

(No Model.)

J. M. PRICE.
RAIL JOINT.

No. 501,161.

Patented July 11, 1893.

Fig. 1.

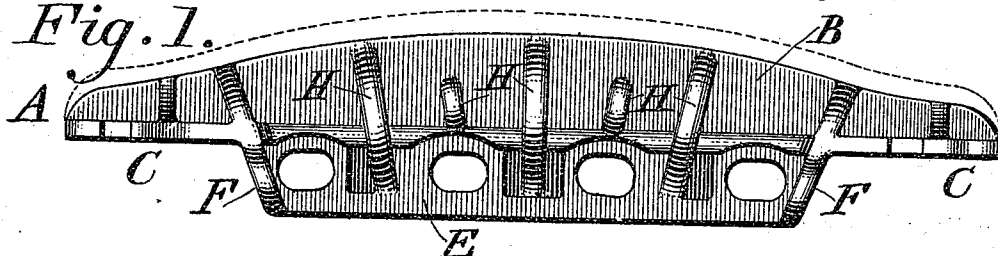


Fig. 2.

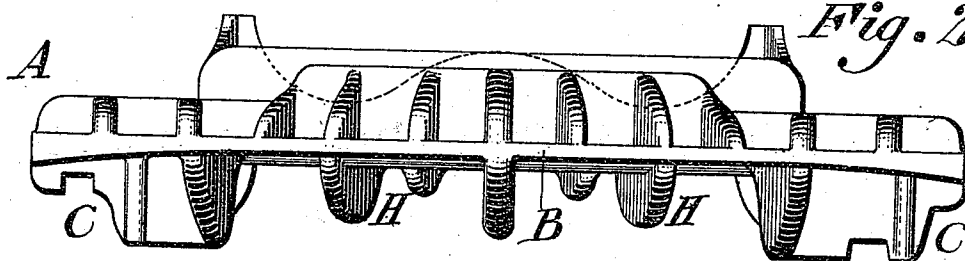


Fig. 3.

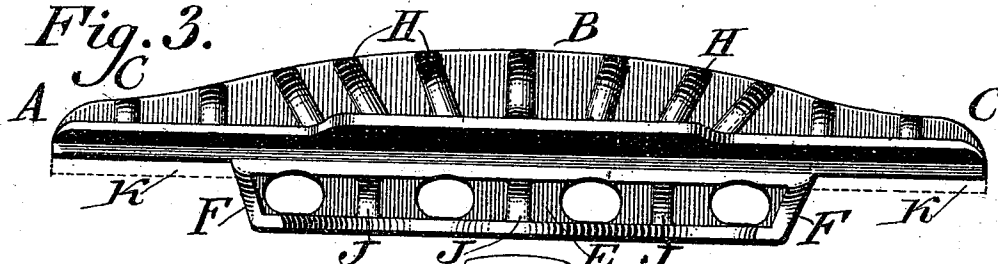


Fig. 4.

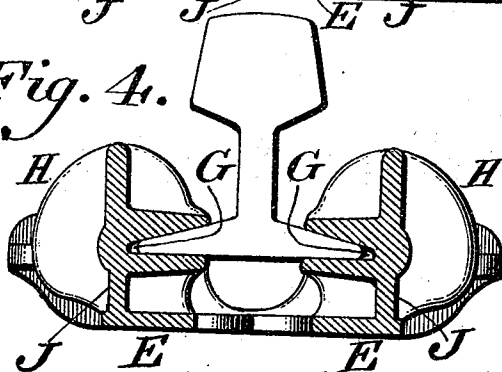
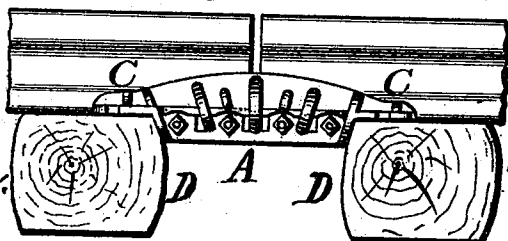


Fig. 5.



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RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 501,161, dated July 11, 1893.

Application filed September 17, 1892. Serial No. 446,360. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. PRICE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Rail-Joints, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to an improvement in rail joints for the securing perfectly together of the ends of railway rails, where two of these rails of any section come together and form that far a continuous rail of that track.

The invention consists of two joint plates of metal, binding the meeting flanges of two adjacent rails so firmly together by the action of bolts and nuts, attaching each joint plate to its fellow as to constitute with this a substantial rail joint, the construction of the parts being hereinafter described.

Figures 1 and 3 represent views of opposite sides of a rail joint embodying my invention. Fig. 2 represents a top or plan view thereof. Fig. 4 represents a vertical section thereof showing also the rail in position. Fig. 5 represents a side elevation, including also the bolts, nuts and ties, all on a reduced scale.

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

Referring to the drawings: A designates a joint plate cast or stamped in one piece, and composed of four principal and contributing parts, each with a function and purpose of its own, namely, a vertical arched plate or girder B, outside of the rail flange, and with ends flattened out and broadened into feet C, resting upon two adjacent ties D. A suspended horizontal foot E reaches from tie to tie, and terminates in a slanting brace or knee F, attached to and depending from the feet of the plate or girder upon the ties. The jaws G or combined bench and vise are formed on one side of the plate A supporting and compressing the flanges of the rails, and a group of ribs H surrounding and embracing the joint plate from the upper surface of this vise to the upper edge of the vertical arched plate or girder, and then descending outside of the vertical arched plate, they reach and merge into the external edge of the horizontal foot of the joint plate. These ribs may run

vertically to the base of the rails inclosed in the joint proposed, or they may be radial or concentric. From the upper inside surface of the foot of the joint plate rise thin upright piers J, to the bottom of the metallic jaw carrying the rails.

