(No Model.)

W. J. BALL.

PLOW.

No. 354,086. Patented Dec. 14, 1886.

Fig. 1.

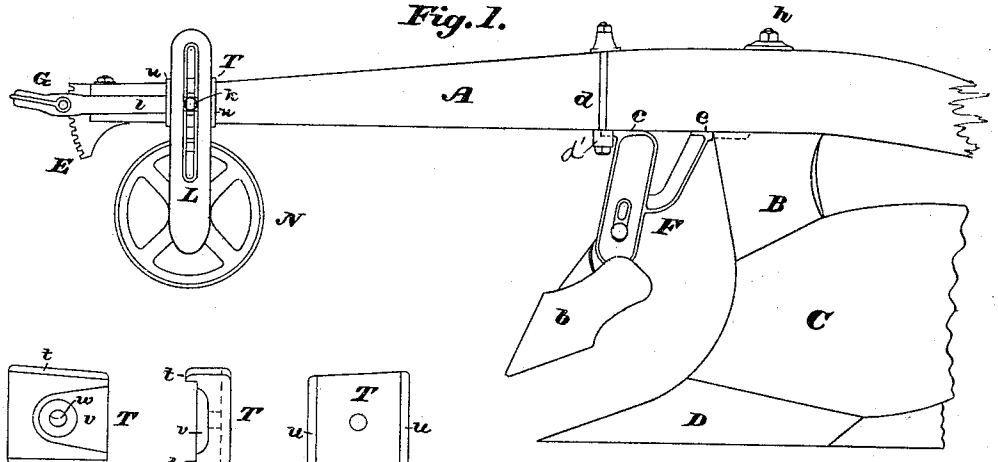

Fig. 4.

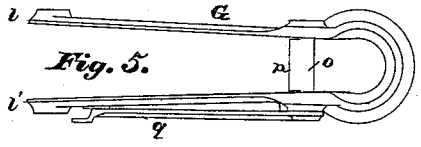

Fig. 5.

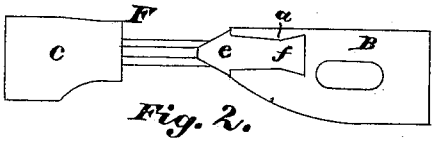

Fig. 2.

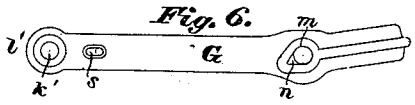

Fig. 6.

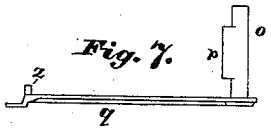

Fig. 7.

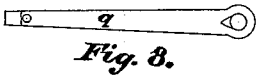

Fig. 8.

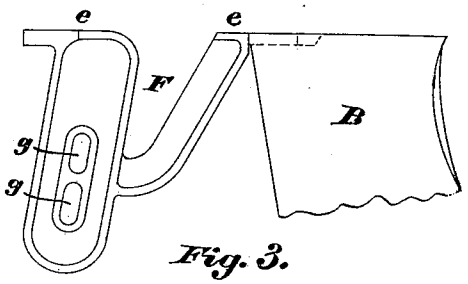

Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WARREN J. BALL, OF SALEM, OHIO.

PLOW.

SPECIFICATION forming part of Letters Patent No. 354,086, dated December 14, 1886.

Application filed July 26, 1886. Serial No. 209,063. (No model.)

To all whom it may concern:

Be it known that I, WARREN J. BALL, a citizen of the United States, and a resident of Salem, county of Columbiana, State of Ohio, have invented a new and useful Improvement in Plows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in plows; and it consists in providing a sub-colter or pendant, to which a jointer or other cutters may be attached, and by which they may be supported and directed.

My invention also relates to and consists in providing means for the support of a guiding-wheel, as hereinafter explained.

My invention further relates to improvements in clevises; and it consists in providing means for adjusting and fixing the same when adjusted.

My invention also relates to the detail and combination of parts, as described, and set forth in the claims.

Similar letters of reference indicate corresponding parts in all of the figures of the drawings.

Figure 1 is a side elevation of a fragment of a plow-beam and plow, showing my improvements as applied to a plow. Fig. 2 is a plan view of plow-standard and pendant. Fig. 3 is a view of the jointer-supporting pendant and upper end of plow-standard. Fig. 4 is a view comprising a longitudinal view of the under side of the guide-wheel-supporting block and outside view of same, and a view in transverse section. Fig. 5 is a plan view of my improved clevis, showing the parts in normal position. Fig. 6 is a side view of clevis with bolt and locking-lever removed. Fig. 7 is a plan view of bolt and locking-lever. Fig. 8 is a side view of locking-lever.

