

Plow.

Patented Nov. 25, 1838.



# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. 1,019, dated November 25, 1838.

### *To all whom it may concern:*

Be it known that I, JOHN DEATS, of Rocksburg, in the county of Warren and State of New Jersey, have made certain new and useful Improvements in Plows; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 represents the mold-board side of the plow as finished; Fig. 2, the side of the plow toward the land; Fig. 3, the side of the standard toward the land as detached; Fig. 4, the side of the standard toward the mold-board; Fig. 5, the reversible landside—both the outer and inner sides; Figs. 6 and 7, upper and under side of an additional share to be substituted for share K when required. Fig. 8 represents a flanged plate fastened to the inside of the standard for holding the share. N is the under side and N' the upper side of said flanged plate. Fig. 9 is the landside of the reversible cutters. Figs. 10 and 11, upper and under sides of the share; Fig. 12, part of share, Figs. 6 and 7, applied at the end represented by the dotted lines in Fig. 6, and made reversible at pleasure; Fig. 13, the main bolt for confining the standard and other parts of the plow together; Fig. 14, a short bolt which assists in confining the standard. Fig. 15 represents the under side of the plow, showing the manner of fastening the parts together.

*The standard, Figs. 3 and 4.*—The standard A is cast separate from the mold-board, in one piece, and the landside, cutter, mold-board, share, and plate being so fitted to and around it that it is entirely protected from wear or accident, so that while these parts may be changed for others, the standard, beam, and handles will remain unchanged. This standard is curved in a concave form in front and convex on the back, except a scallop, cavity, or depression at *u*, Fig. 3. It has a tenon, R, on its upper end, which fits into a corresponding mortise in the under side of the beam Q, and a shoulder, S, on said tenon, under which the head of the bolt T, Figs. 2 and 14, is brought for securing it more effectually to the beam, the bolt T having a nut, 24, on its upper end, resting on top of the beam. There is also a heel, *r*, to this standard, to which the reversible landside

B and beam-handle D, Fig. 2, are fastened by means of the bolt *c*, passing through the aperture 25, Figs. 3 and 4, in said heel. The standard is flat on the side toward the land, and also on the bottom from the point to the heel, at which place it slopes upward at an angle of about five degrees with a horizontal plane, as at *s*, at which angle it continues until it meets the under side of the heel, from whence it runs back at an angle of about one degree, thus forming a depression or space to receive the rib 22 or 23 of the reversible landside. The top of the heel is horizontal. The end *t* forms a projection of an obtuse angle to fit the obtuse angle *u* of the reversible landside. The point of the standard is turned upward on the under side like the fore part of the runner of a sled or shoe. At this point it is notched, as at 21, to admit the tenon 6 of the share, hereinafter described. The side of the point toward the land is flat. The side from the land forms a projection, *v*, whose sides are at right angles to each other. At the upper end of the standard there is a projection, *w*, on the casting, extended toward the landside, then down a sufficient distance to form a groove or channel, G, to receive the side *d* of the cutter F, for holding it in its proper place. This projection or swelling in the casting forming said groove or channel is rounded on the side toward the land. The side of the standard at *x*, Fig. 4, toward the mold-board, is cast concave to admit the inner and front side of the mold-board, which is made convex and fits therein. A channel or groove, P, is left in the casting to admit the main bolt *o* to lay snugly therein, which assists greatly in strengthening the plow. A depression, cavity, or countersink, *y*, is cast in the standard between the point and the heel, to admit the flange 12 of the plate N. Immediately behind the before-mentioned scallop, cavity, or depression *n*, and toward the mold-board, the standard is made to swell in a convex form, as at *z*, through which part a round aperture is left to admit a bolt, *m*, Fig. 1, which passes through it and the mold-board, for securing the upper edge of the mold-board to the standard, the nut resting in the before-mentioned cavity or scallop *n*, Figs. 3 and 15. There are two other apertures in the standard for bolts, (marked 25 and 26,) which will be more partic-

ularly described hereinafter. One of said bolts inserted therein is for securing the plate N and the other the reversible landside B. The shoulders of the tenon R of the standard come close under and against the beam; and the standard is drawn firmly up by means of the screw 19 on the main bolt *o* after the parts are put together and in their proper places, the screwbolts T and C giving it additional fastening to the beam and handle.

*The share, Figs. 10 and 11.*—The share K increases in thickness gradually from the point *o* to the mortise L, being horizontal on the under side. The cutting-edge, however, at No. 1 rises more abruptly and in a curve corresponding with the front or cutting edge of the cutter F. The edge 2 of the share toward the landside, and which is placed between the plate and mold-board, is cast in a serpentine curve. The edge 3 from the landside is cast in a regular curve from near the point to the heel. The upper side of the share between 3 and 4 is convex, and between 2' and 4 is cast with a depression or countersink at 4, to admit the lower edge of the mold-board which rests against the shoulder formed by said depression at 4, made of a corresponding curvature with the lower edge of the mold-board. The under side of the share is concave, with a deep cavity at 5 to admit the point 27 of the standard, which assists in holding the share firmly. There is also a tenon, 6, projecting back from the thickest part of the share near the dovetailed mortise L toward the standard, which tenon fits into a corresponding depression, 21, before mentioned in the point of the standard. The share is perforated with two round apertures, 7 and 8, to receive the bolt V, Fig. 1, and pin W, Fig. 8. The aperture 7 receives the pin W inserted into the plate N. The aperture 8 admits the bolt V, which passes through the mold-board, then through said share, and then through the plate N, and is secured by a nut, which is seen in Fig. 15 at V, which nut is prevented from turning by the head *c* of the main bolt O, which is placed against one of its sides.

