J. L. LAUGHLIN.

SULKY-PLOW.

No. 183,178. Patented Oct. 10, 1876.

Fig. 1

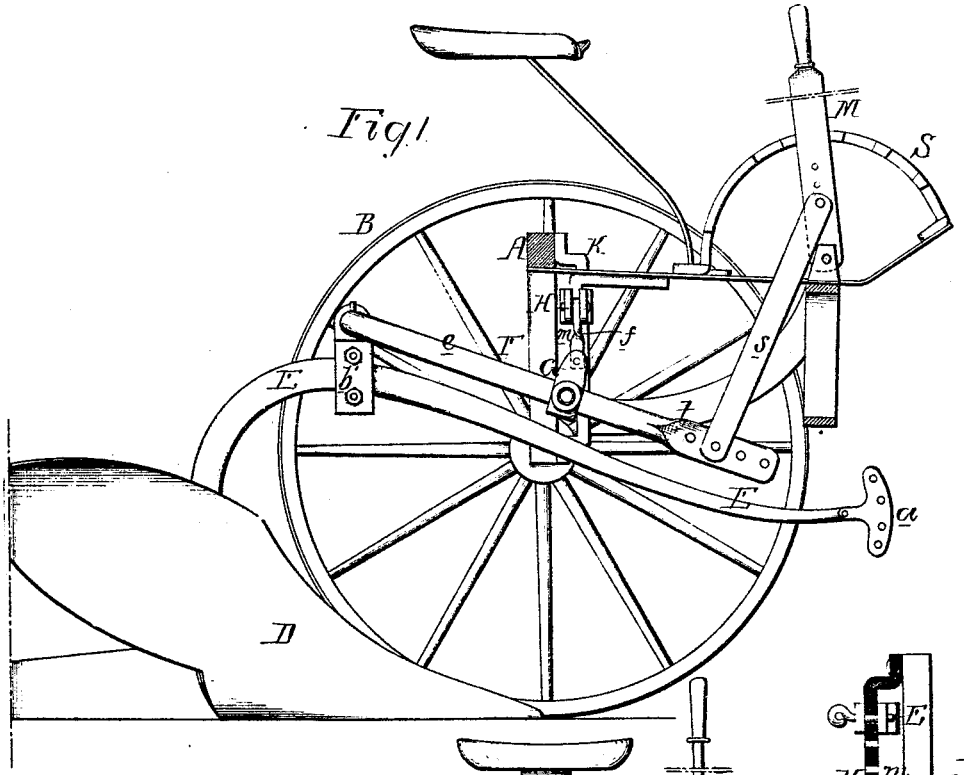


Fig. 3

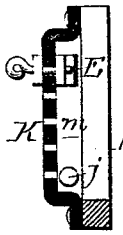


Fig. 2

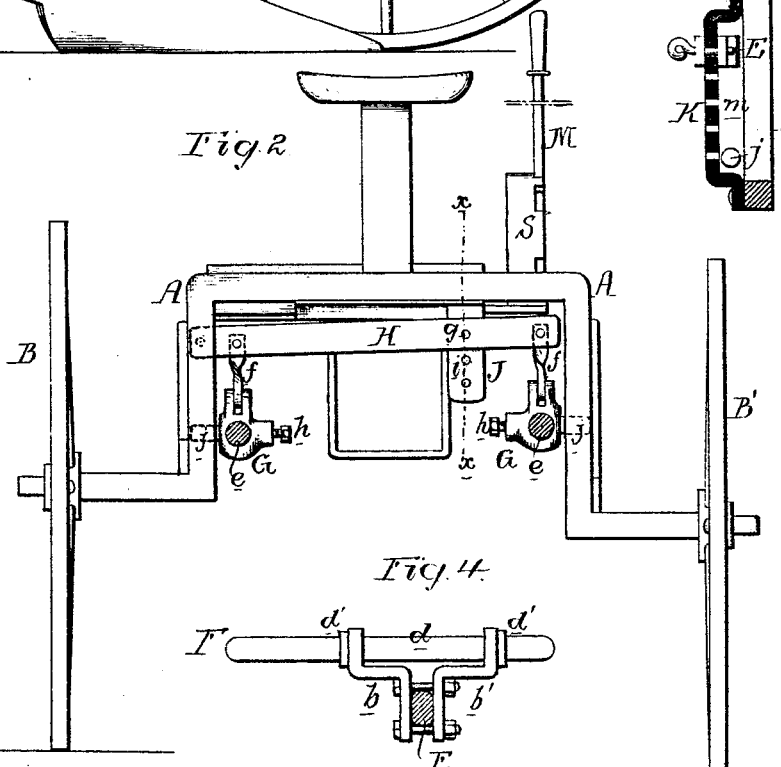
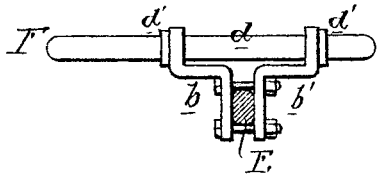


Fig. 4



Witnesses
Harry Howson Jr
Harry Smith

John L. Laughlin
by his attorneys
Howson & Sons

UNITED STATES PATENT OFFICE.

