

UNITED STATES PATENT OFFICE.

CHARLES O. WILDER, OF MONMOUTH, ILLINOIS, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO WEIR PLOW COMPANY, OF SAME PLACE.

IMPROVEMENT IN DIES FOR MAKING PLOW-BRACES.

Specification forming part of Letters Patent No. 183,092, dated October 10, 1876; application filed September 12, 1876.

To all whom it may concern:

Be it known that I, CHARLES O. WILDER, of Monmouth, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Dies for Making Plow-Braces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in drop-hammer dies for manufacturing the braces used in the base and rear part of turning-plows, between the land-side bar and mold-board; and the invention consists, first, in constructing the dies so as to subject the blank from which the brace is to be made to preliminary bendings, for the purpose of rendering the final stamping more certain in securing the bends at the proper points, and more effective in producing angles on the salient sides of said bends; second, in the use of a changeable guide, in combination with the recess for producing one of the preliminary bendings, for the purpose of preparing the blank for terminal stamping and finishing, either for a right-hand or left-hand plow, as desired, all as hereinafter more fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the bed-die. Fig. 2 is the same view as Fig. 1, and showing the brace in the different recesses. Fig. 3 is a perspective view of the head-die inverted. Fig. 4 is a transverse sectional view, in the line *x x* of Fig. 2, of both dies and the recesses therein occupied by braces. Figs. 5, 6, 7, 8, and 9 are perspective views, respectively, of a blank brace, and the first, second, and final forms, into which it is swaged by successive operations of the dies.

Similar unaccented letters of reference, in the different views, represent the same part of the bed-die and of the brace, and the same letter accented represents the coacting part of the head-die in the different views.

Letter A represents the bed-die, with a vertical-faced recess, B, in one side, terminated or bounded at its lower side by an arc-shaped shoulder, *b*. C is a recess in the opposite side of the die A from the recess B, and is curved in a horizontal plane to correspond with the curve in a vertical plane of the arc *b*, and is terminated at its ends by slightly outwardly-inclined sides *c c*. *D d* are flat faces, terminating the upper ends of the sides or faces *c c*. *E e* represent similar holes in the faces *D d*, in either of which a projecting pin, F, may be inserted. G is a recess curved similar to the recess C, in the concave side or face of which is a recess, H, with a similarly-curved vertical side and a flat bottom, and terminated at one end with a nearly vertical faced shoulder, *h*, and at its other end by a curved and inclined shoulder, *i*. J is a recess in the convex side of the recess G, with terminal ends similar to the recess G. K is the upper die, with intaglio surfaces to correspond with the cameo surfaces of the die A, and the brace between them, and is lettered as hereinbefore stated. L is the metal blank from which the brace is formed. It is first placed upon the recess B, and there swaged by the projection B' into the first form L'. It may then be placed over the recess C, as shown by dotted lines at Fig. 1, with one end resting against the pin F, placed in the hole *e*, and then swaged by projection C' into form L'', when it may be placed in the recess H, and swaged by projection H' into the finished brace form L''' for a left-hand plow. For a right-hand plow the pin F should be placed in the hole E to make the form, which may then be swaged in the recess J and finished for a right-hand plow.

The preparatory form L'' adapts the blank to the recesses G and J, respectively, so that it will not move toward either end in swaging, as is apt to be the case where the ends are at such different angles to the base. In the form L'' the short end *l* of the brace is left a little longer than in the finished brace, and when swaged is struck by a shoulder, *l'*, of the die K, and thus slightly upset and driven down to form a complete angle where it curves from the main bar L.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a series of dies for swaging plow-braces, the dies, consisting of the recess or matrix C, and the corresponding projection C', substantially as set forth.

2. In a series of dies for swaging plow-braces, the dies, consisting of the recesses C, H, and J, and the corresponding projections on the head-die, substantially as set forth.

3. In a series of dies for swaging plow-

braces, the guide E, attached to and removable from either end, and operating in combination with the recesses C, J, and H, substantially as set forth.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

CHARLES O. WILDER.

Witnesses:

FRANK M. WEIR,
R. M. STEVENSON.