T. WIARD.

PLOW.

No. 187,950. Patented Feb. 27, 1877.

Fig. 1.

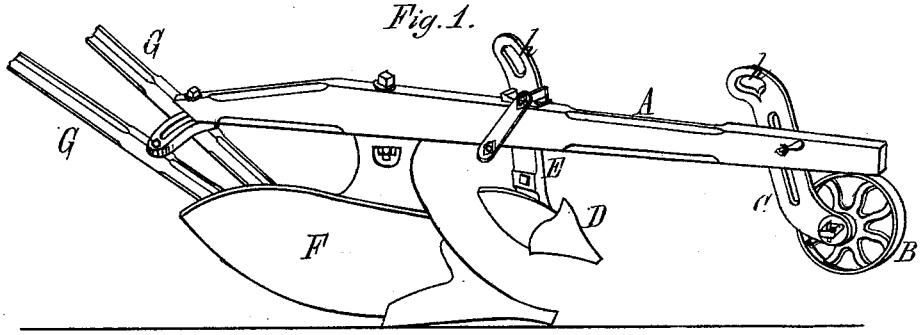


Fig. 2.

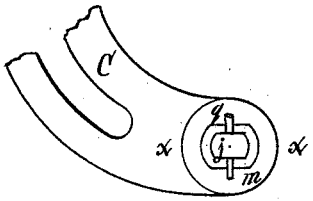


Fig. 3.

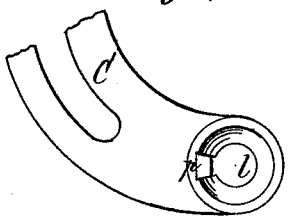


Fig. 4.

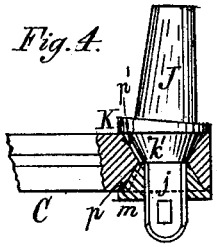
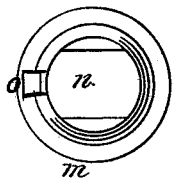


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS WIARD, OF EAST AVON, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WIARD PLOW COMPANY, OF BATAVIA, NEW YORK.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. **187,950**, dated February 27, 1877; application filed October 3, 1876.

To all whom it may concern:

Be it known that I, THOMAS WIARD, of East Avon, in the county of Livingston and State of New York, have invented certain Improvements in Plows, which improvements are fully set forth in the following specification, reference being had to the accompanying drawing.

My invention relates to the means for securing the wheel-arbor to the standard in a firm and reliable manner.

In the accompanying drawing, Figure 1 is a perspective view of a plow provided with my improvements. Fig. 2 is a side elevation of the lower end of the wheel-standard with the arbor secured in place. Fig. 3 is a similar view with the arbor removed. Fig. 4 is a section in line *x x*, Fig. 2. Fig. 5 is a side view of the washer placed around the shank of the arbor.

Like letters of reference refer to like parts in each of the figures.

A is the plow-beam; B, the wheel; C, the wheel-standard; D, the jointer; E, the jointer-standard; F, the mold-board, and G the handles.

The standards C and E are each provided at their upper ends with a hand-opening, *h*, whereby the standards are enabled to be readily manipulated in adjusting them on the beam, while at the same time the respective castings are rendered comparatively light and ornamental in appearance.

J represents the arbor or pivot on which the wheel B turns. It is constructed with a flattened shank, *j*, the central line of which is arranged at an obtuse angle with the axis of the arbor J. K is a collar arranged between the arbor J and the shank *j*, and having its two faces formed at right angles to the axial lines of the arbor and shank, respectively.

The collar K is connected with the shank *j* by a conical portion, *k'*, as clearly shown in Fig. 4. *l* is the opening formed in the lower end of the wheel-standard C for the reception of the shank *j*.

The opening *l* is made conical or tapering inwardly from both ends, its smallest diameter being at its center, so as to form a seat for the conical portion *k'* of the shank *j*.

On either side of the standard *m* is a conical washer, fitting in the opening *l*, and provided with an oblong opening, *n*, of suitable form, to snugly fit around the flattened shank *j*.

o is a projection or lug formed on the conical side of the washer *m*, and *p p'* two corresponding recesses, adapted to receive the lug *o*, and arranged in both conical sides of the opening *l*, so as to enable the washer *m* to be readily placed in its proper position in the opening *l* with reference to the shank *j* and arbor J, and to retain the washer in this position against turning.

To secure the arbor J to the wheel-standard C, the washer *m* is first properly arranged in the opening *l*, on the side opposite to that on which the arbor is required to be, and the shank *j* then passed through the openings of the standard C and washer *m*, and secured by a wedge-key, *q*, the conical portion, *k'*, of the shank *j* bearing against one side of the opening *l*, and the washer *m* bearing against the opposite side thereof, the washer being prevented from turning by the lug *o* fitting in one of the recesses *p p'*, and the shank *j* being prevented from turning by the oblong form of the opening in the washer *m*.

The arbor J being arranged at an angle to the shank *j*, upon securing the latter to the standard C, as described, the arbor J is arranged at an angle to the plane of the standard, the inclination being forward or backward, according to the manner of inserting the shank.

If desired, however, the arbor J and shank *j* may be arranged in the same axial line, and the two faces of the collar K be made parallel, to conform with the arbor and shank.

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

1. The combination, with the wheel-standard C, provided with double-conical opening *l*, of the arbor J, having shank *j* and

conical collar k', and conical washer m, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the wheel-standard C, provided with double-conical opening l and recesses p p', of the arbor J, having shank j and conical collars k', and conical washer m, provided with lug o, substantially as and for the purpose hereinbefore set forth.

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