2 Sheets--Sheet 1.

F. LEONARD & T. TAPENDEN.

Dies for Making Draw-Bars and Buffer-Heads.

No. 155,194. Patented Sept. 22, 1874.

Fig. 1.

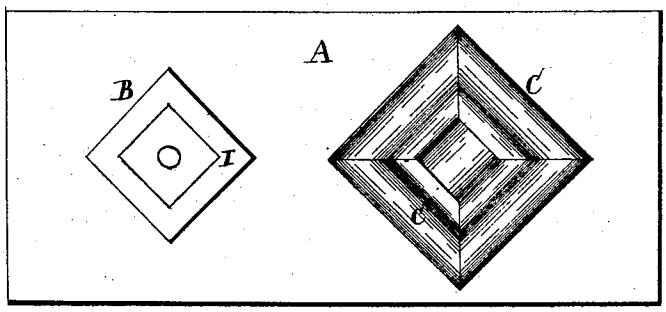


Fig. 2.

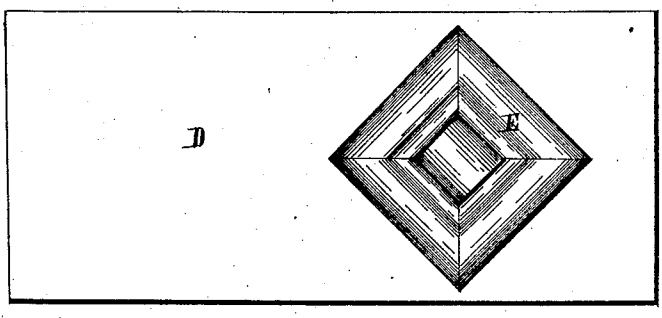


Fig. 3.

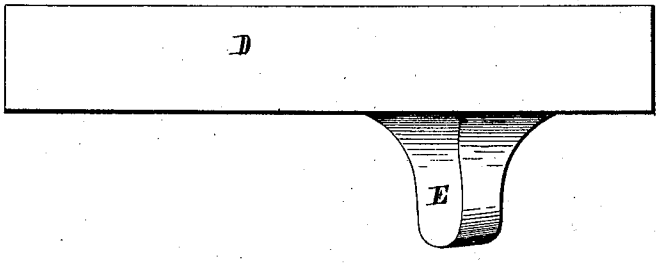
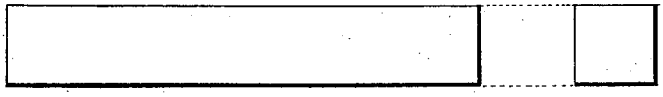


Fig. 4.



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2 Sheets--Sheet 2.

F. LEONARD & T. TAPENDEN.

Dies for Making Draw-Bars and Buffer-Heads.

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Fig. 5.

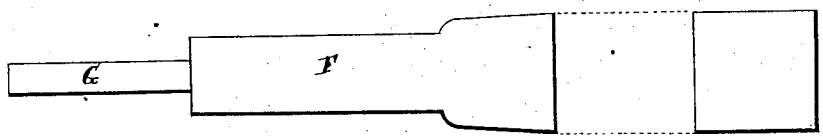


Fig. 6.

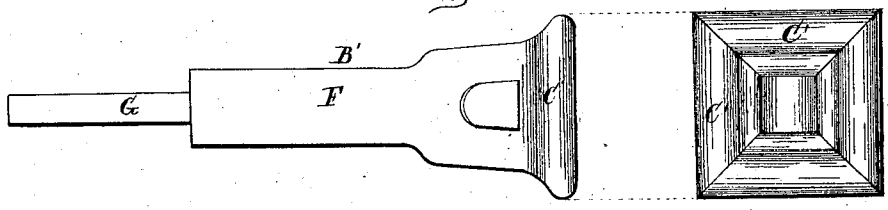
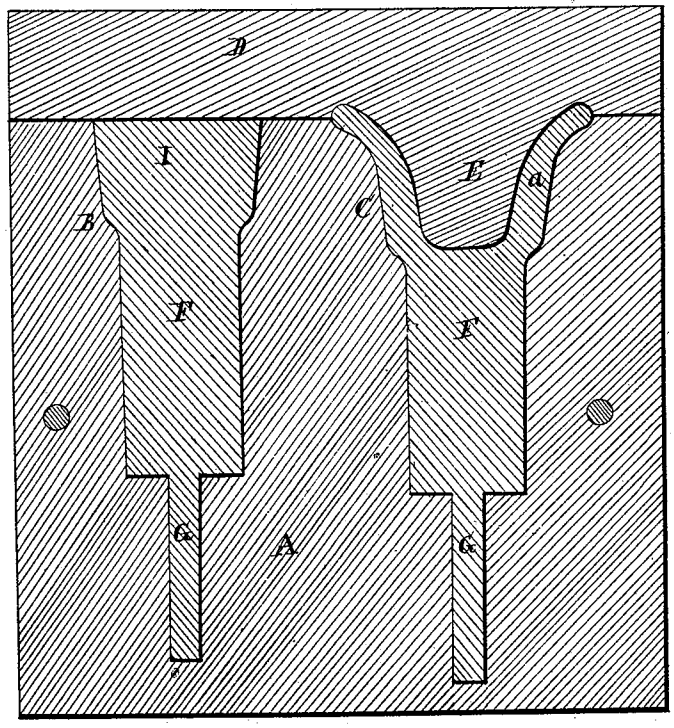


