(No Model.)

J. HARTMANN.

Reversible Plow.

No. 239,773. Patented April 5, 1881.

Fig. 1

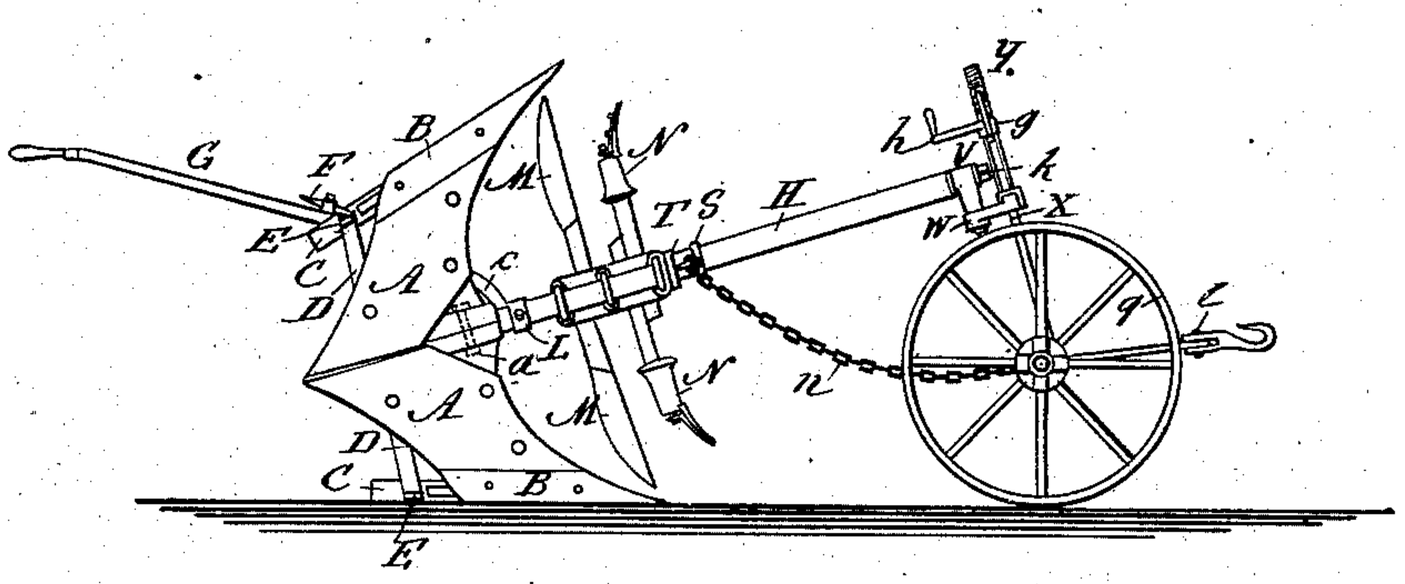


Fig. 2

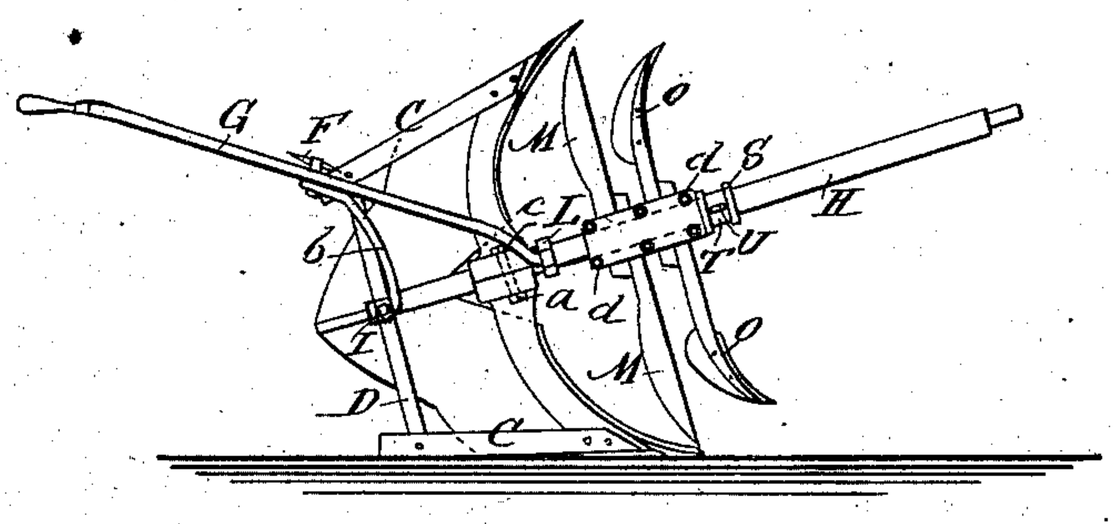


Fig. 5

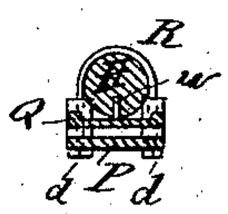


Fig. 3

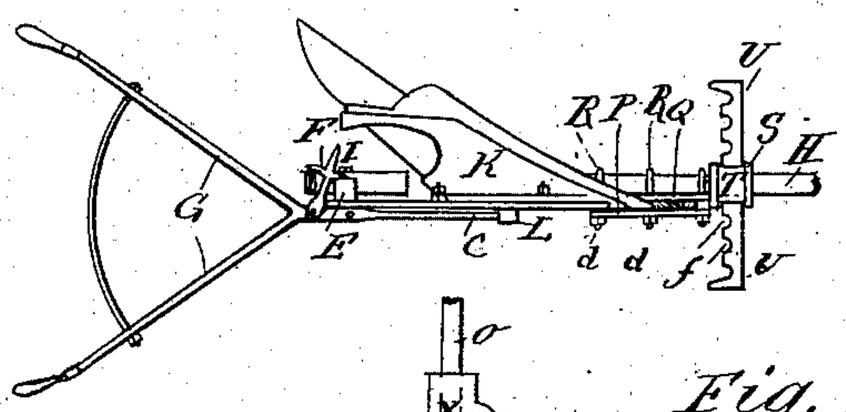


Fig. 6

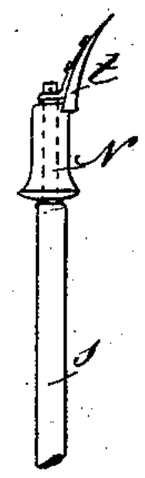


Fig. 4

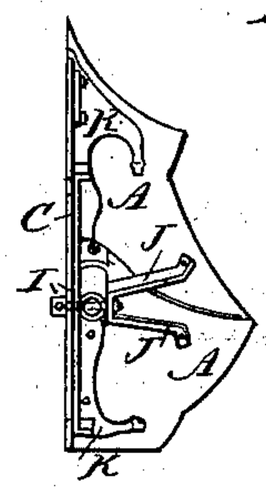
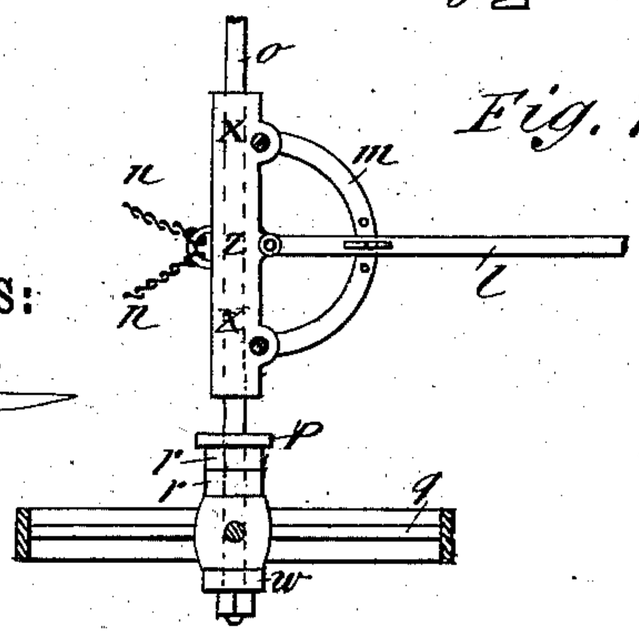


Fig. 7



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JULIUS HARTMANN, OF NEW YORK, ASSIGNOR OF ONE-FOURTH TO HANS C. PFALZGRAF, OF NEW UTRECHT, N. Y.

REVERSIBLE PLOW.

SPECIFICATION forming part of Letters Patent No. 239,773, dated April 5, 1881.

Application filed November 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, JULIUS HARTMANN, of the city, county, and State of New York, have invented a new and Improved Reversible Plow, of which the following is a specification.

The object of my invention is to provide a new and improved reversible plow which is so constructed that it can be reversed at the end of the furrow in a very simple and convenient manner, can be adjusted in height as may be necessary, and is provided with a carriage that can be adjusted in width to suit the furrows, and which draws the plow with an equal and uniform draft.

In the accompanying drawings, Figure is a longitudinal elevation of my improved reversible plow, showing the mold-boards. Fig. 2 is a longitudinal elevation of the same, showing the landsides. Fig. 3 is a plan view of the same. Fig. 4 is a rear elevation of the same in the same position as Fig. 1. Fig. 5 is a cross-sectional elevation of the colter-holder. Fig. 6 is a detail side elevation of the manure-distributing colter. Fig. 7 is a detail plan view of the plow-carriage.

Similar letters of reference indicate corresponding parts.

