

D. W. Crocker.

Railroad Chair.

N^o 54,868.

Patented May 22, 1866.

Fig. 2.

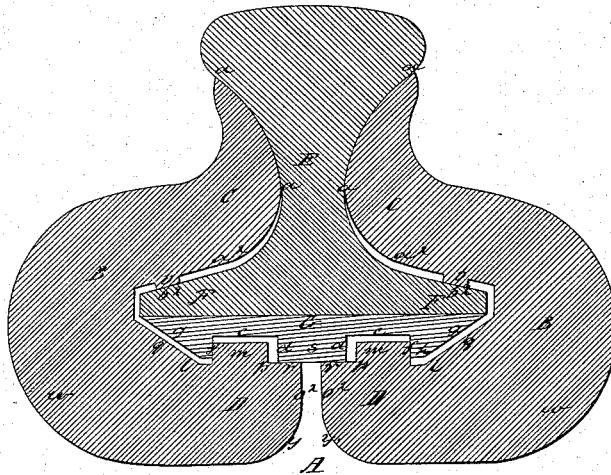
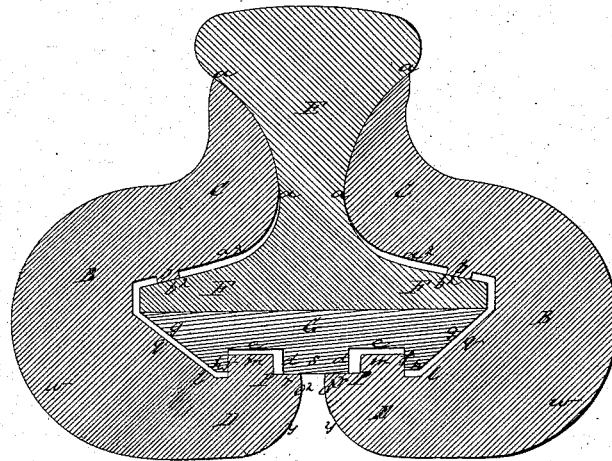


Fig. 1.



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Fig. 3

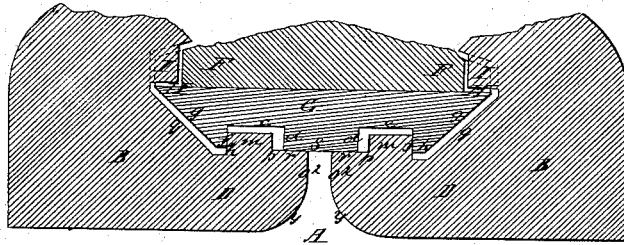


Fig. 5

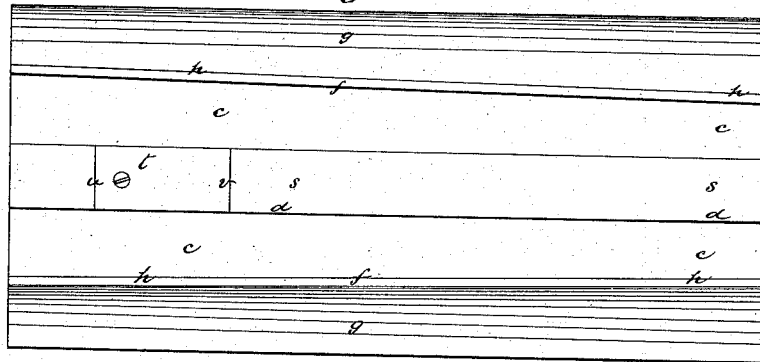
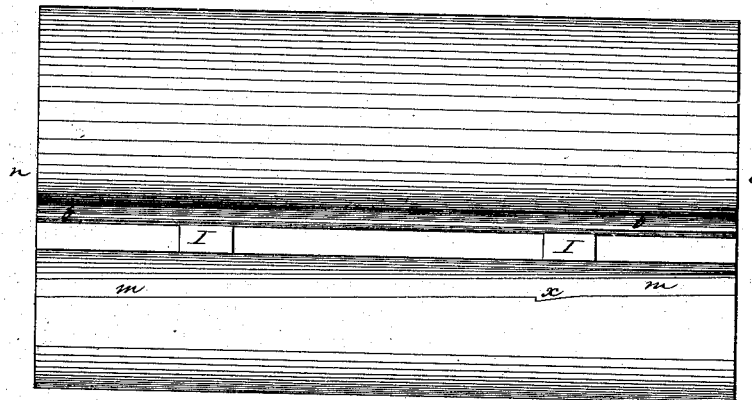


Fig. 4



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UNITED STATES PATENT OFFICE.

