2 Sheets—Sheet 1.

E. T. HUNTER.

Sulky Breaking-Plow.

No. 209,688. Patented Nov. 5, 1878.

Fig. 1

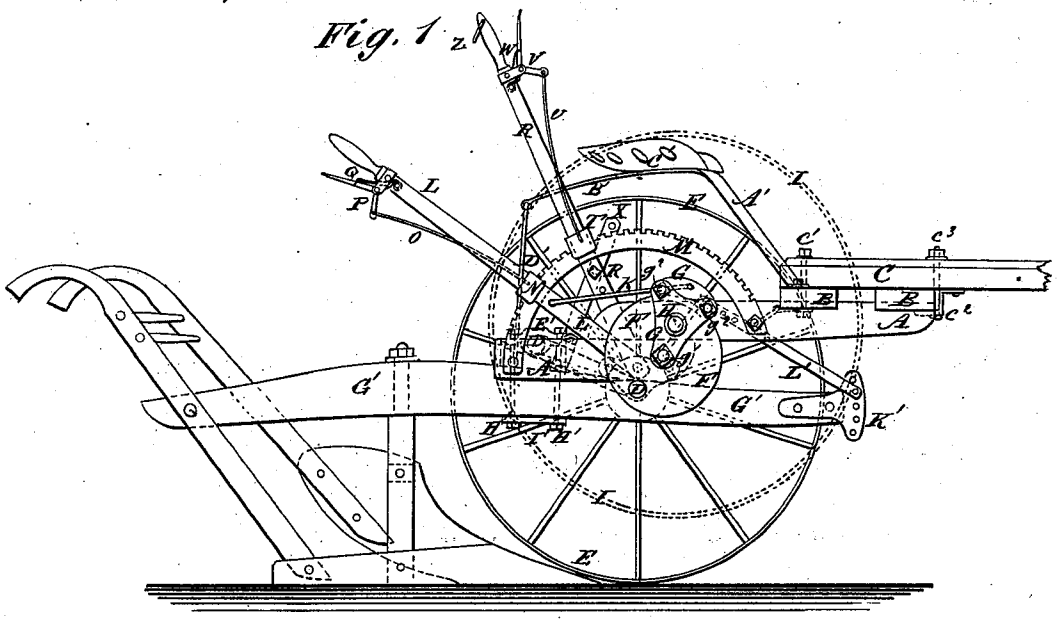
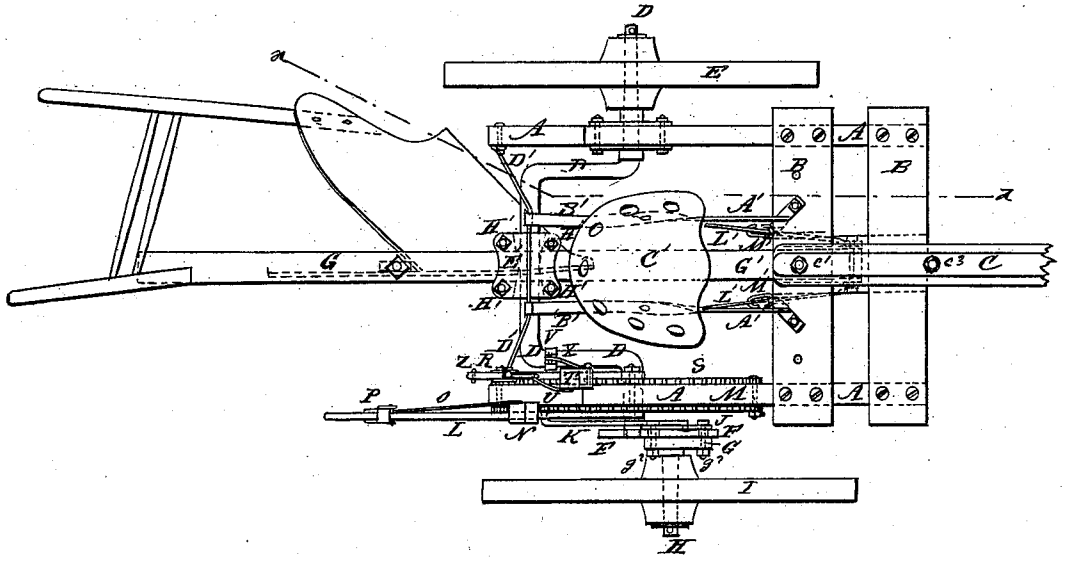


Fig. 2



WITNESSES:

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INVENTOR:

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2 Sheets—Sheet 2.

