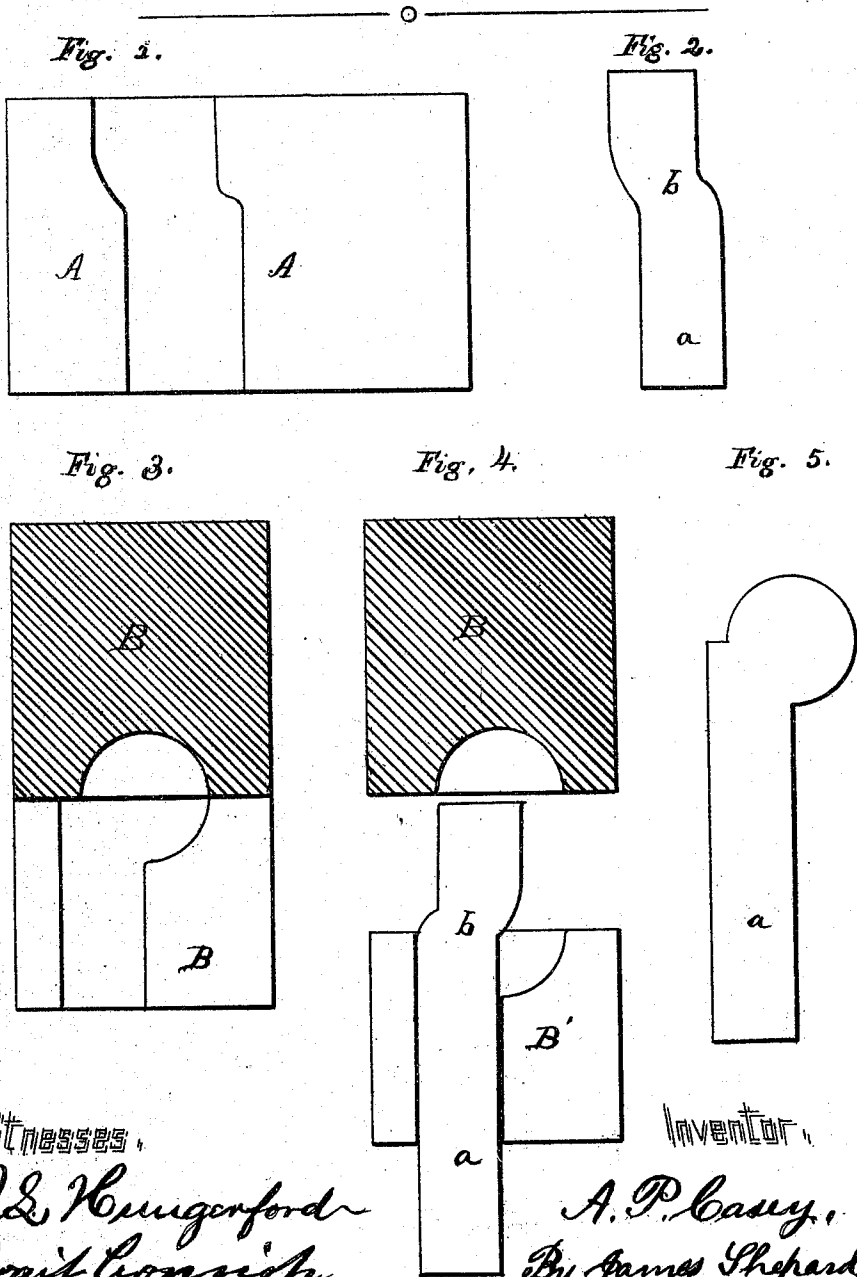


*A. P. Casey,*

*Manf. Carriage Irons.*

*No. 105,423.*

*Patented July 19, 1870.*



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# United States Patent Office.

ALBERT P. CASEY, OF PLANTSVILLE, CONNECTICUT.

Letters Patent No. 105,423, dated July 19, 1870.

## IMPROVED METHOD OF FORMING STUMP-JOINTS FOR CARRIAGE-BOWS.

The Schedule referred to in these Letters Patent and making part of the same.

I, ALBERT P. CASEY, of Plantsville, in the county of Hartford and State of Connecticut, have invented new and useful Improvements in Forging the Joints of Carriage-Bows, of which the following is a specification.

My invention consists in a series of dies for forging stump-joints for carriage-bows from a straight piece of iron of the proper size for the bow.

In the accompanying drawing—

Figure 1 is a top view of the dies for the first operation.

Figure 2, a side elevation of a blank, formed by the dies fig. 1.

Figure 3, a view, partly in section, of the dies for the second operation.

Figure 4, a view of the same, with the blank fig. 2 inserted previous to upsetting it; and

Figure 5 is a side elevation of a finished stump-joint blank.

The dies A A, fig. 1, are arranged in any suitable press or machine, so as to be readily opened and closed. In the drawing, these dies are represented open.

A straight piece of square iron, of the size desired for the finished stump *a* of the joint, fig. 5, is taken when hot and placed between the dies A A, when the same are brought together, which offsets the iron into the form of the blank *b*, shown in fig. 2.

The iron may be cut into pieces of the proper length either before or after it is placed in the dies, as desired.

B designates a solid die, represented in section to show its form, and which is used in connection with the die B'.

The die B' is made in halves, so as to open and close to readily admit the blank *b*. Only one-half of the die B' is shown in the drawing.

The dies B B' are arranged in any suitable press or drop, so as to open and close, and in the positions represented in figs. 3 and 4.

When still hot, or when made so by a subsequent heat, the blank *b* is placed in the die B', as shown in fig. 4, and clamped between its two halves, so as to hold it firm; or, if desired, a support may be furnished for its lower end to rest against.

The blank *b* being offset, its end is immediately under the die B, so as to enter the same as the dies B B' are brought together, which upsets the blank *b*, and causes it to fill the dies, and thus giving it the required form.

The surplus metal which projects from the blank between the dies is then trimmed off, and the stump-joint is ready to finish, as shown in fig. 5.

By properly gauging the iron when offset by the dies A A, the amount of surplus metal on the blank, when taken from the dies B B', will be very small.

Ordinarily, stump-joints and similar articles have been forged by drawing out the stump of the joint from large iron, and leaving a portion of the full-sized iron to be forged into the joint.

By my invention, the article is forged with much less labor, and consequently at less cost.

I claim as my invention—

The method of forging the stump-joint for carriage-bows, herein described, by subjecting a straight piece of iron, of the size of the finished stump of the joint, to the series of dies which offset and upset the iron into the required form, substantially as described.

A. P. CASEY.

Witnesses:

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