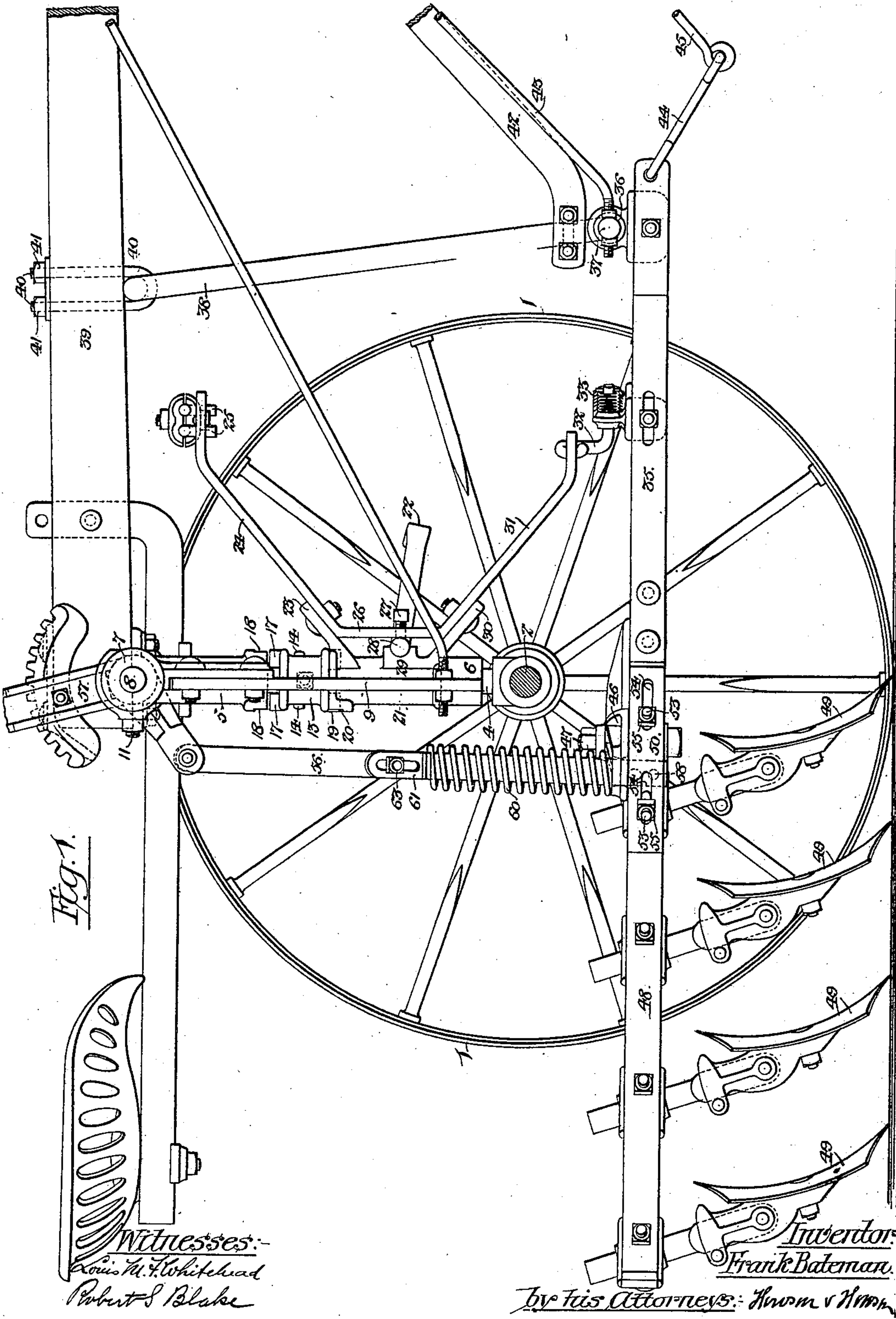
Patented Feb. 5, 1901.

