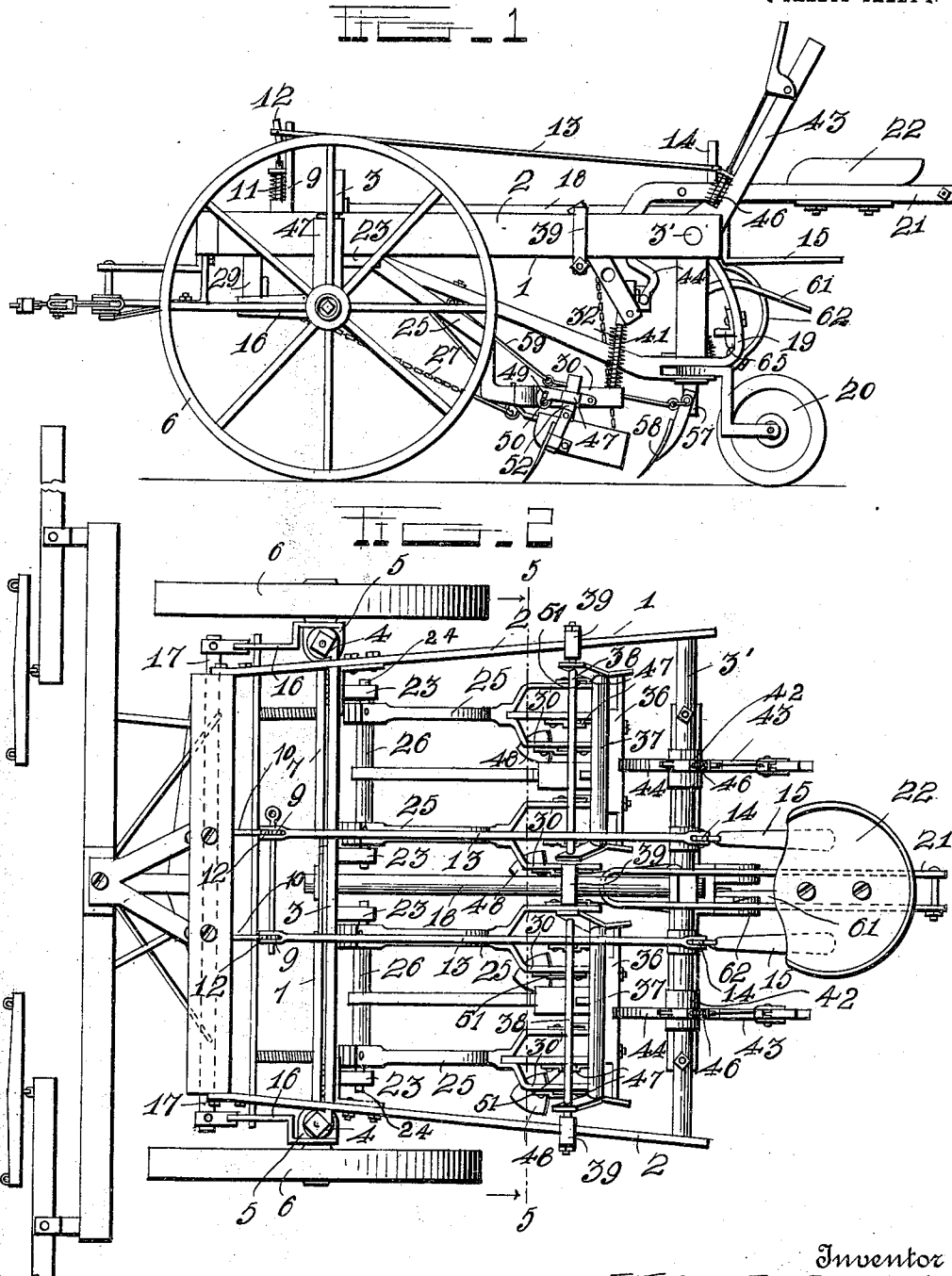


W. A. J. BROWN.
CULTIVATOR.
APPLICATION FILED MAR. 21, 1910.

979,928.

Patented Dec. 27, 1910.

