No. 814,258. PATENTED MAR. 6, 1906.

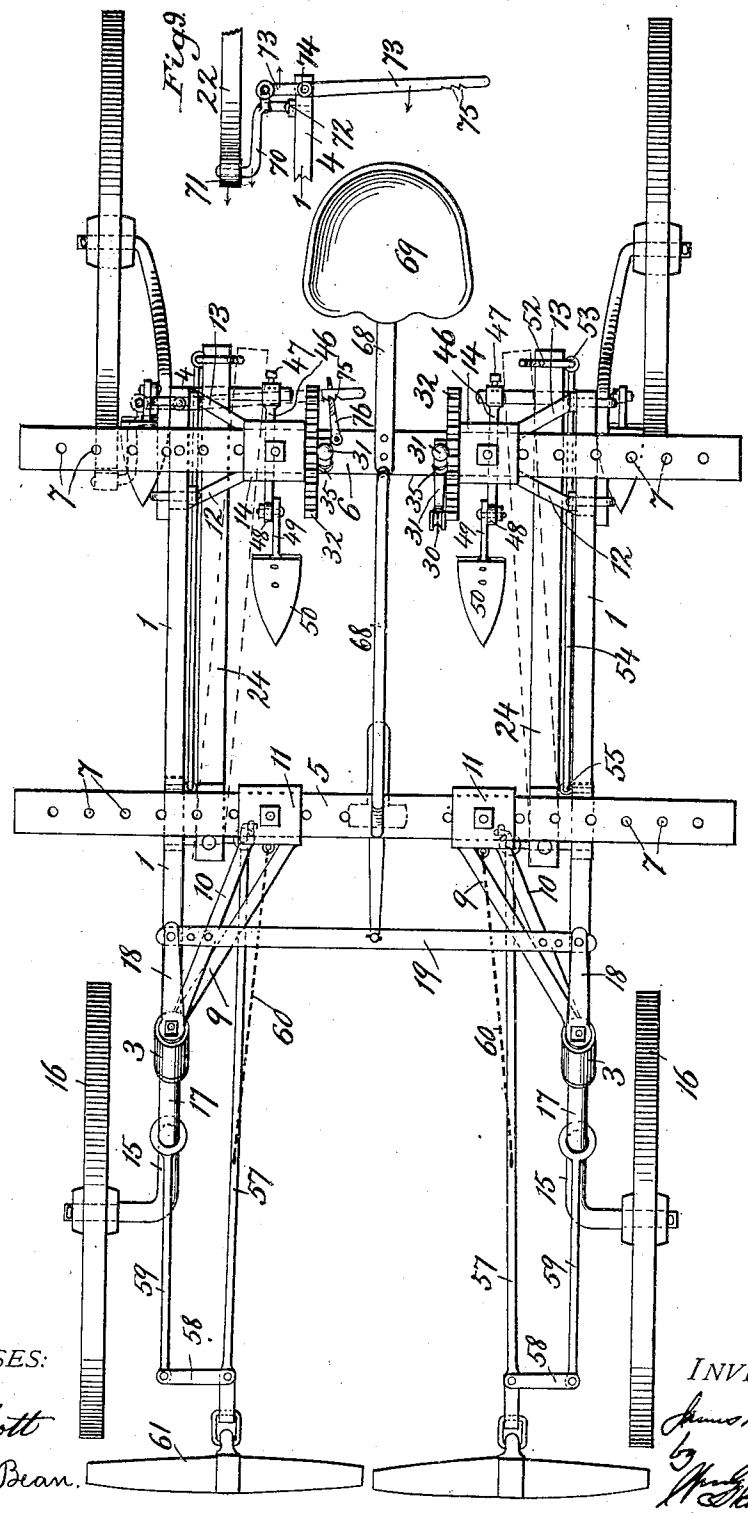
J. K. YOUNG.

WHEEL CULTIVATOR.

APPLICATION FILED MAY 24, 1905.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

F. H. Schott

George T. Bean.

