(No Model.) 2 Sheets—Sheet 1.

J. GREEN.

MANUFACTURE OF DRAW BARS.

No. 456,700. Patented July 28, 1891.

Fig. 1.

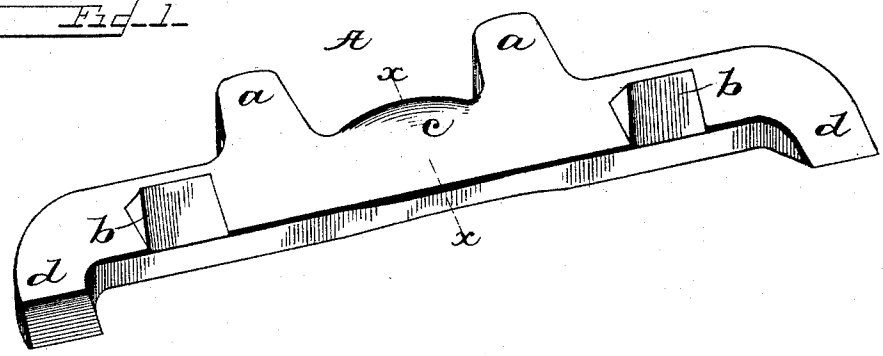


Fig. 2.



Fig. 3.

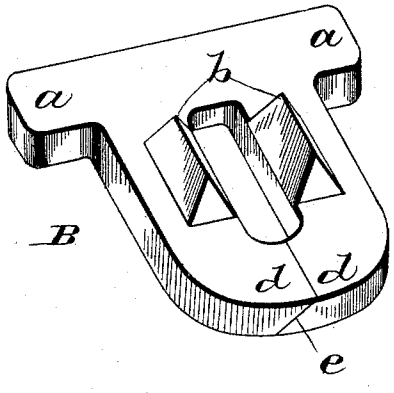
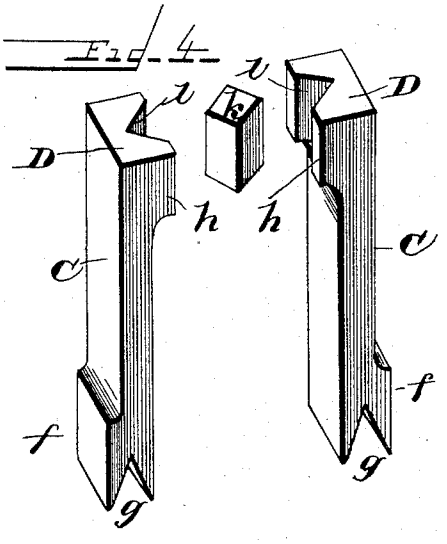


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

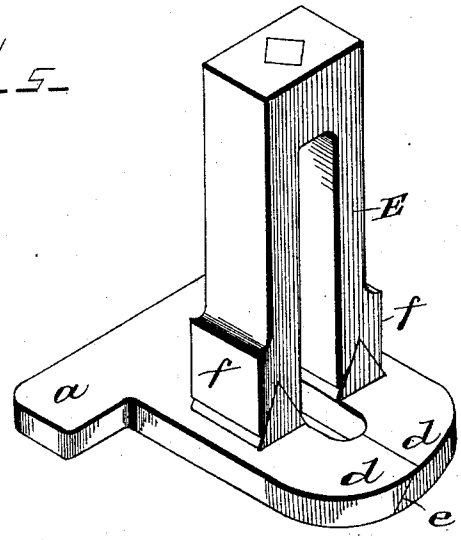
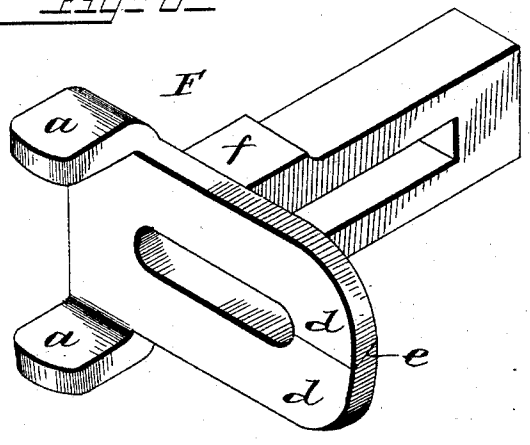


Fig. 6.