D. W. CROCKER, OF DEPOSIT, NEW YORK,

IMPROVED RAILWAY-CHAIR.

Specification forming part of Letters Patent No. 54,868, dated May 22, 1866.

To all whom it may concern:

Be it known that I, D. W. CROCKER, of Deposit, in the county of Delaware and State of New York, have invented a new and Improved Railroad-Chair; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention consists in dividing a railroad-chair into two similar parts or sections in the direction of its length, between the bases of which parts, extending across from one to the other, and the bottom surface of the rail a wedge-shaped plate or "regulator," as I term it, of peculiar construction and form, is driven, coming to a tight and close bearing or seat therein, the surfaces of the chair-bases with which it comes in contact being made of the proper shape therefor, so that as the regulator is driven into the chair it shall cause both of its jaws to tightly and evenly gripe and hug the rail, the chair being thus drawn in a lateral, horizontal, diagonal, and in every possible direction toward and against the rail; and, in addition to the above, the portion of each section of the chair above the bottom edge of the rail, and incasing it upon its sides, is made of a peculiar shape, so that the chair, as it is drawn in toward and against the rail, will turn upon a fulcrum, as it were, at a point between the bottom edge and the upper portion of the rail, where its jaws bear.

In the accompanying plate of drawings my improved railroad-chair is illustrated, Figures 1 and 2 in Plate 1 being transverse vertical section of the same, in connection with a rail, taken, respectively, in planes at or near each end of the chair; Fig. 3, Plate 2, also a partial cross-section of the chair and rail, showing a modification in the outside form of the chair, as will be hereinafter particularly referred to; Fig. 4, a view of the inside face of one section of the chair, or that which comes in direct contact with the rail; and Fig. 5 a view of the under or lower side of the "regulator," so called.

Similar letters of reference indicate like parts.

A in the drawings represents the chair, which is made in two parts or sections, B B, each of which consists of a jaw, C, and a base, D, as shown in the drawings. The jaws C of the

two parts of the chair are fitted closely to the rail E from a to a , also by their longitudinal ribs b at b^2 , about one-fourth of one inch from the edge of the web F of the rail E, leaving a space, a^2 , between the said rib b and the lower point of bearing between a and a , as before stated. The base portion of each section of the chair extends around under the lower side of the rail nearly to the center of the same, but with a plate, G, inserted in and between the rail and the two sections of the chair, extending across from one chair-section to the other, which plate I term a "regulator," and in the following description will be so called, and is of a peculiar construction and form, as well as the surfaces of the chair-bases with which it comes in contact, as will be presently explained. This regulator G is made of a width equal to the under surface or face of the lower portion or web, F, of the rail, against which it bears along the whole of its length, and is thicker at one end than the other, tapering evenly throughout its entire length, which is a little greater than that of the chair, but upon the under side only, which side has two square-shaped grooves, $c c$, extending the whole length of the regulator, with their inner edges, d , parallel with each other for their whole extent, and equidistant from the longitudinal center line of the regulator, but with their outer edges, f , not parallel to their inner ones, both grooves gradually and similarly widening from the thicker end of the regulator to its thinner end, but of an equal depth throughout their whole length. The edges g of the regulator, outside of the grooves $c c$, are similarly beveled toward and to the edge of the flat and plain surface of the regulator, leaving a square lip, h , upon the outer edges of the grooves of an even width throughout their whole length.

The surface or face l of each section of the chair with which the regulator comes in contact has a raised rib, m , extending its whole length, which rib is a little thinner than the depth of the grooves of the regulator, and at one end, n , of the chair—that which has the wider opening or space between the inner faces of the base and jaw of each section, (the said space between the two gradually lessening from such end of the chair to the other end, o , corresponding to the taper of the regulator, or a little less, so that the regulator, when driven

into its seat between the jaws and rail, will be tightly held and wedged, as will be presently explained)—the said rib is of a little less width than that of the narrower ends of the regulator-grooves, and at the other end of the chair of a little less width than the wider end of the regulator-grooves, the ribs thus tapering from end to end, but on their outer edges straight and at an even and uniform distance from the inner edge, o^2 , of the chair-base. These ribs are placed at such positions upon the chair-bases that when the regulator is driven into its seat between the rail and chair the tapering sides of the ribs will come to a close bearing against the inclined sides of the grooves of the regulator, thus, as the ribs are of a little less width than the jaws, leaving a space or opening, p , between the straight sides of the ribs and that of the grooves in each case, which is uniform, or nearly so, throughout the whole length of the chair.

