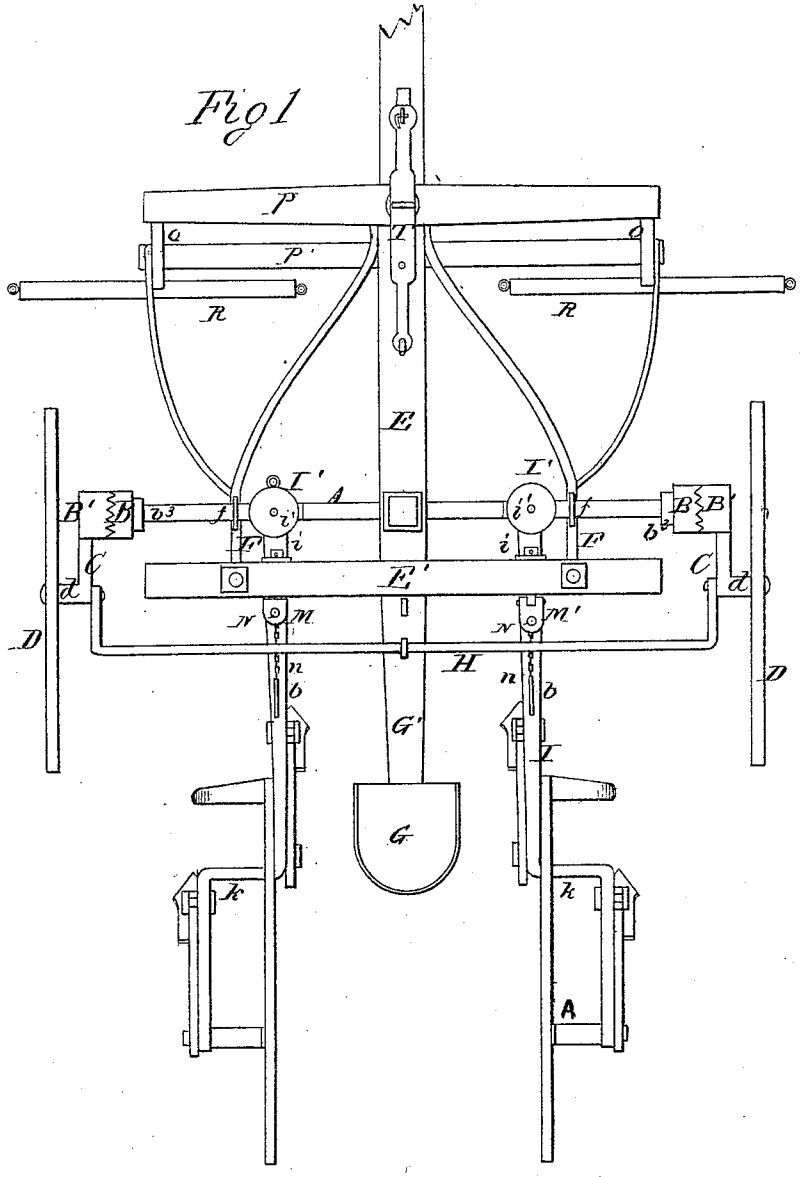
2 Sheets--Sheet 1.

J. M. GUSTIN.

Cultivators.

No. 141,786. Patented August 12, 1873.

Fig 1



Witnesses
Martin Connolly
J. B. Connolly

Inventor
Jonathan M. Gustin
by
Thos. A Connolly
atty

2 Sheets--Sheet 2

J. M. GUSTIN.

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Fig. 2.

