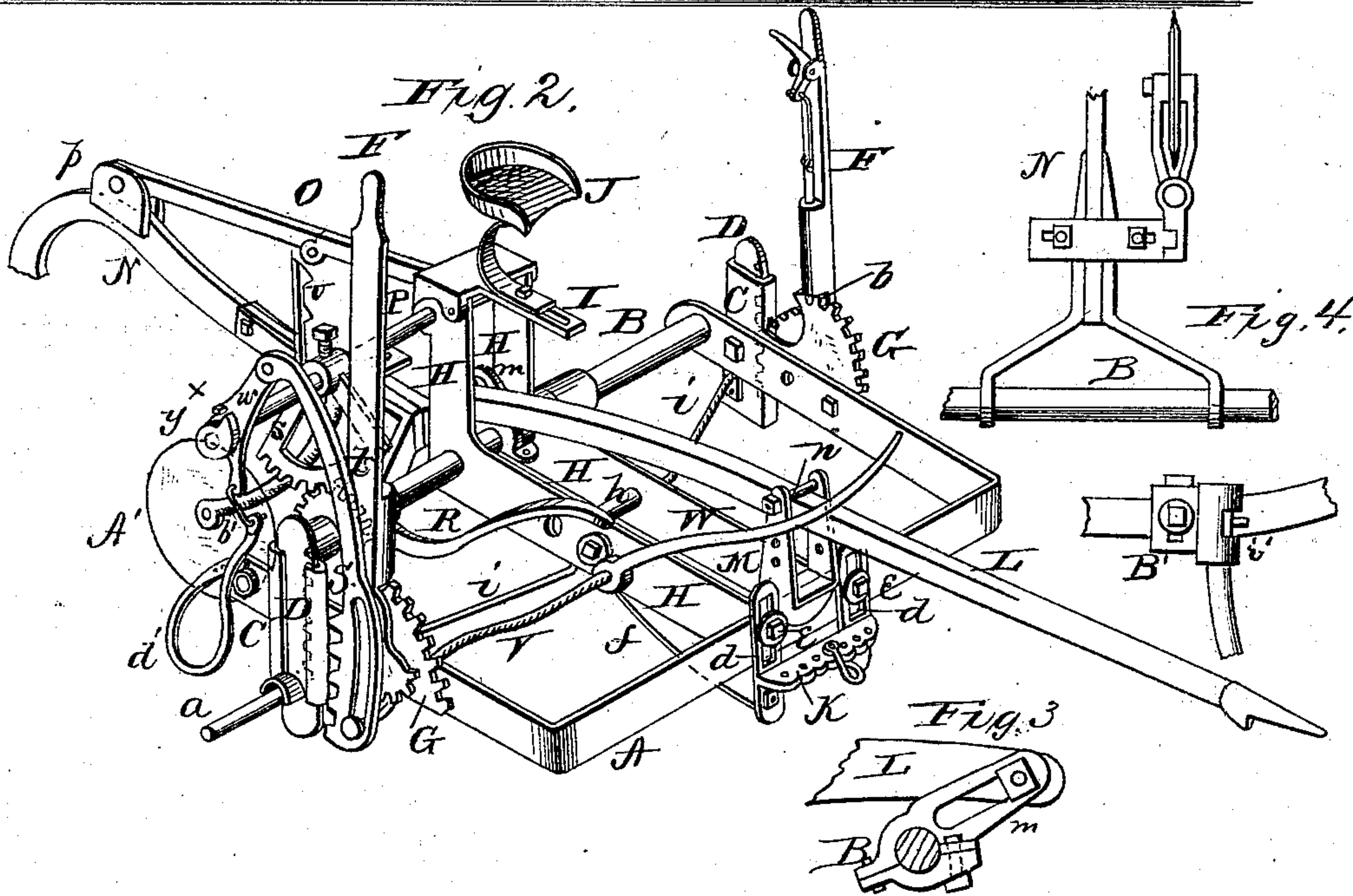
