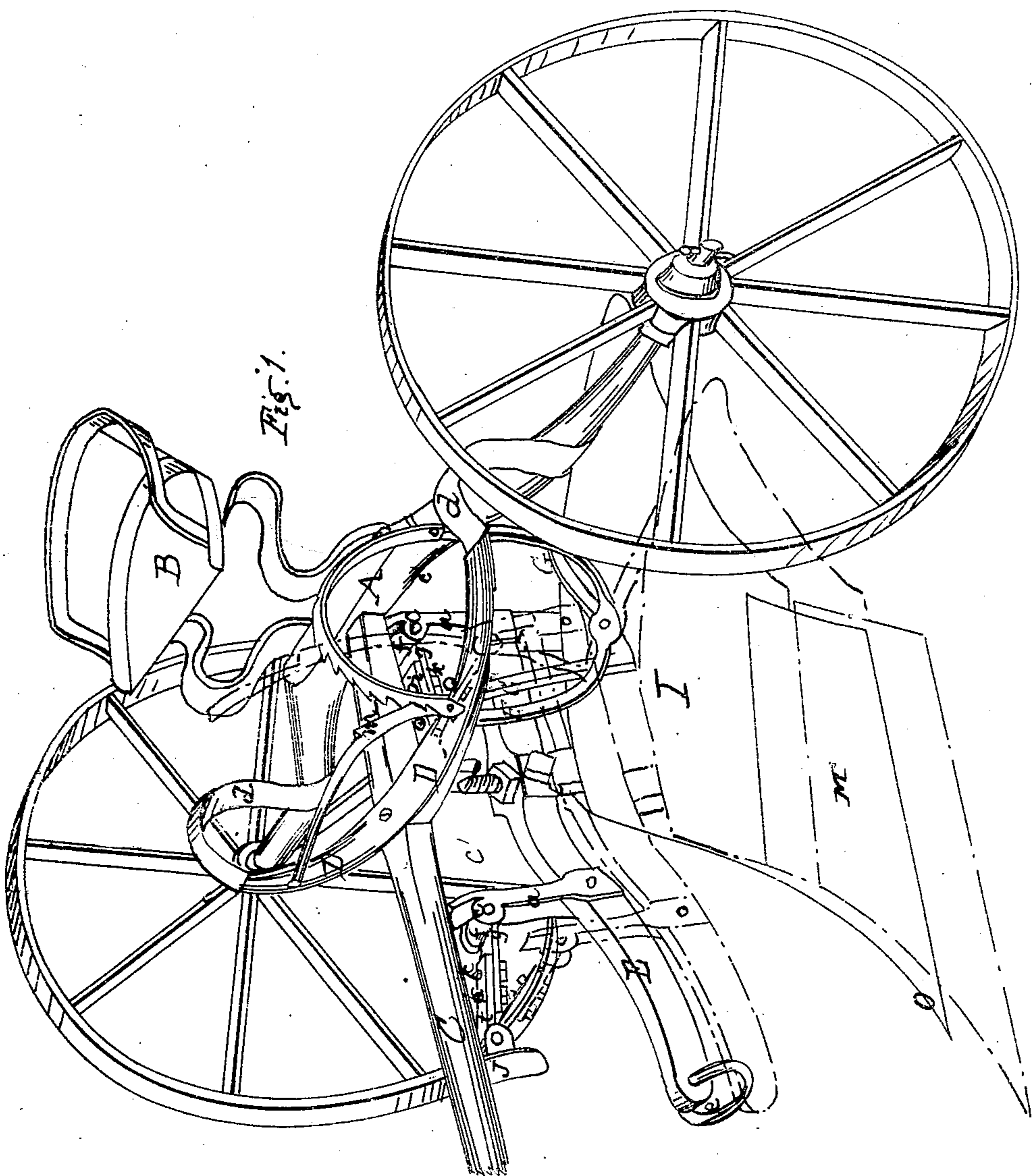


J. Warwick.