The portion of the vertical arched plate or girder, which reaches below the surface level of the cross-ties carrying its feet, is pierced at proper intervals for the passage of the bolts which bind the joint plates together when carrying the flanges of two meeting rails, so in combination with them as to constitute a sound, strong and substantial joint. It will be observed that this combination of parts leads to a union of light material into a whole of remarkable strength. That is, the plate, ribs, bench, vise and piers while all of thin metal are so shaped in contour, and so placed relatively as to acquire, with but moderate use of metal, enormous strength when combined into one piece, as a whole. If made of cast steel or of malleable iron, it will be noticed that the action of fire in their manufacture is complete at every point, whether for annealing or for rendering malleable, by reason of its access to and around all parts. The slanting ends of the horizontal foot add much to the strength of the vertical plate or girder, the ribs embracing all parts, preclude the opening of the jaw in which the flanges of the rails are seated.

Fig. 3, represents a modification of my invention, to adapt it to the use of such railroads as may desire to employ a tie plate under the rails upon every tie. In this it will be seen by the dotted lines at K, that the feet of the ribbed plate joint which is the subject of this application, are so thickened and shaped upon the tie as to place beneath the rails at that point, a thickness of metal identical with that of the tie plate to be used, thus prolonging the jaw in which the flanges of the rails are seated to the ends of the joint plate on each side, in such manner that the joint carries the flange of the rail throughout its length.

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

1. A metallic joint plate consisting of a vertical plate or girder, rounded or arched cen-

trally so as to rise above the ends, which are flattened out with horizontal under surface, a suspended foot or horizontal table starting at right angles from the edge of the vertical plate, and carrying upon thin piers, a bench, whose rounding edge is shaped into a strong clamp or vise, so shaped as to press firmly down upon a rail flange seated upon the bench, the whole surrounded or embraced by a group of thin, converging ribs, all in one piece, as the half of a rail joint plate supporting two meeting rails, substantially as described.

2. A metallic joint plate in one piece combining a vertical plate or web, reaching from one cross tie to another, its ends shaped into horizontal feet resting upon the ties, while between these, three ledges project inwardly, the uppermost a vise bearing down upon meeting flanges of two rails supported by the middle one, a bench carried by piers arising from the lowest of the three, and by slanting knees which reach from the bench downward to the third projection or foot, the whole embraced by encircling ribs, and each plate bound to its fellow, so as to carry the rails from tie to tie, by bolts passing through proper holes near the bottom of the vertical plates, as a rail joint, substantially as described.

3. A rail joint consisting of two horizontal metallic plates attached edgewise to a longer vertical plate with flattened ends resting as feet upon two adjacent cross ties, the parallel plates connected by piers and slanting ends, so that the lower carries the upper as a bench to support the flanges of two meeting railway rails, while a third projection from the vertical plate or girder constitutes a vise bearing firmly down upon the top of the flanges and encircling ribs to bind all parts together in one whole, which is joined to its fellow when in use, by bolts traversing the lower part of the vertical plates, thus combining to make a railway joint, substantially as described.

4. A rail joint consisting of metal shaped into a jaw closely fitting the flange of a railway rail, and supported by a horizontal foot carrying this jaw upon piers, the jaw and the foot both attached to a vertical plate suspended between two cross ties by, and upon, flattened ends resting upon the ties, and all parts embraced and strengthened by encircling ribs, in one piece or plate, attached,

when in use as a joint, to its fellow by bolts traversing the vertical plates, substantially as described.

5. A metallic jaw consisting of a horizontal bench attached by rounded border or side to an overhanging vise, the space between bench and vise so shaped as to fit the flange of a railway rail, the combined jaw supported upon piers vertical and slanting rising from the surface of a horizontal foot, bench, vise and foot attached to a vertical plate or girder of arched or rounded upper contour, and with flattened ends seated as feet upon adjacent cross ties, the whole structure embraced by exterior ribs, all in one piece, with bolt holes near the base of the vertical plate, through which this metallic jaw containing the flanges of two meeting rails is so bound to its fellow as to constitute a rail joint, carrying the rails from tie to tie, substantially as described.

6. A joint plate of metal, consisting of a vertical plate or girder with rounded upper surface and bolt holes through which bolts attach it to its fellow, when carrying two meeting rails, as a rail joint, between two jaws projecting from its side, the one a bench supported upon piers seated on a horizontal foot also attached to the vertical plate, the other a vise bearing down upon the flanges of the carried rails, with exterior ribs reaching across the joint plate from the surface of the vise to the vertical plate, and from the top of the vertical plate to the outer edge of the foot at its base, substantially as described.

7. A metallic joint plate in one piece, consisting of a horizontal jaw to carry the flanges of two meeting rails from end to end of the joint plate, composed of a bench running its whole length and a vise bearing down upon the flanges, attached at one side to a vertical plate, with encircling rib embracing the bench and vise, and the suspended foot between the ties from which piers arise to the bench to support it, and corresponding in the thickness of the metal upon the wooden ties and under the rails to that of tie plates used therewith, substantially as described.

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Witnesses:

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