G. WIARD & C. W. HOUGH.

PLOWS.

No. 180,511. Patented Aug. 1, 1876.

Fig. 1

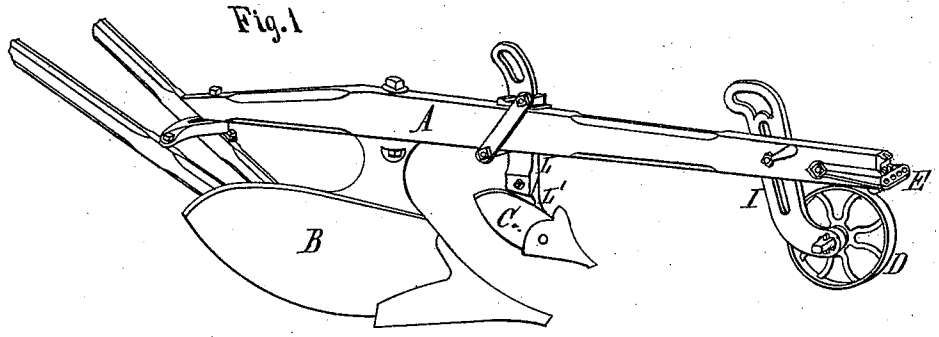


Fig. 2

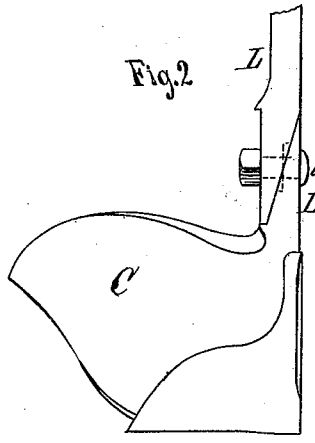


Fig. 3

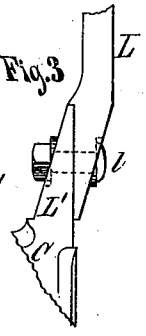


Fig. 4

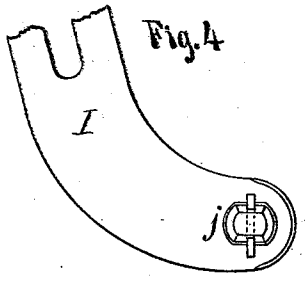


Fig. 5

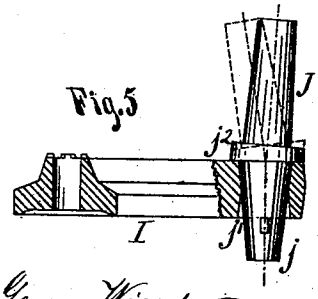


Fig. 6

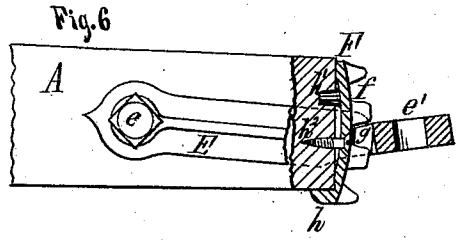
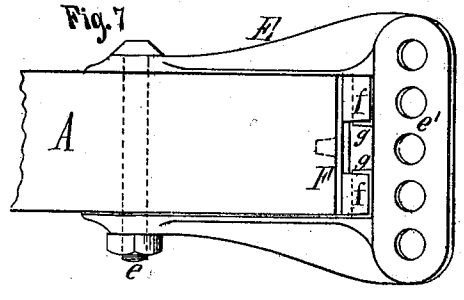


Fig. 7



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UNITED STATES PATENT OFFICE.

GEORGE WIARD AND CHARLES W. HOUGH, OF EAST AVON, NEW YORK.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. **180,511**, dated August 1, 1876; application filed March 2, 1876.

To all whom it may concern:

Be it known that we, GEORGE WIARD and CHARLES W. HOUGH, both 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.

Our invention relates more particularly to the peculiar construction of several parts of a plow, so as to enable a two-horse plow to be readily changed into a three-horse plow, and vice versa, as will be hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a perspective view of a plow provided with our improvements. Fig. 2 is a front view of the jointer and a portion of its standard. Fig. 3 is a fragmentary front view of the joint thereof. Fig. 4 is a side elevation of the lower part of the wheel-standard. Fig. 5 is a horizontal section thereof. Fig. 6 is a vertical section of the front end of the beam. Fig. 7 is a top-plan view thereof.