E. T. HUNTER.

Sulky Breaking-Plow.

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Fig. 3

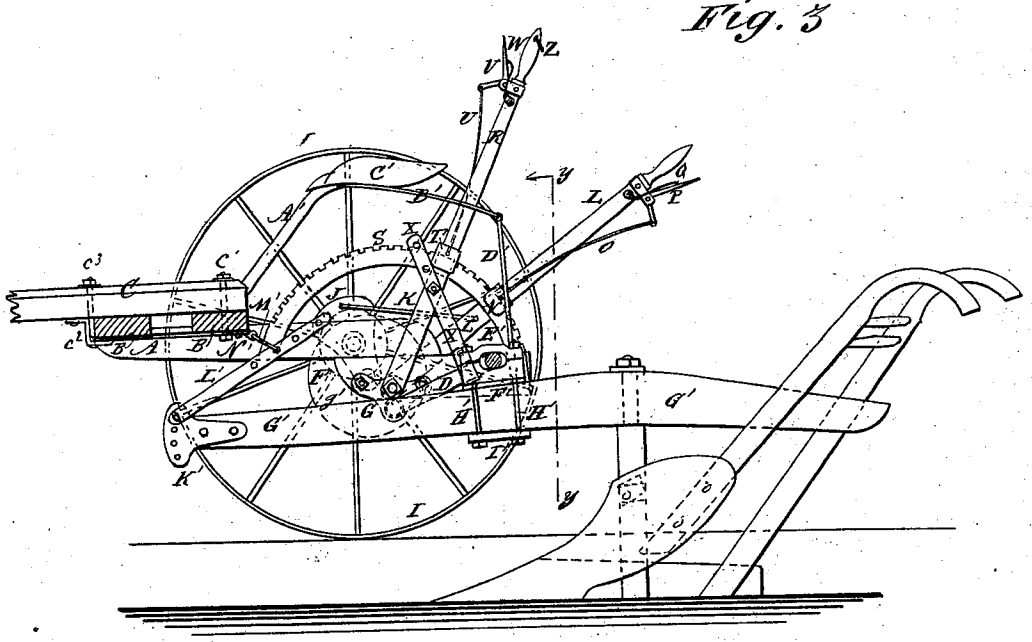


Fig. 5

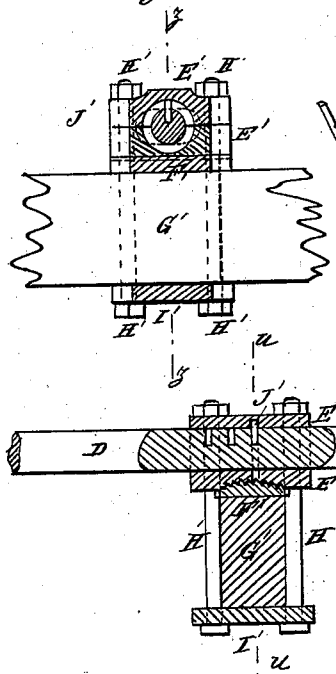
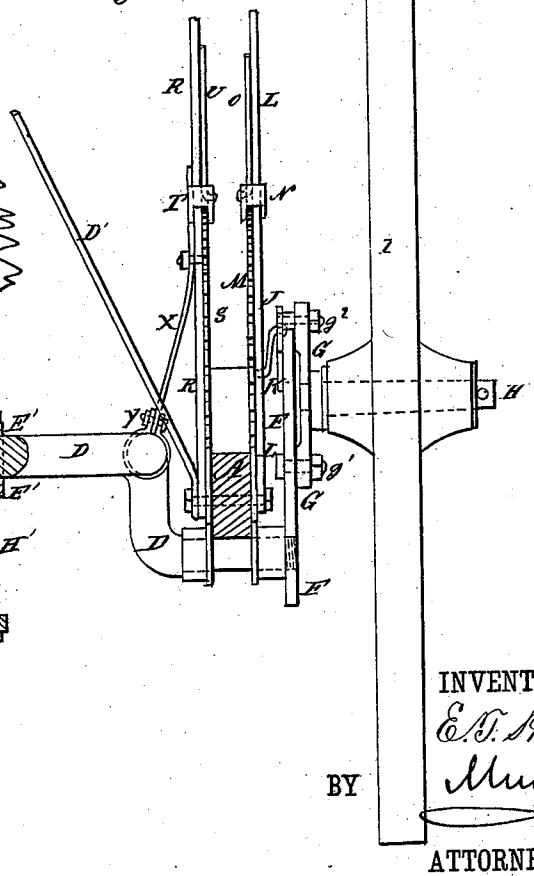


