(Model.)

A. F. PUREFOY.

PLOW.

No. 258,115. Patented May 16, 1882.

Fig. 1.

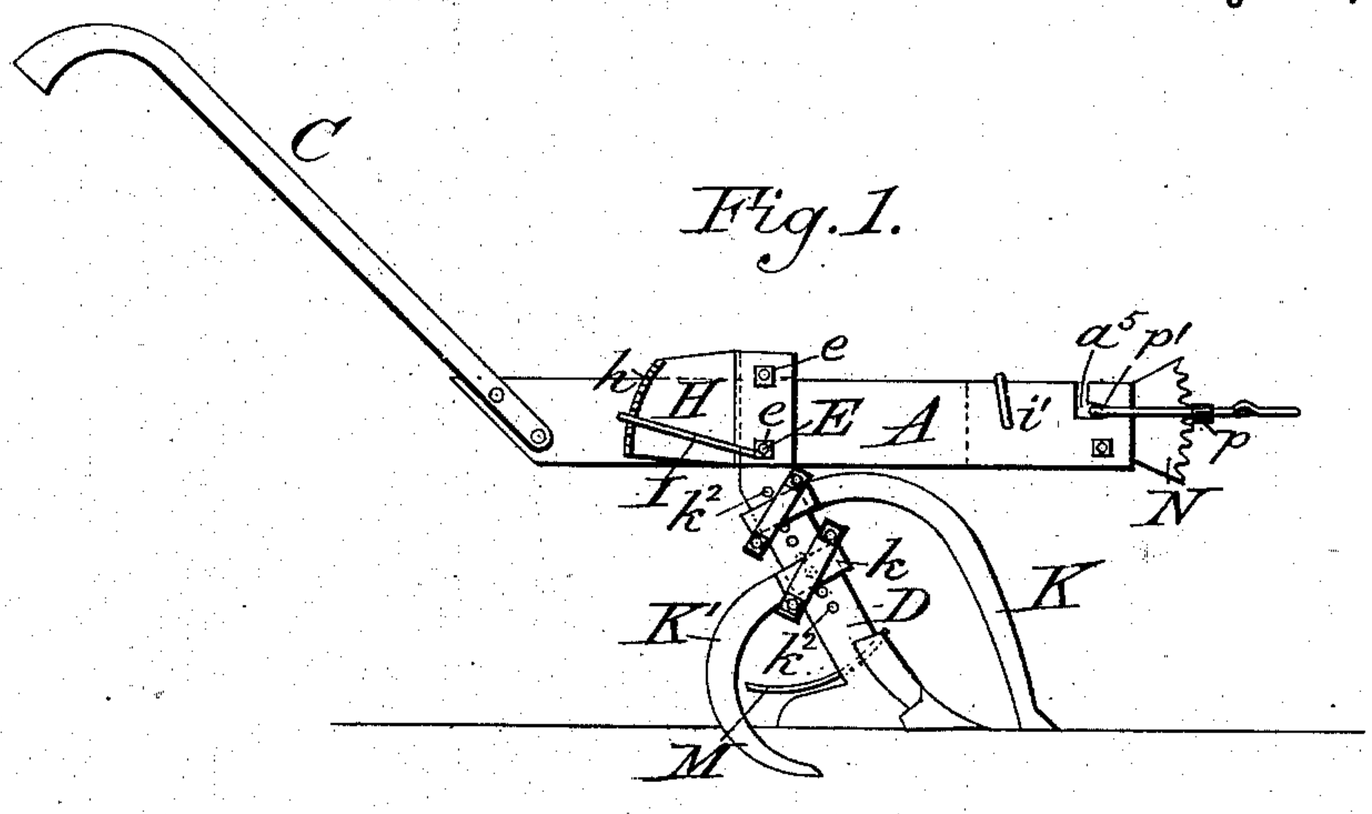


Fig. 2.