F. BATEMAN.  
WHEEL CULTIVATOR.

(Application filed Nov. 18, 1899.)

(No Model.)

4 Sheets—Sheet 1.



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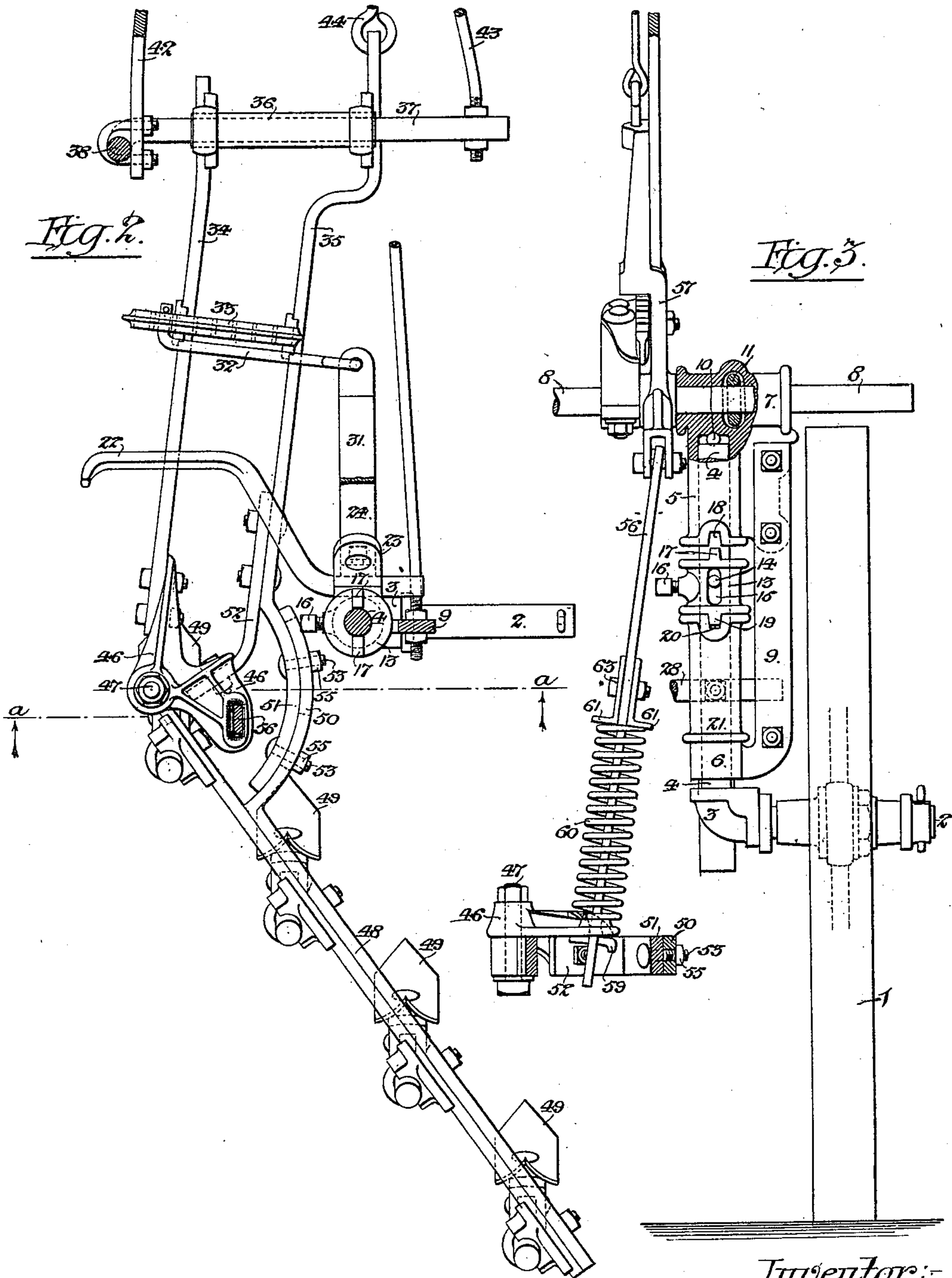
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4 Sheets—Sheet 2.



