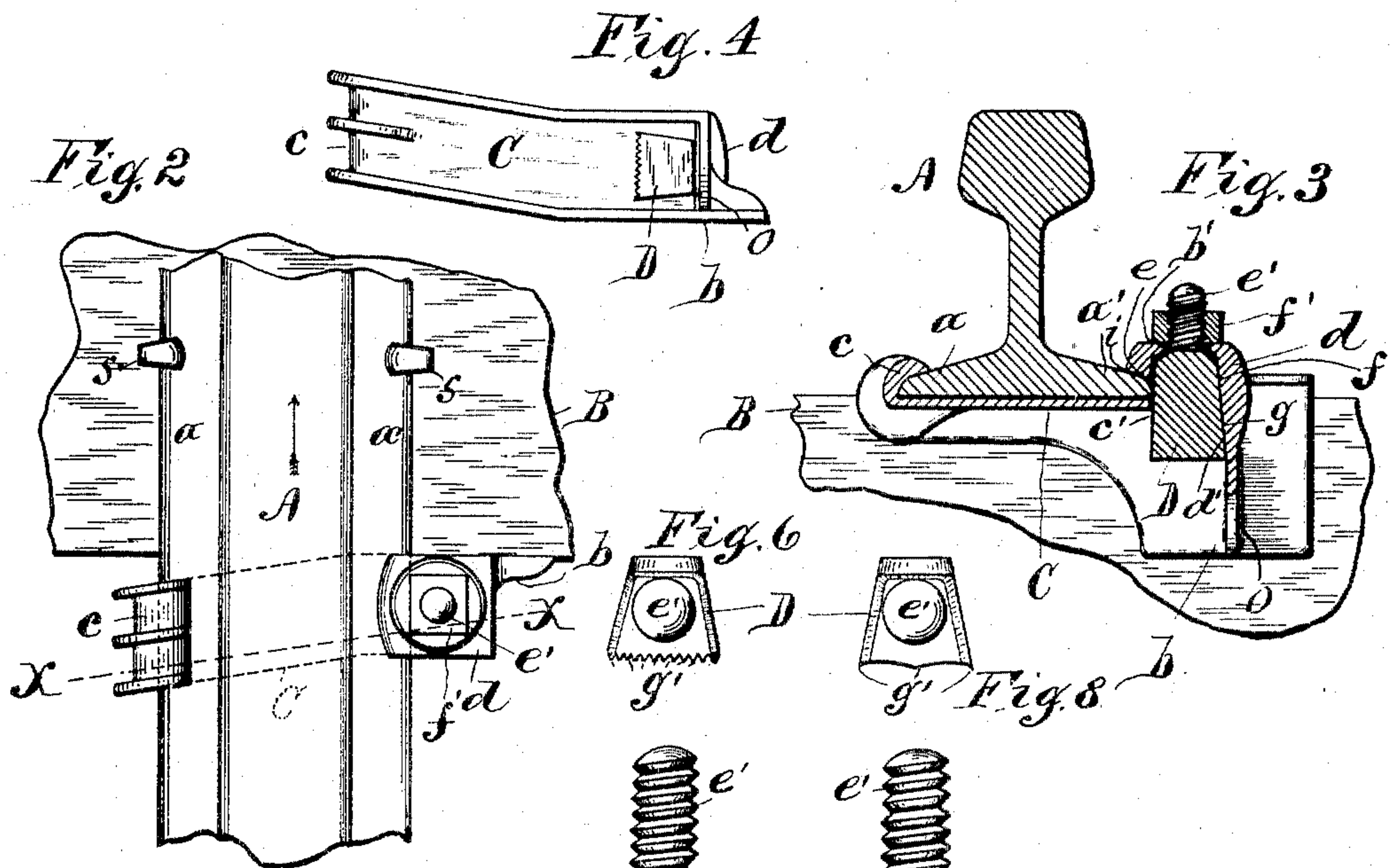
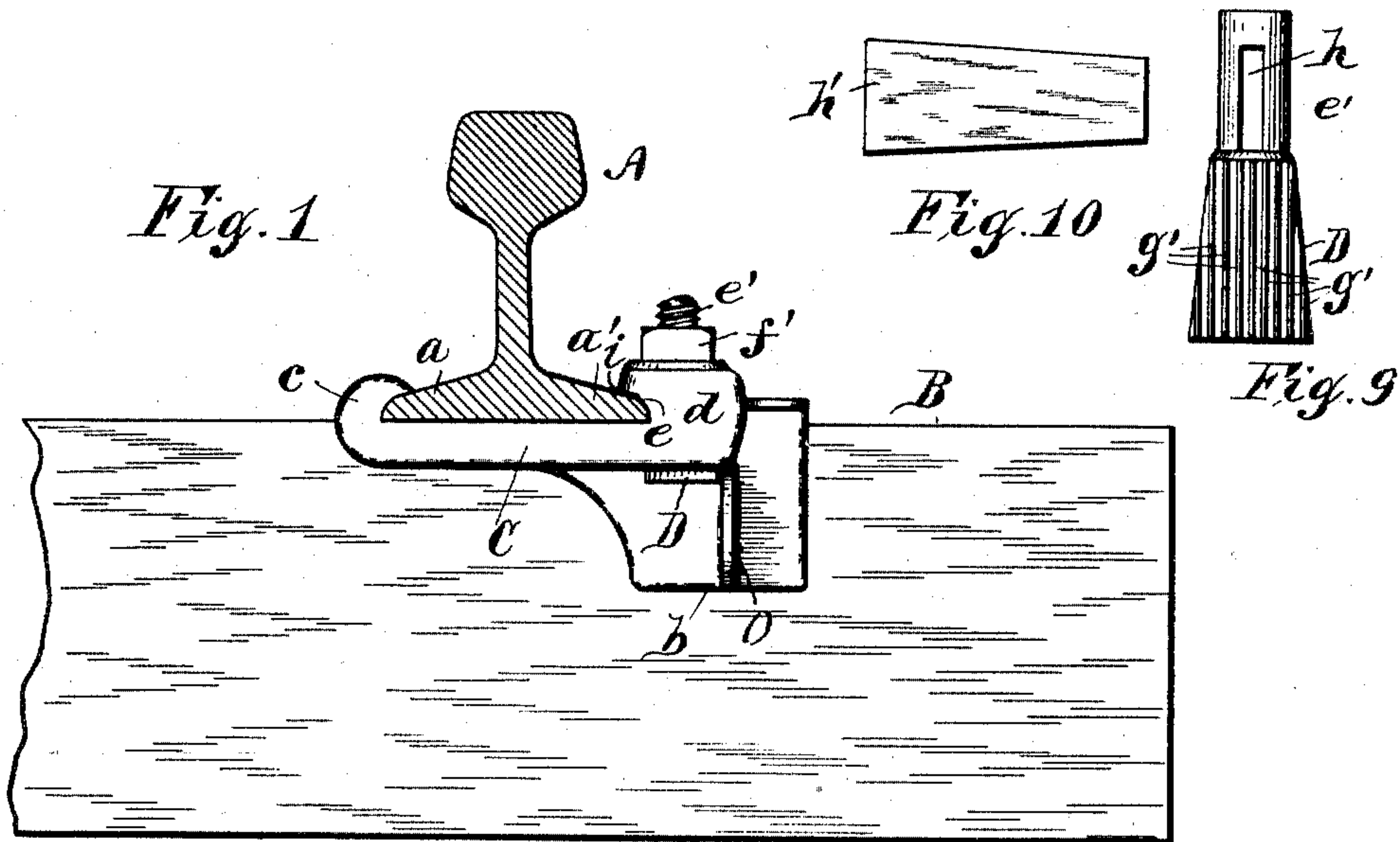