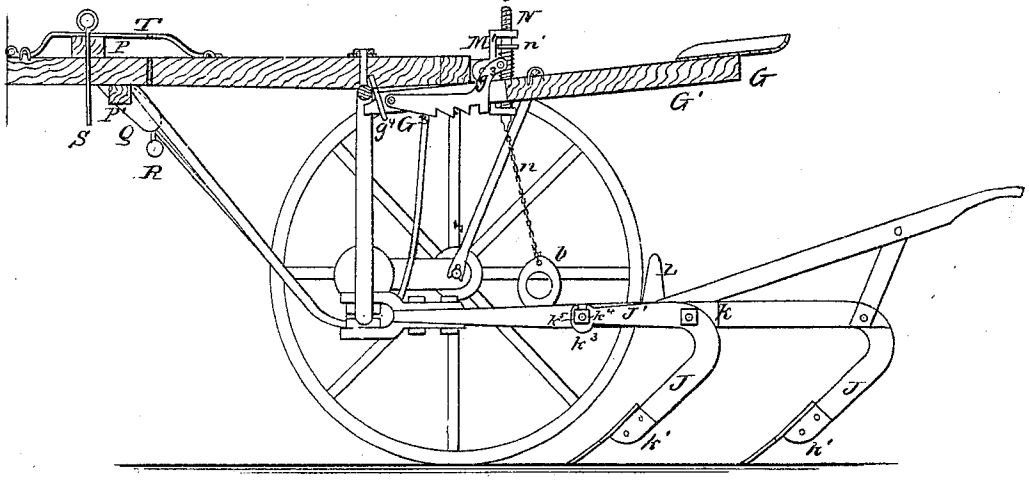


Fig. 3

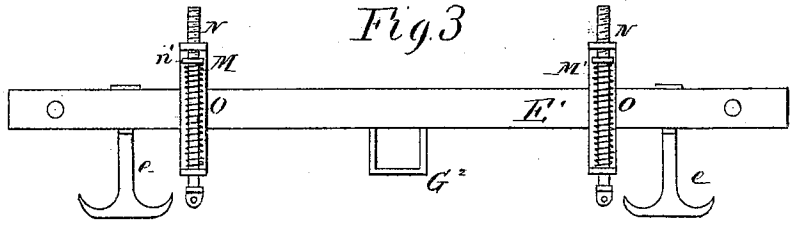
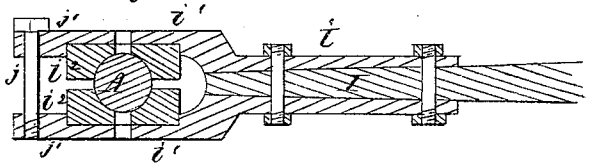


Fig 4

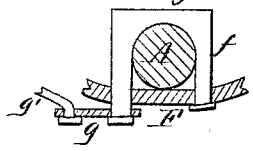


Witnesses

Martin Connolly

J. B. Connolly

Fig. 5



Inventor

Jonathon M. Gustin

by Thos Connolly

Atty.

UNITED STATES PATENT OFFICE.

JONATHAN M. GUSTIN, OF WILMINGTON, OHIO.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **141,786**, dated August 12, 1873; application filed January 28, 1873.

To all whom it may concern:

Be it known that I, JONATHAN M. GUSTIN, of Wilmington, in the county of Clinton and State of Ohio, have invented certain new and useful Improvements in Combined Sulky and Walking Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, that 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 letters of reference marked thereon, which form a part of this specification.

In the accompanying drawings, Figure 1 is a plan view of my invention. Fig. 2 is a vertical longitudinal section of the same; and Figs. 3, 4, and 5 are views of details.

This invention has relation to a combined sulky or riding and walking plow or cultivator; and it consists in the hereinafter-described construction and novel arrangement of the universal beam-coupling, the elastic beam-supporters, the adjustable devices by means of which the wheels are connected to the axle, the adjustable arched brace, and the adjustable removable seat.

Referring to the accompanying drawings, A designates the bent or arched axle of my improved combined walking and riding plow or cultivator. To each end of said axle is secured in an eccentric manner a clutch-plate, B, having radial angular serrations in its face, as shown. These clutch-plates engage with others, B′, corresponding thereto, and formed on the ends of axle-arms C, which are furnished with journals *d* to hold the wheels D. E designates the draft-beams, to the under side of which is rigidly secured the arched portion of the axle A. Secured to the rear end of the draft-beam is a transverse beam, E′. F represents brace-rods secured to the under side of the beam E′, thence extending underneath the lower part of the axle, and passing obliquely to the sides of the draft-beam, to which they are secured, as shown. The rear ends of said brace-rods depend from the beam E′, and are formed into double laterally-projecting hooks *e*, used in supporting the raised plow-beams when the implement is moving to and from the field, said beams having each an eyebolt or rivet, *b*, to be received by one of said hooks. From the braces F clips *f* pass over the axle. One arm of each clip projects through and below the brace, and holds a plate, *g*, to which is secured another brace, g^1, which passes thence to the end of the under bar of the adjustable double-tree, as shown.

When the axle is set forward the implement is used as a riding-plow, the weight of the rider counterbalancing that of the forward part of the machine, which otherwise would bear on the horses' necks. When used as a walking-plow the weight of the implement falls in the rear of the wheel-centers, thus relieving the horses' necks of strain.