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Robert S. Blake

Inventor:-  
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by his Attorneys:-  
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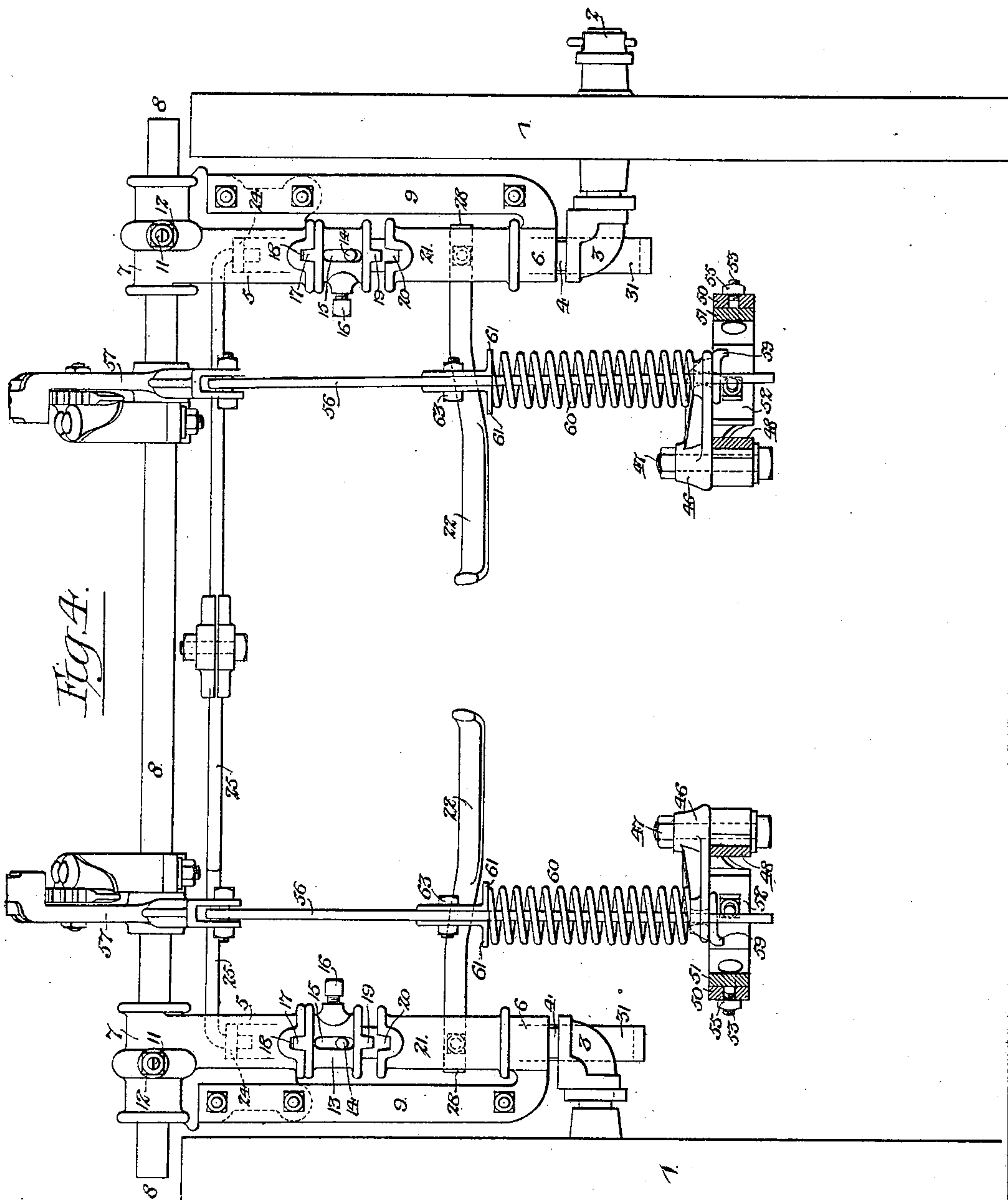
**Patented Feb. 5, 1901.**

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**WHEEL CULTIVATOR.**

(Application filed Nov. 18, 1899.)