3 SHEETS-SHEET 1.



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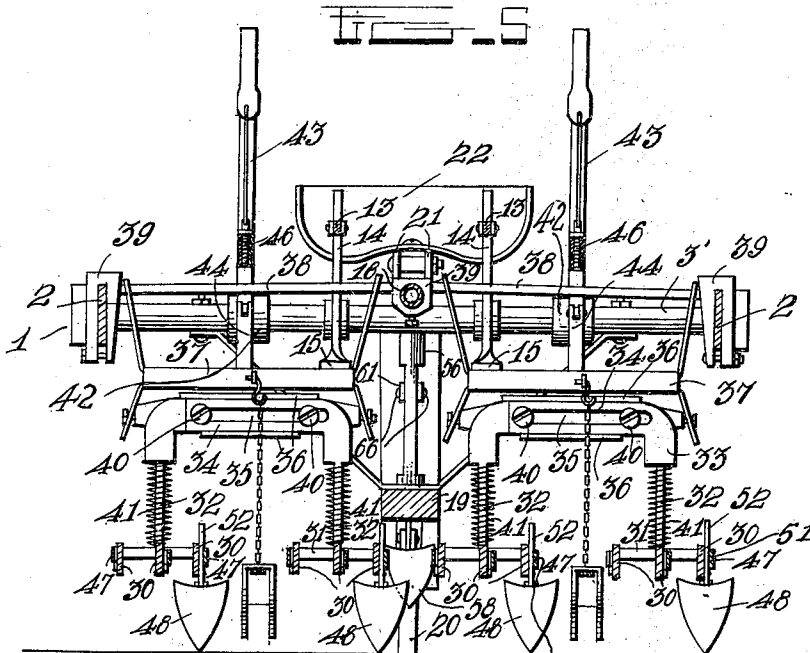
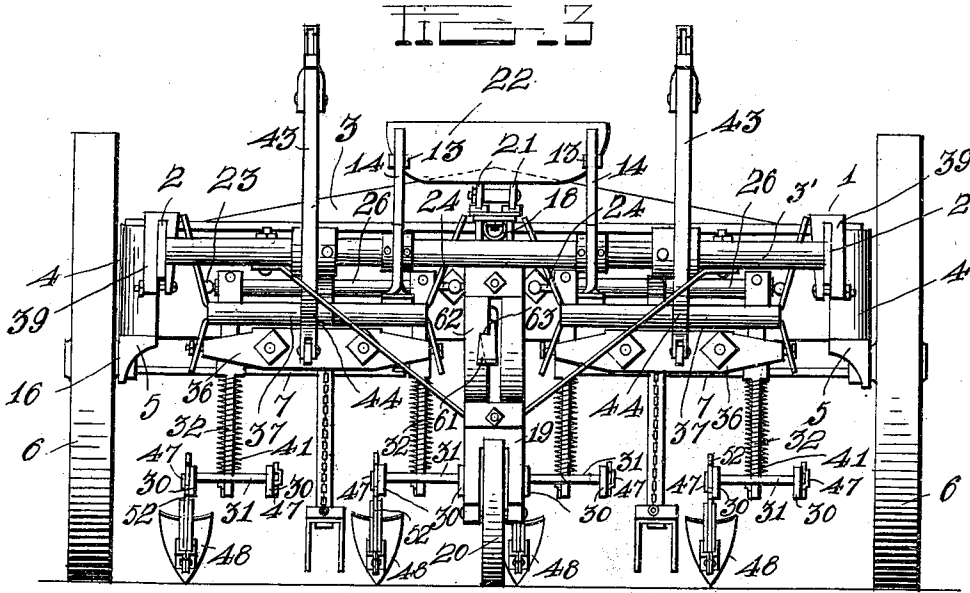
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3 SHEETS-SHEET 2.