The plow is formed of two single plows united at the upper ends of the mold-boards A A, the shears B B forming the outer edges of the double plow. The landsides C C of these two plows are connected at the rear end by a brace rod or bar, D, which is bent over at the ends to form sockets or catches E E for the double hook F, which is pivoted to the handle G in such a manner that it can engage with these catches. The heads of the forward standards or bars form semi-cylindrical flanged sockets, which, when united, connect the two landsides, and form a sleeve through which the cylindrical beam H passes, and against which the semi-cylindrical sockets are pressed by the bolts *a a*. A screw-bolt, I, passes through the middle of the brace-bar D and through the rear end of the beam H. The arm *b* of the handle G is pivoted to this bar D at the bolt I, and the braces J J, attached to the inner side of the mold-boards A A, are also fastened thereby, as shown in Fig. 4.

A seat, K, is attached to the edge of each shear B and the corresponding landside, and forms the bottom of the plow. It insures an even movement and assists in counterbalancing the two plows.

The lower end, *c*, of the handle G is pivoted to an adjustable collar, L, that slides on the cylindrical beam, and can be moved forward and backward on this beam and adjusted as circumstances may require, by loosening its locking-screw, moving the collar, as desired, and then drawing the screws tight again.

The colters M M and the manure-distributers N N, or jointers O O, are clamped between the plates P and Q, which are held together by the stirrups R R, which surround the beam H. By screwing the nuts *d d* of these stirrups up tight the plates P and Q are pressed toward each other and hold the colters and jointers or manure-distributers firmly, and also attach them to the beam H. The stirrups are provided with a pin, *w*, which enters into an aperture in the beam, and prevents the stirrup from turning on the beam. This beam H is provided with a rigid collar, S, in front of the plates P and Q, and a sleeve, T, having two opposite arms, U, with notches *f f* on the side toward the rear of the plow. This sleeve T fits loosely on the beam directly behind this collar, so that when there is a forward strain on the arms U the sleeve T will press against the collar S, and as this is rigidly fastened to the beam the plow must move forward. The front end of the beam H is journaled in a box, V, pivoted in a bearing, W, which slides up and down on the uprights X X of the plow-carriage. The bearing W can be raised or lowered and locked in any desired position by means of a screw, *y*, attached thereto and passing through the top transverse piece, *g*, of the uprights X X, which screw is operated by means of a threaded crank-nut, *h*, through which the screw also passes. A pin, *k*, that passes through beam H in front of the journal-box V, prevents the front end of the beam from dropping out of this box.

The plow-carriage F has a central shaft, *l*, supported by a semicircular projecting bar, *m*, provided with apertures to adjust the shaft in various positions. Two chains, *n n*, are fastened to the plow-carriage F, at the center, and

these chains are hooked into one of the notches *f f* of the arms U a greater or less distance from the beam, as the circumstances may require. The axle *o* of the plow-carriage has a shoulder, *p*, near each end, and the wheels *q* can be adjusted a greater or less distance from the ends of the shaft—that is, separated more or less as the width of the furrows may require by interposing one or more washer-rings, *r r*, between the shoulder *p* and the hub of the wheel *q*, as shown in Fig. 7.

The manure-distributer N consists of a sleeve loosely mounted at the lower end of a rod or bar, *s*, and provided with a cultivator tooth or shovel, *t*.

The operation is as follows: If the plow is in the position shown in Fig. 1, and has arrived at the end of a furrow, the hook F is disengaged from the catch E, and the plow is turned short toward the left. The part that is on top will drop to the ground, and finally the part that has been on the ground is raised and is held in this position by engaging the hook F and the corresponding socket or catch E. The beam revolves half a revolution when the plows are overturned. The handle remains stationary, but the ends of same are pivoted on the collar L and on the middle of the bar D, so as to permit the beam to revolve without taking the handle with it. The beam can be raised or lowered, according to the depth the plow is to cut into the ground.

As one wheel of the plow-carriage must always be in the furrow, the distance from one wheel to the other must be regulated accordingly, which is accomplished by means of the washer-rings *r r*.

As the sleeve of the manure-distributer is loosely mounted on the bar or rod *s*, it will turn to either side as soon as it strikes a quantity of manure, and thereby scatter the same.

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

1. In reversible plows, the handle G, pivoted to a sliding collar, L, in combination with a rotating beam and a locking-screw, as and for the purpose described.

2. The rigid collar S and the loose sleeve T, having two opposite side notched arms, U, combined with the beam, as and for the purpose described.

3. The combination, with the beam H, of the journal-box V, pivoted at right angles to a slide-bearing, W, and held in any position on the uprights X X by a screw passing through the cross-bar *g* and crank-nut *h*, as and for the purpose specified.

4. In a reversible plow, the combination, with the plow, the beam, the carriage, and the notched draft-bars U U, of two draft-chains, *n n*, substantially as herein shown and described, and for the purpose set forth.

JULIUS HARTMANN.

Witnesses:

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C. SEDGWICK.