

(No Model.)

G. CURTIS.
AGRICULTURAL PLOW.

No. 533,119.

Patented Jan. 29, 1895.

FIG. 1.

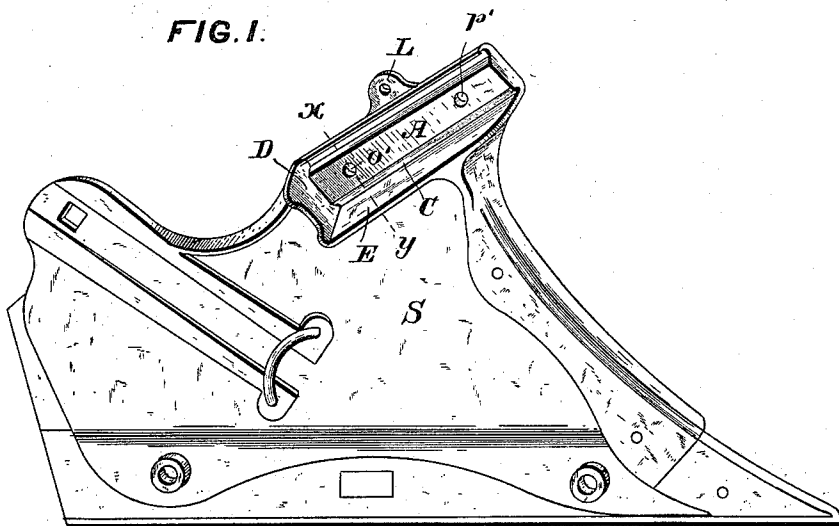


FIG. 2.

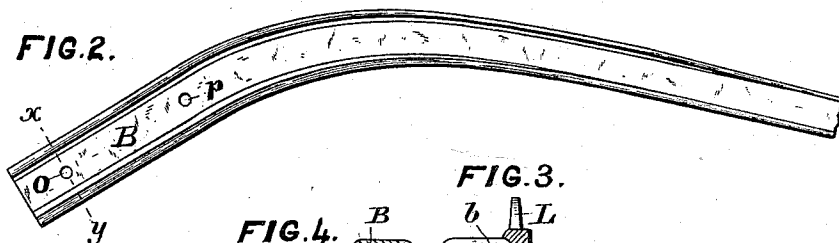


FIG. 3.

FIG. 4.

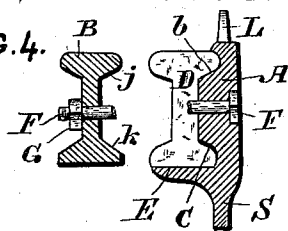
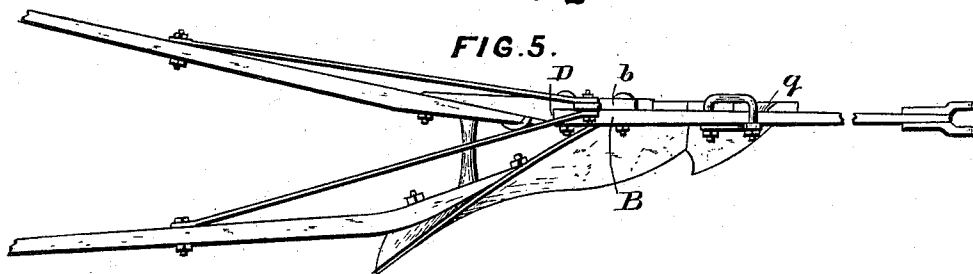


FIG. 5.



WITNESSES

J. Henry Kaiser.
F. W. T. T. T.

INVENTOR

Gates Curtis.

By Geo. B. Shepard
Attorney

UNITED STATES PATENT OFFICE.

GATES CURTIS, OF OGDENSBURG, NEW YORK.

AGRICULTURAL PLOW.