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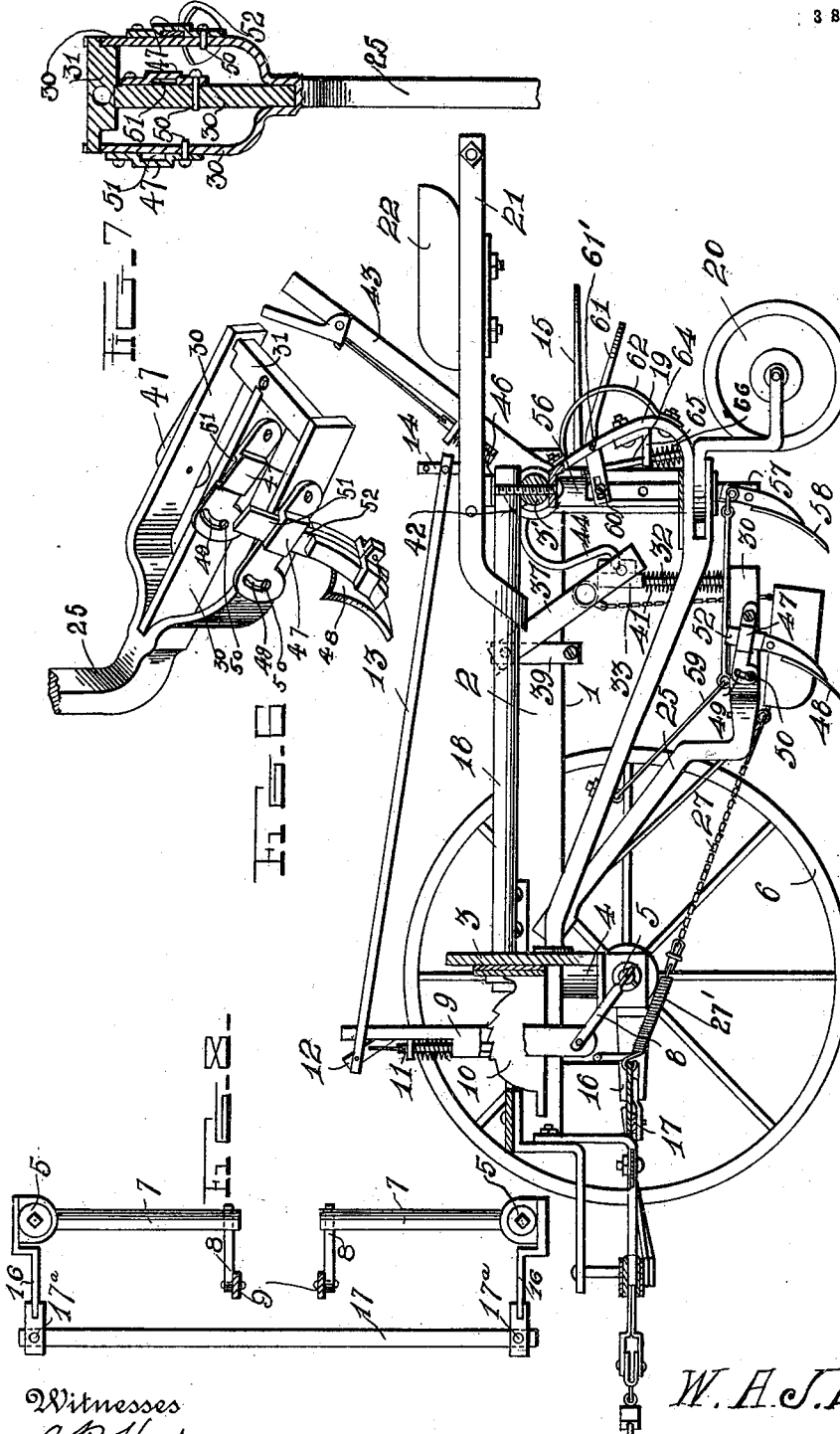
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3 SHEETS-SHEET 3.

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UNITED STATES PATENT OFFICE.

WILLIAM A. J. BROWN, OF LANCASTER, KANSAS.

CULTIVATOR.

979,928.

Specification of Letters Patent. Patented Dec. 27, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM A. J. BROWN, a citizen of the United States, residing at Lancaster, in the county of Atchison and State of Kansas, have invented certain new and useful Improvements in 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.

This invention relates to improvements in cultivators.

The object of the invention is to improve the construction and operation of machines of this character and thereby render them more efficient.

With the above and other objects in view the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side view of a cultivator constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a rear view. Fig. 4 is a central, vertical longitudinal section. Fig. 5 is a transverse section taken on line 5—5, Fig. 2. Fig. 6 is a detail perspective view of a portion of one of the cultivator beams removed from the machine, and showing one of the cultivator shovels applied. Fig. 7 is a detailed horizontal section through parts shown in Fig. 6. Fig. 8 is a detail plan view showing certain parts of the steering device.

Referring more particularly to the drawings, 1 denotes the main supporting frame comprising side bars 2, a series of cross bars 3 and 3'. To the side bars near their forward ends are secured vertically disposed bearing brackets 4 in which are pivotally mounted the vertical portions of supporting stub axles 5, on the horizontal portions of which are revolubly mounted main supporting wheels 6.

