

(No Model.)

2 Sheets—Sheet 1.

B. S. BENSON.

SULKY PLOW.

No. 291,975.

Patented Jan. 15, 1884.

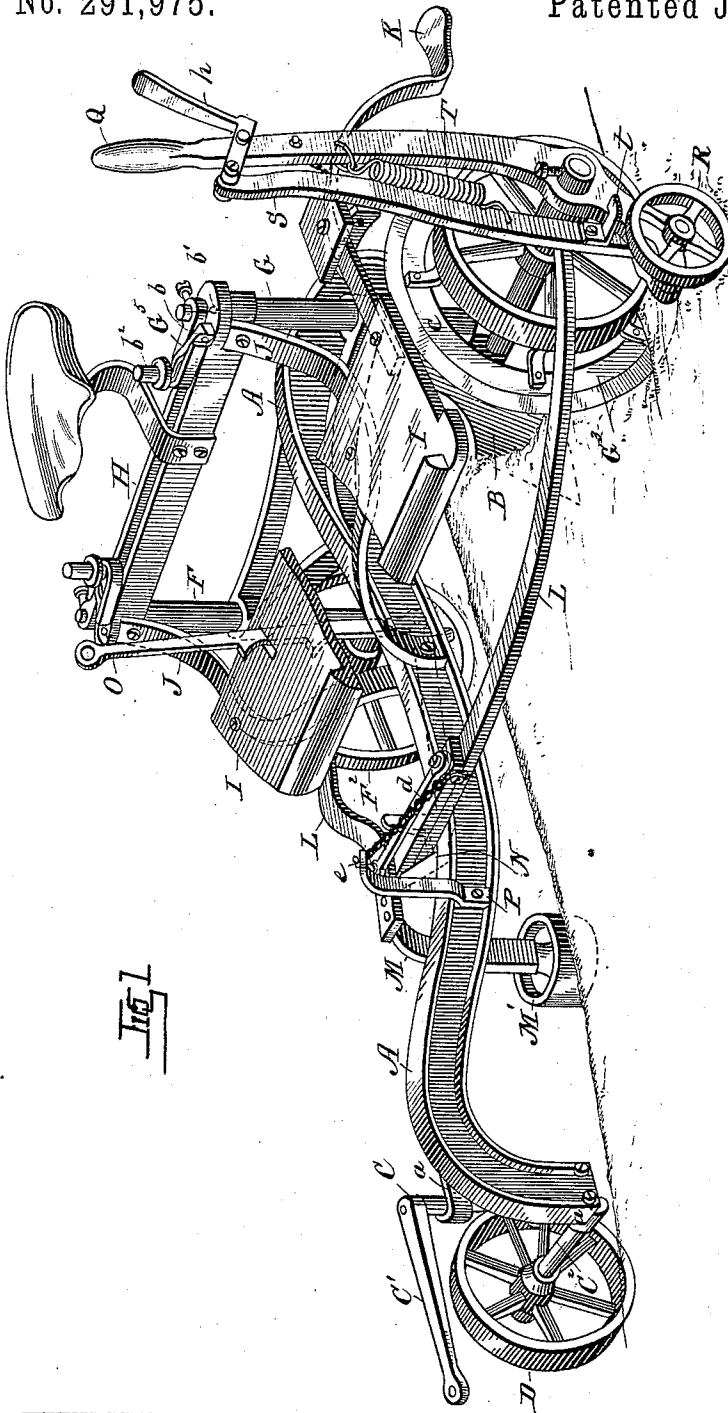


FIG 1

WITNESSES:

Fred. G. Dieterich

Edw. W. Byrn

INVENTOR:

B. S. Benson

BY

Wm. F. G.

ATTORNEYS.