The portions of the chair-bases opposite to the beveled or chamfered edges g of the regulator, as well also as its lips h , are made so as to leave a uniform space, q , between them for the whole length of the chair, and up and around the outer edge of the web of the rail to the ribs b of the chair, hereinbefore referred to, as plainly seen in the drawings, the intermediate portion or center rib, s , of the regulator between its two grooves closely bearing upon the shoulder r of each section of the chair-base.

A short distance from the contiguous ends of the two rails to be held together by the chair, but so as to be embraced within the length of the chair, is cut, or otherwise made in any proper manner and upon both sides or edges of the web of the rail, a square-shaped notch, H , corresponding to and fitting in which, and at the proper points of the chair, are similar square-shaped knobs or studs I .

The chair constructed as above explained, when used is placed along and upon the side of the rail across the joint of the two contiguous ends, one part upon each side, with the knobs interlocked with the notches of the rails, when the wedge-shaped plate, or the "regulator," as I term it, is inserted by its thinner end within the wider opening between the chair and the bottom of the rail, its flat surface against the rail, and driven forward therein, at the same time holding the two parts of the chair to the rail until held by the action of the said regulator, the outer or inclined edges of the grooves c of the regulator, by pressing and bearing against the outer or inclined edges of the ribs or lips m upon the bases of the chair, drawing the two parts of the chair toward each other, at the same time that the center strip or rib, s , of the regulator, pressing down upon the top of the shoulders r of the chair, draws the chair downward, thus causing both parts of the chair to tightly hug or gripe the rail upon all sides, bearing against such portions of the rail, as was hereinbefore particularly referred to, the longitudinal ribs b of the chair

acting as a fulcrum for the chair to turn upon as the regulator, by drawing it into its seat, acts upon the chair, as explained.

The driving of the regulator into the chair is continued until the bearings of the chair upon the rail are made as close and perfect as possible, and the joint of the rails thus held rigid, which result, owing to the construction and formation of the chair and regulator with regard to each other, hereinabove described, will be effected when, or perhaps in some cases before or after, the forward or thinner end of the regulator has reached the other end of the chair to that at which it was inserted.

The object of the interlocking of the studs upon the chair-sections with the rail-notches is to prevent the rails from sliding in the chair as the regulator is driven in, these notches being at such points of the rail and the studs of the chair that when the studs are interlocked with the rail-notches the contiguous ends of the rails will be in close contact, or as near together as practicable.

By constructing a railroad-chair substantially in the manner described, in connection with the regulator having the general form and principles specified, a firm and close pressure or bearing upon or gripping of the rails by the chair is obtained, and the regulator, as it is driven into the chair, acts, as is obvious, not only in a vertical direction, but also laterally, horizontally, and diagonally, and, in fact, in every direction possible, whereby it is rendered impossible for the ends of the rails to become displaced so long as the chair is retained in its proper place and operates through its regulator upon the rail, as described.

I have arranged upon the outer face or surface of the center rib or tongue, s , of the regulator, and near the thinner end of the same, a flat steel or othersuitable spring plate or catch, t , which spring, at its heel u , is secured to the said rib with its free end v toward the thicker end of the regulator, and extends in the same direction therewith. As the regulator is driven into the chair this spring slides along and upon the shoulders r of the chair, but when the regulator reaches its proper seat the spring engages by its free end with a notch, x , made across both sections of the chair, thus holding the regulator and the two parts of the chair firmly in their places, and rendering it impossible for the joint to become loose or shackling, the spring, when desired to withdraw the regulator for unloosening the chair, being depressed sufficiently and in any proper manner to disengage it from the notch of the chair, thus leaving the regulator free to be driven out by any suitable means.

The railroad-chair constructed according to my invention may rest or not upon the cross-ties or sleepers, its lower outside corners, $w w$, when not resting upon the sleepers or ties, being made rounded, (see Figs. 1 and 2,) and when resting upon the ties of a square shape, (see Fig. 3,) the inner corners, $y y$, of the chair-sections being in such case rounded off, as

shown in the drawings, so as to throw the bearing of the chair upon the ties outside of the longitudinal center line of the base of the rail, these inner corners of the chair, when used between the ties, being rounded or not, as may be deemed best or desirable, it then making no material difference.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. Dividing the chair into two similar parts or sections in the direction of its length, in combination with the wedge-shaped plate or regulator G, having the general form and construction hereinabove described, which plate

is driven in and between the basis of the said chair, suitably constructed or formed therefor, and the rail extending across from one section to the other and operating upon the same, substantially in the manner and for the purpose specified.

2. The combination, with the two-part chair A and its regulator G, of the spring-catch *t*, interlocking with suitable notches made in the base of the chair, and arranged substantially as and for the purpose specified.

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Witnesses:

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