The stub axles 5 have secured to their inner sides inwardly projecting steering rods 7, the inner ends of which are connected by links 8 to the lower ends of steering levers 9 which are pivotally mounted on segmental racks 10 secured to the cross bars 3 of the frame, as shown. The levers 9 are provided with spring projected pawls 11 adapted to engage the racks 10, see Fig. 4 whereby the

levers are held in adjusted position. The upper ends of the pawls 11 are connected with bell crank levers 12 pivotally mounted in the upper ends of the steering levers 9, as shown. The bell crank levers 12 are connected by operating rods 13 to operating levers 14 pivotally mounted on the cross bar 3' of the frame and provided with foot treadles 15, whereby the steering levers are actuated to turn the wheels 6 in the desired direction for guiding the machine. The stub axles 5 have formed thereon forwardly projecting crank arms 16, the outer ends of which are pivotally connected as at 17^a to a connecting rod 17 whereby when one of the wheels is turned by the operating mechanism, hereinbefore described, the other wheel will be simultaneously operated.

The cross bar 3 is connected to the rear cross bar 3' by a centrally disposed reach bar 18 and to said cross bar 3 is connected the forward end of a caster wheel frame 19, the rear end of which is suitably braced and connected to the rear cross bar 3'. To the frame 19, is pivotally connected the fork or yoke of a caster wheel 20 which supports the rear portion of the machine. Adjustably connected to the reach bar 18 is a seat supporting frame 21, on which is adjustably secured a seat 22.

To the rear side of the cross bar 3, on opposite sides of the caster wheel frame are secured pairs of brackets 23, with which are detachably engaged beam supporting shafts 24. These shafts have detachably connected to them the upper ends of rearwardly extending angled cultivator beams 25. The upper ends of the beams 25 are held apart in spaced relation on the shaft 24 by spacing sleeves 26. To the lower rear ends of the beams are connected the rear ends of draft chains 27, the forward ends of which are connected to a depending portion 29 of the main frame by springs 27' and other suitable connections.

On the rear ends of the draft beams are formed parallel blade supporting arms 30 which are connected together at their rear ends by a cross bar 31. In each of the cross bars 31, is formed an aperture. Through the apertures in the cross bars 31, are inserted the lower ends of the side bars 32 of pairs of beam supporting yokes 33, the upper portions of which are formed in adjustably engaged sections 34, said sections being provided with alined longitudinally disposed

slots 35. The slotted adjustable upper portions or sections of the yokes 33 are slidably engaged with channel shaped supporting bars 36, the outer ends of which are pivotally mounted in the lower ends of beam adjusting frames 37. The upper ends of the latter are pivotally engaged with a supporting shaft 38 which is secured in brackets 39 adjustably mounted on the frame and reach bar of the machine. Through the slots 35 in the upper sections 34 of the yokes, and through the rear wall of the channel bars 36 are arranged clamping bolts 40, by means of which the sections of the yokes are secured together, after being adjusted laterally for the purpose of spacing the rear ends of the cultivator beams the desired distance apart.

On the side bars 32 of the yokes between the cross bars 31 of the beams and a shoulder formed on said side bars, are arranged coiled springs 41. Through the lower end of the bars 32, are arranged cotter pins or other suitable fastening devices, whereby the beams are connected to the lower ends of said bars. By providing the springs 41, the beams are yieldably held down in operative position and are permitted to swing upwardly when the cultivator blades carried thereby come into engagement with obstructions. On the rear cross bar 3' are secured sleeves 42 having reduced bearing portions on which are pivotally mounted beam raising and lowering levers 43, which are connected by suitable links 44 with the beam supporting frames 37, whereby when said levers are moved in the proper direction, said frames will be swung forwardly or rearwardly on the shaft 38 thereby raising and lowering the beams and the cultivators carried thereby. The levers 43 are held in operative engagement with the bearing portions of the sleeves by means of collars and they are adapted to be locked in adjusted position by an ordinary pawl and segmental rack locking device indicated at 46.

