

No. 752,104.

PATENTED FEB. 16, 1904.

M. M. RENN.
MEANS FOR FORMING PLOW IRONS.
APPLICATION FILED MAR. 9, 1903.

NO MODEL.

FIG. 1

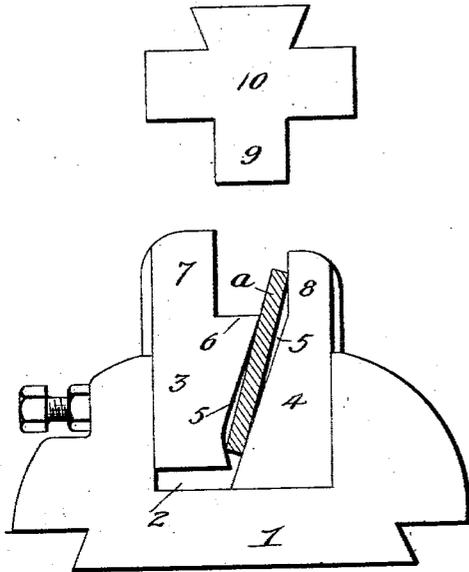


FIG. 2

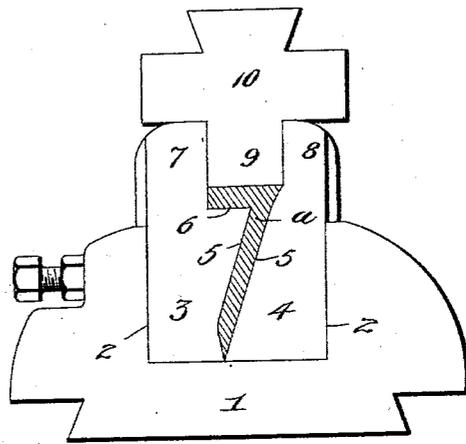


FIG. 3

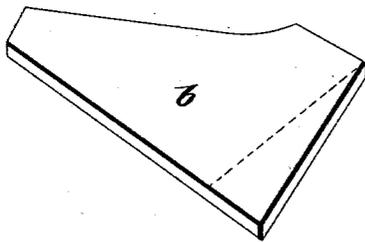
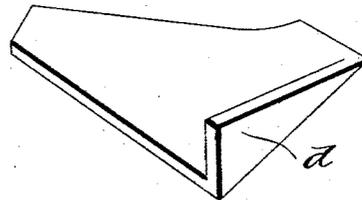


FIG. 4



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Witnesses

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MEANS FOR FORMING PLOW-IRONS.

SPECIFICATION forming part of Letters Patent No. 752,104, dated February 16, 1904.

Application filed March 9, 1903. Serial No. 146,986. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW M. RENN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Means for Forming Plow-irons; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in means for shaping plow-irons, such as plow-points, moldboards, or other parts of plows in which said parts are provided with lateral offset portions, such as landsides, when the said parts are plow-points; and it consists in the peculiar construction and combination of devices hereinafter described and claimed.

The object of my invention is to provide novel and improved appliances by means of which a plow-iron having a lateral offset may be formed and the offset also formed at a single operation without the necessity of first forming the plow-iron and subsequently forming the offset portion and welding the same thereto.

In the accompanying drawings, Figure 1 is partly an elevation and partly a section of dies, a die-block, and a hammer-die constituting improved means for making plow-irons in accordance with my invention, the hammer-die being shown in an elevated position and the blank from which the plow-iron is forged or shaped being shown as in its original condition prior to the action of the hammer-die thereon. Fig. 2 is a similar view showing the hammer-die in the act of delivering its blow on the upper side of the blank to shape the latter in the mold-cavity of the dies and to also simultaneously form the offset of the plow-iron. Fig. 3 is a detail perspective view of the blank prior to the placing thereof in the dies. Fig. 4 is a similar view of a plow-point having a lateral offset constituting a landside, the plow-point having been formed from such blank, as is shown in Fig. 3.