SPECIFICATION forming part of Letters Patent No. 533,119, dated January 29, 1895.

Application filed June 1, 1894. Serial No. 513,157. (No model.)

To all whom it may concern:

Be it known that I, GATES CURTIS, a citizen of the United States of America, residing at Ogdensburg, in St. Lawrence county and State of New York, have invented certain Improvements in Agricultural Plows, of which the following is a specification, and in which the terms "inside of the standard" and "inside of the plow" are used, that part of the standard or plow respectively being intended which faces toward the moldboard.

My invention relates to that class of plows in which the draft beam and standard is made of metal, and the objects of my improvements are, first, in locking the draft beam into a socket on the inside of the standard at an angle of about forty degrees to the base line, so as to bring the strain of draft principally upon the walls of such socket, thereby permitting the plow beam to be held rigidly and securely in place by ordinary means, such as the two small bolts shown, and in such a manner that the relative position of the beam to the standard will not change should these bolts work loose through strain incident to use; secondly, to equalize the pressure produced on the moldboard by bringing the rear end of the beam nearer the center of resistance than in the ordinary plow and holding it rigidly in such position; thirdly, to assist the plowman in making a straight furrow, by constructing the beam parallel with the course taken by the plow in turning such furrow, and, fourthly, in permitting the use thereof with of a colter which is stronger and more economically applied and repaired than that in use with the ordinary plow. These objects I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a side elevation of the standard, shoe and cheek-piece of my improved plow in position viewed from the moldboard side; but with the moldboard omitted to afford clearer illustration and showing the position of the draft beam socket upon the said standard. Fig. 2, is a side elevation of the rearward portion of the draft beam of my said improved plow. Fig. 3, is a sectional end view of the beam-lock of my said improved plow on the line $x-y$ in Fig. 1. Fig. 4, is a sectional end view of the draft beam on the line $x-y$, in Fig. 2. A part of one of the bolts used for fas-

tening the beam and lock together is shown in position in both Figs. 3, and 4. Fig. 5, is a perspective plan view of my improved plow, showing the position of the several parts of such plow.

In said figures A, represents a rib of metal with chamfered sides cast integrally, or firmly united to, the inside of the plow standard S. The said chamfered side b , at the top of said rib ends in a groove forming the base of a shoulder on the top of said standard, and the chamfered side c , on the lower side of said rib ends in a groove forming the base of the platform E, which at its rear end, and at the rear end of said rib A, terminates in an abutment D, set at right angles to both said rib and shoulder. All said parts being firmly united to and supported in position by each other and the body of the said plow standard S, as shown in Figs. 1 and 3, and together form the bottom, side and end of the socket into which the rear end of the draft beam B, fits. The rear end of the said draft beam B, is made in the shape of an I beam with a straight web and the shoulders j , and k , chamfered so as to fit upon and embrace the chamfered edges b , and c , respectively of the rib A, upon the plow standard, as shown, forming the lock when the two are strained together by means of ordinary bolts and nuts inserted through the bolt holes o , and p , in the standard and beam respectively. The base of the rib A, is slightly wider than the mouth of the opening between the said shoulders j , and k , so that the said rib A, is pinched between said shoulders j , and k , when they are drawn snugly down thereupon by means of the screw nuts and bolts F, as shown; and any wear upon the several parts may be taken up by tightening upon said bolts. The said rib A, and platform E, I set at an angle of about forty degrees to the base line of said plow, so that the draft has a tendency to bring the attached beam squarely down thereon; thereby supporting the forces exerted by the pull and vertical leverage of the draft beam almost wholly upon such rib and platform, and enabling said beam to be held securely in place by two small bolts and nuts as shown.