(No Model.)

**4 Sheets—Sheet 3.**



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No. 667,611.

Patented Feb. 5, 1901.

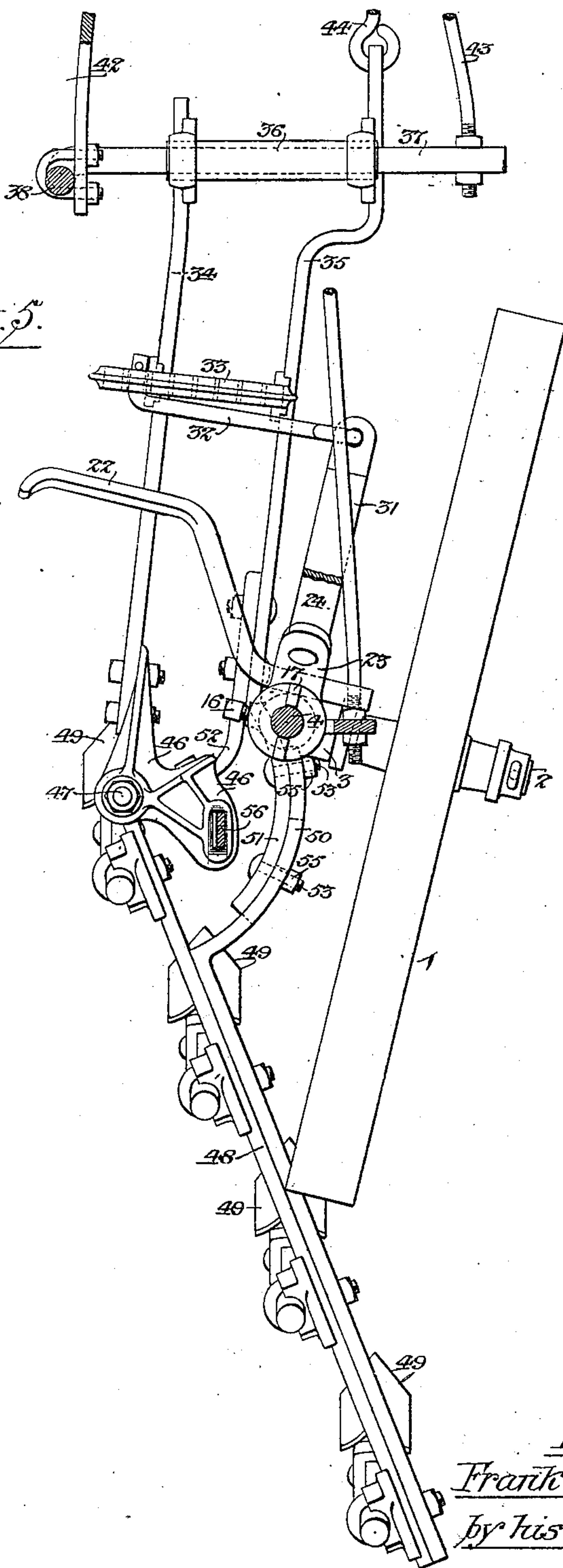
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(No Model.)

4 Sheets—Sheet 4.

Fig. 5.



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# UNITED STATES PATENT OFFICE.

FRANK BATEMAN, OF GRENLOCH, NEW JERSEY, ASSIGNOR TO THE BATEMAN MANUFACTURING COMPANY, OF SAME PLACE.

