

(No Model.)

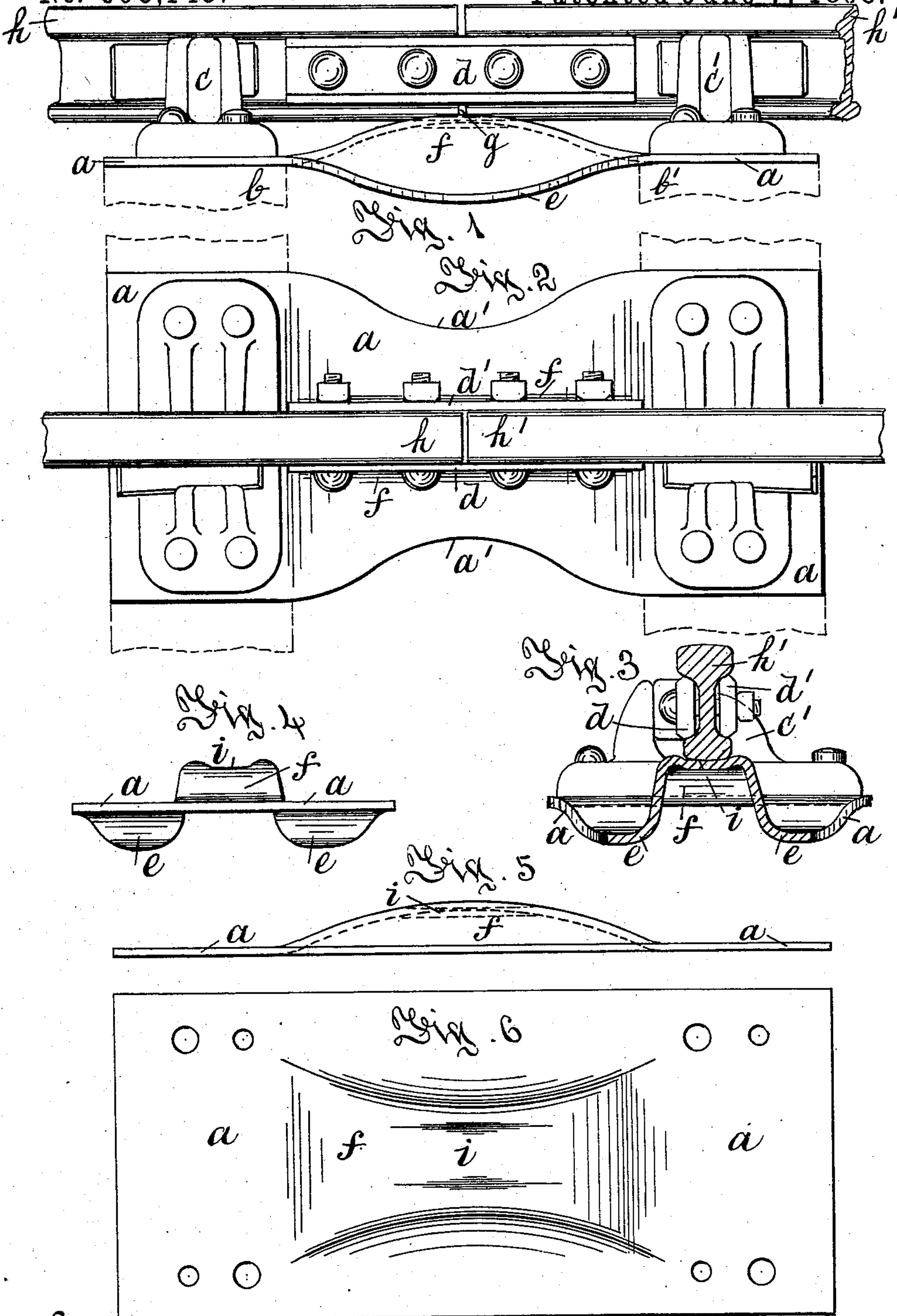
2 Sheets—Sheet 1.

J. B. SQUIRE.

SUPPORT FOR ENDS OF RAILWAY RAILS.

No. 605,145.

Patented June 7, 1898.



