

(No Model.)

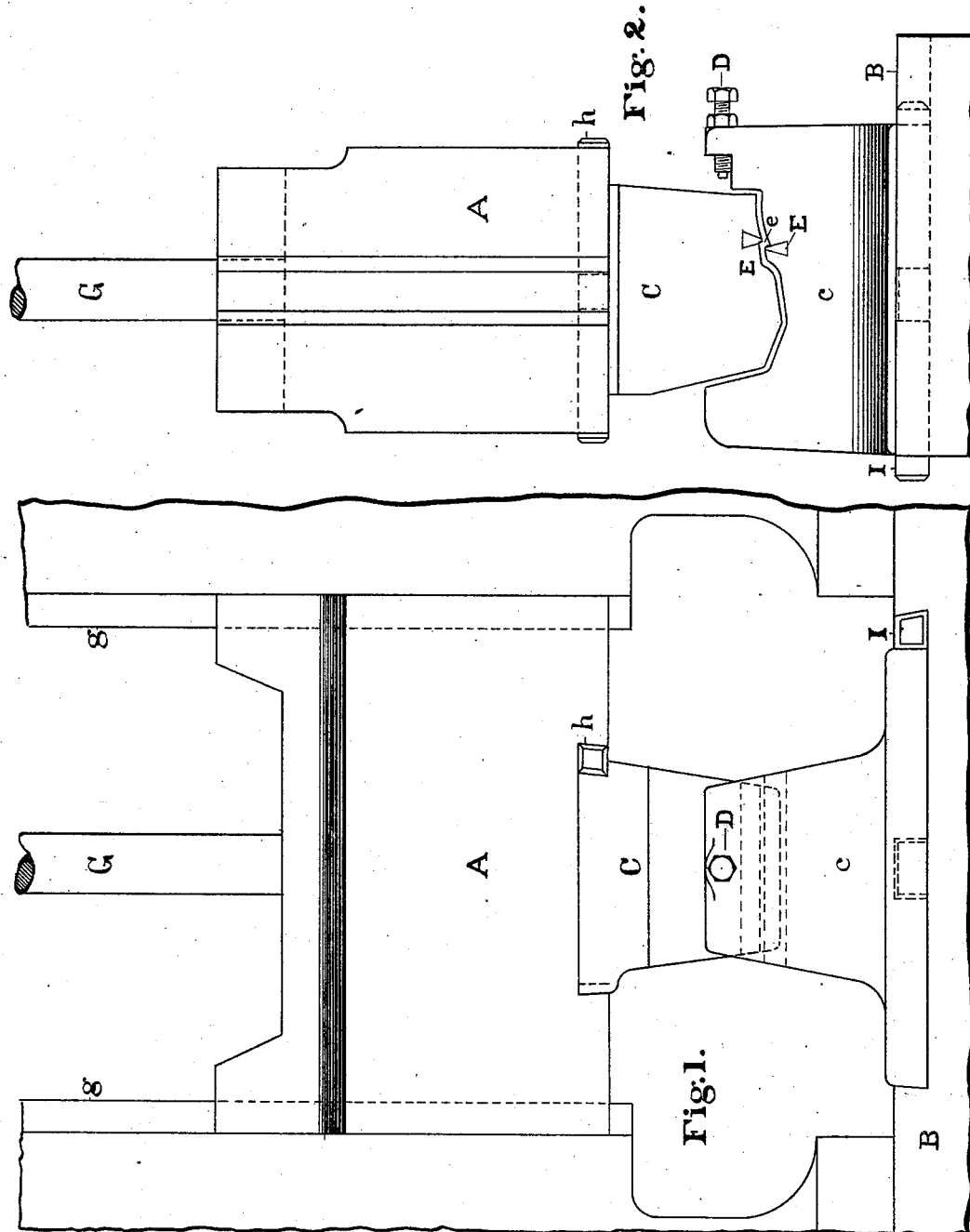
2 Sheets—Sheet 1.

E. B. ENTWISLE.

DIE FOR MAKING RAILROAD CHAIRS.

No. 381,875.

Patented Apr. 24, 1888.



Witnesses:
Francis V. Reilly.
Frank Gray.

Inventor:
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by R. M. Voorhees
att'y.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

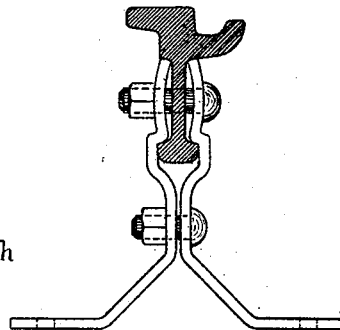


Fig. 3.