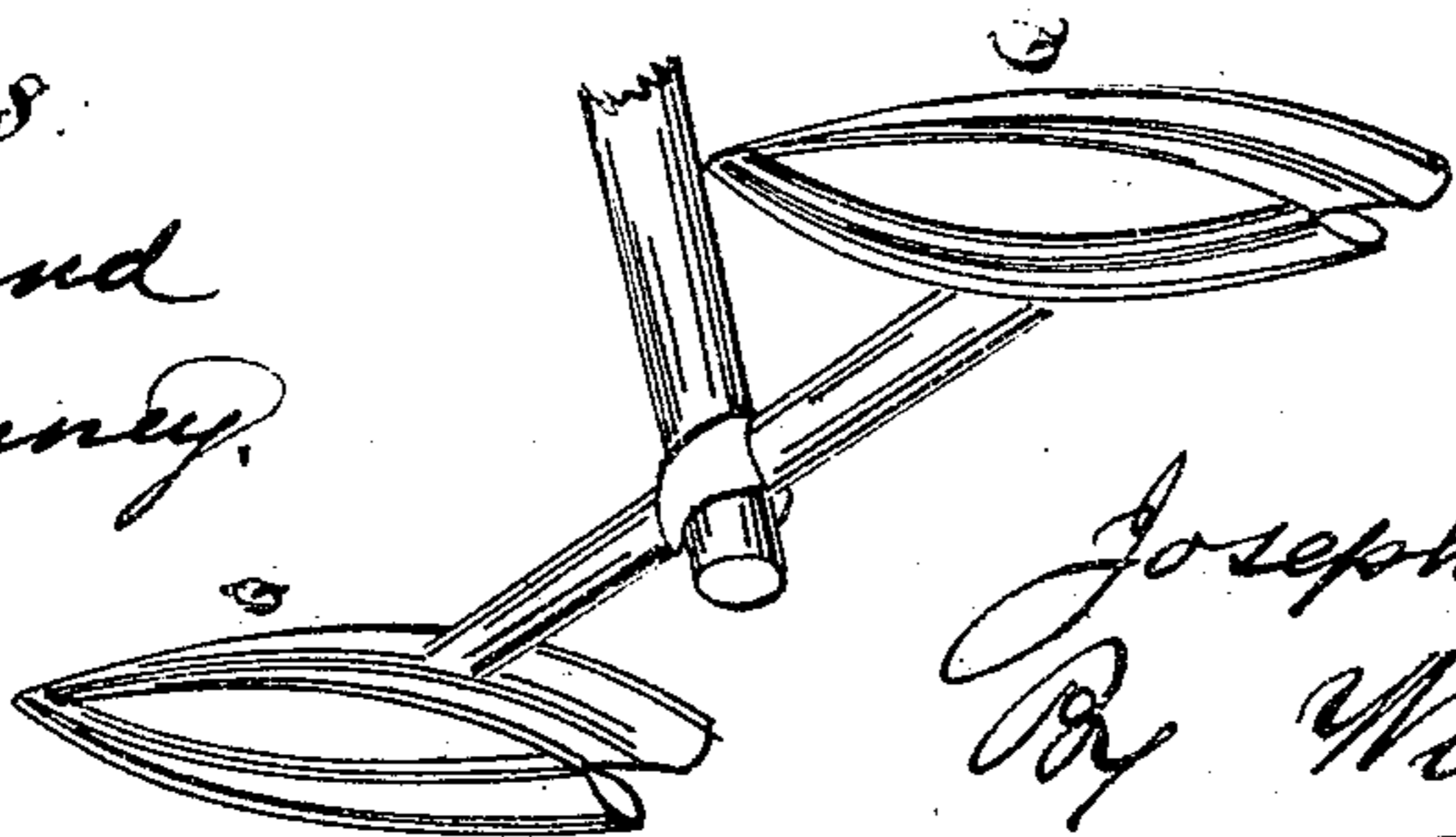
Sulky-Plow.