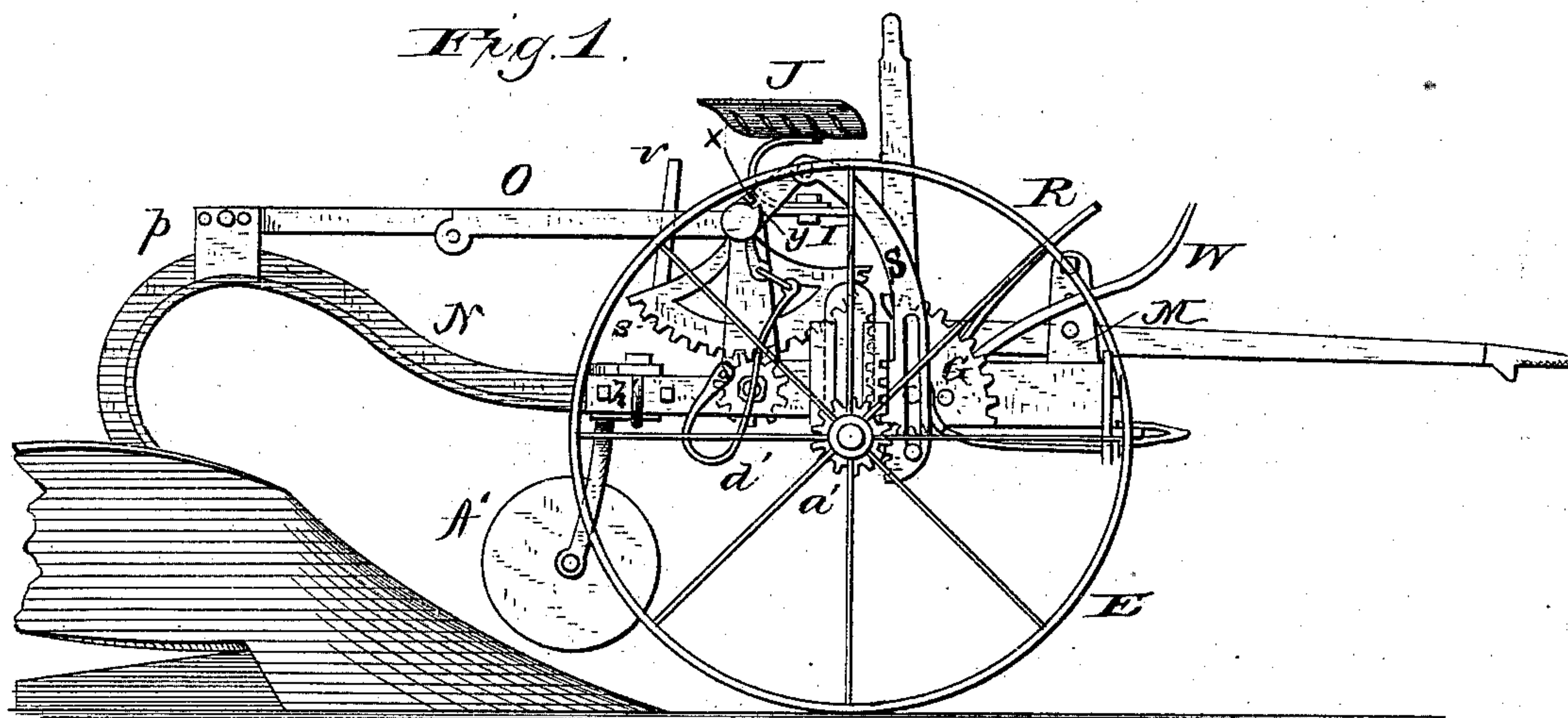