INVENTOR

James K. Young

by Wm. Henderson

Attorney

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4 SHEETS—SHEET 2.

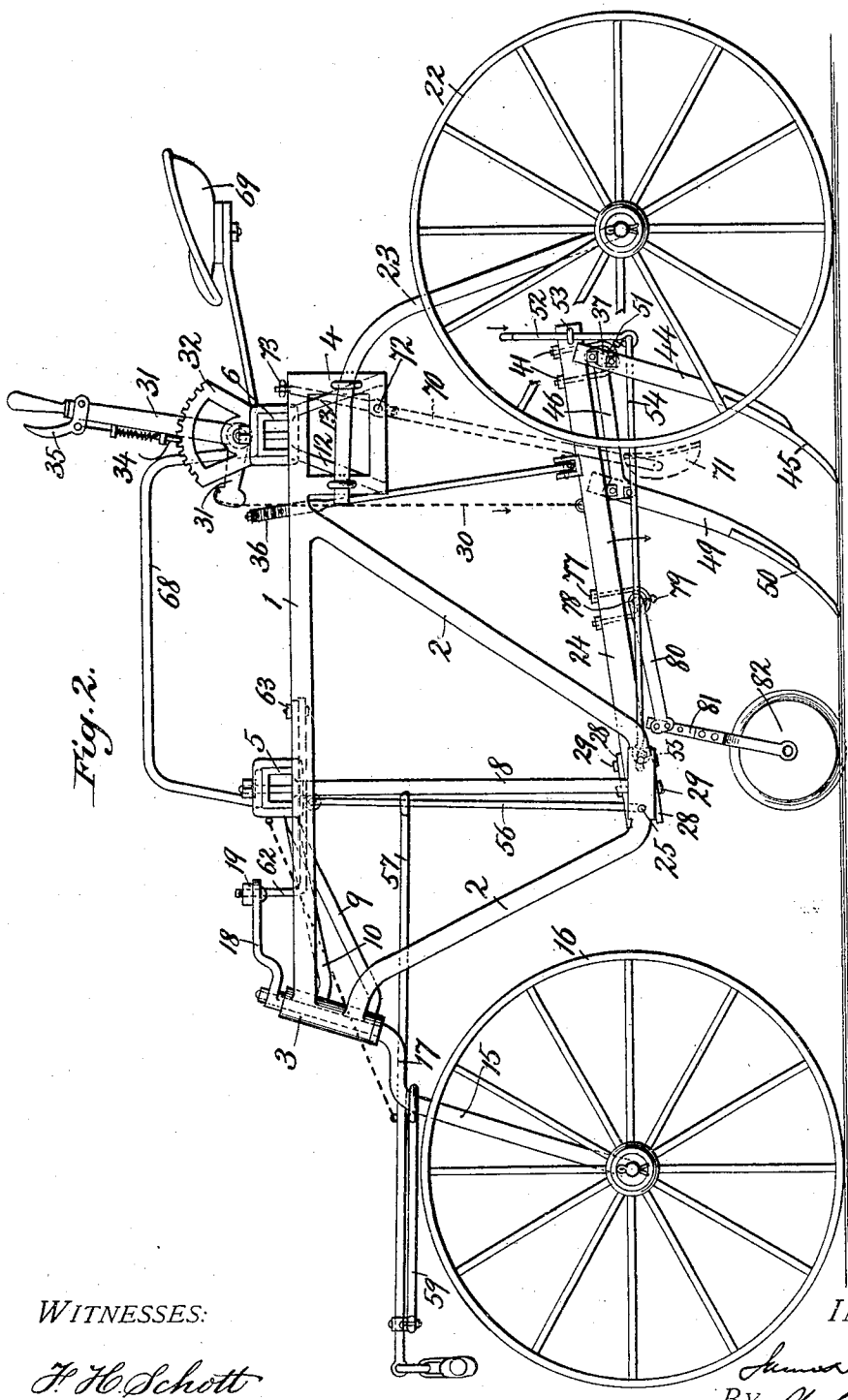

Fig. 2.