## WHEEL-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 667,611, dated February 5, 1901.

Application filed November 18, 1899. Serial No. 737,468. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK BATEMAN, a citizen of the United States, and a resident of Grenloch, New Jersey, have invented certain  
5 Improvements in Wheel-Cultivators, of which the following is a specification.

One object of my invention is to so construct a wheel-cultivator that the same may be readily used either as a pivot-wheel or fixed-wheel  
10 machine, a further object being to provide for the bodily lateral movement of the gangs of cultivating-blades in place of the swinging movement ordinarily imparted to them in order to cause them to clear misplaced plants  
15 or hills, and a still further object being to provide for a swinging adjustment of the gangs of blades independently of this bodily lateral movement.

The invention also comprises certain minor  
20 details of construction intended to simplify the machine and render it efficient in action.

In the accompanying drawings, Figure 1 is a side elevation of the machine from which one of the supporting-wheels has been removed, certain of the forward portions of the  
25 structure being also broken away. Fig. 2 is a sectional plan view of part of Fig. 1, also with the wheel removed. Fig. 3 is a rear view of part of the mechanism, partly in section,  
30 on the line *a a*, Fig. 2. Fig. 4 is a similar rear view showing both sides of the machine, but omitting the seat-supporting devices and a number of parts in the distance in order to avoid confusion; and Fig. 5 is a view similar  
35 to Fig. 2, but showing the wheel applied to the axle and the parts occupying a different relation to each other from that represented in said Fig. 2.

Each of the supporting-wheels 1 of the machine is mounted so as to be free to turn upon  
40 a short axle 2, which projects laterally from an elbow-casting 3, the latter having an upwardly-projecting stem or spindle 4, which is adapted to upper and lower bearings 5 and 6,  
45 the upper bearing depending from the sleeve 7, which is secured to a transverse bar 8 of the frame, the vertical spindles 4 and transverse bar 8 thus constituting an arch structure supported by the wheels and adapted to  
50 carry a number of operative parts of the machine. The axle 2, elbow 3, and spindle 4

may form an integral structure, or the parts may be independent of each other and secured together in any appropriate way.

The lower bearing 6 for each of the spin- 55 dles 4 is carried by an arm 9, secured to and depending from a bracket on the corresponding upper bearing and sleeve, as shown in Fig. 4.

Each of the sleeves 7 and the parts carried 60 thereby is laterally adjustable on the transverse bar 8, being secured in position after adjustment by means of an eyebolt 11 and nut 12, so that the width or gage of the machine may be readily changed, as desired, by  
65 moving the wheels from and toward each other.

The upper end of each of the vertical spindles 4 has its bearing against a ball 10, located at the top of the depending bearing 5, 70 so that said spindle is free to turn in its bearings when a pivot-wheel cultivator is desired. Means are provided, however, for locking each of the vertical spindles 4 to the fixed frame when a fixed-wheel cultivator is desired, the  
75 means employed in the present instance for accomplishing this result being a clutch-sleeve 13, mounted on the spindle 4, so as to be capable of sliding vertically thereon, but prevented from turning independently of the  
80 spindle by means of a pin 14, projecting from said spindle and adapted to a slot 15 in the sleeve, a set-screw 16 serving to secure the sleeve to the spindle in any position of vertical adjustment thereon.

When it is desired to lock the spindle to the fixed frame, the clutch-sleeve is raised, so as to cause lugs 17 thereon to enter notches 18, formed in the lower portion of the bearing 5, and as the latter constitutes a portion of the  
90 fixed frame of the machine the spindle 4 is thus prevented from turning, and the axle which carries the wheel is caused to retain a fixed relation to the frame. When, however, a pivot-wheel cultivator is desired, each of  
95 the clutch-sleeves 13 is lowered on its spindle 4, so as to withdraw the lugs 17 from engagement with the notches 18 and bring other lugs 19 on the sleeve into engagement with notches 20, formed in the upper portion of a swing-  
100 sleeve 21, which is free to turn on or with the spindle 4, and carries a laterally-projecting