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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF DRAW-BARS.

SPECIFICATION forming part of Letters Patent No. 456,700, dated July 28, 1891.

Application filed May 18, 1891. Serial No. 393,215. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN GREEN, a citizen of the United States, residing at Renovo, in the county of Clinton and State of Pennsylvania, have invented certain new and useful Improvements in the Manufacture of Draw-Bars; and I do hereby 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 the manufacture of draw-bars, and has for its object certain improvements, which will be hereinafter described, and particularly pointed out in the claims.

The invention has especial reference to the manufacture of draw-bars of the master car-builders' type in sections, whereby the heavy machinery required to forge them out of a billet may be dispensed with and the major portion of the forging done with an ordinary blacksmith's fire and anvil, the final operation being effected in a set of dies.

In the accompanying drawings, which form part of this specification, Figure 1 is a perspective of a forged bar of metal to form a blank for the head of a draw-bar. Fig. 2 is a cross-section thereof on the line *x x*. Fig. 3 is a perspective of the blank for the head bent into form for welding. Fig. 4 is a perspective of the sections of the body portion of the draw-bar. Fig. 5 is a perspective showing the sections of the body portion welded to the blank for the head and the butt-end of the sections welded; and Fig. 6 is a perspective of a blank for a draw-bar with the lugs bent forward and the whole prepared for dies.

Reference being had to the drawings and the letters thereon, A indicates a forged bar having lateral projections *a a* for forming lugs on the completed bar, vertical projections *b b* for forming a welding-joint with the sections of the body portion of the draw-bar, and thickened at *c* to compensate for the metal displaced in bending the plate into the form of a link, as shown at B, and in some constructions of draw-bars for supplying metal for the hood on the rear side of the head. The ends *d d* are chamfered to form a lap-weld. This bar is heated and bent by any suitable means into the form shown in Fig. 3, when the lap-joint *e* may be welded on an anvil or under a light drop-hammer. The side sections C C are forged separately, with thickened ends *f f* and a suitable groove *g* in the face of each end to receive a corresponding projection *b* on the blank for the head of the draw-bar, and the opposite ends of the sections are provided with inwardly-extending projections *h h*, having a V-shaped groove *i* in their faces to receive a square dowel *k*. The several sections of the draw-bar having been properly forged, the blank B is placed in an ordinary blacksmith's fire and the projections *b b* heated to a welding heat. The side sections are at the same time heated in another fire at their ends *f f*, and then welded to the projections *b b* on the blank B by blows from a hammer applied to the butt-ends of the sections. This weld would be sufficient only for holding the parts together while the blank is being further manipulated, the final weld being effected in dies which form and shape the head of the draw-bar, and in which operation the projections *b b* are driven into and form a homogeneous body with the metal in the ends *f f* of the side sections C C. The butt-end D of the side sections is then heated and the two parts welded, the angular dowel *k* serving to prevent the projections *h h* slipping upon each other. The blank now presents the appearance shown at E in Fig. 5. The lugs *a a* are then heated and bent forward, as shown in the blank F in Fig. 6. At this stage of the operation the head and the thickened portions *f f* are heated to a welding-heat and placed in suitable dies, (preference being given to the dies shown in United States Patent No. 448,612, bearing date of March 17, 1891,) where the welds between the ends *f f* and the blank B is completed. The usual fillets formed at the junction between the side sections C C and the blank B, and at the same time the lap-weld at the ends *d d*, may be made or completed, if not previously made. The dies also shape the lugs *a a* and give the proper contour to the head of the draw-bar.

Having thus fully described my invention, what I claim is—

1. A blank for a draw-bar head, consisting of a flat link-like plate having lateral projections to form lugs.

2. The method of manufacturing draw-bars, which consists in forging a blank for the head and the side bars separately, welding the side bars to the blank for the head and the butt-end of said side bars together, and finally forging and shaping the draw-bar in suitable dies.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN GREEN.

Witnesses:
D. C. REINOHL,
L. P. WHITAKER.