WITNESSES:

F. H. Schott

George T. Bean.

INVENTOR

James K. Young.

BY

Attorney

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4 SHEETS—SHEET 3.

Fig. 3.

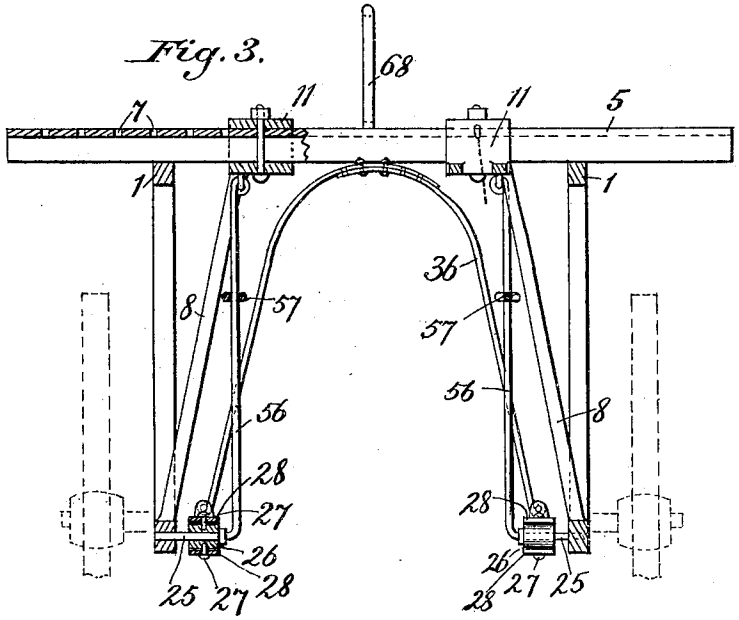
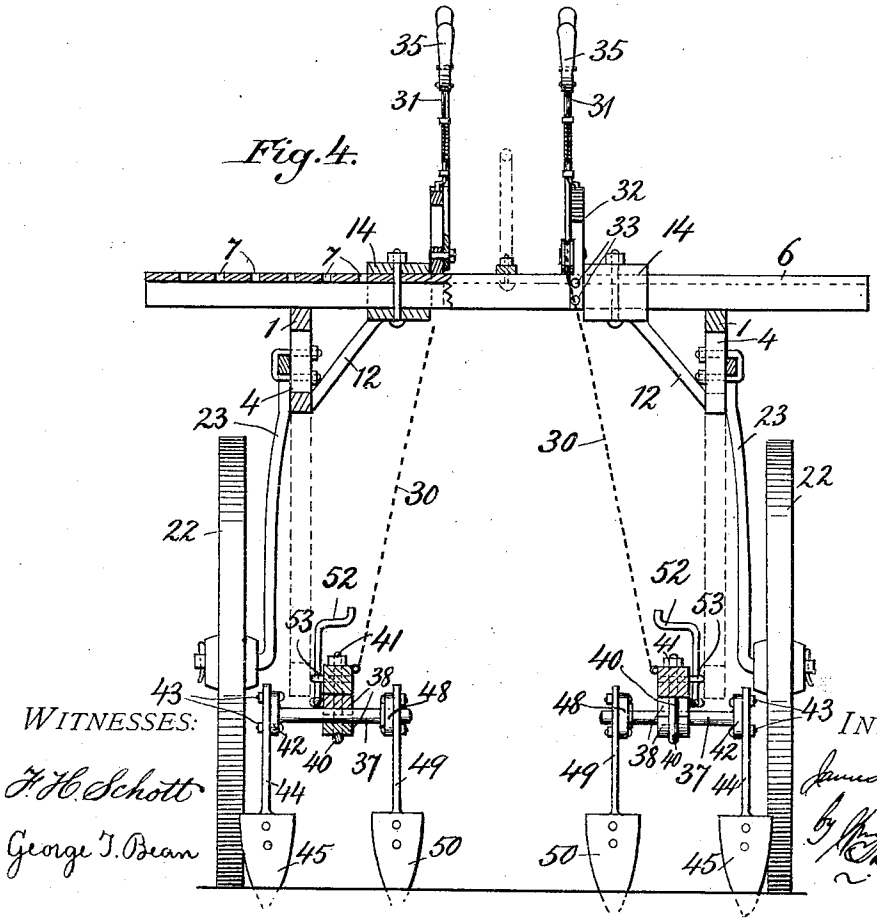



Fig. 4.