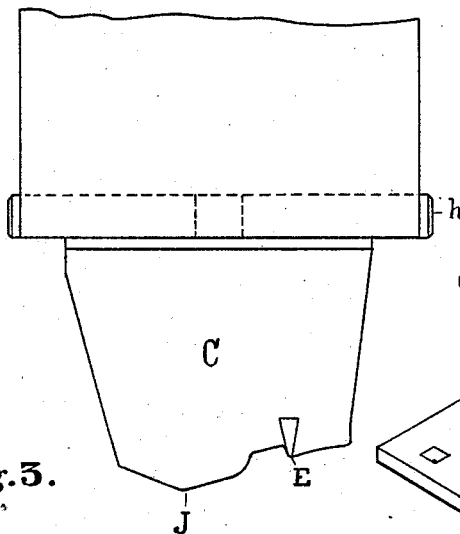
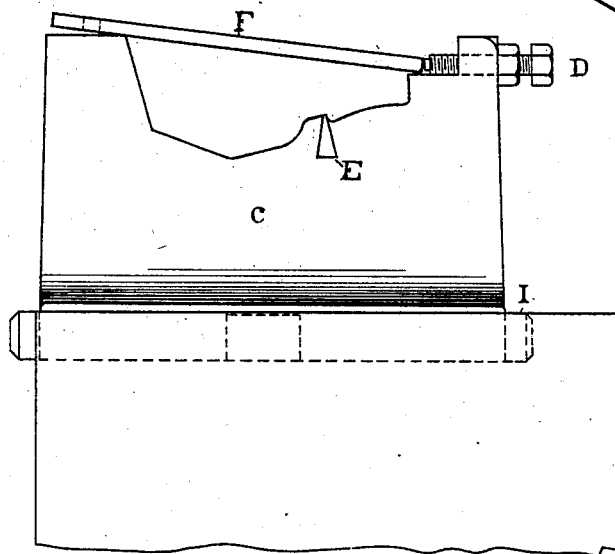
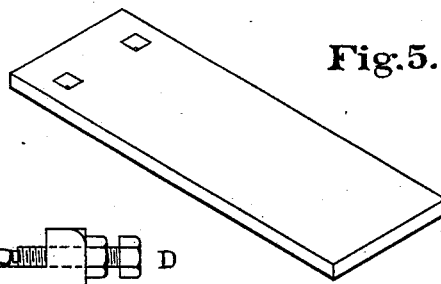


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD B. ENTWISLE, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO
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DIE FOR MAKING RAILROAD-CHAIRS.

SPECIFICATION forming part of Letters Patent No. 381,875, dated April 24, 1888.

Application filed July 14, 1887. Serial No. 244,300. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. ENTWISLE, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented new and useful Dies for the Manufacture of Angle-Chairs for Railroad-Rails, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to manufacture the angle chairs herein described in dies by means of the drop-forge press, a well-known machine.

The dies will first be described in the specification, and then particularly set forth in the claims.

In the accompanying drawings, Figure 1 shows in front elevation part of a drop-forge press containing the dies. Fig. 2 shows the parts of Fig. 1 in side elevation. Fig. 3 shows in side elevation, enlarged, the dies shown in the preceding figures, with a piece of blank metal set in position for forging upon the lower or female die. Fig. 4 shows in end elevation a finished chair supporting a rail shown in cross-section, and Fig. 5 a metal blank, out of which one side of said chair is to be forged, said blank being placed for said purpose, as shown in Fig. 3, as aforesaid.

In said figures the several parts are indicated by letters of reference, by means of which the invention will now be described.

The letter A indicates the drop or hammer shown with a piston, G, as part of a steam-drop, though a strap or any other device usually adopted in ordinary drop-presses may be substituted therefor.

B indicates the bed in which the lower die is secured; C, the upper or male die, and c the lower or female die.

D indicates a gage-point, consisting, as shown, of a screw-bolt and lock-nut for adjusting said bolt; but any suitable adjusting device to perform a similar office may be substituted therefor, as will be very obvious to any one skilled in mechanical work. EE indicate two steel edges or edge pieces, let one each into the male and female dies respectively. Said edge pieces are made removable, because subject to the greatest wear. They are so adjusted that the space e between them is slightly smaller than the space between the

remaining surface portions of the dies. The purpose of this is to secure a sharp and clear-cut angle at this point, which is essential to the proper manufacture of this form of chair. The general shape of the chair to be forged is outlined in Fig. 4 of the drawings; but no claim is herein made to the chair itself as an article of manufacture. The blank F being placed upon the female die, as shown in Fig. 3, is first laid against the end of the stop D, and as the exact draw of the metal in the process of being forged is difficult to accurately judge of at first, the stop is successively adjusted until the right point of adjustment for the blank is reached, when the stop is clamped by means of its lock-nut, shown.

It will, in this connection, be observed that the female die c is so shaped as to take the blank F in an angular direction. This angle is such that every bend in the blank works from the point J as a neutral point, lapping, so to speak, bend after bend, as the forming proceeds from the downward motion of the male die either way from said point J. It will be further observed that such a change in this angle or location of the die might be made as would clamp, say, two of the outside bends, in which case the result would be that the intermediate metal would be torn during the forming process. This angular position or location of the blank is therefore an important point and needs to be carefully provided for by suitable adjustment in practice.

It will be observed that the curve in the shoulder e, Fig. 2, is sharp. It is more acute than that belonging to the natural bend of the metal, and is obtained by the displacement effected by the close location of the removable edges EE, for the purpose of producing the effect upon the metal hereinbefore described.

The dies herein described may be made of either cast-iron or steel, as may be preferred.

Having thus fully described my said dies for the forging of angle-chairs, as of my invention, I claim—

1. A male and female die, of the respective conformations shown, for the forging of angle-chairs for railroad-rails, substantially as set forth.

2. A female die for the forging of angle-chairs, having its face cut at two different

levels, whereby the die is adapted to receive the blank to be forged at an angle instead of in a horizontal plane, substantially as and for the purposes set forth.

5 3. A pair of dies for the forging of angle-chairs, having each therein forming-edges, as E E, located as described, substantially as and for the purposes set forth.

4. A pair of dies for the forging of angle-chairs, provided each with removable forming 10 edge pieces, as E E, substantially as and for the purposes set forth.

EDWARD B. ENTWISLE.

Witnesses:

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GOMER WALTERS.