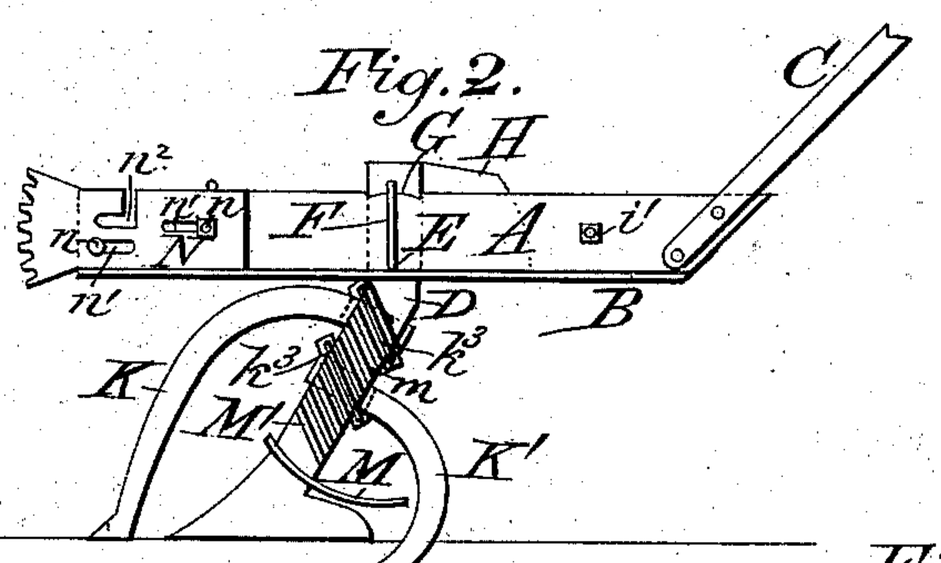


Fig. 3.

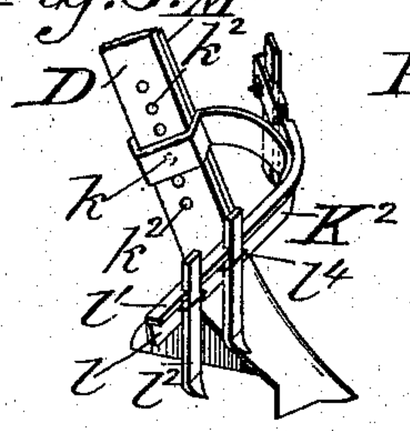
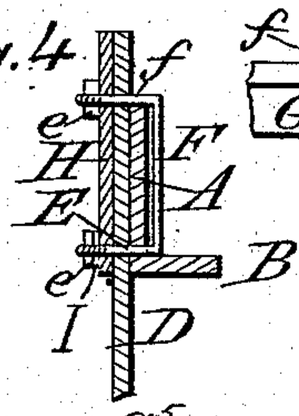


Fig. 4



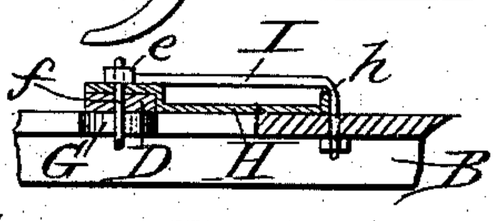


Fig. 5.

Fig. 6.

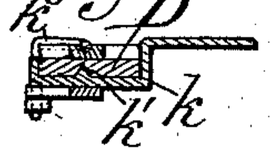


Fig. 14.

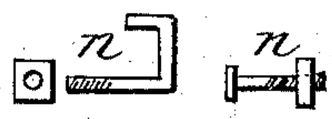


Fig. 7.

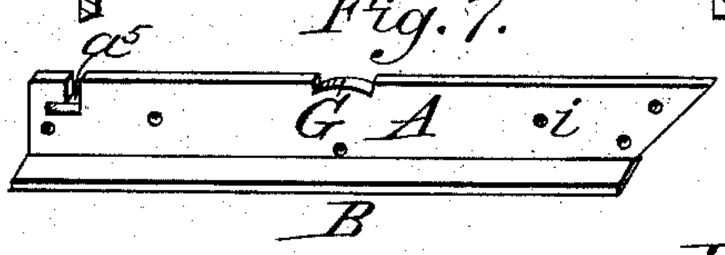


Fig. 10.

Fig. 8.

Fig. 9.

Fig. 11.

Fig. 12.

Fig. 13.

Attest:

F. H. Schott.

A. Poller

Inventor:

Addison F. Purefoy

by Chas. J. Hedrick

his Atty

UNITED STATES PATENT OFFICE.

ADDISON F. PUREFOY, OF WAKE FOREST, NORTH CAROLINA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 258,115, dated May 16, 1882.