WITNESSES:

F. H. Schott

George T. Beam

INVENTOR

James K. Young

by Richardson

Attorney

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J. K. YOUNG.

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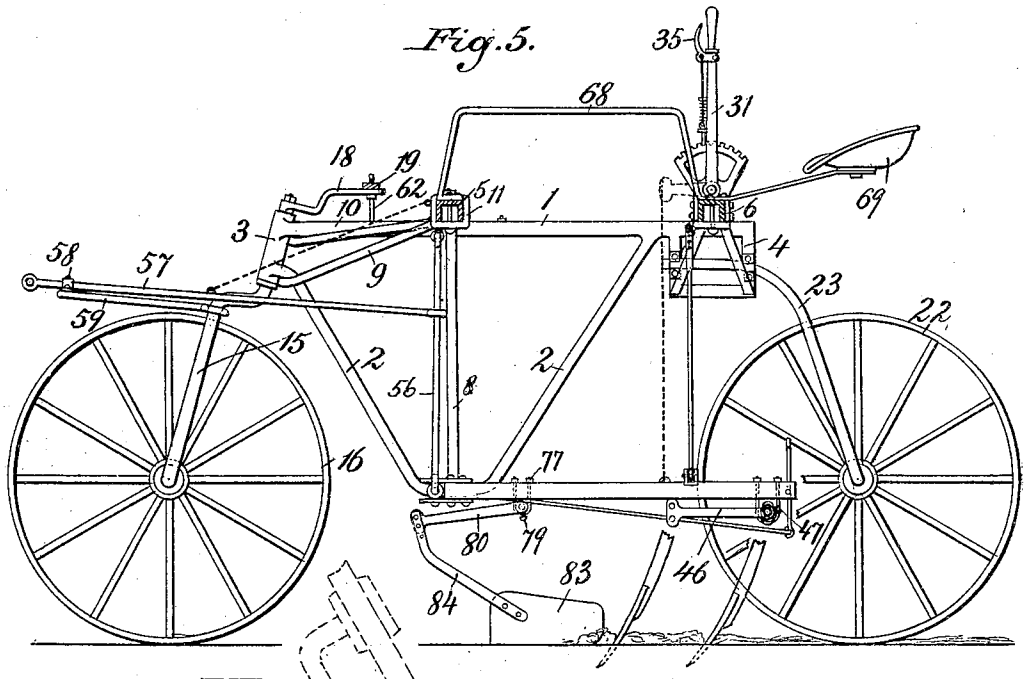
4 SHEETS—SHEET 4.

Fig. 5.



