

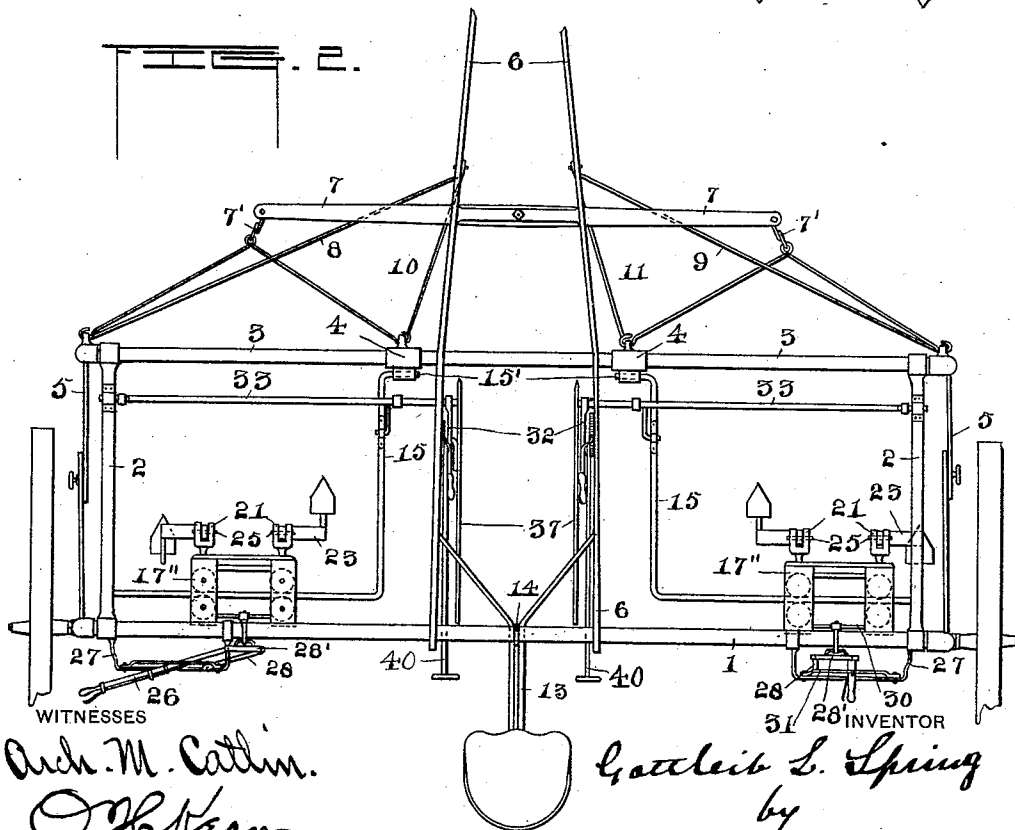
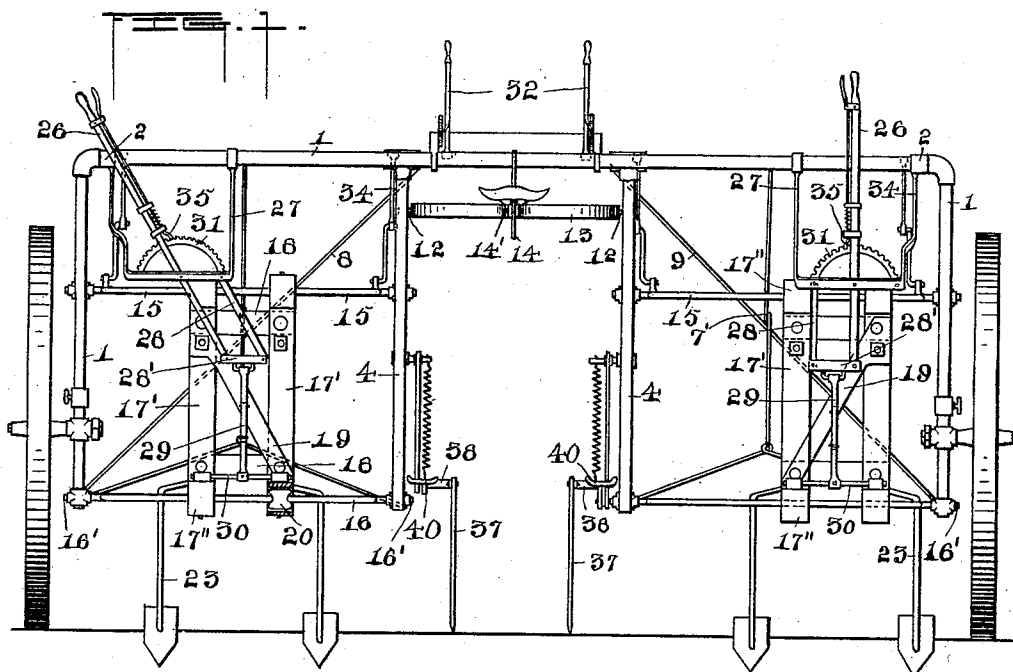
(No Model.)

