W. S. Shotrell.

RAIL ROAD CHAIR

75475

Sections of iron as prepared by Rolling before being cut.

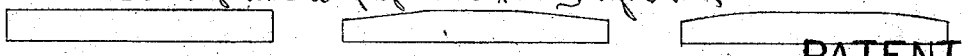

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Fig. 2

Fig. 1.

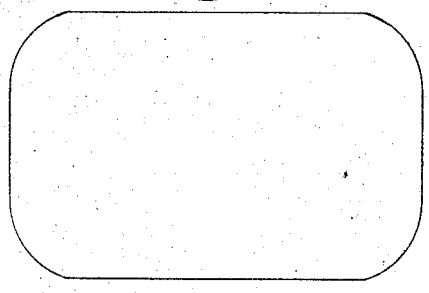


Fig. 3

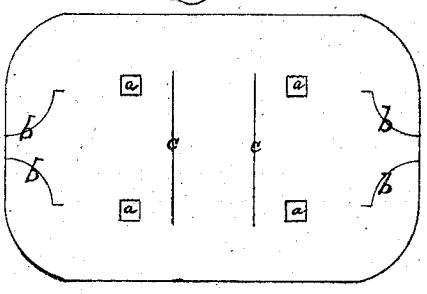


Fig. 7

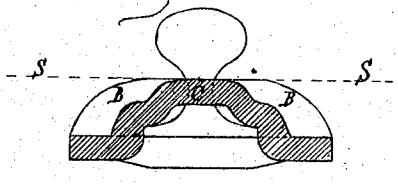


Fig. 8.

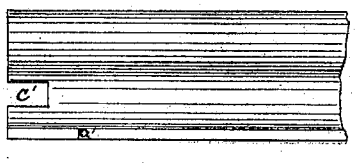


Fig. 6

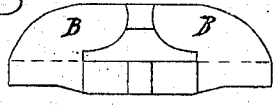


Fig. 4.

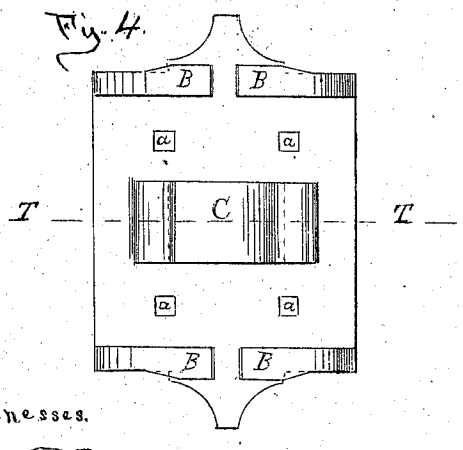
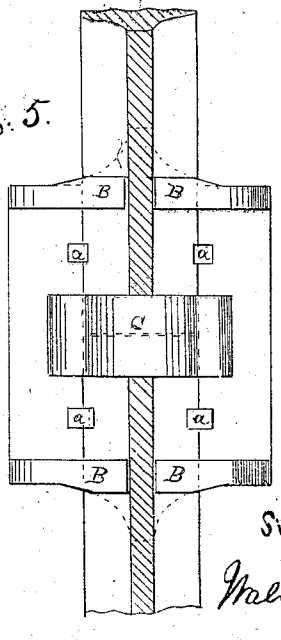


Fig. 5.



Witnesses.

D. L. Freeborn

F. A. Hadicke.

Signature.

Walter S. Shotwell

United States Patent Office.

WALTER S. SHOTWELL, OF PATERSON, NEW JERSEY.

Letters Patent No. 75,475, *dated March* 10, 1868.

IMPROVED RAILROAD-CHAIR.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WALTER S. SHOTWELL, of Paterson, in the county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Wrought-Iron Chairs or Supports for the Joints of Railroad-Rails; and I do hereby declare that the following is a full and exact description thereof.

I will first describe what I consider the best means of carrying out my invention, and will afterwards designate the points which I believe to be new therein. The accompanying drawings form a part of this specification.

Figure 1 is a plan view, and

Figure 2 an edge view of a piece of sheet metal which has been rolled to the proper thickness and condition, and has been cut by a die into a form having an outline shown in fig. 1.

Figure 3 represents the same after it has been struck by one or more additional dies, and cut along lines and punched with holes, as represented.

Figure 4 is a plan view of the same after the parts of the metal have been extended upwards by being rolled in dies or otherwise by one or more operations.

Figure 5 represents the same as fig. 4, but with the lower portion of the rails in place. This figure is, in other words, a horizontal section on the line S S in fig. 7.

Figure 6 is an end view of the chair complete, in a finished condition.