Application filed December 5, 1881. (Model.)

To all whom it may concern:

Be it known that I, ADDISON F. PUREFOY, of Wake Forest, in the county of Wake and State of North Carolina, have invented a certain new and useful Improvement in Plows, whereof the following specification is a full description.

This invention has for its object to secure simplicity and lightness, combined with strength, in the construction, and to obtain increased efficiency in action.

It relates to a special construction of the plow-beam; to the means for permitting the angular adjustment of the plow proper on the beam; to the means for securing the colter and other attachments to the plow; to an improved subsoiler and harrow attachment to the clevis or means of communicating the draft, and to the general construction of the implement, the several parts being adapted to the beam of the special construction before referred to.

In the present invention the beam is of wrought or rolled metal (iron) plate, bent near the bottom at a right or oblique angle, so as to form a flange on one side, leaving the other plain.

The standard of the plow is secured to the beam by means of a bolt, on which it may turn, and a steady-arm which extends from the standard over or through the beam and down on the opposite side, thus embracing a portion thereof. The top of the said arm moves over a circular arc formed on top the beam, or in a curved slot in the body thereof. This steady-arm is preferably made in one piece with the pivot-bolt of a bent bar, having both ends threaded for the reception of nuts.

The connection of the plow-standard with the beam by means of the pivot-bolt and steady-arm, while made with very few parts, allows the plow to be turned on the pivot-bolt and set at different angles to the beam, so as to run deeper or shallower, and at the same time it makes a very strong and reliable fastening.

In order to hold the plow in the position to which it is adjusted, a toothed segment, with the teeth on one side, is attached to the standard, and is combined with a stop-piece formed of bent bar, (fixed at one end and at the other passing through a hole in the beam,) and held in engagement with the teeth of the segment by means of a nut. By loosening the nut the stop-piece can be disengaged from the segment and the latter moved with the plow till the latter is brought to the desired angle, and by tightening it the toothed segment, with the plow, is held in place. The segment, also extending along the face of the beam in close contact therewith, increases the steadiness of the structure and imparts additional strength to the connection between the plow proper and the beam.

The colter is attached to the plow-standard so as to be adjustable with it. A subsoiler is also combined with the plow, being arranged to project under the plowshare. A harrow attachment is also provided, and is fastened in front of the standard, whereby it is brought very close behind the point of the plow, rendering the implement not only more compact, but of greater efficiency, and the drag, or, more properly, the thrust, is directly sustained by the standard, so that the strain upon the connecting devices is resisted in the best way. The attachments are not only adjustable with the plow, but are adjustable up and down on the standard thereof. The same means substantially are used for securing the colter, subsoiler, and harrow, and they could be used also for securing other attachments. They comprise a bent plate fastened to or made in one piece with the attachment, and provided with a pin which fits into any one of a series of holes in the plow-standard. A double bolt, with a nut on each end, holds the bent plate against the side of the standard.

In order that the harrow may be made very light and strong, the body is constructed of sheet metal (iron) with a flange turned over at the top, in which flange notches are made for the reception of the teeth. The teeth are held below by bolts or clamps, and are provided on the back with grooves for the reception of the edge of the flange. The teeth are each thus secured detachably and adjustably to the body of the harrow, so that should one be broken it can be set lower or be replaced readily by another. This construction is applicable as well to a cultivator as to a harrow, the proper-shaped plow-like teeth being substituted for those of a harrow.

In connection with the plow and harrow a

depth-regulator is employed to regulate the depth at which they operate. This depth-regulator has a grooved shank, by which, in connection with the bent bar or double bolt for securing the colters or other attachments in place, it is adjustably retained in position.

In order to regulate the direction in which the draft is applied, so as to throw the plow more or less toward the land side, or to make it run deeper or shallower, an improved form of clevis is employed. To this end the clevis, which is detachably connected with plow-beam, is provided with a toothed cross-bar, which, in connection with a vertical toothed plate on the end of the beam, enables the desired adjustment up and down and right and left to be secured. The vertical toothed plate is attached to the upright part of the beam by means of bolts working in slots, so as to permit to the said plate a limited sliding movement lengthwise of the beam. This toothed plate might be called a "clevis," but for clearness of distinction the term will be herein restricted to the detachable part to which the draft is applied. The connection of the clevis with the beam is made by means of a hook in the upright part of the beam, in which hook the tail end of the clevis fits, and wherein it is locked by the forward movement of the vertical toothed plate. The said movement of the vertical toothed plate also serves to engage the teeth thereof with those of the cross-bar on the clevis and to lock the latter in the position to which it has been adjusted.

