J. A. OLSON.

PLOW.

No. 190,070. Patented April 24, 1877.

Fig. 1

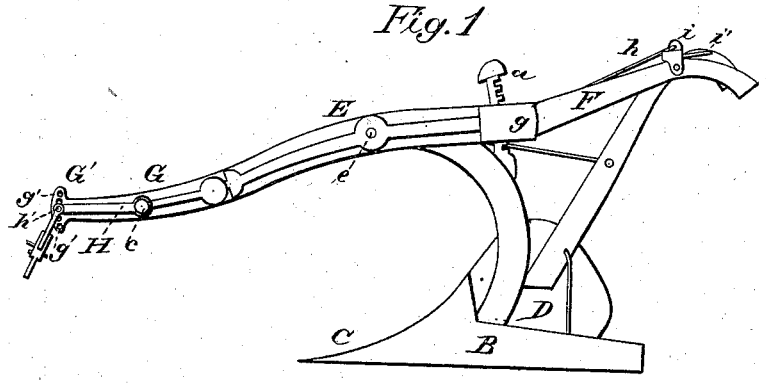


Fig. 2.

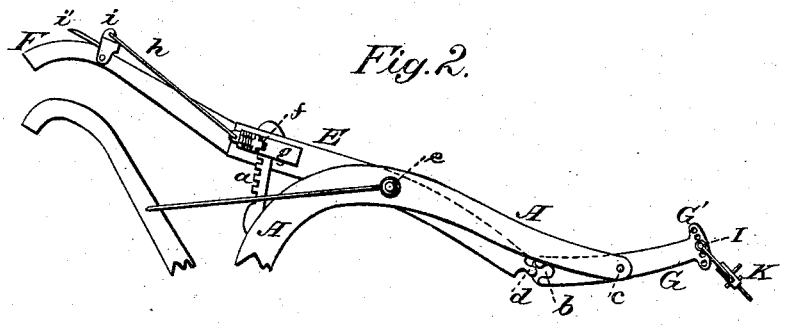


Fig. 3.

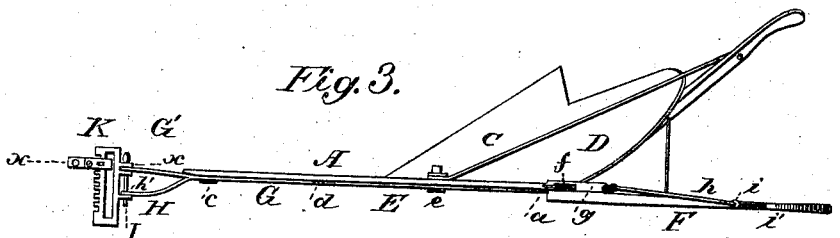


Fig. 4.

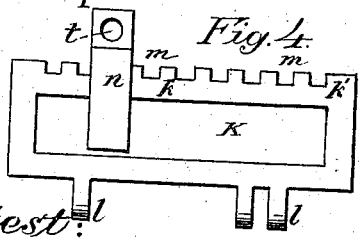
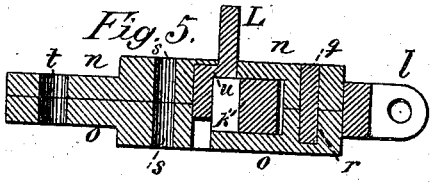


Fig. 5.



Attest:

Jno. P. Brooks.

M. S. Ditmer.

Inventor:

John A. Olson,

by Louis Bagger & Co.

attys.

UNITED STATES PATENT OFFICE.

JOHN A. OLSON, OF VASA, MINNESOTA.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. **190,070**, dated April 24, 1877; application filed March 6, 1877.

To all whom it may concern:

Be it known that I, JOHN A. OLSON, of Vasa, in the county of Goodhue and State of Minnesota, have invented certain new and useful Improvements in Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figures 1 and 2 are side elevations, showing both the sides of the plow. Fig. 3 is a top view. Fig. 4 is a top plan of my improved clevis. Fig. 5 is a cross-section of the same through the line indicated by *x x* in Fig. 3.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has for its object, first, to provide a simple and easy means for regulating the "set" of the plow in the ground, or the depth of the furrow, during the operation of plowing, without the necessity of stopping the team to adjust the clevis; and, second, to provide a means whereby the plow may readily be adjusted laterally in its relation to the line of draft; and it consists in the construction and arrangement of devices whereby these results are attained, substantially as hereinafter more fully described, and pointed out in the claims.

In the drawings, A is the plow-beam, preferably, but not necessarily, made of metal. B is the land-side. C is the share, and D is the mold-board. All of these elements may be of any suitable construction, as my improvements are applicable to all plows of this class, without regard to details of construction. Affixed upon the rear end of beam A is a segmental ratchet, *a*. E is an arm, pivoted to the side of the beam at *e*, and having at one end the handle F, which also serves as one of the plow-handles, and at the other end terminating in a lug or projection, *d*. The arm E, in its relation to beam A, may be secured in any given position by a spring pawl or catch, *f*, placed within a box, *g*, on one side of the handle F, which, when released, catches into any one of the notches in the ratchet *a*. The spring-catch *f* is operated by a rod, *h*, passing up to a small forked arm, *i*, pivoted upon the handle F, which has a thumb-lever, *i'*, so that pawl *f* may be withdrawn from the notches in ratchet *a* by simply depressing, with the thumb, lever *i'*, without removing the hand from its hold upon the handle, or even changing its position.