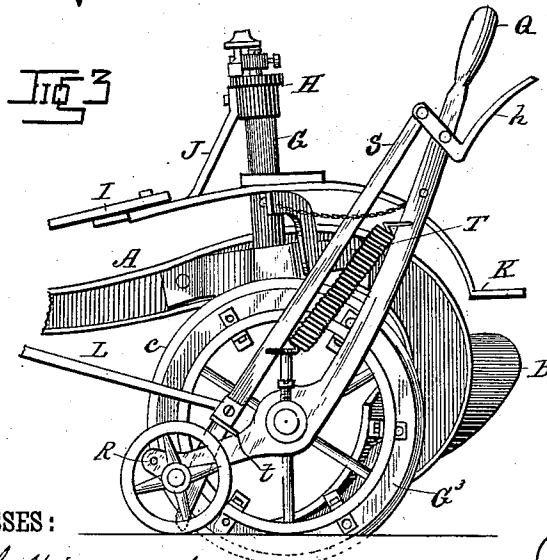
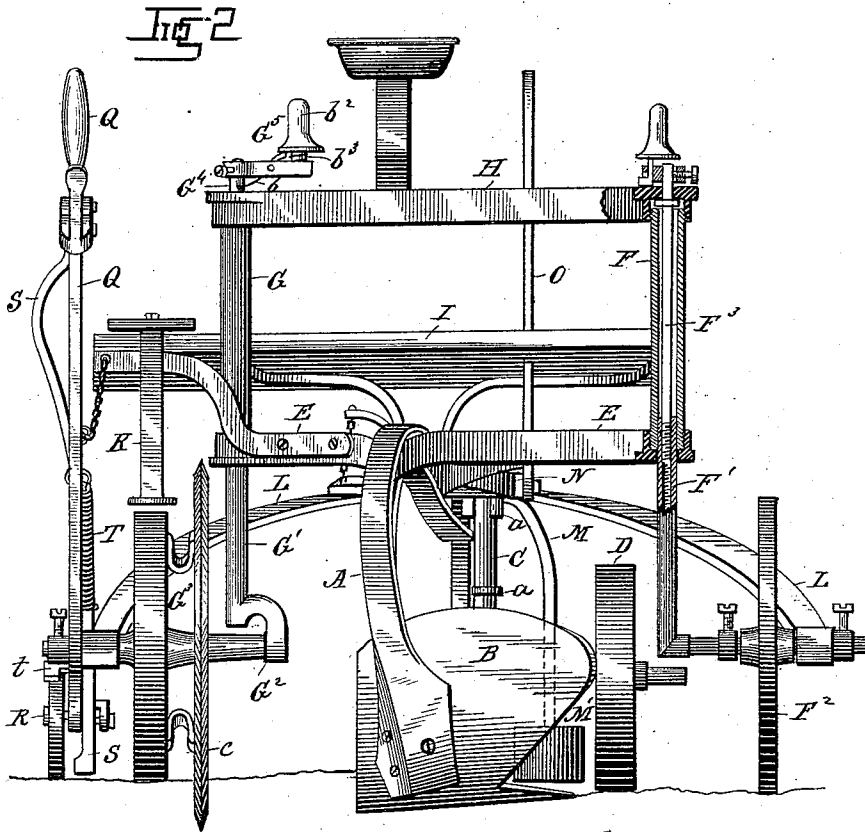
(No Model.)

2 Sheets—Sheet 2.

B. S. BENSON.
SULKY PLOW.

No. 291,975.

Patented Jan. 15, 1884.



WITNESSES:

W. W. Hallingsworth
Edw. W. Ryan

INVENTOR:

B. S. Benson
BY *Manuel Le*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN S. BENSON, OF BALTIMORE, MARYLAND.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 291,975, dated January 15, 1884.

Application filed May 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN S. BENSON, of Baltimore city, and State of Maryland, have invented a new and useful Improvement in Sulky-Plows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view from the front. Fig. 2 is a rear end elevation, partly in section; and Fig. 3 is a fragmental side view.

My invention consists in certain improvements in sulky-plows, designed to facilitate the guiding of the same, and for controlling the width of the furrow-slice, and adjusting the various parts, as will be fully described hereinafter.

In the drawings, A represents the plow-beam, which is made of metal, and at its rear end carries the mold-board B, which has a point and shear, but no landside. At the front end this beam is bent first up and then down, and is provided with two bearings, *a a*, in which is journaled a vertical rock-shaft, C, which has a horizontal arm, C', projecting to the front, and provided with an eye or point of attachment for the draft of the team, and which shaft C has at its lower end a horizontal arm, C², projecting at right angles to the shaft, and also at right angles to the arm C' or line of draft. This arm C² forms the axle for the front guide-wheel, D, and this wheel is always in a plane parallel with the line of draft, for when the strain on arm C' in turning rocks the shaft C, the wheel D correspondingly turns, and can, if necessary, pass under the upward curve of the front end of the plow-beam. To each side of the plow-beam, above the point of the mold-board, is bolted an offsetting-bracket, E E, Fig. 2, which are respectively fastened to the lower ends of two vertical tubes, F G', and which tubes at their upper ends are connected by a cross-bar, H, upon which is mounted the driver's seat. In one of these tubes, F, is contained an interiorly-screw-threaded tube or standard, F', which at its lower end is provided with a horizontal arm that carries the running wheel F², that runs in the previously-cut furrow. This standard is adjusted up or down in the tube by a screw-

