

I. KARSNER.  
Road-Ditcher.

No. 214,399.

Patented April 15, 1879.

Fig: 1.

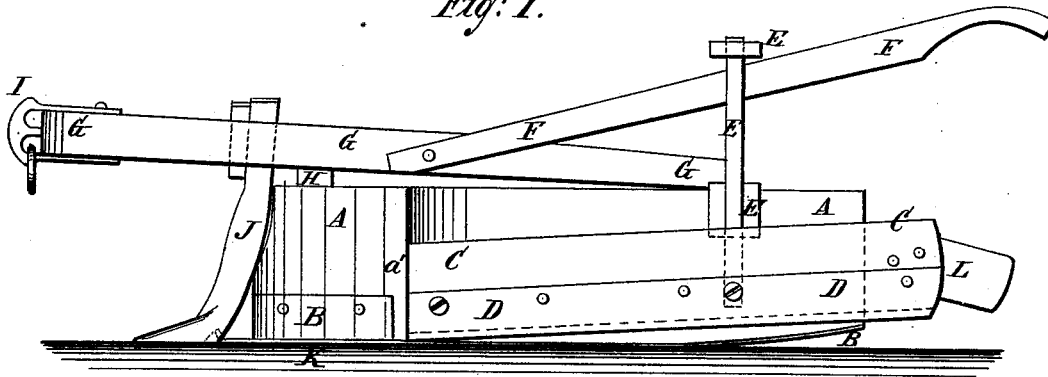


Fig: 2.

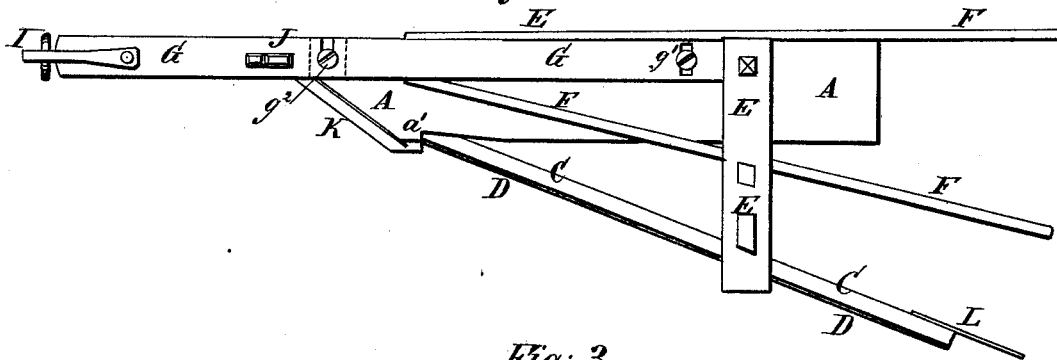


Fig: 3.

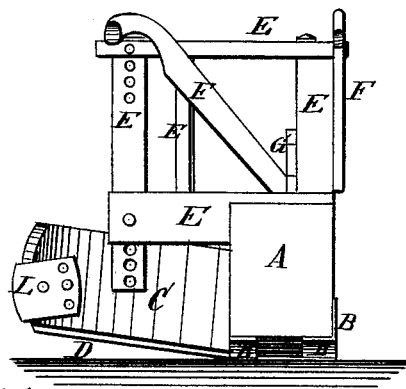
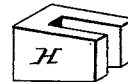


Fig: 4.



WITNESSES:

*Achilles Sehehl.*  
*J. H. Scarborough.*

INVENTOR:

*I. Karsner.*  
BY *Mumford*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ISAAC KARSNER, OF FLORIDA, OHIO.

## IMPROVEMENT IN ROAD-DITCHERS.

Specification forming part of Letters Patent No. **214,399**, dated April 15, 1879; application filed October 7, 1878.

*To all whom it may concern:*

Be it known that I, ISAAC KARSNER, of Florida, in the county of Henry and State of Ohio, have invented a new and useful Improvement in Road-Ditchers, of which the following is a specification.