Pivotally secured at one end to the outer sides of the arms 30 of the cultivator beams are blade attaching plates 47 by means of which the cultivator blades 48 are adjustably secured to the arms 30. The outer ends of the plates 47 have formed therein segmental slots 49 through which and through the adjacent portion of the arms 30 are arranged clamping bolts 50 by means of which the plates 47 are secured at different angles on the arms 30. In the inner side of each of the plates 47 is formed a rectangular notch or groove 51 and with said grooves or notches are engaged the upper ends of the standards 52 of the cultivator blades 48. By thus engaging the standards 52 with the notches in the plates 47, said standards may be adjusted vertically to raise or lower the cultivator blades and by pivotally and adjustably securing the plates 47 to the arms

30 said plates may be adjusted in the arc of a circle thereby changing the angle of the blades, thus holding the same in the desired position.

Arranged between and connected at its upper and lower ends to the rear cross bar 3' and the lower portion of the caster wheel frame is a tubular guide bar 56, in which and through the caster wheel frame is slidably mounted an auxiliary cultivator supporting standard 57, to the lower end of which is pivotally secured an auxiliary cultivator blade 58. The lower end of the standard 57 and the blade 58 are connected by a jointed draft bar 59 to the forward portion of the caster wheel frame, as shown. The guide bar 56 is cut away on its rear side for a portion of its length, as shown in Fig. 5, thus exposing the standard 57. On the exposed portion of the standard 57 are arranged laterally projecting studs 60, with which is engaged the bifurcated forward end of the raising and lowering lever 61 which is pivotally mounted at 61' in the rear portion of the caster wheel frame and which is adapted to be engaged by the foot of the driver or operator and depressed thereby raising the standard 57 and the auxiliary cultivator blade. The lever 61 is engaged with a slotted segmental guide plate 62 having formed therein a locking notch 63 with which the lever is adapted to be engaged when in a depressed position thus holding the auxiliary standard and blade in a raised position. The standard 57 and blade 58 are automatically depressed or forced downwardly to an operative position by means of a spring actuated retracting rod 64 which is slidably engaged with a guide bracket 65 on the caster wheel frame and which is connected to the forward portion of the lever 61. A coil spring 66 is arranged on the rod 64 between a suitable stop at its lower end and the guide bracket 65 so that said spring will tend to actuate the rod 64 downwardly. By thus connecting the rod 64 with the lever, the spring on said rod will be compressed when the rod is drawn upwardly by the depression of the lever so that when said lever is released, the pressure of the spring will be exerted to pull the rod, the forward end of the lever and the blade supporting standard 57 downwardly, thus bringing the blades to an operative position.

To the depending portion 29 of the forward end of the frame and to the front cross bar are secured any suitable draft devices, whereby any desired number of draft animals may be hitched to the machine.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

Having thus described my invention, what I claim is:

1. In a cultivator, a wheeled supporting frame, a series of cultivator beams arranged in pairs in opposite sides of the frame, supporting shafts to detachably connect the forward ends of said beams to the frame, laterally adjustable supporting yokes connected to the frame, a yielding connection between said beams and yokes, draft chains connected to said beams, springs to connect said chains with the cultivator frame, and cultivator blades adjustably secured to said beams.

2. In a cultivator, a supporting frame, a series of cultivator beams, means to detachably connect said beams to the frame, pivotally mounted beam supporting frames, laterally adjustable supporting yokes connected to said supporting frames, a yielding connection between said cultivator beams and said supporting yokes, beam raising and lowering levers operatively connected with said frames, whereby said beams are raised or lowered, and cultivator blades carried by said beams.

3. In a machine of the character set forth, a wheeled supporting frame having central and side bars connected by cross bars, a series of beams arranged in pairs in opposite

sides of the frame, bearing brackets in the forward portions of the frame, pivot shafts mounted in said bearing brackets and having the side beams connected to them, brackets upon the rear portions of the central and side bars of the frame, transverse pivot rods mounted in the last mentioned brackets, swinging brackets pivotally mounted on said transverse pivot rods and having their lower ends provided with spaced portions, transverse channel bars having their ends pivotally mounted in the spaced lower portions of said swinging brackets, said channel bars having spaced upper and lower flanges forming channels, angular yoke members each having a flat longitudinally slotted horizontal portion arranged in the channel of one of said channel bars and a reduced depending end, slidable connections between the depending ends of said yoke members and the rear portions of said beams, springs on the reduced depending ends of said angular yoke members for actuating the beams downwardly, fastenings passed through the slots in the horizontal portion of the angular yoke members and into said channel bars to adjustably fasten the yoke members, and means connected to said channel bars for raising and lowering them.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM A. J. BROWN.

Witnesses:

WILLIAM H. GRANER,
G. W. BERRY.