2 Sheets—Sheet 1.

S. A. BUCHANAN.

SULKY CULTIVATOR.

No. 180,319. Patented July 25, 1876.

Fig. 1.

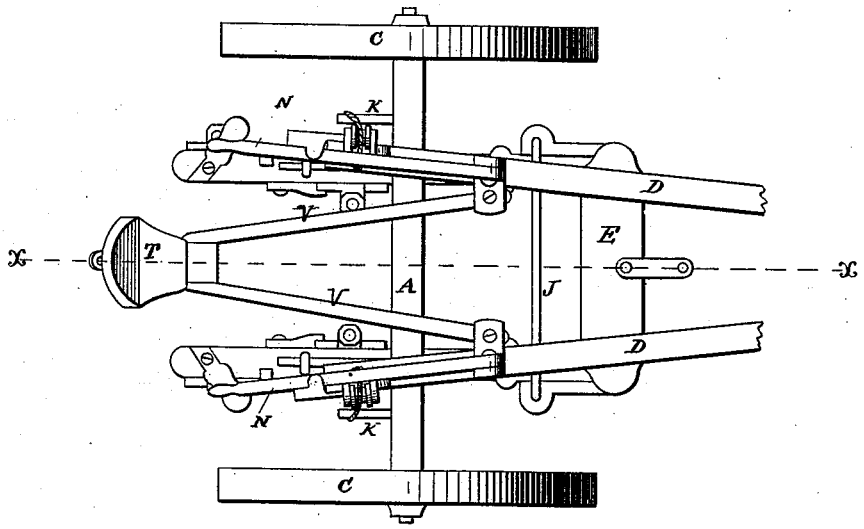
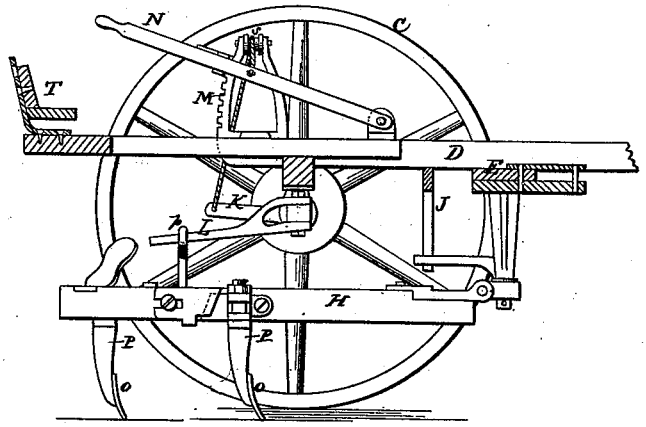


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

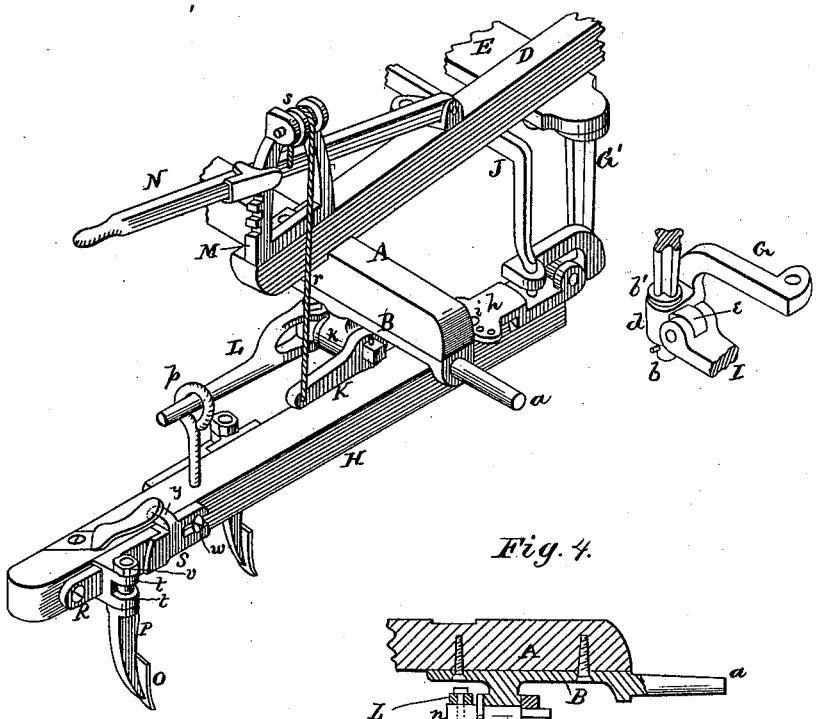
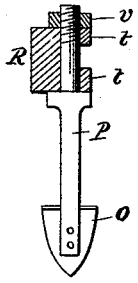


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

SAMUEL A. BUCHANAN, OF JEFFERSON, WISCONSIN.