JOHN L. LAUGHLIN, OF PERU, ILLINOIS.

IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **183,178**, dated October 10, 1876; application filed June 23, 1876.

To all whom it may concern:

Be it known that I, JOHN L. LAUGHLIN, of Peru, La Salle county, Illinois, have invented certain Improvements in Sulky-Plows, of which the following is a specification:

The main object of my invention is to so construct a sulky-plow that the plow proper will always be maintained laterally in a position level with the surface of the ground irrespective of the angles assumed by the frame of the machine. These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical section of my improved sulky-plow; Fig. 2, a transverse section on the line 1 2, looking in the direction of the arrow; and Figs. 3 and 4, detached views of parts of the machine, illustrating features of the invention.

A is a frame of wrought-iron, bent to the form shown in Fig. 2, and carrying at its opposite ends the wheels B B′. D is the plow proper, and E the beam of the same, the latter being provided at the front end with the usual perforated plate, to which the draft-bar is attached, and being secured to the lower ends of two plates, *b b′*, Fig. 4, which are bent outward at their upper ends, and hung to the transverse portion *d* of a frame, F, the longitudinal arms *e e* of which are adapted to blocks G, hung to the links *f*, which are pivoted at their upper ends to a lever, H, as shown in Fig. 2. This lever can vibrate freely on a pin, *g*, adapted to one of a number of openings, *i*, in a bar, J, secured to the frame A of the machine, the pivot-pin *g* being raised or lowered in accordance with the depth of the furrow to be turned. The plates *b b′* are retained in position on the portion *d* of the frame F by means of collars *d′*, which are adjustable, so that the plow may be moved laterally, as desired, and the arms *e e* of the frame F may be adjusted longitudinally in the blocks G, and secured in position after adjustment by means of the set-screws *h*. Each of the blocks G has a pin, *j*, which fits snugly, but can slide freely in a vertical opening, *m*, formed between the vertical portion of the frame A and a plate, K, secured to the same. One of these plates K is perforated in the present instance, and is embraced by one end of the lever H, as shown in Fig. 3, this end of the lever being furnished with openings, for a purpose explained hereafter.

The pivot *g* should be so arranged laterally in respect to the plow that a vertical line, *x x*, Fig. 2, passing through the said pivot, should also pass through the plow at such a point that the weight of the plow and its load on one side of the line will be balanced by the weight on the opposite side of the line, or, in other words, the line should pass through the lateral center of gravity of the plow, so that when, owing to the sinking of a wheel into a furrow, or for other cause, the frame A is tilted laterally, the plow will retain its position.

During the tilting of the frame the ends of the lever H are guided and steadied by the pins *j* of the blocks G sliding in the vertical openings *m* in the frame.

When plowing in hard ground, it is sometimes desirable to hold the plow in a certain position. In order to accomplish this, the end of the lever H which embraces the perforated plate K is adjusted until its openings coincide with the proper perforation of said plate, a pin being then inserted to retain the lever.

The pins *j* of the blocks G, in addition to serving as guides for the lever H, act as trunnions, on which the frame F may be caused to vibrate, so as to raise or lower the plow D by the action of a lever, M, pivoted to the frame of the machine, extending above the same, so as to be within reach of the operator, and connected by means of a link, *s*, with an extension, *t*, of one of the arms *e* of said frame F. The lever M is adapted to notches in the edge of a segmental plate, S, these notches serving to retain the lever in the different positions to which it is adjusted.

It will be observed, on reference to Fig. 4, that the upper ends of the plates *b b′*, to the lower end of which the beam E of the plow is attached, are bent outward to a considerable extent before being hung to the frame F. The object of this arrangement is to afford an extended bearing for the plates, and prevent any lateral movement of the plow independent of the frame F.

It will be evident that any suitable catch may be employed for holding the end of the lever H in position in place of the device shown.

I do not desire to claim, broadly, a plow having a pivoted lever, to which the plow-beam is hung; but

I claim as my invention—

1. The combination of the U-shaped frame F and the plow hung to the central portion *d* of the same, with the pivoted lever H, from opposite ends of which the arms *e e* of the said frame are suspended, substantially as described.

2. The combination of the lever H, hung to the frame A of the plow, with blocks G, connected to said lever and adapted for the reception of the side bars of the plow-carrying frame F, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN L. LAUGHLIN.

Witnesses:

HARRY HOWSON, Jr.,

HARRY SMITH.