

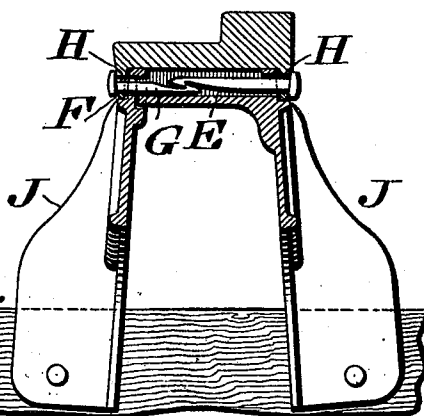
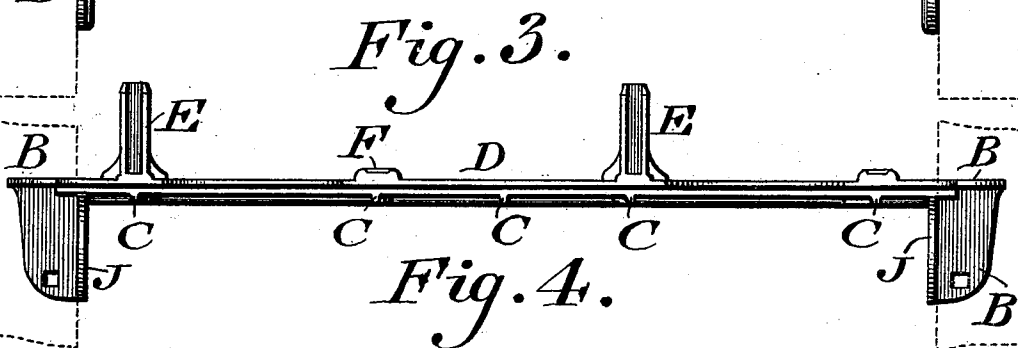
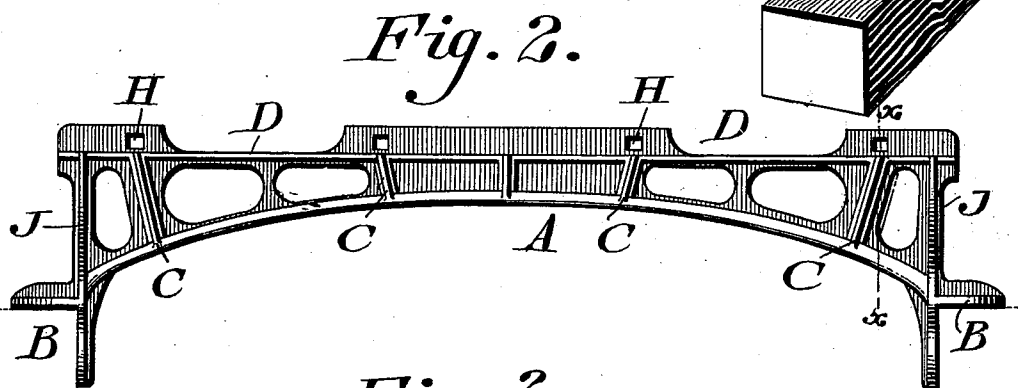
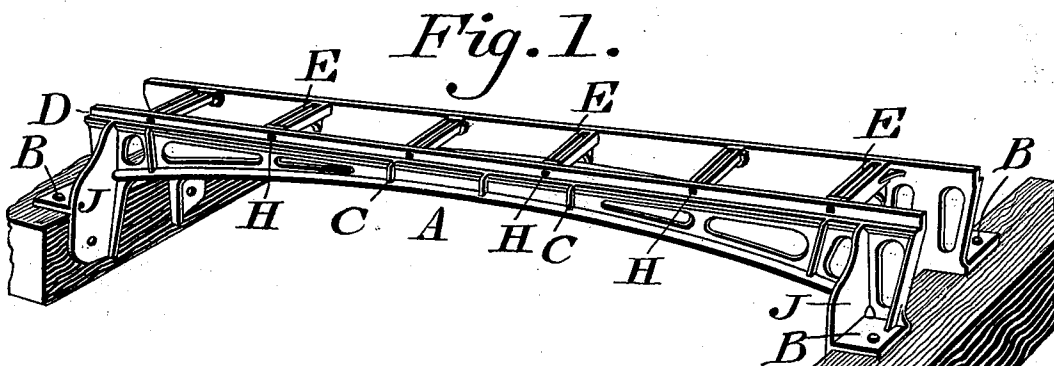
(No Model.)