rod, F³, swiveled in the outer tube, and having a threaded portion that enters the tubular standard F' and draws it up or forces it down when turned. The other tube, G, has in it a tubular standard, G', having an interior screw-thread, and provided at its lower end with a right-angular arm, G², which carries the colter-wheel G³, that runs upon the unplowed ground and marks and cuts vertically the slice that is to be taken off in the next trip. The tubular standard G' is adjusted vertically by a screw-rod, G⁴, swiveled in the main tube, and turned by a hand-crank, G⁵, alone. For preventing back motion of this hand-crank, a pivoted detent, *b*, Fig. 1, is made to engage against a teat or projection, *b'*, and for lifting this detent over the projection, the spool or hand-hold *b''* is made to bear against a spring, *b''*, and lift the detent by simply pressing down with the hand upon said spool. A crank and locking device of a similar character is arranged to be used on the other screw-rod for the other wheel. By these means these two rear running wheels can be vertically adjusted to suit the depth of furrow-slice. The colter-wheel G³ is attached to a long tubular hub, and it is in the nature of a plain running wheel with a sharp edged ring, *c*, arranged in a plane at right angles to the axis and offset from the periphery of the wheel laterally by brackets, and also made of greater diameter than the wheel, so that while the periphery of the latter is resting upon the ground its colter-ring *c* is cutting into the soil. The function of this colter-wheel is twofold—first, it marks and cuts the vertical incision for the following furrow-slice, and, secondly, it resists the lateral thrust of the mold-board, which, having no landside, has a tendency to run obliquely into the unplowed ground.

The object in having the colter-ring offset from its running wheel, with a space between, is to permit the mud and dirt to crowd up between the same without clogging and throwing the colter out.

I is a platform for the driver's feet, which platform is sustained upon brace-bars J J, fastened at one end to the plow-beam and at the other end to the cross-bar H. K is a step-bar by which the driver mounts the platform.

To hold the outer ends of the axle-arms of

the two rear wheels, drag-bars LL are secured thereto, and at their forward ends are adjustably connected together by a link, *d*. To the front ends of these drag-bars is attached a downwardly-projecting arm, M, bearing a wheel, M', which runs in a horizontal plane, and bears against the wall of the preceding furrow and holds the front end of the plow against the side thrust of the mold-board, and serves to steady and guide the plow straight. To lift this wheel out of action, it, with the drag-bars L, is raised by a forked lever, N, which, at its rear end, is operated by a vertical bar, O, provided with teeth for holding it either up or down. These drag-bars L also have a flexible connection, *e*, with an arm, P, projecting upwardly from the plow-beam.

Q is a long lever mounted upon the outer end of the colter-wheel axle. This lever carries at its lower end a wheel, R. To this lever is fastened a push-bar, S, connected loosely by link below, and connected at its upper end to the cranked handle *h*. This push-rod is normally held up by a spring, T. When, however, the handle-crank *h* is grasped, the push-bar is shoved down and its lower end is made to enter the ground, and the draft of the team then turns the lever Q and throws the colter-wheel out of the ground, raising that side of the plow out of the ground. The brake *t* on the push-bar, by binding on the wheel R, retards its motion and helps to retard the plow, when needed, to stop the team.

With respect to the construction and arrangement of the forward end of the beam and its double-crank arms, I would state that I do not claim the wheel D in connection with the double-crank arms, as this is shown in my prior Patent, No. 264,434, but only the curved end of the beam in that connection, which gives two bearings for the rock-shaft and still allows the wheel to pass entirely under the beam in turning, thus enabling the plow to be turned with a shorter curve. I would also state that a downwardly-projecting arm, M, has been provided with a sliding bearing or landside for guiding the plow in connection with a

single bar, L, as shown in my prior patent referred to, and in this connection I claim only the wheel or rotating bearing and the duplication of the bars LL, which give a firmer support or resistance to the thrust of the plow and an easier friction.

Having thus described my invention, what I claim as new is—

1. The plow-beam having its front end bent first up and then down, in combination with the vertical shaft C, arranged in bearings on the beam, and having a horizontal draft-arm, C', and an arm, C², at right angles to both the shaft C and its draft-arm, and provided with the wheel D, as and for the purpose described.

2. The combination of the plow-beam, the offsetting brackets EE, the vertical tubes F G, cross-bar H, the screw-threaded wheel standards F' and G', the adjusting screw-rods F² G², the said standards and screw-rods being contained in the tubes F and G, as and for the purpose described.

3. The combination, with the adjusting-rod G⁴ and of the crank G⁵, pivoted detent *b*, locking-projection *b'*, the hand-hold *b''*, and spring *b'''*, as and for the purpose described.

4. The combination, with the rear crank-axes and the plow-beam, of the drag-bars LL, having a downwardly-projecting arm, M, bearing a horizontal rotating wheel adapted to bear against the wall of the preceding furrow, and made vertically adjustable, substantially as shown and described.

5. The combination of the platform, the adjusting-bar O, the lever N, the drag-bars LL, and the arm and wheel M M', substantially as shown and described.

6. The combination, with the colter-wheel axle, of the lever Q, bearing-wheel R, and the push-bar S, adapted to be projected into the earth, to cause the draft of the team to throw the plow and colter out of the ground, substantially as described.

BENJAMIN S. BENSON.

Witnesses:

EDWD. W. BYRN,
CHAS. A. PETTIT.