The seat G is attached to the end of a beam, G^1, which is supported by a loop, G^2, depending from the beam E′. The beam G^1 is adjustable as well as removable, the adjustment being required to adapt the position of the seat to the weight of the rider. A pivoted rack, G^3, occupying a slot in the end of the beam G^1, engages with the loop G^2 when the beam is passed through the latter, and thus locks the same at any desired position. The rack has a handle, g^3, by means of which it may be disengaged from the loop. A pin, g^4, depending from the draft-beam, as shown, prevents the seat-beam from being pushed too far forward, as well as from having lateral play. The seat is properly braced by means of a bent rod, H, passing through a loop, *h*, and having its ends attached to the wheel-journals. The depending parts of said rod should be made extensible, so that the brace may be adjusted to suit the position of the wheels. The ends of said depending parts or arms are forked to include the journals, from which they may be removed when the seat is taken from the implement. The corresponding clutch-plates B B′ are secured together by means of the transverse bolts b^3, by displacing which the wheels may be set to any desired position with respect to the axle, so as to bring the latter forward of or behind the wheel-centers, or to any height to suit the requirements of the work to be performed. I represents the plow-beams, connected to the cylindrical axle by means of the universal couplings I′, which allow said beams to be swung in every direction, bringing them under the utmost control of the operator. Each coup-

ling is composed of two plates, *i*, secured, respectively, to the upper and lower sides of the beam, and cast or constructed with circular recessed plates i^1, holding each a cylindrical block i^2, having a concave groove to receive the axle, which passes, as shown, through the circular opening formed by the corresponding pairs of blocks. The plates i^1 may be made more secure by connecting the two together by means of a bolt or screw, *j*, passing through eyes *j'*. The blocks i^2 turn upon the axle, allowing the beams to be raised and lowered. The plates i^1 turn upon the blocks i^2, thus enabling the beams to be moved laterally. Through the centers of the plates i^1 are holes i^3 to admit oil to the blocks i^2. The beams I extend rearwardly to a point a little beyond the attached ends of the handles, and are then bent at right angles, and again bent and continued straight to their rear ends, as shown. Each beam holds two plow-standards, J, having each an arm, J', running lengthwise of the beam. At their elbows or angles the standards are pivoted to the beam—one at the rear end, and the other directly forward of the lateral extension *k*. The standards proper incline forward to their points or lower ends, to which are secured the shovels by means of the riveted flanged plates k^1. The forward ends of the standard-arms J' have formed on each a vertically-slotted head, k^3, which embraces a bolt, k^4, holding a nut, k^5, which is tightened sufficiently to hold the plow-standard in place against all ordinary strain. When, however, the shovel comes in contact with a stone or other immovable obstacle, the standard swings back on its pivot, the head k^3 releasing itself from the bolt and nut. In this way the implement is enabled to pass obstructions without receiving any injury.

The object of the lateral extensions *k* is to locate the plows the proper distance apart.

As illustrated in the drawing, a space equal about to the distance apart of the outer of three furrows is left between the two inner plows.

By interchanging the places of the beams the plows may be made to produce four even furrows equally distant apart.

L designates stirrups, attached to the beams for the driver to rest his feet upon in order to guide the plows. M M' designate two plates, having shanks, which pass through the transverse beam E', swiveling the plates thereto. The ends of said plates are bent at right angles to the plates and parallel to each other, and have holes bored through them for the passage of the threaded rods N, to the lower ends of which are attached chains *n*, connecting them to the eyes or rings *b*. Between the bent ends of the plates M M' each threaded rod N is encircled by a spiral spring, O, the tension of which is regulated by means of a nut, *n'*.

The plates may, if desired, be hinged to their shanks, as shown at *m'*, thus allowing the beam-supporters greater freedom of movement.

The rods, with their springs, are designed to support the beams slightly raised, or to exert such strain upon them that the plows may be raised without labor to the driver so as to pass over obstacles. Very slight force is required to sink the plows to the required depth.

P P' designate an adjustable double-tree, consisting of the two transverse bars shown, one above and the other below the draft-pole, and connected at their ends by means of pivoted arms Q, linked to the bar P, and supporting the single-trees R. The bar P is held by a pin, S, passing through a hinged loop or raised plate, T. The loop and draft-pole have corresponding holes at different points, so that the bar P may be adjusted forward of or to the rear of the bar P', to suit the requirements of the draft, the single-trees being adjusted in the opposite direction to that of the bar P.

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

1. The yielding beam-supporters, consisting of the bent plates M, swiveled to the beam E, and holding the adjustable screw-rods N and springs O, substantially as and for the purpose specified.

2. The yielding beam-supporter, consisting of the bent plate M', hinged to a swiveled horizontal shank, and holding the adjustable screw-rod N and spring O, substantially as and for the purpose specified.

3. The adjustable arched or bent brace H, constructed and arranged as shown and described, in combination with the axle A, axle-arms C, and clutch-plates B B', substantially as and for the purpose specified.

4. The adjustable and removable seat G G^1, loop G^2, and rack G^3 combined, substantially as and for the purpose set forth.

5. The axle A and axle-arms C, in combination with the clutch-plates B B', bolts b^3, and the combined walking and riding cultivator herein described.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of January, 1873.

JONATHAN M. GUSTIN.

Witnesses:
A. C. PYLE,
J. J. POND.