N^o 73143

Patented Jan. 7, 1868.



Witnesses:
D. Ourand
Wm. Kenney.



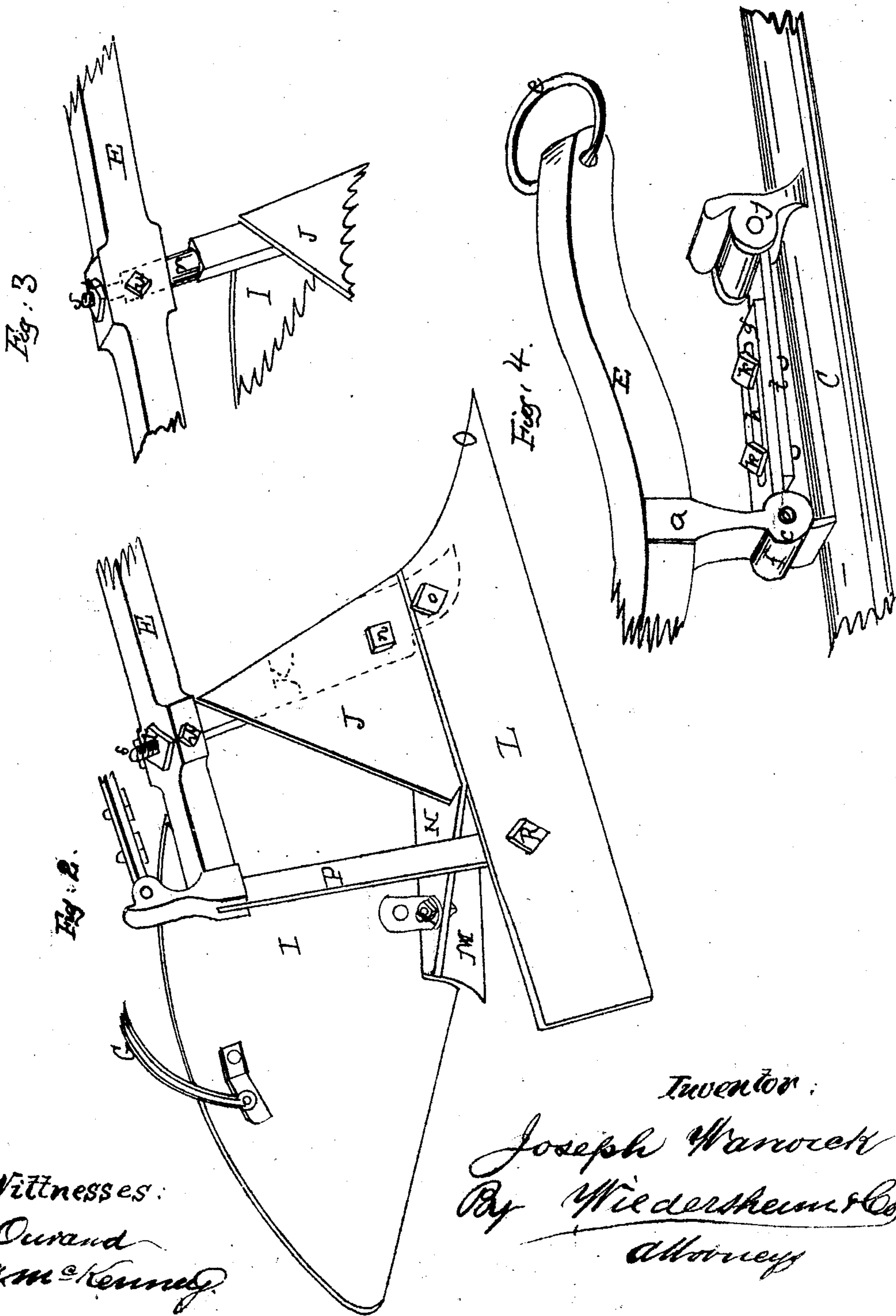
Inventor:
Joseph Warwick
By Wiedersheim & Co.
Attorneys

J. Warwick.

Sulky-Plow.