bar 22, constituting a rest for one of the feet of the driver of the machine. Each swing-sleeve 21 has a projecting angular bracket 23, to which is secured the upper projecting portion 24 of an angle-brace which is connected by means of coupled rods 25 to a similar angle-brace at the opposite side of the machine. Hence both swing-sleeves 21 are connected so as to be caused to move in unison with corresponding movement of the wheels 1, and in consequence of this connection forward pressure upon the right-hand foot-rest 22 will cause both wheels to be swung to the right, while forward pressure upon the left-hand foot-rest 22 will cause both wheels to be swung to the left, the vertical spindles 4 serving as the axes of swing in either case. The angle-braces have central portions 26, which carry set-screws 27, whereby the stems 28 of the foot-rests are secured to socket 29 on the swing-sleeve 21, and each socket 29 has a projecting angle-bracket 30, to which is secured the lower projecting portion 31 of the angle-brace. The socket 29 and angle-brackets 23 and 30 may be formed integral with the sleeve 21 or may be separate therefrom and appropriately secured thereto.

The forward end portion 31 of each angle-brace carries a bent rod 32, the inner end of which can be adapted to any one of a series of openings in a transverse bar 33, mounted upon a pair of beams 34 and 35, which constitute the forward member of the gang structure of the cultivator, the forward ends of these beams carrying a sleeve 36, which is free to slide laterally upon the horizontally-projecting lower end 37 of an arch or yoke 38, the upper portion of the latter being secured to the main longitudinal beams 39 of the fixed frame by means of U-bolts 40 and nuts 41. Each of the depending lower ends of the yoke is braced by means of a bar 42, extending forwardly to the fixed frame and the outer end of each horizontally-extending portion 37 of the yoke is braced by a forwardly-extending rod 43, so that said horizontal portions 37 of the yoke are practically a rigid part of the frame. The beam 35 projects forwardly and carries a link 44, which is connected to one of the elements 45 of the draft mechanism. The rear ends of the beams 34 and 35 carry a block 46, which has a hinge pin or bolt 47, and to the latter is hung the forward end of the bar 48, which carries the cultivator-blades 49, said blades being hung to said bar 48 by any ordinary form of fastening, so that they may be caused to assume different angles in respect to the lines of draft and different degrees of pitch. The bar 48 is of duplex construction, the forward end of one bar being hung to the pivot-bolt 47 and the forward end of the other bar being bent so as to form a segment 50, which overlaps and moves in contact with a segment 51, formed at the rear end of the beam 35, the latter having a bent bar 52 for attachment to the block 46. The segment 51 carries bolts 53, which are adapt-

ed to slots 54 in the segment 50 and are provided with nuts 55, so that the rear member of the gang structure can be adjusted to different angles in respect to the forward member and can be secured in position after such adjustment. The block 46 also has an opening for the passage of a gang-lifting bar 56, which depends from the usual crank-lever 57, and has at its lower end a series of openings 58, to any one of which may be adapted a pin 59, whereby the gang structure can be supported at any desired height from the lever 57, a coiled spring 60 being interposed between the block 47 and flanged bearing-plates 61 on the bar 56, so to tend normally to depress the gang structure, but permit it to rise when it meets with any obstruction, the block 46 in this case sliding on the bar 56 and the spring 60 being compressed accordingly.

The flanged bearing-plates 61 each have a series of openings 62 for the reception of the bolt 63, whereby they are secured to the bar 56, whereby these bearing-plates can be adjusted to correspond with any readjustment of the supporting-pin 59, thus permitting of a change in height of the gang structure without any change in the normal tension of the spring 60, or they may be adjusted independently of the pin 59 in order to vary the tension of the spring, as desired.

The gang-lifting levers 57 are hung directly upon the transverse bar or rod 8 of the arch structure of the machine, thus simplifying the construction of this portion of the machine and rendering unnecessary any special pivotal supports for the levers.