Figure 7 is a cross-section through the chair on the line T T in fig. 4. It shows an end view of the rail in position.

Figure 8 is a side view of one end of the rail prepared to be fitted into my chair.

Similar letters of reference indicate like parts in all the figures.

The material of the whole may be wrought iron, of good quality, rolled in a rolling-mill, and treated by well-known processes.

It is desirable for the purposes of my invention that the iron shall be rolled in a peculiar manner, by giving a corresponding form to the rolls, so that the metal shall be thicker along the middle of the chair than at each edge. The difference of thickness which I prefer is very plainly indicated in fig. 1, and the advantages due to the increase of thicknes in this manner will become apparent as we proceed.

I take a sheet of rolled iron having variations in thickness, as represented, and cut it, by suitable dies, into pieces of the form represented in fig. 1, taking care to so place the rolled iron in the dies that a thick portion shall extend along the central line, as will be obvious. I next introduce the piece thus produced into a suitable die-press, and cut the four holes *a*, the four lines *b*, and the two straight cuts *c*, all of which are shown in their proper position in fig. 3. The metal thus prepared, after being brought to a high temperature, is bent in other dies, either at a single operation, or at successive operations, until the portions B B B B are raised, so as to stand at right angles to the main body of the chair, and so that the strip of metal, C, included between the cuts *c c* is raised, as indicated in fig. 7. In the act of raising this latter part, the tongue C stretches or extends the metal. This operation diminishes its thickness, but the increased thickness of the portion of metal across which the lines *c c* extend, allows this stretching—this diminution of thickness—without too greatly reducing it. The metal of this portion, after being thus stretched, is still about the same thickness as the other portions of the chair. This thickness may vary according to circumstances, but I prefer, for ordinary railroad-tracks, a thickness of about three-fourths of an inch.

I prepare the ends of the rails by cutting in suitable dies, or otherwise, in the manner indicated; that is to say, I punch partial holes or rectangular notches a^1, in the edges of the bottom flange or web, which coincide, when the rolls are in place, with the holes *a* in the chair, and by introducing spikes or other fastenings through the holes *a* and the notches a^1, I prevent the rolls from moving endwise in the chair. This mode of fastening is identical with that employed in many ordinary chairs, but the notch c^1 is cut, or otherwise produced, horizontally across the base, as shown in fig. 5, and is believed to be novel. In its relation to the portion C of the chair, it performs a novel function.

When the rails are thrust into the chair, which may be done by moderate force, in any approved manner,

the notches c^1 in the end of each, match and fit tightly upon the tongue C of the chair. It thus aids very materially in preventing the working of the rails vertically relative to each other. It locks into each somewhat in the manner of the dowels which are employed in many other branches of the arts.

The corner portions B B of the chair, on being bent upward, as indicated, are adapted to fit over and match against the lower portion of each rail, and to hold the same firmly, very much in the same manner as the corresponding portions of ordinary chairs, but the manner in which the metal is applied is very different from ordinary chairs, in the fact that it is sheet metal, presented with its edges, (instead of one of its faces,) against the rail. Any tendency of the rail to move is resisted by the strength of the iron as it stands edgewise, which is much greater than the strength of the same iron merely bent flatwise. The increased thickness of the metal along the central line gives an increased thickness to the portions B, where they come in contact with the rail. This is useful by increasing the bearing-surface.

I propose, in manufacturing my chairs in a large way, to heat the iron, and to cut it in the manner shown in fig. 3, and to bend it into the finished condition at a single heat, and by a very small number of operations. I esteem it possible to effect the whole with one manipulation, by the aid of a suitable machine, which I do not propose now to describe. But I do not limit myself to conducting the several steps of the manufacture in this manner, or in any other particular manner. I propose to produce the chair by any of the approved processes or manipulations.

I do not confine myself to the precise form and proportions of all the parts here represented. I propose, for example, to intersperse, with the chairs represented, other chairs, which shall have only a portion of the novel features of my invention. Such other chairs may have the tongue cut into or cut entirely across, so as to allow rails to be received which have not the notches at each end. The employment of such chairs thickly interspersed, or still better, regularly interposed, or alternately with the chairs described and represented, will, in many instances, be advantageous. It will allow the ends of the rails which fit therein to be cut off or shortened as required.

Having now fully described my invention, together with the best means known to me of putting it in practice, what I claim as new, and desire to secure by Letters Patent, is as follows:

I claim, in chairs for railroad-rails, holding the rails by sheet metal presented edgewise to the rails, substantially as and in the manner herein set forth.

WALTER S. SHOTWELL

Witnesses:

D. L. FREEBORN,

F. A. HADICKE.