In the embodiment of my invention here shown the block 1 is provided in its upper

side with an angular recess 2, adapted for the reception of the dies 3 4, in the opposing sides of which is formed the mold-cavity 5, corresponding to the required shape of the body or major portion of the plow-point or other plow-iron *a* to be formed therein. The die 3 is here shown as provided with a shoulder 6, which is disposed laterally with reference to the mold-cavity, and the dies 3 4 are shown as respectively provided with vertical extensions 7 8, which project above the said shoulder 6 and are adapted to guide and form a seat for the lower portion 9 of the hammer-die 10, which hammer-die, as will be understood, is adapted to coact with the dies 3 4 in the making of the plow-iron. Any suitable means may, within the scope of my invention, be employed to secure the dies 3 4 in the seat of the die-block 1, and any suitable means may be employed for raising and lowering the dies, for placing the blanks between the dies, and removing the plow-points therefrom when finished. The hammer-die may be operated by any suitable mechanism, such as steam-hammer mechanism or bulldozer.

It will be observed by reference to Figs. 1, 2 of the drawings that the mold-cavity formed in the opposing sides of the dies 3 4 is disposed obliquely with reference to the plane of movement of the hammer-die, this disposition of the mold-cavity facilitating the action of the hammer-die in driving the heated ductile stock of that portion of the blank which is to constitute the body of the iron into the mold-cavity, so as to forge and shape the same therein.

In the manufacture of a plow-iron or similar article by my improved appliance a blank *b* is first provided, which approximates the shape of the finished article and exceeds the same in one of its dimensions, so that when the blank is placed in the mold-cavity between the blocks 3 4, as shown in Fig. 1, a portion of the blank will extend upwardly from and out of the said mold-cavity in the space formed between the opposing sides of the guiding and shaping extensions 7 8 of said dies.

It will be understood that prior to the introduction of the blank into the mold-cavity the

blank will be heated to the requisite degree. In order to forge and shape the plow-iron or other article, the hammer-die 9 is driven with force toward the dies 3 4, caused to enter the space between the guiding and shaping extensions 7 8, and to deliver its blow on the projecting portion of the blank to force the same into and shape the body portion of the iron or other article in the mold-cavity of the dies 3 4 and immediately thereafter to also upset the projecting portion of the blank and cause the same to be forged and shaped between the hammer-die 9, shoulder 6, and extensions 7 8, as shown at Fig. 2, so that the entire plow-iron, including both the body thereof and its lateral extension, (indicated in the present instance as the landside *d*), are formed simultaneously and integrally, thus rendering it unnecessary to first manufacture the body of the plow-iron and then separately manufacture the offset portion thereof and subsequently weld the same thereto as is now the usual practice.

It will be observed by reference to Figs. 1 and 2 of the drawings that the die 3 is movable vertically, so that the width of the space between the opposing sides of the dies 3 4 may be varied, being widened when the die 3 is raised and narrowed or contracted when said die is driven downwardly. The blank is placed in the mold-cavity between the opposing sides of the dies 3 4 when the die 3 is in the elevated position shown in Fig. 1, and when the hammer-die delivers its blow it serves to drive the body of the blank downwardly into the obliquely-disposed mold-cavity between the opposing sides of the dies 3 4 to drive the die 3 downwardly, thereby compressing the body portion of the blank between it and the die 4 to forge, shape, and finish the body portion of the work, and the hammer-die, which enters the space between the extensions 7 8 of the dies, fits the said space, which constitutes an open mold-cavity, closes the open side of the said cavity, and serves to forge, form, and

shape the offset portion of the work therein, as hereinbefore described.

By my improved means I greatly simplify and reduce the cost of the manufacture of that class of plow-irons and similar articles which constitute the body portion and have a lateral portion projecting therefrom.

For the purposes of this specification I have shown and described a plow-point as the subject of manufacture, the same having a lateral offset *d*, constituting a landside. I will have it understood, however, that other plow-irons may be manufactured by my improved appliances by providing dies of suitable shape, and I do not limit myself in this particular. Neither do I desire otherwise to limit myself to the precise construction and combination of devices hereinbefore described, as it is evident that modifications may be made therein without departing from the spirit of my invention and within the scope of the appended claim.

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

The combination of a die-block, shaping-dies therein, one of said dies being stationary and the other vertically movable in relation thereto, said shaping-dies having a mold-cavity in their opposing sides, and a mold-cavity, open on one side, communicating therewith; and a hammer-die coacting with the shaping-dies to forge and shape the body of the work in the first-mentioned cavity thereof, and shaped to enter, fit and close the open cavity and to downwardly move the movable die to forge and shape an offset or lateral portion of the work therein, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MATTHEW M. RENN.

Witnesses:

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GEO. GUTIG.