Witnesses:  
John F. Townsend

Inventor:  
John Barnett Squire  
by Richard Squire  
Attys

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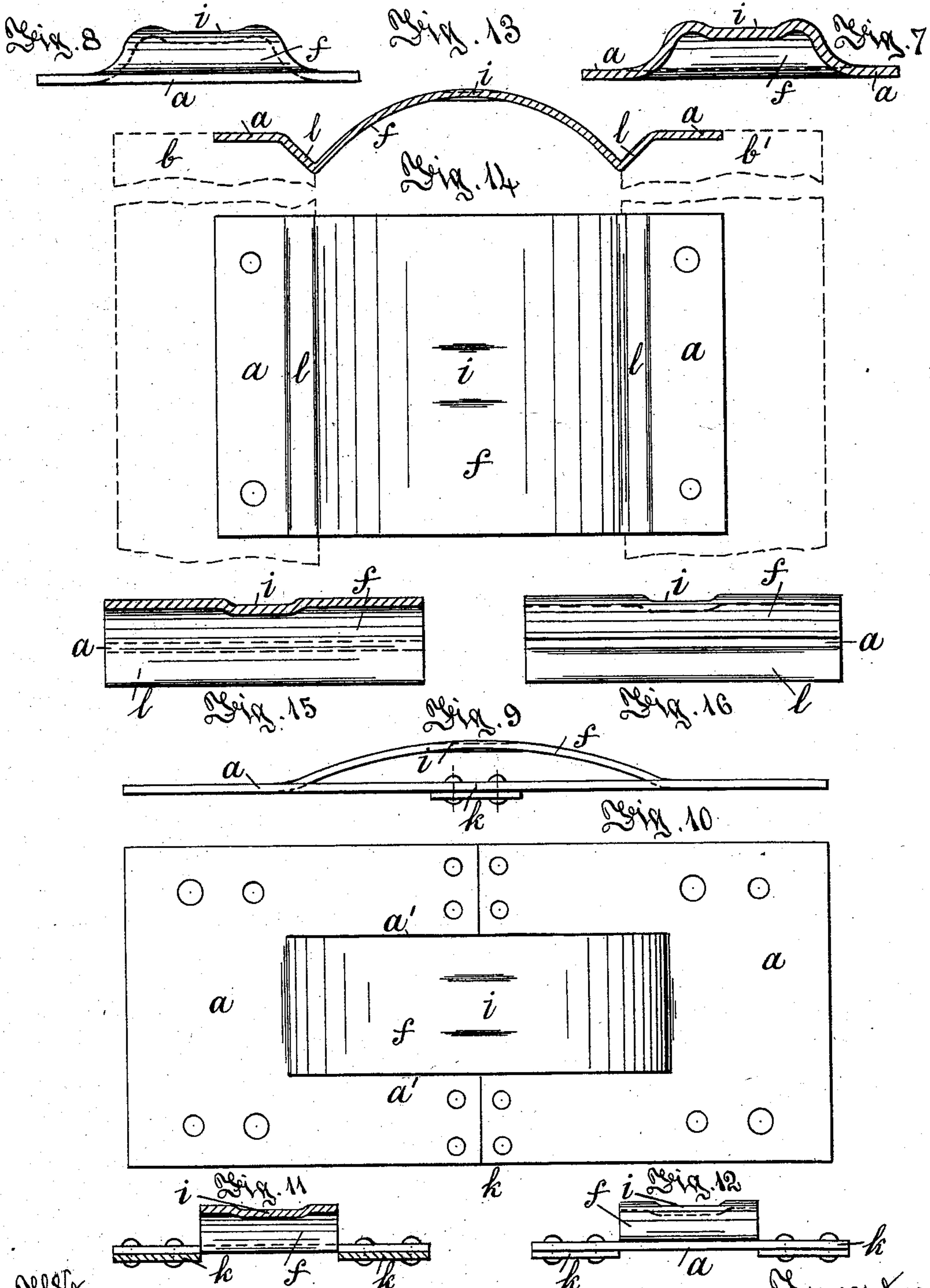
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Attys



# UNITED STATES PATENT OFFICE.

JOHN BARRET SQUIRE, OF LONDON, ENGLAND.

## SUPPORT FOR ENDS OF RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 605,145, dated June 7, 1898.

Application filed December 21, 1897. Serial No. 662,909. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BARRET SQUIRE, a subject of the Queen of Great Britain, residing at Streatham Park, London, in the county of Surrey, England, have invented certain new and useful Improvements in Supports for the Ends of Rails on Railways and Tramways, of which the following is a specification.

My invention relates to improvements in supports for the ends of rails on railways or tramways at the parts where the joints of such rails are held together by fish-plates and bolts between the chairs and sleepers adjoining the rail-joint; and the objects of my improvements are to provide a sufficiently rigid and effective support for the rail-joint, while at the same time allowing sufficient elasticity for the very small amount of deflection which is advisable in order to insure smooth running of the wheels and durability of the permanent way.

My invention is applicable to rails of different sections, and its application to ordinary double-headed rails carried in chairs upon transverse sleepers is illustrated in the accompanying drawings, in which—

Figure 1 is a side view showing the ends of two adjoining rails jointed together by fish-plates and bolts carried by chairs and sleepers and having the joint supported by my improved support. Fig. 2 is a plan, and Fig. 3 a transverse section, of the same. Fig. 4 is a separate end view of the support shown in Figs. 1, 2, and 3. Fig. 5 is a side view, Fig. 6 a plan, Fig. 7 a cross-section, and Fig. 8 an end view, of a support made according to my invention, but somewhat different in form and construction. Fig. 9 is a side view, Fig. 10 a plan, Fig. 11 a cross-section, and Fig. 12 an end view, of another slightly-modified form of my improved support. Fig. 13 is a longitudinal vertical section, Fig. 14 a plan, Fig. 15 a transverse section, and Fig. 16 an end view, of another modified form of my support.

