

(No Model.)

D. A. CHAPIN.

MANDREL FOR COMBINED RAILWAY CHAIRS AND FISH PLATES.

No. 501,989.

Patented July 25, 1893.

Fig. 1.

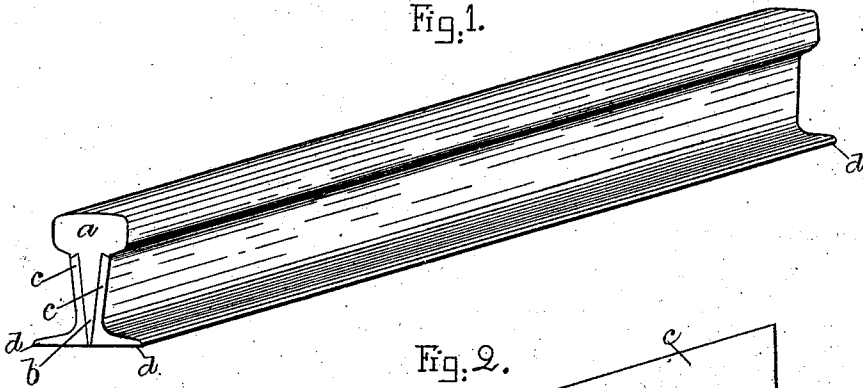


Fig. 2.

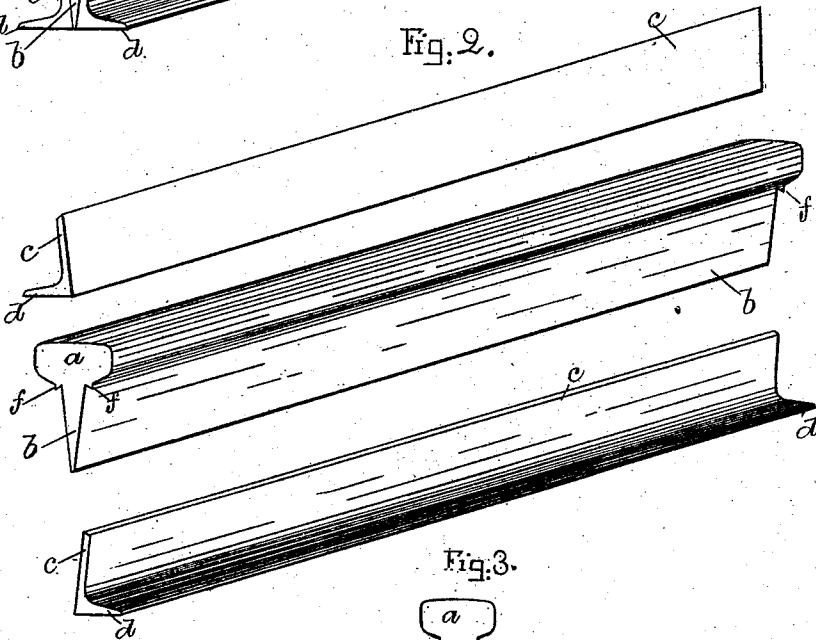


Fig. 3.

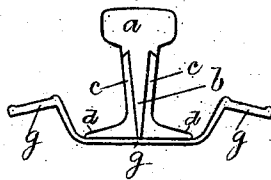
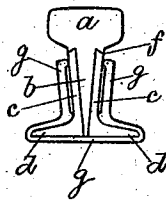


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

DANIEL A. CHAPIN, OF BOSTON, MASSACHUSETTS.

MANDREL FOR COMBINED RAILWAY CHAIRS AND FISH-PLATES.

SPECIFICATION forming part of Letters Patent No. 501,989, dated July 25, 1893.

Application filed December 1, 1892. Serial No. 453,728. (No model.)

To all whom it may concern:

Be it known that I, DANIEL A. CHAPIN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Mandrels for Combined Railway Chairs and Fish-Plates, of which the following is a specification, reference being had to the accompanying drawings, which form part hereof.

My invention relates to a mandrel or former for that class of combined chairs and fish-plates which have two upright portions, two flange portions and a connecting base, as illustrated in Patent No. 437,288, to Chapin and King, dated September 30, 1890. The blank for the fish-plate is usually rolled or bent over the mandrel while hot, and as it shrinks in cooling there is much difficulty experienced in withdrawing the mandrel if made in one piece in the common way.

My invention consists in making the mandrel in three pieces, a middle piece, and two side pieces each side piece having a flange shaped like the rail flange, and an upright portion which fits the face of the middle piece.

In the drawings, Figure 1 is a perspective of my mandrel with the three parts together. Fig. 2 is a perspective detail of the three pieces composing the mandrel. Fig. 3 is an end view of the mandrel shown resting on a blank for a fish plate which is about to be shaped. Fig. 4 is an end view of the same after the plate is formed into shape and before the mandrel is withdrawn.

The middle piece is formed with a cap *a*, the lower portion *b* being preferably wedge-shaped as shown, the thinnest part of the wedge at the bottom. The wedge should preferably not be sharpened to an edge. The cap *a* is shown in the drawings as of the same configuration in cross section as the tread portion of a rail, but this is not necessary as it is merely for convenience of handling and does not form part of the shaping portion of the

mandrel. The two side pieces each have an upright portion *c* which fits against the wedge *b*, and a flange portion *d*. When put together the three pieces have nearly the form of the web and flanges of a rail, as shown. The web, however, instead of having parallel sides, tapers somewhat downward, thus giving to the sides of the mandrel a slight upward flare. The upper edge of the side piece abuts against a shoulder *f* on the middle piece.

The blank *g* for the fish-plate is preferably rolled first into the shape shown in Fig. 3, and then by suitable machinery is bent over the mandrel as shown in Fig. 4. As the bending is best done while the blank is hot and as the subsequent cooling of the metal shrinks it onto the mandrel it would be exceedingly difficult to withdraw the mandrel if made in one solid piece. On account of the wedge shape of the middle piece of my device, it can easily be withdrawn by lifting. Then, of course, the two middle pieces are left loose and can be easily withdrawn. By making the thin edge of the wedge *b* with a slight degree of thickness a greater play is given to the side pieces when the wedge is withdrawn than would be the case if the wedge were thinned down to a sharp edge. The middle portion *b* may be made with parallel sides instead of wedge-shaped without departing from the spirit of my invention, but the wedge shape is much preferable.

What I claim as my invention is—

A separable mandrel for forming a combined chair and fish-plate, consisting of a middle piece and two side pieces, each side piece having an upright portion and a flange, the two upright portions and the middle portion together composing the web of the mandrel, substantially as described.

DANIEL A. CHAPIN.

Witnesses:

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