Fig. 7.



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UNITED STATES PATENT OFFICE.

FRANKLIN LEONARD AND THOMAS TAPENDEN, OF CLEVELAND, OHIO.

IMPROVEMENT IN DIES FOR MAKING DRAW-BARS AND BUFFER-HEADS.

Specification forming part of Letters Patent No. **155,194**, dated September 22, 1874; application filed July 17, 1874.

To all whom it may concern:

Be it known that we, F. LEONARD and T. TAPENDEN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new Improvements in Dies for Making Railway-Car Draw-Bars and Buffer-Heads, of which the following is a description, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a plan view of the lower section of the buffer-head dies. Fig. 2 is a view of the face of the upper section of the dies. Fig. 3 is a side view. Fig. 4 is a view of a blank, of which a buffer-head is made. Fig. 5 is a view of a buffer-head partially made. Fig. 6 is a completed buffer-head. Fig. 7 is a longitudinal vertical section of the dies.

Like letters of reference refer to like parts in the several views.

The purpose of this invention is to make buffer-heads for railway-cars, from one piece of wrought-iron, by means of a pair of dies, in which the blank for the buffer-head is placed and thereby fashioned and completed for use.

The construction and manner of operating the dies are as follows: The lower section of the die consists of an iron block, A, Fig. 1, having formed therein a primary matrix, B, of the shape shown in Fig. 7, which represents the outline of a partially-formed buffer-head, a view of which incipient head is shown in Fig. 5. In said block is also formed a matrix, C, Fig. 1, of the shape shown in Fig. 6, which represents a completed buffer-head. Fig. 7 represents a vertical longitudinal section of the two matrixes B C. The upper section of the dies consists of the block D, having projecting from its face the form E, which is of the shape of the inside of a buffer-head, or the mouth thereof, corresponding in this respect to the general outline of the head, and in which it fits, as shown in Fig. 7. It will be observed that it is not close-fitting, there being a space, *a*, between the two sections equal to the thickness of the cheeks C′ of the buffer-head.

The operation of the above-described dies is simple and readily understood, and is as follows: A piece of wrought-iron, termed a blank, represented by Fig. 4, of a size proper for the stem F of the head, and having formed thereon the drag-bar or shank G, though it is not essential that the shank should be first formed, as the head can be first made and a shank attached thereto by any appropriate means without changing the nature of this invention, is while hot, inserted in the primary matrix B. The end of the blank is allowed to project somewhat above the face of the die or matrix. Section D of the dies, attached to and forming part of the head of a power-hammer, now falls upon it and upsets the protruding end of the blank so much as to fill the part I of the matrix. This partially-formed buffer-head, represented by Fig. 5, is now taken out and dropped into matrix C. The male part E of the upper section or hammer-head falls upon it, and, by repeated blows, spreads it out in the head of the matrix, and at the same time forming the hollow or mouth in the buffer-head, thereby completing the article. A buffer-head, B′, thus made is represented in Fig 6. By this means a solid homogeneous wrought-iron buffer-head is made, which heretofore has been made up in sections of wrought-iron, bolted or otherwise secured together. This manner of head is often broken or beaten out of shape by the severe blows it receives on coupling up the cars, whereas a solid wrought-iron head will neither break nor bend when subjected to the same treatment. Also, a wrought-iron buffer-head, made as above described, has a flaring mouth, for the ready admission of the coupling-link, which the sectional wrought-iron one has not.

The primary die or matrix, wherein the blank is upset for forming the head of the buffer, may be dispensed with, and the enlargement on the end for the head may be forged or rolled thereon.

What we claim as our invention, and desire to secure by Letters Patent, is—

The primary and secondary dies B C, in combination with the upper die or section D, substantially in the manner as described, and for the purpose specified.

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Witnesses:
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