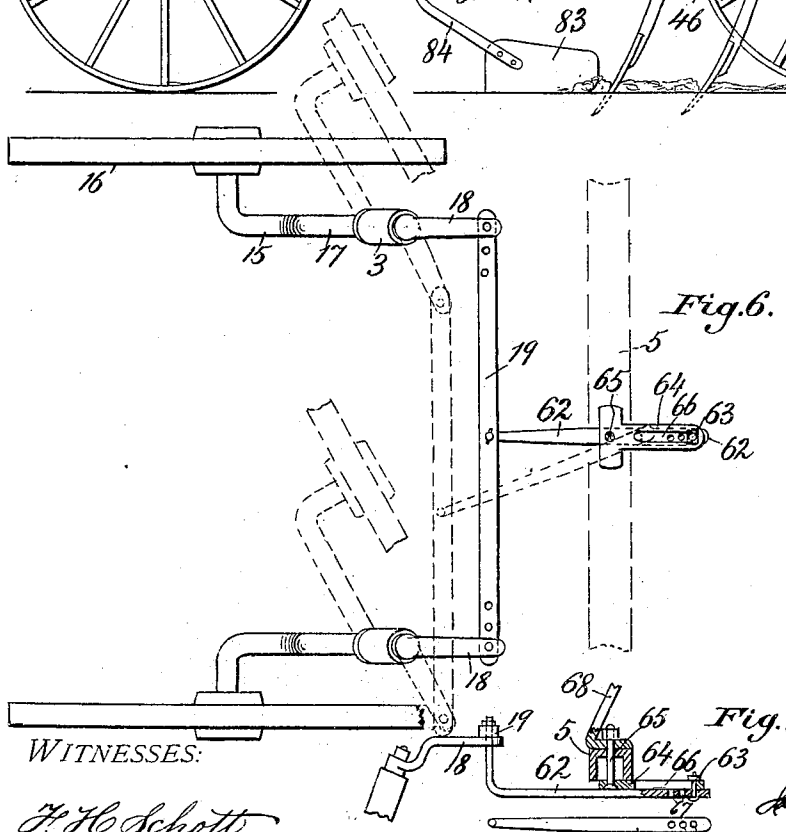




Fig. 6.

Fig. 7.

Fig. 8.

WITNESSES:

F. H. Schott

George J. Bean.

INVENTOR

Jamest K. Young.

BY

Attorney

# UNITED STATES PATENT OFFICE.

JAMES KING YOUNG, OF CAMDEN COUNTY, GEORGIA.

## WHEEL-CULTIVATOR.

No. 814,258. Specification of Letters Patent. Patented March 6, 1906.

Application filed May 24, 1905. Serial No. 262,063.

*To all whom it may concern:*

Be it known that I, JAMES KING YOUNG, a citizen of the United States, residing in the county of Camden and State of Georgia, have invented certain new and useful Improvements in Wheel-Cultivators; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to wheeled cultivators; and it has for its object to provide such a cultivator which can be adjusted in width to accommodate it to the distance apart of the rows to be cultivated; also, to provide an improved construction and arrangement of parts of the beams carrying the plows or cultivator-teeth, so that the beams may be raised and lowered and also moved laterally; also, to provide an improved construction whereby the plow-points or cultivator-teeth may stand at one or both sides of the beams and be adjusted laterally to and from the beams; also, to provide an improved construction for turning the front wheels of the cultivator when the end of a row is reached; and it has, further, for its object to provide improved features of construction in the several parts forming the cultivator and also in arrangement of the parts in relation one to the other.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, the invention consists in features of construction and arrangement of parts hereinafter particularly described and then sought to be clearly defined by the claims, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a plan view of the cultivator; Fig. 2, a side elevation; Fig. 3, a vertical cross-section along front cross-bar; Fig. 4, a cross-section along rear cross-bar; Fig. 5, a vertical longitudinal section; Fig. 6, a plan view of a portion of the forward part of the cultivator; Fig. 7, a detail, partly in section, of the front wheels controlling mechanism; Fig. 8, a plan of the rod shown in Fig. 7, and Fig. 9 a detail plan of the brake.

The side members of the cultivator-frame consist of frames composed of the longitudinal bars 1 and truss-bars 2, each frame having at its front end vertical sleeves 3, and the longitudinal bars having at their rear end the depending brackets 4. The side frames are connected together by the transverse bars 5 and 6, which may be bolted directly to the longitudinal bars 1, and which cross-bars are formed with holes 7, so as to permit the side frames to be spaced the desired distance apart according to the distance apart of the rows to be cultivated, and thus providing a cultivator capable of contraction and expansion in its width under the adjustment mentioned. To brace the connection between the side frames and the cross-bars, brace-rods 8, 9, and 10 are provided, the rod 8 extending from the lower part of the truss-frame 2, the rod 9 from the truss-frame at a point near the lower end of the sleeve 3, and the rod 10 from the bar 1 near the upper end of the sleeve 3, said rods 8, 9, and 10 being connected at their other ends to a collar 11, encircling the cross-bar 5 and held thereto by a bolt passed through the collar and one of the holes in the cross-bar. The rear portions of the side frames are braced by the brace-rods 12 and 13, which are connected at one end to the brackets 4 and at the opposite end to a collar 14, which encircles the cross-bar 6 and held thereto by a bolt passing through the collar and into one of the holes in said cross-bar. If desired, the several parts of the side frames, including the sleeves, the brace-rods, the collars, and the bracket, may be made integrally or in one piece.