When as heretofore constructed metal beam plows have had the draft beam fastened to

the standard on the land side thereof, a plain socket has been usually formed on the land-side of the standard to receive the rear end of the beam, and the beam fastened into said socket by means of screw bolts and nuts, which construction brings the edge of the draft beam immediately over and in substantially the same vertical plane as the surface of the landside and cutting edge of the point; and, when a colter is used, necessitates having either the beam or colter bent in order to bring the cutting edge of the colter in the same vertical plane as the cutting edge of the share. This bending of the parts named, subjects them and their fastenings to unnecessary strain in use; which I avoid by fastening the beam to the side of the standard, facing the moldboard in the manner shown, bringing the beam the width of the colter inside of the said vertical plane of the cutting edge of the share, thereby permitting the use of a straight colter attached directly to the side of the draft beam, as clearly shown at *g*, in Fig. 5; or when the beam is fastened to the moldboard side of the standard by the means heretofore employed, it is secured thereto in such manner that the greater part of the strain when in use bears crosswise, or with a shearing action, upon the bolts fastening the several parts together; subjecting such bolts to undue strain and wear and the several parts so held together to the liability of being easily slipped out of their proper relative adjustment. This tendency I obviate by projecting the platform *E*, which supports the lower shoulder of the draft-beam *B*, at nearly right angles to the point of resistance on the plow share when in use; so that such platform, in conjunction with the sides of the rib *A*, sustains the greater part of the leverage of said draft beam upon said standard when in use, and the bolts *F* are not subjected to such shearing action and their office is restricted to holding said rib *A* within its seat in the plow-beam.

It is obvious that the draft beam of my improved plow being set in a vertical straight plane and parallel with the landside of the plow, as shown at Fig. 5, will form a straight guide for the eye of the plowman in running a straight furrow, the advantage of which is apparent.

It is also obvious that a straight colter is much stronger and can be made and repaired much cheaper than a bent one, as formerly used; and does not require to have the beam present, to correctly shape the colter for the plow.

I fasten the draft beam and standard of my improved plow together by placing the rear end of the draft beam within the socket or box formed by the abutment *D*, platform *E*, and rib *A*, in such position that the bolt holes *o*, and *p*, therein, coincide with the bolt holes

o', and *p'*, respectively in the rib *A*. An ordinary screw bolt is then passed through each of said holes from the landside and washers and screw nuts secured thereon on the inside of the draft beam in the usual manner. To the plow beam, I then attach a straight colter on the landside of the beam by means usually employed for such purpose, and to the standard of my said improved plow I attach in the usual manner the parts not above described, but in common use in the class of plows to which my said invention relates as above set forth; but as these undescribed parts form no part of my invention and may be made in any of the forms commonly in use for such plows, I have not particularly described the same.

My improved agricultural plow is used in the same manner as other plows of its class with the advantages hereinbefore described.

Having thus described my improvements in agricultural plows and manner of using same, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In an agricultural plow, an improved beam-lock comprising an I-shaped metal draft-beam, and a metal socket having straight sides and rectangular inner faces, attached to that side of the plow standard which faces the moldboard, and including a rectangular rib the face of which is in a longitudinal vertical plane and its sides set at an angle of about forty degrees to the base line of the plow and having chamfered edges adapted to fit the recess formed by the web and shoulders of the I-shaped draft-beam, and one or more bolts securing the said parts in position, substantially as shown and described.

2. In an agricultural plow, a metallic socket attached to that side of the plow standard facing the moldboard and comprising a parallelogrammic rib with longitudinal vertical face, and chamfered sides set at substantially right angles to a line drawn therefrom to the plow point, and adapted to fit an I-shaped metal draft-beam; a platform or shelf below and parallel with said rib and an abutment at the rear end thereof, all substantially as shown and described.

3. In agricultural plows of the class described, a beam-lock having a socket the longitudinal lines of which are straight and set at substantially right angles to a line drawn therefrom to the plow point; all placed on that side of the plow standard facing the moldboard, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in the presence of two witnesses.

GATES CURTIS.

Witnesses:

ALBERT J. CURTIS,
NATHANIEL WELLS.