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

A represents the wooden beam; B, the mold-board; C, the jointer; and D, the wheel. E represents the clevis arranged at the front end of the beam A, to which it is secured by a horizontal bolt, *e*. The front bar or plate of the clevis is provided with a series of holes, e^1, which permit of the lateral adjustment of the draft-bolt. F represents a metallic plate secured to the front of the beam A, and provided with two vertical rows of notches, *f*, in which engage two teeth or projections, *g*, formed on the rear side of the front bar of the clevis E. The notches *f* are arranged in a circular arc described from the bolt *e*, as a center. By withdrawing the bolt *e* the clevis E can be arranged with its teeth *g* in any corresponding pair of the notches *f*, thereby rendering the clevis vertically adjustable. The plate F is provided at its lower edge with a flange or lip, *h*, engaging under the front end of the beam A, and near its upper edge, with a pin or stud, h^1, projecting into a recess in the front of the beam A, as clearly shown in Fig. 6. The draft on the clevis E being in an upwardly-inclined direction, the flange *h* receives the greater part of the strain, and, as it extends through the entire width of the plate F, prevents the tilting of the latter when the draft-bolt is arranged out of the center-line of the clevis. In order to prevent the plate E from becoming detached from the plow-beam when the bolt *e* is removed for adjusting the clevis, the plate E is secured by a light screw, h^2. I represents the wheel-standard secured to the beam A, in a common manner, and J the arbor or pivot on which the wheel D turns. The arbor J is constructed with a flattened tapering shank, *j*, engaging in a corresponding socket, j^1, of the wheel-standard I, in which it is secured by a wedge-key. The axial lines of the arbor J and shank *j* are arranged at an obtuse angle with each other, as shown in dotted lines in Fig. 5. j^2 represents a collar arranged between the arbor J and shank *j*, its two faces being formed at right angles to the axial lines of the arbor and shank, respectively. The axis of the socket j^1 in the wheel-standard I being arranged at right angles to the plane of the latter, the arbor J, upon inserting the shank *j* into the socket, is arranged at an angle to the plane of the wheel-standard, the inclination being forward or backward, according to the manner of inserting the shank. The inclination of the arbor is readily reversed from forward to backward, and vice versa, by withdrawing the shank *j* from its socket, and giving it a half turn, the flattened form of the shank enabling the half turn to be readily determined. By this means the angle which the plane of the wheel D forms with the wheel-standard and plow-beam is readily changed, so as to retain the wheel parallel with the land side, as the plow-beam is adjusted or swung laterally in changing the plow from a two-horse to a three-horse plow. The socket j^1, in the wheel-standard, is made tapering from both ends toward the middle, as shown in Fig. 5, so as to permit the tapering shank *j* being inserted therein from either side, thereby enabling the wheel D to be arranged either outside of the plow-beam or under the same, as the operator may prefer. The standard of the jointer C is constructed in two parts, the upper portion L being secured to the plow-beam A in a common manner, while the lower portion L′ is

cast with or otherwise secured to the jointer. The two contiguous ends of the parts L L′ are beveled off or made inclined, while their outer surfaces are made vertical. When their inclined surfaces are placed together the two parts of the standard will be in a vertical line, and form a straight standard, as shown in Fig. 2, while when the vertical side of the part L′ is placed against the vertical side of the part L, the standard will present a broken line, and the jointer be arranged farther inwardly or toward the plow-beam. When the plow-beam is arranged in the proper position for a two-horse plow, the two parts of the jointer-standard are connected together with their inclined sides contiguous, as shown in Fig. 2, when the point of the jointer will be in line with the plow-point. By adjusting the plow-beam for a three-horse plow the jointer is swung away from the plow-point when the jointer is detached from the outer inclined side of the standard L, and secured to the vertical side of the same, as shown in Fig. 3, whereby the jointer is moved back the same distance that it was swung out by the adjustment of the beam, thereby again placing it in line with the plow-point. The two parts L L′ of the standard are connected by one or more bolts, *l*.

What we claim as our invention is—

1. The combination, with a wooden plow-beam, A, and clevis E, provided with teeth *g g*, and bolt-holes *e′*, of the metallic plate F, provided with notches *f f*, flange *h*, and pin h^1, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the wheel D and standard I, of the arbor J, provided with shank j^1, arranged at an angle to the arbor, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the wheel-standard I, provided with double tapering socket j^1, of the arbor J, provided with angular collar j^2, and flattened shank *j*, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the jointer C, of a standard composed of two parts, L L′, constructed with inclined or tapering contiguous ends for rendering the jointer laterally adjustable, substantially as and for the purpose hereinbefore set forth.

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