J. GREEN.

DEVICES FOR MAKING FACE-PLATES FOR DRAW-BARS.

No. 184,859. Patented Nov. 28, 1876.

Fig. 1.

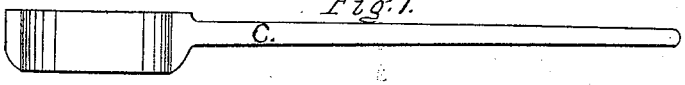


Fig. 2.

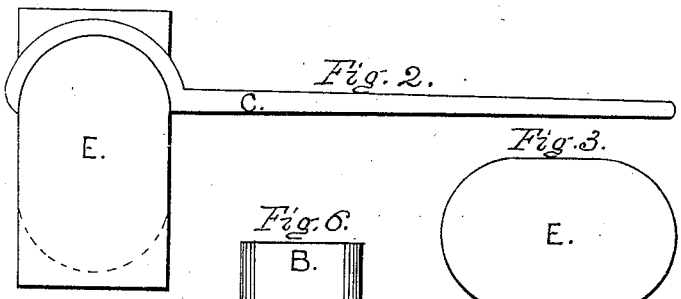


Fig. 3.

Fig. 6.

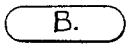


Fig. 4.

Fig. 5.

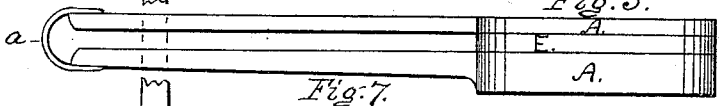


Fig. 7.

Fig. 8.

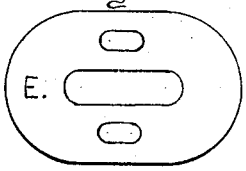


Fig. 10.

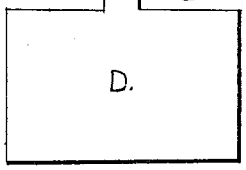


Fig. 9.

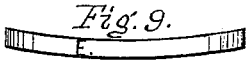


Fig. 11.

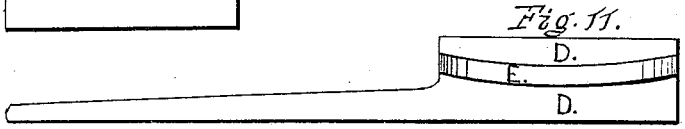
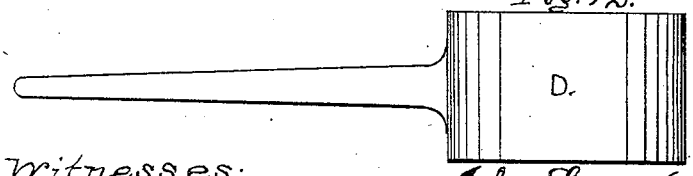


Fig. 12.



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Attorneys

UNITED STATES PATENT OFFICE.

JOHN GREEN, OF SUNBURY, PA., ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE W. SMITH AND WILLIAM H. MILLER, OF SAME PLACE.

IMPROVEMENT IN DEVICES FOR MAKING FACE-PLATES FOR DRAW-BARS.

Specification forming part of Letters Patent No. **184,859**, dated November 28, 1876; application filed October 5, 1876.

To all whom it may concern:

Be it known that I, JOHN GREEN, of Sunbury, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Face-Plates for Draw-Bars of Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figures 1 and 2 show side and plan views of the cutters; Fig. 3, the blank cut by the same; Figs. 4 and 5, side and plan views of the guide-plates; Figs. 6 and 7, details of the detachable dies; Figs. 8 and 9, views of the blank as punched and bent; Figs. 10, 11, and 12, plan and side views of the curved bending-plates.

My invention relates to certain improvements in the manufacture of metallic face-plates for the draw-bars of railroad-cars; and it consists in a series of tools to be used for the common end of making the said plates, which tools are employed for the successive steps of cutting out the blanks, stamping the slot and rivet-holes, and bending the stamped plate into curved form, each of the tools being provided with extended handles for their convenient manipulation beneath the hammer, whereby all of the said steps of the operation are conducted under the same heat employed for forging the blank plates.

