

(No Model.)

2 Sheets—Sheet 1.

W. C. WOOD.
CHAIR FOR GIRDER RAILS.

No. 459,717.

Patented Sept. 15, 1891.

Fig.1.

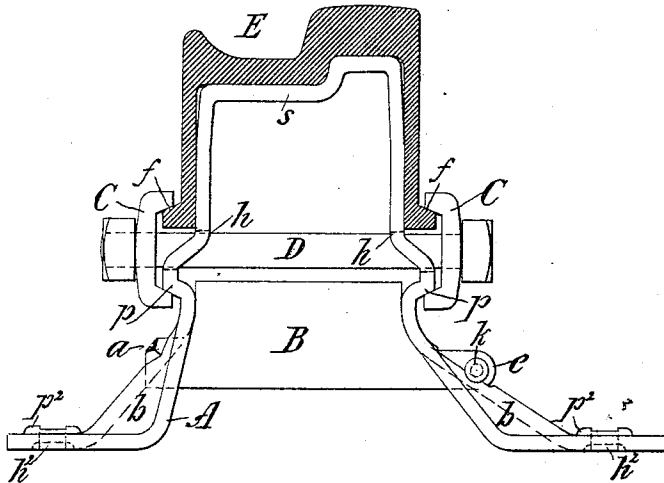


Fig. 2.

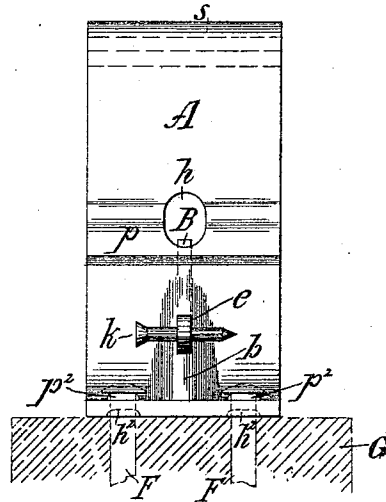


Fig. 3.

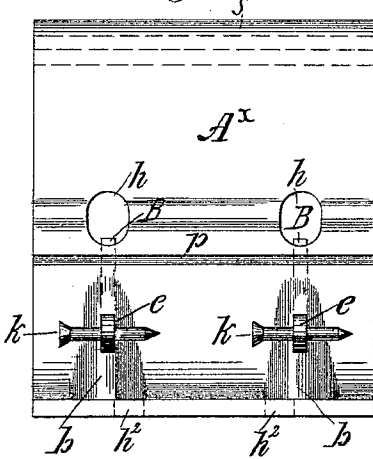
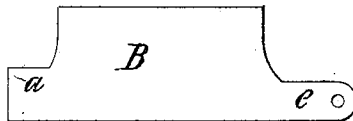


Fig. 4.



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Fig. 5.

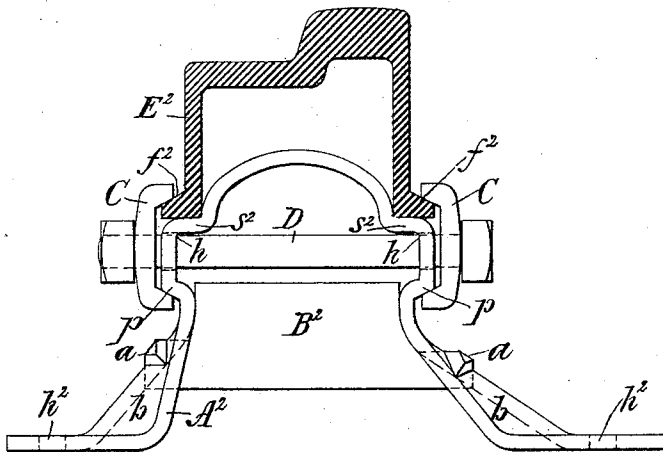
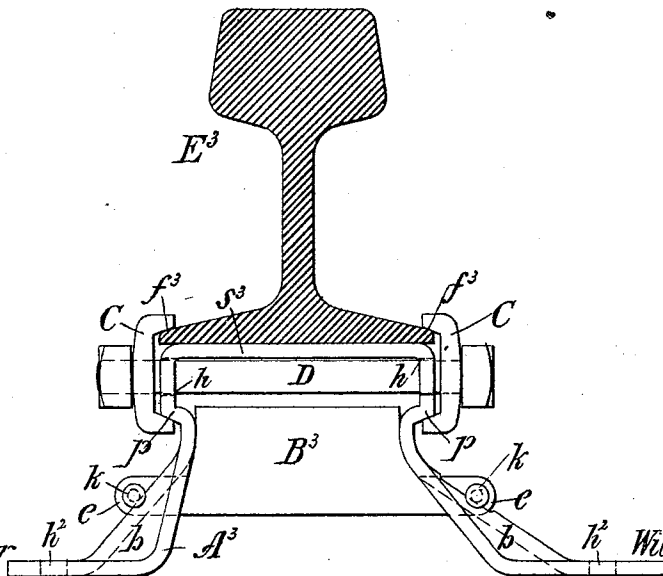