W. D. JAPS.  
Sulky-Plow.

No. 225,138.

Patented Mar. 2, 1880.



Witnesses:  
Frank L. Curand  
H. Aubrey Toulmin

Inventor:  
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# UNITED STATES PATENT OFFICE.

WILLIAM D. JAPS, OF WATERTOWN, MINNESOTA.

## SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 225,138, dated March 2, 1880.

Application filed December 29, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM D. JAPS, of Watertown, in the county of Carver, and in the State of Minnesota, have invented certain new and useful Improvements in Sulky-Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a sulky-plow, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of my plow. Fig. 2 is a perspective view of the frame and mechanisms connected thereto. Figs. 3 and 4 are detail views.

A represents the frame, made of a flat piece of iron bent to form the front and two parallel side arms, the rear ends of which are connected by a rod, B. To each side arm of the frame is attached a vertical guide, C, in which is a slide, D, provided with the spindle *a*, and on this spindle the wheel E is placed. The slide D is cogged on its forward edge, and a cogged segment formed on the lower end of pivoted lever F works therein for raising and lowering the wheel, said lever being held by a dog or pawl, *b*, in a rack, G.

To the front part of the frame A are fastened two bars, H H, which extend rearward and have the rod B passing through them, and are then turned upward and provided with a cap-piece, from which projects forward a slotted arm, I. On this arm the seat J is adjusted forward and backward, so as to balance the machine, and fastened by a bolt.

K represents the clevis, provided with two vertically-slotted arms, *d d*, which are fastened by bolts *e e* to the front of the frame, and admit of the clevis being raised and lowered, as required.

*ff* are braces connecting the lower ends of the arms *d* with a long bolt, *h*, in the bars H, and from this bolt extend braces *i* to the lower ends of the guides C, as shown.

On the rod B is fastened a collar with slotted arm *m*, in which the rear end of the tongue or pole L is adjusted and pivoted by means of a movable stud. The tongue or pole extends forward through a tongue-holder, M, fastened at the front of the frame. This holder has two vertical arms, between which the tongue passes, said arms being perforated for the adjustment of a pin, *n*, so that the tongue can be regulated as required.

In a full-sized machine the clevis and pole connections are to be made laterally adjustable, so as to accommodate them to two or more horses, as desired.

N represents the plow-beam, having two diverging arms or prongs at its forward end, which are pivoted on the rod B.

O is a jointed arm, one end of which is pivoted between lugs *p* on the plow-beam N, while the other end is attached to a shaft, P, which runs above the rod B, and has its bearings in the bars H and a suitable arm attached to the frame. On the shaft P is a cogged segment, *s*, which meshes with a similar segment, *t*, pivoted on the rod B, and this latter segment is provided with a lever, R. By the use of this lever it will readily be seen that the shaft P can be turned so as to break the joint in the arm O, and raise the plow out of the ground. A spring-catch, *v*, secured to the segment *s*, then catches on and holds the lever R, so as to keep the plow in an elevated position. This is intended simply when going to or from the field, or when turning at the end of the furrow.

When it is desired only to raise the plow an instant to pass an obstruction the following device is used: On the outer end of the shaft P is pivoted an arm, *w*, to which is pivoted a hanging arm, S, having a series of cogs on its rear edge, which are to engage with a pinion, *a'*, on the hub of the driving-wheel. The arm *w* has a lug, *x*, to engage with a lug, *y*, on the shaft P. The arm *w* also extends below said shaft, and is by a link, *b'*, connected with a spring, *d'*, which holds the arm in such position that the lugs *x y* are in contact. The shaft P can then be turned by means of the lever R without interfering with the arms *w S*.

V is a crank-shaft provided with a foot-lever, W, and the crank works in a slot in the arm S. By means of the foot-lever W the

driver can throw the cogged arm S in gear with the pinion *a'*, so that said arm is drawn down. The lugs *x y* then cause the shaft P to be turned a short distance for raising the plow to pass an obstruction, and as soon as the pressure is removed from the foot-lever the plow falls back, and the spring *d'* returns the arms *w S* to their former position. More than one plow may be used, if desired.

10 A' is the rolling colter, swiveled in a socket, *i'*, which is adjustable up and down on a guide, B', and this guide is adjustable laterally on the plow-beam and fastened by a clip, *h'*.

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

1. In combination with the frame A and rod B, the L-shaped bars H H, cap-piece with

slotted arm I, and the adjustable seat J, as and for the purposes herein set forth. 20

2. The combination, with the pole L, of the movable collar with slotted arm *m* and the tongue-holder M, all constructed substantially as and for the purposes herein set forth.

3. The combination of the shaft P, arm *w*, 25 lugs *x y*, spring *d'*, cogged swinging arm S, pinion *a'*, crank-shaft V, and foot-lever W, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I 30 have hereunto set my hand this 8th day of December, 1879.

WILLIAM DANIEL JAPS.

Witnesses:

ALBERT KENNWANS,  
FRANK ACKER.