A represents a plow-beam, and may be of any of the well-known and approved forms and of any well-known and approved material; B, a plow-standard, having on its upper front section a dovetailed socket, *a;* C, the mold-board; D, the share.

F is a pendant-support for a jointer, *b*, or of any desired form of cutter, said pendant having its upper end, *c*, adapted to the form of the beam and for clamping to said beam by the use of the bolt *d* and block *d'*, and is also provided with an upward and rearward projected brace, *e*, having at its upper end a rearward projected dovetailed section, *f*, adapted to the dovetailed socket *a* in the standard B, and with oblong perforations *g g* for through-bolts, by which the jointer may be attached, adjusted, and fixed in the desired adjustment, the said perforations being surrounded by a rib or re-enforcement of metal for the purpose of strength. There is also about the outer edge of the pendant a projected rib or rim, for the purpose of obtaining great strength with the least possible weight and initial cost. The rear brace of the pendant is adapted to the socket in top of standard, and is securely held therein by the standard-bolt *h* by clamping the parts against the beam. By this construction and adaptation of parts the jointer may be held rigidly in line with the standard, and at the same time permit of a lateral adjustment of the beam, by slacking the bolts *d* and *h* and moving the beam over the top of the pendant and standard, and then tightening the said bolts, thus holding the beam as adjusted without moving the jointer-support.

A toothed segment, E, is mounted on the end of the beam A, about which the clevis-loop G may be oscillated, said loop having a pivotal connection with the beam A by the use of the bolt *k*, passing through the rear end of the prongs *l l'* of the loop. For the adjustment of said clevis-loop there is provided perforations *m*, said perforations having a slot, *n*, projected rearward and downward, and a bolt, *o*, adapted thereto, said bolt having on its rear side a projected feather, *p*, adapted to the slots *n* and the teeth of segment E. There is also provided, and may be integral with said bolt *p*, a spring lever or handle, *q*, having on its rear end an outward-projected locking-pin, *z*, adapted to a depression or perforation, *s*, in the prong *l'*. By means of said lever *q*, locking-pin *z*, and perforation *s*, the bolt *o* may be held in engagement with the segment E, the feather *p* resting between the teeth.

The operation is as follows: Spring the lever *q* back, releasing pin *z*. Raise the lever up until the feather has been turned out of the teeth. Then move the draft-loop up or down, as the case may be, to secure the proper or desired line of draft, when the lever may be returned

to its locking position, the feather of the bolt between the teeth; or the lever may be moved down until the feather is brought into line with the slot *n*, at which point bolt *o* may be withdrawn, the draft-loop oscillated about its pivotal connection with the beam formed by the bolt *k* passing through the perforation *k'* in the end of the prongs *l* and *l'* of the loop G. It will be noticed that a change of the line of draft may be made quickly at any time or place, no wrench or other tool being required to make the change.

The guide-wheel N may be of any of the well-known and approved forms, and is supported by and rotated about a supporting-spindle attached to the supporting-arm L.

To attach the wheel-arm L to the plow-beam, a clamping and supporting block, T, is provided, said block having projected wings *t t*, that embrace the beam A, and outwardly-projected wings *u u*, that embrace the wheel-supporting arm L. There is also provided a recess, *v*, and perforations *w*, said recess being provided for the purpose of allowing the clamping-block T to be placed over the end of yoke-prong *l* without binding or in any way interfering with the movements of the loop G for the purpose of adjustment. By this arrangement of parts the clevis and guiding-wheel may be attached to the beam by the same bolt *k*.

For the purpose of adjusting the plow as to the depth of furrow, the arm L may be moved up or down on the bolt *k* and fixed at the desired point by tightening the bolt.

Having thus fully described the nature and object of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a plow, of a draft-beam, a guide-wheel and its supporting-arm, and a clamping-block, T, having projected wings *t t* to embrace said beam, projected wings *u u* to embrace and support said wheel-supporting arm, recess *v*, adapting said block to be set over the rear end of the clevis-prong *l*, whereby the wheel-support and clevis-loop may be attached to the beam by the same bolt, substantially as described, and for the purpose set forth.

2. In a plow-clevis, a rotatable adjusting-bolt, *o*, having a feather, *p*, and lever *g*, adapted for engagement with said clevis-loop for the purpose of securing the parts in working position, substantially as described and set forth.

3. The combination, in a plow-clevis, of a toothed segment, E, draft-loop G, that may be oscillated about its pivotal connection with the beam, and a rotatable adjusting-bolt, *o*, having a feather, *p*, adapted for engagement with the toothed segment E, and a hand-lever for rotating and locking said adjusting-bolt in a fixed adjustment with said segment E, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 21st day of July, A. D. 1886.

WARREN J. BALL.

Witnesses:
JNO. W. PASSMORE,
SHELDON PARKS.