Fig. 4



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UNITED STATES PATENT OFFICE.

EDWARD T. HUNTER, OF HALLSVILLE, ILLINOIS.

IMPROVEMENT IN SULKY BREAKING-PLOWS.

Specification forming part of Letters Patent No. **209,688**, dated November 5, 1878; application filed September 9, 1878.

To all whom it may concern:

Be it known that I, EDWARD T. HUNTER, of Hallsville, in the county of De Witt and State of Illinois, have invented a new and Improved Sulky Breaking-Plow, of which the following is a specification:

Figure 1, Sheet 1, is a side view of one of my improved plows. Fig. 2, Sheet 1, is a top view of the same. Fig. 3, Sheet 2, is a side view of same reversed, partly in section through the line *x x*, Fig. 2, to show the construction. Fig. 4, Sheet 2, is a detail section of the same, taken through the lines *y y*, Fig. 3, and *z z*, Fig. 5. Fig. 5, Sheet 2, is a detail section taken through the line *w w*, Fig. 4.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved sulky attachment for breaking-plows, which shall be so constructed as to receive any ordinary plow, which may be adjusted to cause the plow to work deeper or shallower in the ground, which will allow the plow to be turned to either side, and which shall be convenient and reliable in use.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

The frame of the machine is formed of two side bars, A, connected at and near their forward ends by two parallel cross-bars, B.

C is the tongue, the rear end of which is secured adjustably to the rear cross-bar, B, by a bolt, c^1. The tongue C is secured to the forward cross-bar, B, by an angle-plate or half-keeper, c^2, and a bolt, c^3, so that by loosening the nut of the said bolt c^3 the tongue C may be inclined toward one or the other side, as may be desired.

D is the axle, which is bent four times at right angles, and works in bearings attached to the rear parts of the side bars, A. Upon one end of the axle D is formed an axle arm or spindle, upon which revolves the furrow-wheel E. To the other end of the axle D is attached a circular plate or disk, F, near its edge. To the center of the disk F is pivoted, by a bolt, g^1, the inner angle of a triangular plate, G, to the center of which is attached the axle arm or spindle H. Upon the axle-arm H revolves the wheel I, that runs upon the unplowed land. The outer angles of the triangular plate G project beyond the edge of the disk F, to receive the bolts g^2 that secure them to the plate J, which is placed upon the inner side of said disk F, washers a little thicker than the disk F being placed upon the said bolts g^2 between the said plates G J, so that the triangular plate G may be adjusted to bring the axle-arm H into any desired position with respect to the end of the axle D.

To the center of the sliding plate J is pivoted the end of a rod, K, the other end of which is pivoted to the lever L. The lower end of the lever L is pivoted to the side bar, A, or to the bearing for the axle D by a bolt. The lever L passes up at the side of the arched bar M, the ends of which are attached to the side bar, A.

The outer or convexed edge of the bar M is notched to receive the edges of the band N, placed upon the said lever L. The edges of the band N are notched to receive the edge of the ratchet-bar M, so that the said band may serve as a guard or keeper to keep the lever L in place against the side of the said ratchet-bar M, while serving as a pawl to hold the said lever L in place.