The following description, in connection with the accompanying drawings, which form a part of this specification, will enable those skilled in the art to which it appertains to make and use the invention.

Figures 1 and 2 are views in elevation on opposite sides of a plow provided with colter, subsoiler, and depth-regulator attachments; Fig. 3, a perspective view of the plow proper with harrow attachment; Figs. 4 and 5, vertical cross-section and horizontal section, respectively, showing the connection of the plow-standard with the beam; and Fig. 6, a horizontal section, showing the means for securing this attachment to the plow-standard. Fig. 7 shows the beam detached; Figs. 8 and 9, the body of the harrow and the teeth, respectively; Fig. 10, a half-harrow; Fig. 11, a cultivator-tooth, to be substituted, if desired, in place of the harrow-teeth; Fig. 12, the clevis detached; Fig. 13, the vertical toothed plate on the end of the beam, and Fig. 14 the bolts and nuts for attaching the said plate to the beam.

The same letters of reference indicate like parts in all the figures wherein they occur.

The beam is formed of a wrought or rolled plate of iron or other suitable metal, bent near the bottom at an angle, preferably a right angle, as shown, so as to form an upright plate, A, with the flange B at the bottom. The handles C, connected by a cross-bar, as usual, are bolted on opposite sides of the upright plate A.

The standard D of the plow proper is attached on the plain side of the plate A, or side opposite from the flange B.

Near the bottom of the plate or beam is a pivot-bolt, E, and above this a clamp or steady-arm, F, bent over the top of the beam at *f*, and fastened in the standard.

As shown, the pivot-bolt and steady-arm are formed of a single bent bar or rod, screw-threaded at both ends, and provided with nuts *e*. The part *f* of the clamp or steady-arm works over an arc, G, cut in the top of the beam.

H is a segment bolted to the standard, being, as shown, held by the nuts *e*. It is provided with a curved row of lateral-projecting teeth *h*.

I is the stop-piece, with one end held on the bolt E and the other bent and passing through a hole, *i*, in beam A and engaged by a nut, *i'*. By loosening the nut *i'* the stop-piece I can be released from the toothed segment, and the plow can be turned on the pivot-bolt E to the desired angle with respect to the beam, and by again tightening the nut it will be held in the position by the engagement of the stop-piece I with the toothed segment. The plow is held steady by the clamp or steady-arm F, embracing a portion of the beam or plate A, and also by the segment H, bearing against the face of the said beam or plate.

The colter K, subsoiler K', and harrow K^2 are each secured to the plow-standard by a bent plate, *k*, which embraces three sides of the standard, said plate being fastened to or made in one piece with the attachment, a pin, *k'*, that fits into any one of a series of holes, k^2, in the plow-standard, and a double bolt, k^3, with cross-piece and nuts, that hold the bend in plate *k* against the standard and the pin *k'* in the hole k^2. The shape of the colter and subsoiler may be more or less modified; but that deemed most advantageous is represented in the drawings.

By releasing the bolt k^3 the attachment colter, subsoiler, or harrow can be removed. It can be secured in a new position, higher or lower, the pin *k'* being placed in a higher or lower one of the holes k^2.

The body *l* of the harrow is composed of a wrought or rolled plate of iron or other suitable metal, turned over at the top to form a flange, *e'*. The bent plate *k* is secured in the rear of the body *l*, and the structure is stiffened by side braces, when deemed necessary. In the flange *l'* a series of notches are formed. The teeth l^2 are secured in these notches. At their back are grooves l^3, that fit over the edge of the flange at the bottom of the notches. Bolts l^4 embrace the lower parts of the teeth and hold them close against the body of the harrow. The teeth may have any suitable form, whereby they are adapted to special purposes. They may be plain harrow-teeth, as shown in Fig. 9, or they may be shaped so as to act as cultivators, Fig. 11. When the harrow is secured in place on the plow the bent

attaching-plate extends forward of the standard, and the teeth follow close behind th point of the plow.