IMPROVEMENT IN SULKY-CULTIVATORS.

Specification forming part of Letters Patent No. **180,319**, dated July 25, 1876; application filed April 15, 1876.

To all whom it may concern:

Be it known that I, S. A. BUCHANAN, of Jefferson, in the county of Jefferson and in the State of Wisconsin, have invented certain new and useful Improvements in Sulky-Cultivators; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a sulky-cultivator, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view of my cultivator. Fig. 2 is a longitudinal section of the same. Figs. 3, 4, and 5 are detached views of certain parts thereof.

A represents the axle-tree, with a metal plate or casting, B, on the under side at each end, from the outer end of which projects the spindle *a*, to have the wheel C placed thereon. D D are the two parts of an ordinary split or V-shaped tongue, secured on top of the axle-tree A, and connected a suitable distance in front thereof by a cross-bar or board, E. At each end of this cross-bar, on the under side, is secured a cast-metal post, G′, extending vertically downward, and having its lower end formed with a tenon, *b*, and flange *b′*, at the upper end of said tenon. On this tenon is placed a coupling, consisting of a hub or collar, *d*, with a curved arm, G, extending from the outer side upward and backward; and from the back of said hub or collar extends a horizontally-perforated ear, *e*, which is pivoted at the front perforated end of a casting, I, fastened on top of the plow-beam H at the front end. This casting is fastened by a single screw, *f*, and has at its rear end a perforated enlargement, *h*, for the passage of another screw, *i*, through either of the holes therein into the plow-beam. By this means the plow-beam may be set originally in any position desired. J is a sway-bar placed under and against the tongue D, and having its ends bent downward, the extreme ends of said bar being curved, as shown, and inserted in perforated ears formed at the rear ends of the arms G G of the coupling.

By the construction of this hinge and coupling, and the parts connected therewith, the drag-bars or plow-beams H H may be adjusted in regard to the distance between them as required, and allow them to be raised independent of each other, and independent of the sway-bar J, which is of great importance in the proper working of a cultivator.

On the under side of each axle-casting B is formed a lug or projection, *k*, having a hole through it, on a line parallel with the axle, for the passage of a short shaft, *m*, which has an arm or lever, K, secured to its outer end, and on the inner end is formed an eye, *n*. At this end is pivoted the forked end of an arm, L, by a pin passing through the same, and through the eye *n*. The outer end of the arm L is inserted in an eyebolt, *p*, fastened to the beam or drag-bar H. From the outer end of lever K a cord, *r*, extends up over a pulley, *s*, mounted at the top of a casting, M, which is secured on the rear end of the tongue D, and the other end of the cord is secured to a hand-lever, N. This hand-lever is pivoted to a casting on the tongue, and is to be provided with an ordinary spring-pawl or spring-bolt, to take into a rack formed on the rear edge of the casting, for holding said lever at any point desired, and thereby regulating the depth at which the plows are to work, as well as for raising the plows over obstructions. P represents the plow-standard, to which the shovel-plow O is secured, the upper end of said standard being made round, and passed through ears *t t*, projecting from a plate, R, and a nut, *v*, is screwed on the extreme end of the standard, for holding the same to said plate. The plow-standard can thus be turned to either side, and held so as to bring the plow to any angle desired, for taking more or less land. The plate R is pivoted to the side of the plow-beam at its rear end, and the front end made inclined or beveled, and fits against an inclined shoulder, *x*, formed on a plate, S, which is slotted, as shown, and fastened to the side of the plow-beam by a screw, *w*. From

the top of the plate S a lip, *y*, projects over on top of the plow-beam.

It is, of course, evident that the plates R and S may be reversed, both forms being shown in the drawing. The plate S should be fastened by its screw *w* sufficiently strong so that the pressure of the inclined end of the plate R on the shoulder *x* of the plate S, caused by the ordinary strain of the plow, will not move said plate S, but the plow be held in position for work.

When, however, the plow meets with any obstruction, the strain is such that the inclined end of the plate R will force the plate S out of the way, and allow the plow to turn backward over the obstruction.

T is the driver's seat, adjustably supported upon arms V V, secured on the tongue.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The adjustable hinge and coupling, consisting of the tenoned post G′, hub *d*, with arm G, and lug *e*, and the adjustable pivoted casting I, in combination with the drag-bar H and sway-bar J, as and for the purposes herein set forth.

2. The hinge and coupling, consisting of the lug *k*, shaft *m*, with eye *n*, and forked pivoted arm L, in combination with the drag-bar H and lever K, as and for the purposes herein set forth.

3. The combination of the pivoted plate R, carrying the plow-standard, and having its free end inclined, and the slotted plate S having inclined shoulder *x* and lip *y*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of February, 1876.

SAMUEL A. BUCHANAN.

Witnesses:

N. BRUETT,

D. C. WEYMOUTH.