To the band N is attached the lower end of a rod, O, the upper end of which is pivoted to the end of the short arm of the elbow-lever P. The elbow-lever P is pivoted at its angle to the upper part of the lever L, and its upper arm is held out, holding the band N down upon the ratchet-bar M, by a spring, Q, interposed between the said levers P L. To the other side of the bar A, or to the bearing of the axle D, is pivoted the end of a lever, R, which is provided with an arched ratchet-bar, S, a band, T, a connecting-rod, U, an elbow-lever, V, and a spring, W, in the same manner as the lever L.

To the lower part of the lever R is pivoted a bar, X, the other end of which is pivoted to the axle D near its inner angle by a strap, Y, or other suitable means. Several holes are formed in the lever R and bar X to receive the pivoting-bolt, so that they may be adjusted as may be required. By this construction, by operating the lever R the axle D will be turned in its bearing to raise and lower the plow and adjust it to work at any desired depth in the

ground. To the upper end of the lever R is hinged a ring, Z, in such a position that it may be turned down over the end of the elbow-lever V, to lock the band-pawl T away from the ratchet-bars S, and thus allow the sulky to adjust itself to uneven ground without affecting the working of the plow.

To the rear cross-bar, B, upon the opposite sides of its center, are attached the lower ends of two bars, A′, which project upward and incline to the rearward, and upon their upper ends are formed or to them are attached the ends of two horizontal springs, B′. To the springs B′ is attached the driver's seat C′. The rear ends of the springs B′ are attached to the bend of a U bar or rod, D′, the ends of which are attached to the rear ends of the side bars, A.

E′ are two plates or blocks, in the adjacent sides of which are formed half-round notches or grooves to receive the middle part of the axle D. The lower side of the lower block, E′, is concaved to fit upon the convexed upper side of the plate or block F′, the lower side of which rests upon the upper side of the beam G′ of the plow, so that the said plow may be turned to one or the other side without disturbing the position of the axle D. The adjacent curved faces of the lower block, E′, and the block F′ are correspondingly corrugated to prevent them from slipping upon each other when adjusted. Through the four corners of the two blocks E′ are passed four bolts, H′, which pass down two upon each side of the plow-beam G′, and their lower ends are attached to the four corners of the plate or block I′, placed beneath the plow-beam G′. By this construction, by tightening the nuts of the bolts H′ the plow-beam will be securely clamped to the axle D, and by loosening the said nuts the plow may be turned to one or the other side. In the center of the inner surface of the cavity of the blocks E′ is formed a ring-groove to receive a pin, J′, the lower end of which is inserted in a hole in the axle D to keep the said axle from having a longitudinal movement in the said blocks E′. Several holes are formed in the axle D to receive the pin J′, so that the plow may be adjusted laterally upon the axle D, as may be required. The end parts of the cavity in the blocks E′ are enlarged laterally, or made oblong, so that the forward end of the plow-beam may be inclined to one or the other side, as may be required.

To the forward end of the plow-beam G′ is attached the clevis K′, to which the draft is applied. To the opposite sides of the clevis K′ are pivoted the lower ends of two bars, L′, the upper parts of which are perforated to receive the open or hook links M′. The open links M′ are hinged to eye-straps N′, attached to the rear cross-bar, B. The bars L′ and links M′ are designed to hold the forward end of the plow-beam G′ down to its work and prevent it from jumping up while allowing it to have a free lateral movement. Several holes are formed in the upper parts of the bars L′ to receive the open links M′, so that the forward end of the plow-beam may be adjusted higher or lower, as may be required.

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

1. The combination, with the crank-axle D, of the disk F, the pivoted angle-plate G, the spindle H, the wheel I, the sliding plate J, the pivoted rod K, and the lever L, as and for the purpose specified.

2. The combination of the block F′, convexed and corrugated upon its upper side, with the lower block, E′, concaved and corrugated, upon its lower side, the four bolts H′, and the bottom plate, I′, for connecting the plow-beam adjustably with the axle D, substantially as herein shown and described.

3. The combination of the adjustable pin J′ with the bent axle D, provided with holes to receive it, and the blocks E′, provided with a ring-groove in their grooved faces, substantially as herein shown and described.

EDWARD THOMAS HUNTER.

Witnesses:
JOHN A. IRWIN,
W. O. ROGERS.