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM CLARK WOOD, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE
LEWIS & FOWLER GIRDER-RAIL COMPANY, OF SAME PLACE.

CHAIR FOR GIRDER-RAILS.

SPECIFICATION forming part of Letters Patent No. 459,717, dated September 15, 1891.

Application filed December 18, 1890. Serial No. 375,142. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLARK WOOD, a citizen of the United States, and a resident of Brooklyn, in the State of New York, have invented a new and useful Improvement in Chairs for Girder-Rails, of which the following is a specification.

This invention is additional to my series of inventions relating to girder-rails and their fastenings set forth in my specification forming part of Patent No. 433,923, dated August 5, 1890, and other previous specifications.

The present invention consists in a wrought chair primarily designed for use in connection with box girder-rails of my improved construction and embodying certain novel features of construction and peculiar combinations of parts hereinafter set forth and claimed.

The objects of this invention are, first, to produce light and strong chairs of wrought-iron or soft steel adapted to be formed from the flat plate by punching and swaging without upsetting the metal and at the same time to coact with wedging-clamps and through-bolts for fastening down the rails and making or breaking their joints, in the manner set forth in said previous specifications; secondly, to provide such chairs with internal struts in a simple and practical way, and, thirdly, to provide for spiking down the chairs by means of ordinary button-head spikes, with provision at the same time for readily withdrawing the spikes by their heads.

Two sheets of drawings accompanying this specification as part thereof.

Figure 1 on Sheet 1 of these drawings is an elevation of a wrought chair constructed according to this invention, showing a box girder-rail in cross-section, a pair of clamps, and their bolt or bolts as applied thereto. Fig. 2 is a side view of a single chair constructed as shown in Fig. 1, showing also a wooden cross-tie in cross-section and a pair of ordinary spikes, in dotted lines, as used in connection therewith. Fig. 3 is a side view of a double or joint chair embodying the main features of the same invention, and Fig. 4 is an elevation of the strut shown in Fig. 1 as it appears before its application to the

chair-iron. Fig. 5, Sheet 2, is an elevation of a modified chair for box girder-rails, showing also a rail in cross-section and a pair of clamps and their bolt or bolts as in Fig. 1; and Fig. 6 is a like view of a modified chair adapted for T-rails and rails having a like form of base.

Like letters of reference indicate corresponding parts in the several figures.

Each of these wrought chairs is composed of a chair proper or "chair-iron" $A A^2 A^3$ in one piece, adapted to be produced from the flat plate by punching and swaging without upsetting the metal, and a strut or struts $B B^2 B^3$, adapted to be stamped from straps of the same metal, and is adapted to coact with a pair of clamps C , Figs. 1, 5, and 6, and with one or more through-bolts D to fasten down a superposed girder-rail $E E^2 E^3$, or in the case of double or joint chairs, Fig. 3, to both fasten down the adjoining ends of two rails and to effectively support the same at the joint. Each of the said wrought chairs is furthermore constructed with a suitable seat portion $s s^2 s^3$ and with hollow lateral projections p , beveled at bottom, located immediately below the flanges $f f^2 f^3$ of the superposed rail, said beveled projections and rail-flanges being adapted to engage with matching beveled flanges on the clamps C , and each chair is also provided with side holes h above the bevels of said lateral projections p to receive the through-bolts D , and also with hollow lateral braces b merging into upwardly and inwardly inclined side portions below said lateral projections p and into horizontal base portions, which latter are provided with base-holes h^2 , which in common are or may be adapted to receive spikes F , Fig. 2, or bolts or rivets for attaching the chairs to cross-ties G , Fig. 2, or the like. It will be observed that the metal throughout the chair is of substantially uniform thickness, all its parts being formed by bending and drawing in contradistinction to upsetting the metal. The chair is thus adapted to be produced more quickly or with less power than if it possessed features necessitating the upsetting of the metal and consequently with greater economy.