*The flange-plate, Fig. 8.*—The side 9 of the plate which is toward the lower edge of the mold-board is made straight. The front side, 10, is also straight and at right angles to the edge or side 9, and comes behind the point of the standard. The side 11 opposite to the side 9 is also straight and at an angle of about seventy degrees with the side 10, and is turned down at right angles, so as to form a flange, 12, for securing said plate to the standard E by means of the bolt M, Fig. 2, passing through the cutter F, standard A, and a hole, 13, in said flange, and having a nut, 14, (seen in Fig. 15,) on the inside for securing them together. The rear end, 15, of the plate is made rounding. The under side, N, is somewhat convex. The upper side, N', is flat. The plate N is pierced with four apertures (marked 16, 17, 18, and Z) besides the one in the flange 13, before men-

tioned. The aperture 16 is for the main bolt O, which passes through the plate and along in the groove P in the standard and through the beam, and has a nut, 19, on top for securing it. The aperture 17 is for the bolt V, which passes through the mold-board, share, and plate, and is secured by the nut at the side of the main bolt. (Represented in Fig. 15.) Aperture 18 is for a round short pin or stud, W, to be driven through the plate into the share to assist in holding it from turning. Aperture Z is made oblong for a bolt to pass through in the use of the additional share X Y, Figs. 6, 7, and 12, said bolt also passing through aperture 20 in the rear part of said additional share, (marked Y.)

*The reversible landside, Fig. 5.*—The reversible landside B is cast in the shape of a rhomboid on the side toward the land, and has a wedge-shaped rib, 22 23, cast on the side toward the standard at its longest sides, one on each side. The ends of the ribs toward the acute angles of the rhomboid are tapered to a point, and those at the obtuse angles turn and extend with the ends of the rhomboid as far as is necessary to form suitable projections, E, for resting on the top of the heel of the standard at *a*. The reversible landside is secured to the standard by the bolt C, which passes through the landside, heel of the standard A, and the lower end of the beam-handle D, and has a nut, 24, Fig. 15, on the inside, by which it is secured. The rear end of the heel of the standard is shaped to fit the obtuse angle formed at the union formed by the turn of the ribs at *u u*, as before mentioned. When the side 23 is worn down so as to be unfit for longer use the landside is reversed, which will bring the side 22 in the place where the side 23 is represented to be in Fig. 2.

*The reversible cutter, Fig. 9.*—The cutter F is placed against the standard A with one end, *d'*, in the dovetailed mortise L and the other end, *d*, in the groove G, formed in the upper part of the standard with its back H resting against the end of the landside, and is secured to the standard by the bolt M, which passes through it, the standard, and the flange of the plate, the nut being seen at 14, Fig. 15. In Figs. 1 and 2 it is represented in its proper place. I, Fig. 2, is the bottom, which is horizontal. H is the back, which rises at an angle of about forty-five degrees. The front end, *d'*, is beveled to fit the dovetailed groove L of the share. The cutting-edge *i* is made gently concave and brought to an edge proper for cutting the sward, roots, &c. The other or upper half of the cutter, as seen in Fig. 2, is made in a similar manner, so that it becomes reversible, and when its position is reversed J becomes the bottom and is placed in the same position that I occupied. The position of the cutter is reversed, when the bottom I and cutting-edge *i* are worn, so as to present a new bottom and cutting-edge, and that from the

same casting. When thus changed the bolt M will occupy the aperture 27 and the end *d* the dovetailed mortise L.

*The additional share, Figs. 6, 7, and 12.*—The additional share is made in two parts, X and Y. The front part, X, is made similar to the share K, before described, as far as a line drawn between the two apertures 7 and 8 of Fig. 10. The rest is omitted and its place is supplied by the second part, Y, whose outline describes a rhombus. It is flat on the under side and convex on the upper, and has two apertures, 20 and 28, for the screw-bolt to secure it to the plate, which bolt is passed through one of these apertures, 20, and then through the oblong mortise Z of the plate, which allows the part of the share Y to be adjusted to the part X as the latter wears, and when the part Y is reversed the bolt is put through aperture 28. The nut is on the under side of the plate, and is prevented from turning by the board head of the main bolt O, which comes against it. The front part, X, is fastened to the standard by means of the tenon 6 let into the notch 21, and the bolt V passes through the mold-board, share, and plate, the nut being on the under side and held from turning by the head of the main bolt, as before described for the other share. No. 29 is the aperture through which the bolt V passes.

The construction of the wood-work of this plow, being similar to other plows, need not therefore be described.

The manner of putting the several parts of this plow together having been fully described

in describing the parts themselves will render any further description unnecessary.

The mold-board and standard being cast separate, as above described, several mold-boards may be cast and fitted to the same standard to be used as required. No claim, however, is made to any novelty in the construction of the mold-board, although it differs in some respects from any other in use.

The invention claimed by me, the said JOHN DEATS, and desired to be secured by Letters Patent, consists in—

1. Casting the standard (to which the mold-board, reversible landside, share, reversible cutter, flange-plate, beam, and beam-handle are fastened) with a mortise at the point to admit a tenon on the share, a countersink on the mold-board side to admit the flange of the flange-plate, a mortise in the shoulder to admit the end of the cutter, as before described.
2. Casting the share with a tenon for fitting into the notch or mortise in the point of the standard, as before described.
3. The flange-plate, in combination with the standard, as before described.
4. The letting in of one end of the cutter into the groove G of the standard, as before described.
5. The additional or double share, as herein described.

JOHN DEATS.

Witnesses:

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HUGH Y. RANDALL.