2 Sheets—Sheet 1.

G. L. SPRING.
CULTIVATOR.

No. 489,507.

Patented Jan. 10, 1893.



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G. L. Spring
by
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2 Sheets—Sheet 2.

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FIG. 3.

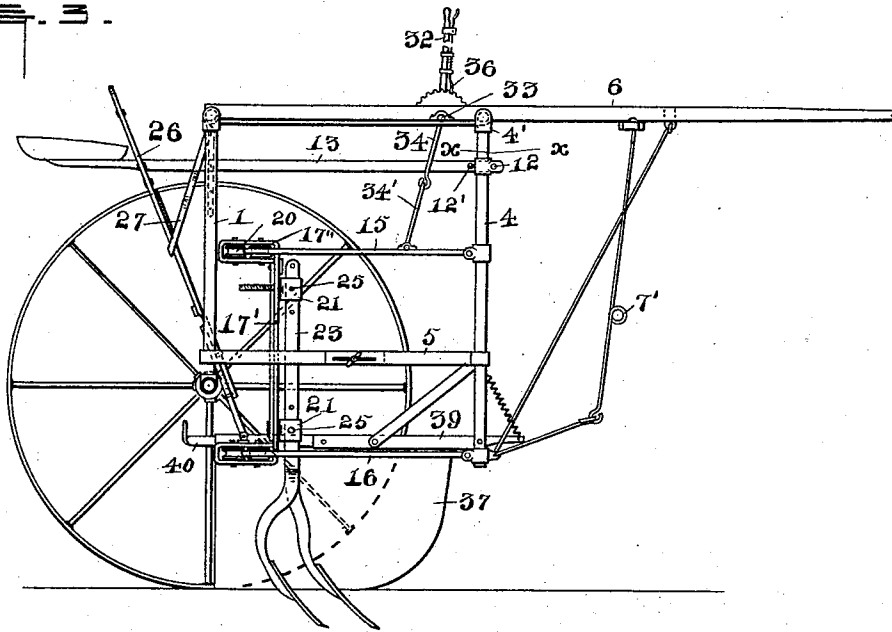


FIG. 4.

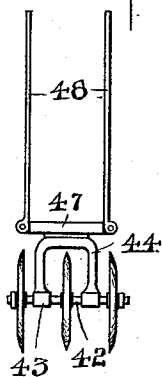


FIG. 7.

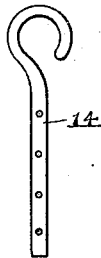


FIG. 5.

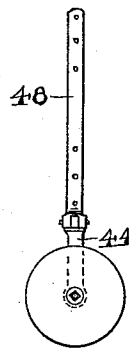


FIG. 6.

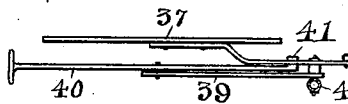
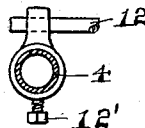


FIG. 8.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

GOTTLEIB L. SPRING, OF PAWNEE CITY, NEBRASKA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 489,507, dated January 10, 1893.

Application filed May 21, 1892. Serial No. 433,845. (No model.)

To all whom it may concern:

Be it known that I, GOTTLIEB L. SPRING, a resident of Pawnee City, in the county of Pawnee and State of Nebraska, have invented certain new and useful Improvements in 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 pertains to make and use the same.

The object of the invention is to increase the efficiency of corn cultivators and the invention consists in the construction hereinafter described and pointed out.

In the accompanying drawings; Figure 1 is a rear elevation; Fig. 2 is a plan; Fig. 3 is a side elevation; and Fig. 4 a front elevation of a device carrying circular disks; and Fig. 5, is a side elevation of the same. Fig. 6 is a detail. Fig. 7 is an enlarged view of a seat supporting bar; and Fig. 8 is an enlarged partial section on line $x-x$ of Fig. 1.

Numerals 1 indicates an axle supported by wheels between which it is bent upwardly as shown. It is loosely connected by transverse bars 2 adapted to turn upon the axle with a frame comprising bar 3 and depending posts or bars 4, the latter being connected to the upper bar 3 by couplings 4'.

5 denotes bars made adjustable in length and adapted to rigidly connect the frame bar 3 and the axle.

The bars 6 to which the tongue will be in practice attached are connected rigidly to bar 3 and loosely to axle 1 and are transversely braced. 7 denotes an evener, the draft animals being attached by means of single-trees at 7'.

8 and 9 indicate braces and 10 and 11 rods connecting the feet of posts 4 with said bars 6.

12 is a seat-supporting rod made vertically adjustable, (see Figs. 1 and 3,) between the two inner posts 4, by means of a set screw 12'. The seat-supporting arms 13 are loosely connected with said rod and also loosely and adjustably connected by the bar 14 with the axle 1. By the above described construction the seat-supporting arms can be raised or lowered by adjustment either in the plane of the axle or of the bar 3, or in both planes. The distance of the lower ends of posts 4 from the axle can also be adjusted by means of the

extensible bars 5, the transverse bars 2 having a pivotal connection with the axle. By this means, the machine can be adjusted to properly balance the weight of the driver and mechanism over the wheel centers.