The standards 15 for the front wheels 16 are formed with an offset 17, so that in practice the wheels will stand a little outside of the side frames of the cultivator, and thus allow a somewhat more lateral play or swing for the draft-bars in making a turn before they will come in contact with the wheel-standards. This offset may be about three inches, more or less, and when the wheel is mounted on the outturned spindle at the lower end of the standard the wheel will stand about five inches, more or less, from the outside of the side frame. The upper ends of the standards pass through the sleeves 3, so as to be capable of turning therein, and their upper ends are provided with cranks 18, secured thereto to turn therewith. The cranks of the two standards are connected together by a bar 19, which is formed with holes to receive the connecting-bolts at the desired points, according to the spacing apart of the side frames. By thus connecting together the cranks of the two wheel-standards the

wheels will be made to turn together and to an extent depending upon the length of movement of the connecting-bar 19, which will be restricted in its movement. Suitable means for this purpose may be a rod 62, having one end passed through the bar 19 and the other end connected by a bolt 63 to the arm of a T-plate 64, which will be bolted to the cross-bar 5 by a bolt 65. The plate 64 has a slot 66 in which the bolt 63 has play, and when the front wheels have turned to a predetermined angle in turning the cultivator—for instance, as shown by dotted lines in Fig. 6—the bolt will have been drawn to the front end of said slot, and thus the further turning of the wheels will be prevented. By adjusting the bolt 63 from one to another of a number of holes 67, formed in the rod 62, the degree of movement of the bar 19 and of the front wheels may be regulated. The bolt 65 also secures to the cross-bar 5 the front end of an arched rod 68, which is also secured to the rear cross-bar 6 and then extended, so as to support the seat 69.

The rear wheels 22 of the cultivator are supported by standards 23, whose upper ends will be suitably clamped to the brackets 4 of the longitudinal side bars 1, and these standards will be given such an inclination that when the wheels are mounted upon the outturned spindles at the lower ends of the standards the wheels will stand about five inches, more or less, beyond the outside of the side frames of the cultivator.

The cultivator-beams are designated by the numeral 24. These are pivotally connected at their forward ends to pins or pintles 25, which extend inwardly from the lower portion of the truss-bars 2. On these pins or pintles are mounted the boxings 26, to which the forward ends of the beams 24 are connected by pivot-pins 27 projecting from plates 28, secured to the upper and lower faces of the beams by bolts 29. Under this construction the cultivator-beams may be raised and lowered by the boxings 26 turning on the pivot pins or pintles 25, and the beams may be moved or oscillated laterally by reason of the pins 27 pivotally connecting them to the boxings. The rear ends of these beams are supported by chains 30, which at their upper ends are connected to the short arms of levers 31, which are pivoted to rack-segments 32, which are held at the desired distances apart on the rear cross-bar 6 by means of set-screws 33 or otherwise, said levers being provided with the locking dogs or pawls 34, controlled by the spring-fingers 35 in a well-known manner. By means of these chains and levers the rear ends of the cultivator-beams may be raised to the extent desired to control the depth of cut of the plow-points or cultivator-teeth. The two beams 24 are connected together by a yoke 36, the ends of which have a hinged connection of any approved form to the beams. This yoke will space the beams apart, and yet by the hinged connection between the yoke and the beams and between the upper end of the yoke lateral adjustment is provided for.