Figure 1 is a side view of my improved ditcher. Fig. 2 is a top view of the same. Fig. 3 is a rear view of the same. Fig. 4 is a perspective view of the slotted block.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved machine for opening ditches along the sides of roads and fields, and in other places where the ditches are to be made with one perpendicular and one sloping side, for forming roads upon side hills, for grading roads and other places where the dirt is to be moved to one side, for opening and filling blind ditches, and for various other similar purposes.

The invention consists in the combination of the bar, having its forward end beveled, its bottom face slightly rounded, and faced with metal plates upon its lower and outer sides and its beveled forward end, the wing faced upon its outer side with a metal plate, having its lower edge bent outward, the upright frame, the handles, the adjustable beam, the cutter, and the shear with each other; in the slotted block inserted between the beam and the forward end of the land-side bar, and held in place by the fastening-bolt, as hereinafter fully described.

A is a heavy bar of wood, of any convenient length, and having its forward end beveled upon one side, and having the rear part of its bottom face slightly rounded, to enable it to be more readily controlled.

The bar A forms the land-side of the machine, and is faced with metal plates B upon its bottom face, and upon the lower part of its land-side and of its inclined forward end.

In the side of the bar A, at the rear end of the incline of its forward end, is formed a shoulder, *a'*, to receive the forward end of the wooden wing C, which is bolted to the said bar A.

The wing C is inclined outward and slightly inclined upward, and is faced with a metal

plate, D, upon the lower part of its outer side. The lower edge of the facing-plate D is bent outward, to serve as a shear for cutting or shaving off uneven places.

The rear part of the wing C is bolted to the outer post of an upright frame, E, which is secured to the rear part of the bar A, and which is strengthened in place by the handle F. The handles F are attached to the frame E, and their forward ends are attached to the beam G.

The outer post of the frame E, to which the wing C is attached, is movable, and is secured to the cross-bars of the said frame by pins or bolts, so that it may be moved up or down to adjust the rear end of the said wing C at any desired elevation.

The rear end of the beam G is slotted transversely to receive the bolt *g'*, by which it is secured to the bar A, so that the line of draft may be adjusted as may be required. The beam G is secured to the forward end of the bar A by a bolt, *g*<sup>2</sup>; and a wedge-shaped block, H, slotted to receive the bolt *g*<sup>2</sup>, that fastens the beam to the bar A, is inserted between the beam and the said bar A, to enable the machine to be adjusted to work deeper or shallower in the ground, as may be required, by simply adjusting the said block.

To the forward end of the beam G is attached the clevis I, to which the draft is applied.

J is the cutter, which is made with an angular foot, and the shank of which passes through a slot in the beam G at the forward end of the bar A, and is secured in place by a wedge-key driven into the said slot along the forward edge of the said shank.

In the heel of the cutter J is formed a recess to receive the point of the shear K, attached to the lower side of the forward end of the bar A, and which may be the forward end of the bottom plate, B, or a separate plate, as may be desired.

To the rear end of the wing C is secured a small wing, L, by two or more bolts. The wing L is designed to smooth off the side of the ditch, and several holes are formed in it and in the wing C, to receive the fastening-bolts, so that the said wing L may be adjusted at any desired inclination.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

1. The combination of the bar A, having its forward end beveled, its bottom face slightly rounded, and faced with metal plates B upon its lower and outer faces and its beveled forward end, the wing C, faced upon its outer side with a metal plate, D, having its lower edge bent outward, the upright frame E, the handles F, the adjustable beam G, the cutter J, and the shear K, with each other, substantially as herein shown and described.

2. The wedge-shaped and slotted block H, inserted between the beam G and the forward end of the bar A, and held in place by the fastening-bolt *g*<sup>2</sup>, substantially as herein shown and described.

ISAAC KARSNER.

Witnesses:

WILLIAM H. STOCKMAN,

A. J. SCOFIELD.