2 Sheets—Sheet 1.

J. M. PRICE.  
RAILWAY SUPPORT OR SUBSTRUCTURE.

No. 507,688.

Patented Oct. 31, 1893.



WITNESSES:

*P. F. Hagler.*  
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INVENTOR

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(No Model.)

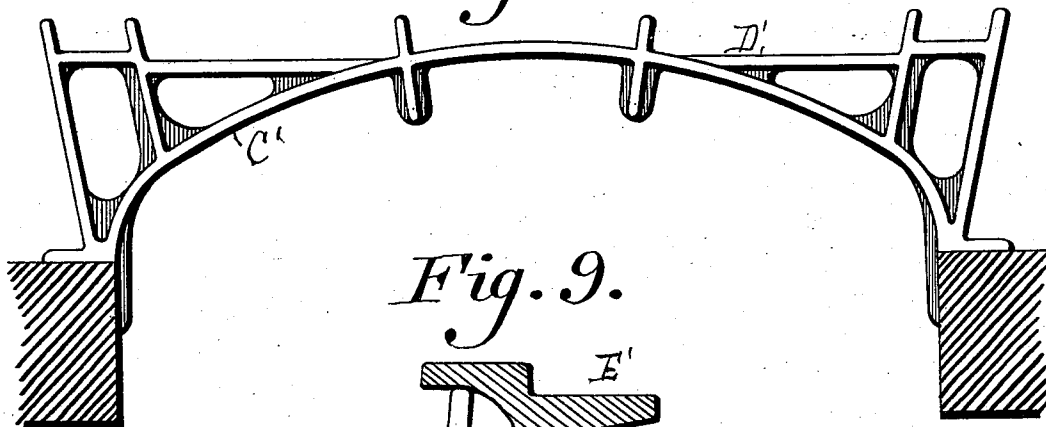
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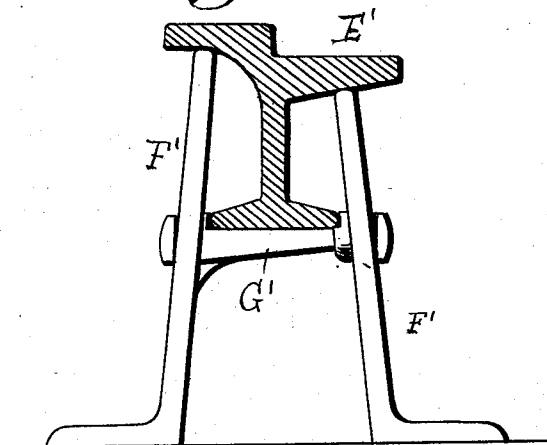
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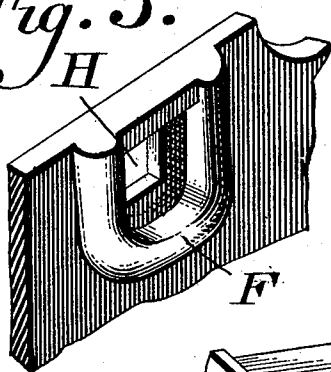
*Fig. 8.*