Each beam supports a cross rod or arm 37, which preferably is round and which is held to the beam by a two-part boxing 38, said boxing being held to the beam by a clip 40 and nuts 41. This rod carries at one end a head or casting 42, to which is clamped, by bolts 43 or otherwise, the shank 44 of the cultivator-tooth or plow-point 45. From the other end of the rod or arm 37 extends an arm 46, which is held to the arm 37 at a greater or less distance from the beam 24 by means of a set-screw 47 or otherwise. This arm 46 is formed at its forward end with a head or casting 48, to which is clipped or otherwise attached a shank 49, carrying a plow-point or cultivator-tooth 50. Under this construction it will be observed that one plow-point or cultivator-tooth stands in advance of the other, and it will also be observed that the arm 46 may be moved toward or away from the cultivator-beam, so as to regulate or adjust the point or distance therefrom at which its plow-point or cultivator-tooth shall operate. This also provides for plow-points or cultivator-teeth on both sides of the beam. Either one of these plow-points or cultivator-teeth may be removed, so that only one tooth may be employed, and that may be on either the inner or the outer side of the beam, as occasion or conditions may require. It will further be observed that this construction admits of the cross-arm carrying the plow-points or cultivator-teeth being removed from one beam and applied to the other, so that the position of the plow-points or teeth will be changed in relation to the points at which they shall work. It will further be observed that by turning the cross rod or arm 37 and holding it at its adjustment by the set-screw 51 the plow-points or cultivator-teeth may be caused to cut at different angles or inclinations.

Pressure may be applied to the swinging beams by the foot of the driver through a foot-lever 52, connected by a pin 53 or otherwise to the beam and at its lower end connected by a link 54 with an eyebolt 55 or other hinging means extending from the lower part of the truss-frame 2. By this foot-lever and its link connection the driver can not only exert more or less pressure upon the beams for depressing the plow-points or cultivator-teeth, but can also swing the beams laterally, so that the cultivator-teeth may throw the earth to one side to a greater or less extent, as conditions of the plants or the rows may make desirable.

The draft attachment consists of an upright bar 56, supported at its lower end from the pin or pintle 25, of which it may

constitute a continuation, and at its upper end connected with the collar 11, to which the brace-rods are attached. To the upright bar 56 is connected one end of a draft-rod 57, and to the forward end of this draft-rod is connected by a cross rod or link 58 a second draft-rod 59, which at its opposite end is connected to the standard 15 of the front wheel, and a chain 60, which connects the rod 57 with the sleeve or collar 11, prevents the draft-rod from dropping below the desired position when the pull on the draft-rod is slackened. One of these draft attachments is applied at each side of the cultivator and a swingletree 61 is connected thereto for hitching the horse. Under this construction the draft is at points of the cultivator giving the best advantages and affording the greatest ease to the horses in pulling the cultivator. It will be observed from this construction that the pull is from a point at the front-wheel standard and also at a point adjacent to the forward end of the cultivator-beam.

A brake of suitable construction may be employed. For instance, it may consist of a rod 70, carrying the shoe 71 and pivoted at the point 72 to the bracket 4 and having its upper end passed through one eye formed in a lever 73 suitably pivoted, for instance, at the point 74, to one of the side bars of the frame and having its free end formed with notches 75 for the engagement therewith of a pivoted finger 76 to lock the lever when the brake is applied. When the finger and lever are disengaged, the brake is released and the finger may be turned to one side. Any other construction of brake, however, may be employed.

Sometimes it is desirable to employ a colter for cutting the ground in advance of the plows. For that purpose I attach to each beam 24 by a suitable boxing and clip 77 a shaft or rod 78, to which will be secured by a set-screw 79 an arm 80. To the forward end of this arm will be bolted or otherwise detachably secured the upper end of a standard 81, the lower forked end of which will carry a collar 82. The upper end of this standard is formed with a number of holes, so that it may be adjusted vertically, and its angle may be varied by adjusting the inclination of the arm 80 by means of the set-screw 79.