N^o 73143

Patented Jan. 7, 1868.



Witnesses:
@ Ourand
W. A. M. Kennedy

Inventor:
Joseph Warwick
By Wiedersheim & Co.
Attorneys

United States Patent Office.

JOSEPH WARWICK, OF SPRINGBORO, OHIO.

Letters Patent No. 73,143, dated January 7, 1868.

IMPROVEMENT IN SULKY-PLOUGHS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSEPH WARWICK, of Springboro, in the county of Warren, and State of Ohio, have invented a new and useful Improvement in Sulky-Ploughs; and I do hereby declare the following to be a full and correct description of the same, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1, Plate I, is a perspective view of my improved sulky-plough.

Figure 2, Plate I, is a detached perspective view of the plough alone.

Figure 3, Plate I, is a perspective view of the attachment of the plough-sheath to the beam, and

Figure 4, Plate I, is an under side detached view of the attachment of the plough-beam to the sulky-pole.

The same letters indicate the same parts in the several figures.

My invention consists in a peculiar attachment of the plough-beam to the sulky-pole, by means of which the plough can be raised or lowered, or entirely taken out of the ground, the movement of the attachment raising the plough-point out backwardly; also, in the peculiar attachment of the plough-point, share, and mould-board to the sheath of the plough, without the use of a bolt on the face of the share or mould-board; also, in the peculiar arrangement of the plough under the centre of the sulky, so that the sulky is drawn by the plough, whilst the plough is guided by the sulky.

A, in the drawings, may represent the axle of the sulky, bent upwardly towards the centre, and provided with a straight portion in the centre, to which the seat B is attached by springs *b*. C is the pole, provided with a bow, D, which is attached to the axle A by means of springs *d*. Under the pole, and in line with it, is the plough-beam E, provided with a draught-string, *e*. This beam E is attached to the pole C by means of standards *a a*, provided with ears, *c c*, through which, and the sleeve-part *f* of plates *g*, pins *c'* pass, forming pivots for the plates *g*, which are provided with slots, *h*. Plates *i* have their pivots formed similarly in standards J, attached to the pole C, and have holes to allow screws *k* to be fastened, which hold the plates *g* and *i* firmly to each other. The contiguous surfaces of these plates may be roughened, so as to form a better connection. Attached at one end to the under side of the bow D, and at the other end to the axle A, is a metal bow, F, affording, at *l*, a pivot for the double-armed lever G, the horizontal part of which is secured to the mould-board, as shown in fig. 2, or may be so arranged as to be attached to the plough-beam direct. Its vertical part, forming the handle, has a triangularly-shaped part, *m*, which catches in the notches of the bow-rack H, which is attached to the bow D and axle A, as shown. The mould-board consists of one piece, bent around the sheath K, and forms two parts, I and J, the latter being attached to the sheath by means of a bolt, *n*. The share consists of the part L, forming, with the part J of the mould-board, the low-side, and the share proper, M, which has a part, N, bent at right angles to M, and connected with the top of the land-side L. The joining of the land-side L and share M forms the points O. The land-side is secured to the sheath K by means of the bolt *o*, and to a standard, P, on the plough-beam E, by a bolt, *p*. The parts I and J of the mould-board rest on the part N of the share, which latter may be attached to I by a bolt, *q*, passing through the plate N, and a plate riveted to the part I. The upper part of the sheath K is made round, as shown at *r*, and has a screw-shank, *s*, and passes through an opening in the beam E, in which it can turn, and is held by a nut, *t*, by means of which it can be adjusted vertically. A firm lateral position is secured by set-screws *u*, one on each side of the beam E, which gripe the part *r* between them. Q Q is a neck-yoke for the horses, by which to guide the sulky and plough, and may be of any well-known shape or form.