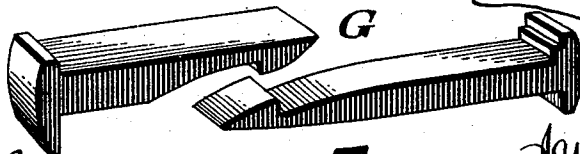
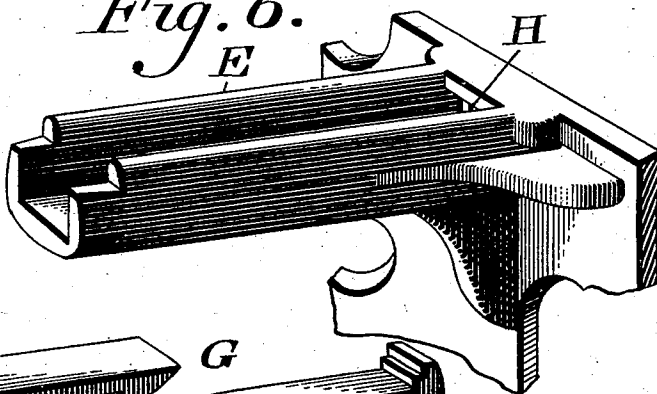
*Fig. 9.*



*Fig. 5.*



*Fig. 6.*



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*C. H. Chagle.*  
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*Fig. 7.*

INVENTOR

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# UNITED STATES PATENT OFFICE.

JAMES M. PRICE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE  
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## RAILWAY SUPPORT OR SUBSTRUCTURE.

SPECIFICATION forming part of Letters Patent No. 507,688, dated October 31, 1893.

Application filed December 14, 1892. Serial No. 455,131. (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 Railway Supports or Substructures, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a railway support or substructure formed of a successive series of arches formed as hereinafter described and constituting an arcade, adapted to furnish safe and ample support to railway rails, either placed upon its upper surface or in part upheld thereby, and embraced between a pair of these arches, and deriving support from an interlocking device, as will be hereinafter set forth.

The invention further consists in supporting a flanged rail, such as is known as the Price rail upon a series of arches in opposite pairs embracing their upper edges between its flanges, while the interlocking device, besides supporting the rail forms a brace between arch and arch.

The invention also consists of details of construction as will be hereinafter set forth and pointed out in the claims.

Figure 1 represents a perspective view of a railway support embodying my invention. Fig. 2 represents a side elevation thereof with some modifications. Fig. 3 represents a top or plan view of one member of a pair of the supports. Fig. 4 represents a transverse vertical section on line *x, x*, Fig. 2, on an enlarged scale, a rail being added thereto. Figs. 5, 6 and 7 represent perspective views of the parts of the interlocking device on an enlarged scale. Fig. 8 represents a side elevation of a modified form of the support. Fig. 9 represents a transverse vertical section of a modification, as adapted to the support of a girder rail, also indicated in section.

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

Referring to the drawings: A designates arches of metal springing from feet B, and attached by ribs or pillars C to a horizontal rib D, or a combined rib and plate on which much of the weight is superimposed. In or-

der to interlock the members of a pair of arches I employ a hollow pier or trough E, which is attached to or formed with the arches, and is supported in grooved sockets F, likewise formed with the arches and alternating with said troughs. The upper edges of the troughs are flat and of the same level, and serve also to support the rails.

G designates two fastenings of the form of spikes with barbed ends, said spikes being thrust from the outside faces of the arches through openings H, which they fit closely, toward each other, until the barbs after riding over each other, cause their shoulders to engage or fasten.

In Fig. 4 I show the spikes passing through the depending flanges of the rail as well as through the troughs, said flanges embracing the upper edges of the arches, whereby the rail is steadily supported, and there is produced a reliable quadruple brace between arch and arch. The rail in this case is of the form shown in previous applications for patents filed by me.

The feet B rest upon the ties, and each foot consists of a rectangular plate with openings in its limbs, so that it may be spiked to the tie both upon its side and top. Rising from the feet are vertical plates J which join the ends of the arches and spread or flare toward the feet, so as to act as braces, as most plainly seen in Fig. 4. The arches of a pair incline from the feet upward toward each other, so that the feet not only act as a supporting chair but also protect from lateral displacement. The ribs C connecting the curved and horizontal portions of the arches A, are inclined outwardly from the center of the arch at their upper ends, so as to obviate or lessen the shock as the wheels approach or pass over the ties. It will be seen that by the use of separate arches, a detachable support is placed under each rail so that when either an arch or a rail is worn out, another can be substituted therefor to rest upon the substructure, thus leading to a greater economy of labor and material.