In the accompanying drawing, C C represent the two cutters for stamping or cutting the outline of the oval plates, said cutters being each a semicircular knife, its curvature corresponding to the curve required for the end of the plate, and having projecting handles, by which they are manipulated under the hammer. A A are the guide-plates for the punches which punch the slot and rivet holes into the face-plate after it shall have been stamped. Said plates have a central slot, which receives the punch B, that punches the slot in the face-plate, and have also, upon each side of the same, holes that receive the smaller punches B′ B′, that punch the rivet-holes in the face-plate. The guide-plates A are provided with handles for their manipulation, which handles are connected at their extremities by spring *a*. This spring may be separate and removable, as shown, or the two handles may be welded homogeneously together and bent to form a spring, or, in the place of the same, the two handles may be hinged together. D D are the curved plates for imparting the curve to the face-plate of the draw-bar after it has passed through the preceding steps of stamping and punching. These plates are also provided with handles.

The method of manufacturing the face-plates according to my invention is as follows: The stock or material from which the same are manufactured is, for the sake of cheapness, prepared from car-axles and scrap-iron, which is brought to a proper heat and hammered into plates. The cutters C are then placed upon the plate during the same heat at which the latter is forged, as in Fig. 2, and inserted between the anvil and a steam-hammer, the ends of the plate E being cut to oval shape, one at a time or both together, as may be desired. The blank thus formed, and shown in Fig. 3, constitutes the incipient face-plate.

The advantage arising out of the use of the separable cutters C, in contradistinction to a single oval-block die is, that they are in themselves tools which may be easily manufactured, repaired, and sharpened by any blacksmith, the handles permitting them to be conveniently and rapidly manipulated, while their separable character permits the formation of a better blank, which may be variable in size. The blank is then placed between the guide-plates A, as in Fig. 5, and the punches B B′ placed in the top guide-plates in position to be struck by the hammer. The guide-plates are then manipulated between the hammer and the anvil, as before, and the punches B B′ forced down into the guide-plates by the strokes of the hammer punching out the central slot, and the rivet-holes in the interposed blank E, which is thus made to assume the appearance shown in Fig. 8. The punches B B′ may be either concaved or plain upon their cutting-edge, but are preferably made concaved or guttered, while the guide-plates may be faced with detachable plates of steel. The advantages of this form of tool for punching the plates are

that, the punches B B′ being held by the guide-plates, the blows of the hammer are more readily transmitted through them by reason of their lightness to produce the cutting effect.

The punches are also held by the upper plate in proper position to pass through the blank and enter the holes below. The handles, moreover, render the manipulation more rapid, which is a consideration, in view of the fact that the plates are to be finished at a single heat. The spring *a* also obviates the necessity of guide-bolts for effecting the registration of the holes in the two plates A, this being more particularly the case when the handles are joined and formed into a spring, as described. The plate, as shown in Fig. 8, with its holes punched, is then placed between the curved plates D D and bent into the curved shape shown in Fig. 9, to form a perfect and smooth face-plate for a draw-bar.

I am aware that face-plates have been constructed in a single heat by first stamping the same by a single oval die, and afterward punching the slot and bending the plate in a single operation. This method, however, does not secure the advantages that my separable cutters do, and the stamping and bending in one operation leaves a burr or flange upon the edge of the punched surfaces. My separate operation of punching the holes by a special device, and afterward bending the plate, forms a perfectly smooth plate free from the flange or burr, for the reason that the subsequent bending upon a plain curved plate flattens out any flange that the dies may have formed. My device also being provided each with handles, it will be seen that the method is rendered more expeditious, and the face-plates may be manufactured so much more rapidly, as not only to effect the whole operation in one heat, but to leave them red hot when complete, thus saving time and cheapening their production.

Having thus described my invention, what I claim as new is—

1. The series of tools, consisting of the separable cutter C, the guide-plates A, having link-slot and rivet-holes, with corresponding detachable punches B B′, and the plain curved plates D, all provided with handles for their manipulations beneath the hammer, and adapted for successive use to the common end of forming face-plates for the draw-bars of railway-cars, substantially as described.

2. The guide-plates A A, having link-slot and rivet-holes, and handles connected by a spring or its equivalent, as described, in combination with the detachable punches B B′, substantially as and for the purpose described.

JOHN GREEN.

Witnesses:
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JAMES GATTON.