At times when the plants are young it is desirable to protect them against being covered up by the earth which is turned to one side by the plows or shovels. For that purpose I provide a fender which consists of a light metal plate 83, having a standard 84, designed to be suitably bolted to the arm 80, so that the fender will be held in such position as to prevent the plants from being covered with the dirt thrown to one side by the plows or shovels. When the fenders are used, the colters are removed and replaced by the fenders. It is also obvious that when conditions do not require it neither the colter nor the fender need be used.

The parts of the cultivator can be made of metal or wood or of the two materials together, and while I have illustrated and described with particularity the preferred details of construction and arrangement of the several parts, yet it is to be understood that changes can be made and essential features of my invention be retained.

Having described my invention and set forth its merits, what I claim is—

1. In a wheel-cultivator, the cultivator-frame composed of the two side frames each consisting of a longitudinally-extending bar and a truss-bar, cross-bars adjustably connecting the longitudinal bar of one side frame to the corresponding bar of the other side frame, and brace-rods extending from each side frame and adjustably connected to the cross-bars which connect the two side frames, substantially as described.

2. In a wheel-cultivator, the cultivator-frame composed of two side frames each consisting of a longitudinally-extending bar and a truss-bar, the rear of the longitudinal bars having depending brackets and the front provided with vertically-disposed sleeves, standards extending through said sleeves and having wheels connected thereto, and standards extending from the brackets at the rear of the longitudinal bars and having wheels connected thereto, substantially as described.

3. In a wheel-cultivator, the combination of side frames, pintles extending inwardly from the lower portion of the side frames, boxes supported by said pintles so as to turn thereon, and beams pivotally mounted on said boxes so as to swing thereon, substantially as described.

4. In a wheel-cultivator, the combination of side frames, pintles extending inwardly from the lower portion of the side frames, boxes connected to said pintles so as to turn thereon, beams having their forward ends pivotally mounted on said boxes so as to swing laterally, foot-levers connected to the rear of the beams, and links connecting said levers with the lower portion of the side frames, for depressing the beams and swinging them laterally, and means for lifting the beams, substantially as described.

5. In a wheel-cultivator, the combination with a cultivator-beam, of a boxing attached thereto, an arm supported across the beam by said boxing and rotatably and longitudinally adjustable therein, the clip clamping the boxing to the beam and holding the cross-arm to its rotatable and longitudinal adjustment and a plow-point shank carried by the arm, substantially as described.

6. In a wheel-cultivator, the combination with a cultivator-beam, of a transversely-extending arm supported from the beam, a plow-point shank connected to said arm to

one side of the beam, a forwardly-extending arm adjustably connected to the transversely-extending arm on the opposite side of the beam, and a plow-point shank connected to the forwardly-extending arm, substantially as described.

7. In a wheel-cultivator, the combination with side frames connected together by cross-bars, wheels and front and rear standards for the wheels, of beams, upright standards connected with the lower portions of the frames and with the cross-bars connecting the frames, and draft-rods connected one to the upright standard and the other to the front-wheel standard and to each other, substantially as described.

8. In a wheel-cultivator, the combination of a frame, front and rear wheels supporting the frame, standards for the front wheels swiveled to the front portion of the frame, cranks connected to the upper ends of said standards, a bar connecting said cranks together, a rod extending rearwardly from said connecting-bar, and a slotted member fixed to a suitable support and connected with said rearwardly-extending rod by a bolt passing through said slot and said rod, substantially as and for the purposes described.

9. In a wheel-cultivator, the combination of a frame, front and rear wheels supporting the frame, standards for the front wheels swiveled to the front portion of the frame, cranks connected to the upper ends of said standards, a bar connecting said cranks together, and means pivotally connecting said bar with a part of the cultivator to the rear of said bar for limiting the movement of said bar and front wheels, substantially as described.

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

JAMES KING YOUNG.

Witnesses:
JNO. E. DUBBERLY,
H. F. DU BIGNON.