G is another arm, pivoted at the forward end of the plow-beam upon a bolt, *c*, and slotted or recessed at one end, as shown at *b*, Fig. 2, to fit loosely over the projection *d* on arm E. At the other end arm G terminates in a clevis, G', preferably made in one piece with the arm itself. H is a strap or bracket, pivoted upon and projecting from the bolt *c*, and passing forward, terminating in an eye, *h'*, opposite to the segmentally-arranged perforations *g'* in the clevis G', so that, by swinging bracket H upon its bolt *c*, the eye *h'* may be placed opposite to any one of the perforations in the clevis G'. By this arrangement it will be seen that the bolt I, which passes through the eye in bracket H, and upon which my improved horizontal clevis K is hung, may be inserted into and secured in any one of the perforations *g'* in the vertical clevis, thereby admitting of the preliminary adjustment, vertically, of the plow, in its relation to the line of the draft, in the usual manner.

My improved clevis for adjusting the plow laterally—that is, regulating the angle between the face of the land-side and the line of draft, consists of a parallelogram, K, having two projecting ears, *l*, by which it is hung upon bolt I in the manner clearly shown in Fig. 3 of the drawings. The opposite side has a series of equidistant notches, *m*. *n o* are two plates, recessed in their respective lower and upper faces, so as to fit over and slide upon the toothed side *k'* of the parallelogram K. One of these plates has affixed to its rear end a pin or screw, *q*, which fits into a corresponding hole, *r*, in the plate opposite, and the plates are prevented from coming apart by a screw or bolt, *s*. The forward end of plates *n o* is perforated, as shown at *t*, for the link or bolt, by which the double-tree is secured to pass through.

The clevis-plates *n o*, to which the draft is accordingly applied, may be secured at any given point upon the toothed side of clevis K

by the pin L, the construction of which will be understood by reference to Fig. 5. This pin passes vertically through perforations made in plates *n* and *o*, and has a step or shoulder, *u*, which will fit into any one of the notches in the side *k'* of the parallelogram K. By raising the pin this step is lifted out of the notch in which it rested at the time being, the step or shoulder at the same time preventing the withdrawal or falling out of the pin from the clevis-plate, which may then be slid in either direction upon the notched bar *k'*; and when the desired position has been reached the plate is secured in its place by dropping pin L, thereby allowing its step *u* to enter into the corresponding notch in bar *k'*. Thus, by this arrangement, it will be seen that the vertical draft, operating at *t*, is adjustable by arm G and horizontal clevis K, without the necessity of stopping or unhitching the team; and by changing the position of plate *n o* upon clevis K, it will readily be observed that the line of draft may be so adjusted laterally as to change at will the angle at which the plow is working, or make this work on a line by adjusting the clevis-plate, as represented in Fig. 3, which is nearly even with that of the draft, or on the same line.

Besides this, the advantages resulting from the facility with which the depth or "set" of the plow may be regulated and controlled are too obvious to require further explanation. In plowing stony or rocky soil or ground in which have been left standing stumps and similar obstructions, the point of the share may readily be raised so as to pass over them, thereby avoiding loss of time and injury to the plow. In plowing hilly or uneven ground it is desirable to set the plow deeper while passing over hilltops and ridges, because of the meagerness and toughness of the soil at those places than when passing over the valleys and depressions, where the soil is generally of a rich and loamy character. And this may be effected easily and instantaneously by my improvement, so that the depth of furrow will be the same all over without regard to the varying character of the soil. Deep or shallow furrows may be plowed simply by adjusting the spring-catch *f* in its proper notch in the segmental ratchet *a*, which is the work of a moment, requiring little exertion and no stoppage of the team.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The herein-described device for regulating the set of a plow, consisting essentially in the combination of the plow-beam A, having segmental ratchet *a*, with the engaging or coupling lever-arms G E, operating-handle F, and spring-catch *f*, substantially as and for the purpose shown and specified.

2. The combination of the plow-beam A, having bolt *c*, arm G, having clevis G', swinging bracket H, and bolt I, substantially as and for the purpose herein shown and specified.

3. The adjustable clevis-plate herein described, consisting of an upper plate, *n*, having pin or screw *q*, a correspondingly-shaped lower plate *o*, having perforation *r*, pin L, having step or shoulder *u*, and bolt or screw *s*, all constructed and combined to operate substantially in the manner and for the purpose herein set forth.

4. The combination of plow-beam A, swinging and adjustable arm E, having handle F, pivoted arm G, having clevis G', bracket H, bolt I, parallelogram K, and clevis-plate *n o*, all constructed and combined to operate substantially in the manner and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN ANTHONY OLSON.

Witnesses:

O. A. OLSON,

W. O. WILLIAMS.