In the chairs for box girder-rails illustrated by Figs. 1, 2, and 4 the base portions of the chair-iron are further constructed with raised projections p^2 , forming bolsters for the ordinary spike-heads in front and behind with reference to a given side of the chair, as in Fig. 2, so as to expose the lateral edges of the head above the base of the chair-iron, and thus to facilitate interlocking an ordinary claw-bar with the spike-heads, so as to withdraw the spikes without injury to the chair-iron.

In the modification represented by Fig. 3 the base portions of the chair-iron A^x are simply provided with square holes h^2 to receive improved spikes adapted to be so withdrawn or with ordinary holes for bolts or rivets. The seat portions s of the chair-irons A^x in common are adapted to fit within or to be straddled by clamped box rails E , having normally-flaring webs, which are sprung inward to vertical planes when the rail is clamped, and said seat portions s are adapted to support such box rails vertically immediately under the top portion of the rail and across the same from side to side. A solid support of the rail is thus insured, and any slight variation in the vertical height of the box rails at their respective ends becomes immaterial; but this is not considered an essential feature of these wrought chairs, except as designed for my box girder-rails with normally-flaring webs.

The broad struts shown at B are so shaped as to fit within the chair-iron transversely below the clamping-bolts in the form of vertical transverse walls, and are constructed with a projecting angle a and a perforated end e at the respective extremities of each, said angle being adapted to penetrate a matching hole in the chair-iron and to be clinched on the outside of the chair-iron, as represented in Fig. 1, while said perforated end is intended to protrude through a hole in the chair-iron and to receive a suitable key k , which may conveniently consist of a wire nail, as represented. The strut may obviously be fastened at both ends in either way, as illustrated in Figs. 5 and 6 at B^2 and B^3 , and other suitable fastenings will suggest themselves to those skilled in the art.

In the modified chair for box rails represented by Fig. 5 the seat portion s^2 of the chair-iron A^2 comprises lateral shoulders, upon which the lower edges of the flanged

webs of rail $E^2 f^2$ rest, and in the chair for T-rails and rails having a like form of base represented by Fig. 6 the seat portion s^3 of the chair-iron A^3 is simply a flat surface, upon which the base of the rail E^3 rests, the chair being made of a suitable width, so that the flanges f^3 , formed by the lateral edges of the base of the rail, project in substantially the same vertical planes as the lateral projections p of the chair-iron.

Other like modifications will suggest themselves to those skilled in the art, and details which have not been specified may be of any approved description.

Having thus described the said improvement in chairs for girder-rails, I claim as my invention and desire to patent under this specification—

1. A wrought chair for girder-rails, comprising a hollow chair-iron having a suitable seat portion at top, hollow lateral projections beveled at bottom on its respective sides, side holes above the bevels of said lateral projections, and hollow lateral braces below said bevels merging into the side and base portions of the chair-iron, the whole being so adapted to be formed of substantially uniform thickness from plate-iron or the like without upsetting the metal and at the same time to coact with wedging-clamps and through-bolts for fastening down the rail or rails, as hereinbefore specified.

2. A wrought chair for girder-rails, composed of a chair-iron adapted to be formed in one piece from plate-iron or the like and having a suitable seat portion at top, hollow lateral projections beveled at bottom on its respective sides, side holes above the bevels of said lateral projections, and hollow lateral braces below said bevels merging into the side and base portions of the chair-iron and one or more struts forming vertical transverse walls within the chair-iron, substantially as hereinbefore specified.

3. A chair-iron having its base provided with raised projections adapted to form bolsters below the heads of ordinary button-head spikes at front and rear with reference to a given side of the chair, substantially as hereinbefore specified, for the purposes set forth.

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Witnesses:

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