When any form of girder rail is to be placed upon this arcade, its interlocking devices will be placed at a height upon these arches so low as to come immediately under the base

of the rail to be carried, so as to give it support additional to that given the under side of the head and of the wagon tread of that rail by the uppermost tips of the arch.

- 5 In Fig. 8 is shown a modification, wherein the curved portion C' of the arch extends above the horizontal portion D'.

In Fig. 9, the flanges of the rail E' rests upon the supports F', while the base of the rail is supported on a locking device G' of said supports.

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

- 15 1. Metallic arches with interlocking braces or piers, as the supports, above the cross ties, of railway rails, substantially as described.

2. Metallic arches, crossed by strengthening ribs, whether vertical or somewhat slanting, and with interlocking piers from arch to arch fitting into opposite, projecting shoulders or sockets, and with feet embracing between plates at right angles to each other, the cross ties on which these feet are seated, with spikes attaching these feet through proper holes in these plates to the ties, as a substructure, supporting railway rails, substantially as described.

3. Metallic arches in a series of opposite pairs, whether in single pairs, or in double lengths, breaking joint each double arch with its fellow, with interlocking piers or braces fitting into suitable sockets upon the opposite arch, and with feet adapted to rest upon and bespiked to cross ties as a supporting substructure for railway rails, substantially as described.

4. A rail support consisting of ties, arches supported at their ends on two adjacent ties, and interlocking pieces bracing said arches, said parts being combined substantially as described.

5. Arched trusses of metal reaching from tie to tie and attached to the ties through their feet resting upon them, with interlocking devices to bind the opposite members of the truss firmly together, as a substructure supporting railway rails, substantially as described.

6. Fastenings for the supporting metallic arches, carrying a railway rail, consisting of interlocking catches seated in guttered piers or braces, crossing from arch to arch, to constitute, with the arches, ties and spikes, the substructure for railway rails, substantially as described.

7. Metallic arches, carrying a railway rail upon their upper edges or upon the ribs of

the arch in conjunction with interlocking piers or braces, crossing from arch to arch and supporting the rail, as a system of railway substructure, substantially as described.

8. Metallic arches, in pairs attached to each other by interlocking devices, carrying a rail with depending edges or flanges and embracing the upper edges of the arches between the flanges, in combination with the rail, the fastenings, the spikes and the cross ties, as a complete system for use for street railways, elevated roads, &c., substantially as described.

9. Metallic arches or trusses, in pairs attached to each other by interlocking devices, carrying a girder rail upon the ends of the ribs of the arches and upon the interlocking piers or braces which carry the fastenings, as constituting with the ties, the spikes and the fastenings, the substructure of a railway rail, substantially as described.

10. Metallic arches with stout ribs projecting at their upper edges and interlocking piers or braces and sockets to receive them, carrying a girder rail upon both the ends of the ribs and the upper edges of the piers, in combination with the underlying cross ties, the girder rail, the fastenings, and the spikes, as a complete railway construction, substantially as described.

11. Two arches of metal, slightly inclined toward each other and resting upon a cross tie at each end, by means of a rectangular foot whose upright face is spiked, through proper holes, to the side of the tie, while its horizontal face or plate is seated upon the tie and similarly attached to it by vertical spikes, the two arches connected by interlocking fastenings, so as to strengthen each other, as supports for a railway rail, substantially as described.

12. A series of opposite arches or pairs of arches of metal with interlocking horizontal piers or braces, guttered to contain the fastenings binding the arches together, and fitting at their ends into suitable sockets projecting from the surface of the arches, and with feet framed into a vertical and a horizontal plate fitting the side and the top of the cross ties upon which these feet are seated, and adapted to be spiked through proper holes to these ties, as the supporting structure of railway rails, substantially as described.

JAMES M. PRICE.

Witnesses:

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L. JENNINGS.