15 indicates upper and 16 lower shovel frame-supports which are of bail like form and pivotally connected with the posts 4 as indicated at 15' and 16' respectively. They are further connected by the shovel or plow-carrying frame composed of two members 17', each having pulley-supporting brackets 17''. They are also rigidly joined by transverse bars 18 and brace 19. By means of pulleys 20 they can be easily moved laterally on the shovel frame support 15.

21 denotes shovel-supporting brackets secured to the shovel carrying frame and adapted to receive and adjustably support the shanks 23 of the shovels. The upper brackets have a screw thread or equivalent connection with the frame and are made independently adjustable in the brackets, whereby the inclination of the shovel shanks can be varied. These shanks are made adjustable vertically and independently by means of bolts 25 or other suitable fastening devices. They are bent as indicated to hold the shovels a distance apart wider than the frame.

Shovels, blades, teeth, disks, and cultivating and cutting devices of various forms and for different purposes can be substituted for those indicated in the drawings if desired.

In Figs. 3 and 4 are shown a series of circular disks fast on a shaft 42 supported to revolve in sleeves 43 supported by brackets 44 pivotally connected by means of a bar 47.

Shanks adapted to be secured in the brackets 21 are denoted by 48. They are hinged to bar 47 as indicated to provide for independent vertical adjustment whereby the revolving disks can be inclined with respect to the surface of the ground when desired.

The shovel frame is adjusted laterally on the frame-supports 15 and 16 by means of the lever 26 suitably pivoted in a bracket or hanger 27 depending from the axle.

28 is a short bar also pivoted to the bracket and connected to the main part of the lever by a cross bar 28' which is joined by means of an extensible connecting rod or bar 29 to

a cross bar 30 loosely attached to adjacent pulley-supporting brackets 22. A rack fast on bracket 27 is denoted by 31. The lever 26 is provided with a suitable retaining pawl 5 having an operating handle as indicated. By moving the lever handle laterally the shovels are similarly moved in reverse direction upon their supports 15 and 16.

The shovel frames are adjustable in vertical 10 plane by means of their supports which are pivotally connected with the pendent posts 4. 32 denotes a lever for the purpose. It is rigidly attached to a shaft 33 arranged to turn in bearings as indicated and provided with 15 arms 34 rigidly joined to said shaft and pivotally connected with the shovel frame supports 15.

35 and 36 indicate ratchets and spring-held pins for holding the adjusting levers and 20 their shafts and connections in any desired position.

37 denotes a guard to protect the corn or other plant from the dirt thrown by the shovels. It is made large as shown and supported by a bar 38 pivotally connected to a 25 post 4, or to a bracket 39 made fast on such post. The bracket is solidly attached to the post in substantially the manner indicated and at its rear end next the post it pivotally 30 supports a treadle lever 40, which at its front end is provided with an arm 41 adapted to loosely support the shield bar, the construction being such that the shield can be raised by depressing the treadle. In case the shield 35 is detached and the cultivator is used without it the treadle lever can be fixed to the bracket 39 on the opposite side, and the arm 41 made to engage the bottom of the bracket whereby a solid foot rest is provided, arm 41 40 acting as a stop.

Having thus described my invention what I claim is:

1. In a cultivator the shovel-supporting 45 frame, in combination with the pivoted frame-supports consisting of the shaft 33, crank arms 34 fixed on said shaft and loosely connected link 34' and devices for suitably turning said shaft; substantially as set forth.

2. In a cultivator the shovel-supporting frame provided with the upper and lower 50 shovel-holding brackets in combination with shovels, said upper brackets being adjustable in a horizontal plane to vary the pitch of the shovel shank; substantially as set forth.

3. In a cultivator the shovel-supporting 55 frame provided with shovel-holding brackets and with pulley brackets provided with pulleys, said frame support having a part passing between the pulleys whereby both the pulley and shovel-holding brackets can be 60 moved laterally in one straight plane, and devices for moving the shovel-supporting frame about its pivots; substantially as set forth.

4. In a cultivator the combination of the bent axle, the frame bar 3 provided with pend- 65 ants 4, adjustable bars rigidly connecting the axle and the outside posts, bars 2 loosely connecting said parts and shovel-holding devices supported by said frame bar 3; substantially as set forth. 70

5. In a cultivator the combination of the bent axle, the frame bar 3 provided with posts 4, the vertically adjustable bar 12, the seat-supporting arms, bar 14, and the devices for 75 adjusting the arms vertically on the bar; substantially as set forth.

6. In a cultivator the combination of post 4 with brackets 39 with the detachable treadle lever having at its end a lateral arm or projection extending to one side thereof; sub- 80 stantially as set forth.

7. In a cultivator the combination of post 4 with brackets 39 and with the detachable treadle lever having at its end a lateral arm or projection extending to one side thereof, 85 and a spring-held shield adapted to be supported on said lateral arm; substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib- 90 ing witnesses.

GOTTLEIB L. SPRING.

Witnesses:

W. D. MARBLE,
S. A. WRIGHT.