Similar letters refer to similar parts throughout the several figures.

In Figs. 1, 2, 3, and 4,  $a$  is a metal plate, of suitable thickness and strength, of a length sufficient to extend from the outer sides of the two sleepers  $b b'$  or of the chairs  $c c'$  at

each side of the joint and fish-plates  $d d'$ , the ends of the plate  $a$  being fitted between the bottom of the chairs  $c c'$  and the top of the sleepers  $b b'$ . The central part between the sleepers is curved or arched down for a sufficient depth, as shown at  $e$ , and from the bottom of this curved part  $e$  is stamped up or otherwise formed a part  $f$ , projecting up and hollow below, rising sufficiently high at the center to support the bottom of the rail-joint, where the ends of the two rails meet at  $g$ , and curving down to and meeting the main plate  $a$  near the inner edges of the sleepers  $b b'$ . This projection  $f$  is made considerably narrower than the width of the plate  $a$ , so that a margin of the latter is left upon each side of the hollow projection, the sides of which are made to curve into these margins, and the sides of the plate  $a$  between the sleepers curve in on each side, so that their narrowest part may be at the center  $a' a'$ , Fig. 2. The center of the hollow projection  $f$  is slightly depressed at the top at  $i$  in a line with the rails, so that the ends of the latter may take a larger and better bearing upon it. The ends of the plate  $a$  need not necessarily extend to the two outer sides of the sleepers.

In Figs. 5, 6, 7, and 8 a plate  $a$ , similar to that already described, is used, its ends being adjusted and fixed between the chairs and the sleepers, but without being curved or arched down. In this case the hollow projection  $f$  is stamped up to a sufficient height from the central part of the flat plate  $a$ , as in the arrangement first described. The ends or sides of the hollow projection  $f$  are curved up, so as to gradually meet the flat plate, and its top is depressed at the center at  $i$  the better to support the ends of the rail, as in the first-described arrangement.

In the modified form of arrangement illustrated in Figs. 9, 10, 11, and 12 I take a flat plate  $a$ , such as has been already described, and I form the vertical projection  $f$  by making two parallel longitudinal cuts through it at  $a' a'$  at a sufficient distance apart and forming the projection  $f$ , which supports the rails, by bending or curving up sufficiently the central strip so separated, the ends of which, however, remain attached to and forming part of the plate  $a$ . The top of the projection



may be slightly depressed at *i*, as already described, to better support the ends of the rails. The side strips of the plate *a*, upon each side of the central strip, which forms the  
 5 projection *f*, may be cut transversely through at their center at *k k*, so as to better allow the central strip at *f* to be bent up, the cut ends being then reunited by riveting or other equivalent means, as shown.

10 In another simple form (illustrated in Figs. 13, 14, 15, and 16) I take a flat plate *a* of the kind and size described, and I bevel the upper edges of the inner sides of the opposite sleepers *b b'*, which support it, bending the  
 15 plate itself down so as to fit against these beveled edges at *l l*, and then curving or arching up the remainder of the plate at *f* to a sufficient height for its center or crown to form the support for the ends of the rails, the  
 20 part which so supports them being slightly depressed at *i* in the way already described. The flat ends of the plate *a* are shown let into the top of the sleepers, across which they may only partly extend, as shown. The central  
 25 part of the plate may be made narrower instead of the sides being parallel.

I do not confine myself to the precise form and arrangement of the plates or supports arranged and used for the purpose described,  
 30 as they may evidently be modified and varied in many ways, those above described being used as illustrative examples, my invention consisting substantially in supporting the

ends of the rails by arched or girder-shaped supports carried on the adjoining sleepers. 35

In all cases holes are made in the proper positions through the ends of the plates, the spikes or fastenings of the chairs passing through these holes into the sleepers; or they may be fastened by tie-bolts or other  
 40 equivalent means.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a rail-joint, the combination with the adjoining ends of adjoining rails and the  
 45 sleepers, of the metal plate having its ends resting upon the sleepers, and the chairs seated upon the ends of said plate and holding the rails above the upper surface of the plate, said plate having a central portion  
 50 struck up above the main body of the plate and forming a seat for the adjoining ends of the rails, substantially as described.

2. The support consisting of the plate *a*, bent at *l, l*, to fit against the beveled inner  
 55 edges of the sleepers *b, b'*, the central part of the plate being curved or arched up sufficiently to support the ends of the rails, the ends of the plate *a* resting upon the opposite sleepers, substantially as set forth. 60

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

JOHN BARRET SQUIRE.

Witnesses:

FRANCIS W. FRIGOUT,  
 H. D. JAMESON.