One of the great objections to steel ploughs is their liability to strain that part of the mould-board in which the bolts are situated, by means of which they are secured to the share-joints and land-sides, the resistance of the ground acting upon the share and upon the mould-board in such a way as to tear them away one from another, and in this way mould-boards have to be continually replaced by new ones. To obviate this difficulty, I construct my plough without a single bolt in that part of it where the strain comes most. The mould-board, share, and land-side are all secured to the sheath K, and even the bolt *q* may be dispensed with, when there will be no bolt or rivet in the whole surface of the mould-board or share, the lever G, in that case, being attached to the plough-beam E.

My plough can be used either as a two or three-horse plough. If it is desired to use three horses abreast the bolt *p* is loosened sufficiently to allow the point to swing around as much as is required, the sheath *K* being turned sufficiently, after loosening the set-screw *u*, to overcome the draught of the third horse, and being kept in that position by fastening the screws *u* again.

By means of placing the plough directly under the centre, and a little in front of the seat, I am enabled to attend to the horses and the work at the same time, and need not turn around every other movement to look whether the plough does its work properly or not, as is the case in all sulky-ploughs now in which the plough is dragged by and after the sulky; and by means of the peculiar hinge-attachment of the plough-beam to the sulky-pole, I am enabled to lower or raise the plough from the seat as necessity requires, and have the work always before me. Should the plough catch under a root, there is no necessity of backing up, as, by raising my plough by means of the lever *G* and the peculiar hinge-attachment, I not only raise it vertically, but also back laterally, as shown in red lines in fig. 1, thus drawing the point from under the root or rock without the slightest injury to it.

To plough properly and well, the point must have a certain inclination relatively to the draught-pole, and this I attain by raising and lowering the sheath *K*, by means of its screw-shank, *s*, and the nut *t*, the bolt *p* holding the land-side to the standard *P*, forming the pivot, so to speak, for the adjustment of the point.

The bent mould-board being made of one piece, and, of necessity, fitting on the share and land-side, it will be, in a good plough, a sure pattern for other mould-boards; that is to say, as it is necessary to give the vertical edge of the mould-board a certain pitch, the mechanic, after making one mould-board which has the required pitch, has the pattern for as many more as he can make, and knows that they are good and correct, the distances from that point of the edge of the mould-board nearest the beam to its ends, where it connects with the land-side and share, being a sure pattern.

If it is desired to lower the plough still further than can be done by means of the lever alone, or to give it a more forward position at the same height that is required, the plates *g* and *i* can be set, by means of the screws *k*, to effect the desired object. The bent part *N* of the share *M* serves the double purpose of a connection with the land-side and to prevent the sod from clogging under the plough.

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

1. The device for lowering and raising the plough-beam, consisting of the plates *g* and *i*, the former being slotted, pivoted as described, adjusted by means of the set-screws *k*, and operated by means of the lever *G* and bow-rack *H*, substantially as described.
2. The screw-shank *s* of the sheath *k*, and nut *t*, in combination with the standard *P*, attached to the land-side *L* by means of the bolt *p*, for the purpose of lowering the plough-point, substantially as described.
3. The mould-board *I J*, with its part *J* bent around the sheath and secured to the same, substantially as and for the purpose described.
4. The share *M*, with its bent part *N* connected to the land-side *L*, and with the latter forming the point, attached and constructed substantially as described.
5. A plough with separate mould-boards and share, both attached to the sheath in such a manner that no bolt or rivet is used on their surface, substantially as described.

The above specification of my improvement in sulky-ploughs signed this twenty-first day of November, 1867.

JOSEPH WARWICK.

Witnesses:

J. B. SCOTT,

ALEX. A. C. KLAUCKE.