It will be observed that owing to the connection between the angle-braces 31 and the forward members of the gang structure both gangs of blades will be shifted to right or left simultaneously, and such movement will be coincident with the swinging of the wheels to right or left, so as to clear misplaced plants or hills, and the same movement of the gangs of blades will take place when the wheels are fixed or incapable of swinging, the sleeves 21 being free to swing in either case.

Joint swinging of the wheels and gangs of blades has before been adopted in numerous machines; but the gangs have usually been pivoted at their forward ends and swung from such pivotal points, whereas in the construction which I have adopted there is a bodily lateral movement of each gang structure, so that each of the blades from the front to the rear end of the series is moved laterally to the same extent and without any change in its angle in respect to the line of draft, thus insuring uniform action of the cultivator-blades irrespective of the lateral shifting movement imparted to them.

Instead of employing a slide at the forward end of the gang-beams 34 and 35 the same may, it will be evident, be hung by means of links, so as to be permitted to move laterally under the action of the swinging angle-braces 31.



By pivoting the rear member of the gang structure, which carries the blades, to the forward member change in the angle of the rear member can be effected without deranging or requiring change in adjustment of the parts coöperating with the beams 34 and 35, thus simplifying the operation.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination in a wheel-cultivator, of wheels having axles with pivot-spindles, wheel-swinging sleeves on said spindles and means whereby the spindles may be locked either to the fixed frame or to said wheel-swinging sleeves.

2. The combination in a wheel-cultivator, of wheels having axles with vertical spindles, bearings on the fixed frame for said spindles, wheel-swinging sleeves mounted on the spindles, and a sliding clutch-sleeve movable on each spindle between its bearing and the swing-sleeve and adapted to engage with one of said parts when in one extreme position and with the other part when in the other extreme position.

3. A wheel-cultivator having pivot-wheels, a gang structure mounted so as to be moved bodily in a lateral direction without change of angle in respect to the line of draft, and connections between said gang structure and the wheel-swinging mechanism.

4. The combination in a wheel-cultivator, of a wheel-axle having a pivot-spindle, means for rocking the same so as to swing the wheel, a gang structure carrying the cultivator-blades, an arm projecting from said pivot-spindle of the wheel-axle, and a rod serving to connect said arm to the gang structure, said rod having a number of points of connection with the gang structure, whereby the latter may be adjusted to different positions in respect to the wheel, and maintained in such adjusted positions, substantially as specified.

5. The combination in a wheel-cultivator, of a wheel having an axle with pivot-spindle, means for rocking said spindle so as to swing

the wheel, a gang structure having a forward member composed of separated beams, a perforated bar carried by said beams, and a connection between said bar and the wheel-swinging mechanism.

6. A wheel-cultivator having a gang structure consisting of a forward member mounted so as to be movable laterally in respect to the frame of the machine, and a rear member pivoted to said forward member and capable of swinging laterally in respect thereto.

7. A wheel-cultivator having a gang structure consisting of a forward member mounted so as to be movable laterally in respect to the frame of the machine, and a rear member pivoted to said forward member so as to swing laterally in respect thereto, overlapping segments on said forward and rear members, and means for securing said segments together in different positions of adjustment.

8. The combination in a wheel-cultivator, of a gang structure comprising independent forward and rear members, a gang-supporting bar, and a block secured to the forward member of the gang structure and carrying a pivot-bolt for the rear member, said block having an opening for the reception and passage of the gang-supporting bar.

9. The combination in a wheel-cultivator, of a gang structure, a gang-supporting bar, a block on the gang structure having an opening for the passage of said bar, a supporting-pin for the gang, a pressure-spring and one or more bearing-plates for the upper end of the latter, said gang-supporting bar having two series of openings, one providing for vertical adjustment of the supporting-pin and the other for vertical adjustment of the bearing plate or plates.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK BATEMAN.

Witnesses:

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JOS. H. KLEIN.