The depth-regulator consists of a shoe, M, and an upright, M′. The latter is provided with a series of oblique grooves, *m*, and is held against the landside of the plow-standard by the bolt k^3, that holds the colter or other attachment in place. The shoe M may be attached to the upright M′ by any of the ordinary means for fastening the parts together.

At the forward end of the beam is the vertical toothed plate N. It is placed preferably on the same side of the beam or plate A as the flange B, with its lower edge resting on the latter. The bolts *n*, which hold it in position, pass through slots *n′*, whereby a limited movement is allowed to said plate when the bolts are loosened.

Near the top of the toothed plate N is an angular slot, n^2, and in the plate A of the beam is a similar-shaped slot, a^5, by which a hook is provided for the tail of the clevis. This clevis consists of a bar, bent and twisted, as shown, (see Fig. 12,) and a toothed cross-bar, *p*. The bend *p′* is inserted in the slots $n^2 a^5$, the toothed plate N being at its rearmost position, so that the two slots coincide. When the clevis has been inserted the toothed plate N is moved forward, so as to close the opening into the slot, and at the same time cause the teeth of the vertical plate N to engage with those of the cross-bar *p*.

It will of course be understood that before advancing the vertical toothed plate the clevis has been adjusted to the position it is wished for it to assume, so that it will be held in that position by the engagement of the teeth. The vertical toothed plate is held in the advanced position by tightening the bolts.

The operation of the improved plow is sufficiently apparent without further explanation.

It is obvious that modifications could be made in the details of construction without departing from the spirit of the invention, and that portions of the invention could be used without the others. For example, the means described for securing the colter and other attachments to the plow-standard could be used to secure them to a supplementary standard in front of or behind the plow.

Having thus described my said invention and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. A plow-beam composed of a metal plate bent at its lower edge to form a flange, and provided with the angular slot a^5 and arc G, substantially as described.

2. The combination of a plow-beam, a standard attached to said beam by a pivot-bolt and clamp, as represented by E F, a toothed segment, H, fastened to said standard, and a stop-piece, I, for engaging the teeth of said segment, substantially as described.

3. The combination, with the plow-beam and standard pivoted thereto, of a toothed segment fastened to said standard and a separate stop-piece, I, adapted both to engage the teeth on said segment and to clamp the segment against the side of the beam, substantially as described.

4. The combination, with the plow-beam provided with the arc-shaped recess G, of the plow-standard attached to said beam by a pivot-bolt and clamp, E F, the part *f* of said clamp working in said recess, substantially as described.

5. The means described for securing a colter, subsoiler, harrow, or other attachment to a plow-standard, comprising a bent attaching-plate, *k*, adapted to embrace the standard, a pin to enter holes in the said standard, and a double bolt for binding the whole together, substantially as described.

6. A depth-regulator comprising a shoe and an upright with oblique grooves, substantially as described.

7. The combination, with a plow and plow-standard, of a harrow attachment, K^2, having the body *l* oblique to the attaching-plate *k* and secured in front of the standard, substantially as shown and described, so that the harrow-teeth are above and behind the point of the plow, substantially as described.

8. The combination, with a plow and plow-standard, of a harrow attachment, substantially as shown and described, secured in front of the plow-standard above the plow, so as to be vertically adjustable on said standard, as set forth.

9. The combination, with the flanged metal plate provided with notches in the flange, of the teeth, grooved and fitting within said notches, and bolts for holding the teeth in position, substantially as described.

10. The combination, with a plow-beam, of a vertical toothed plate adjustably connected therewith, so as to be capable of a limited sliding movement lengthwise of said beam, and a detachable clevis provided with a toothed cross-bar, substantially as described.

11. A plow-beam having at the end an angular slot for securing the clevis, in combination with a plate, also slotted and capable of a limited movement lengthwise of the beam, so as to lock the clevis, substantially as described.

12. A clevis formed of a metal bar, bent and twisted, as shown, and provided with a toothed cross-bar, substantially as described.

13. The combination of a plow-beam made of a metal plate, bent at the bottom to form a flange, the vertical toothed plate bolted to the upright part of the beam, with its lower edge resting on said flange, and the clevis provided with a toothed cross-bar, said clevis being held in a slot in the beam, and said vertical toothed plate being capable of movement lengthwise of the beam, substantially as described.

ADDISON F. PUREFOY.

Witnesses:
E. G. HARRELL,
W. H. PACE.