H. H. SPONENBURG.
RAILWAY RAIL STAY.
APPLICATION FILED OCT. 6, 1904.



WITNESSES:

H. H. Fulmer,
J. J. Laass.

INVENTOR:

Hiram H. Spokenburg
By E. Laass
ATTORNEY.

UNITED STATES PATENT OFFICE.

HIRAM H. SPONENBURG, OF WADSWORTH, ILLINOIS, ASSIGNOR OF ONE-HALF TO EDWARD LAAS, OF OTTUMWA, IOWA.

RAILWAY-RAIL STAY.

SPECIFICATION forming part of Letters Patent No. 780,309, dated January 17, 1905.

Application filed October 6, 1904. Serial No. 227,423.

To all whom it may concern:

Be it known that I, HIRAM H. SPONENBURG, of Wadsworth, in the county of Lake, in the State of Illinois, have invented new and useful
 5 Improvements in Railway-Rail Stays, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of rail-stays which are designed to be clamped to the rails in such position as to abut against the cross-ties for the purpose of preventing the rails from creeping longitudinally.

The present invention has special reference
 15 to the style of rail-stay shown and described in my Letters Patent No. 738,499, dated September 8, 1903, which consists of a metal bar placed crosswise under the rail and provided with an abutment engaging the cross-tie and
 20 formed with jaws at its opposite ends receiving the flanges of the rail and a key or wedge inserted into one of the jaws and clamping the flanges between the key and the other jaw.

The object of this invention is to apply the
 25 wedge in a manner which shall more effectually clamp the stay to the rail and to provide means for conveniently tightening the wedge, if required.

To that end the invention consists in the
 30 novel construction and combination of the component parts of the rail-stay, as herein-after fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 is
 35 a front view of my improved rail-stay applied to the track-rail. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section taken on the dotted line X X in Fig. 2. Fig. 4 is a detached inverted plan view of the rail-stay.
 40 Fig. 5 is an enlarged detail view of the wedge. Fig. 6 is a top end view of the same. Fig. 7 shows a modification of the wedge. Fig. 8 is a top end view of the modified wedge. Fig. 9 shows a further modification of said wedge,
 45 and Fig. 10 illustrates the key employed in connection with the latter form of wedge.

Referring to the drawings, A represents the track-rail provided with the usual flanges *a a'* on its base.

B denotes one of cross-ties which support
 the rail A, fastened thereto by spikes S S in the usual and well-known manner.

The rail-stay for preventing the rail from creeping comprises, primarily, two jaws tied to each other and engaging the flanges *a a'* to
 55 support the rail-stay on the rail and provided with an abutment engaging the tie in opposition to the longitudinal creeping of the rail. The detail construction of the aforesaid elements is susceptible of various modifications,
 60 and I therefore do not limit myself in that respect. I prefer, however, the construction illustrated in the annexed drawings, in which—

C represents a stout metal bar which is placed transversely under the rail A and is
 65 formed at one end with the depending abutment *b*, which bears on the side of the cross-tie. The opposite end of the bar C is formed with an upwardly-projecting hook-shaped jaw *c*, which receives the rail-flange *a*. The end
 70 of the bar C, which has depending from it the abutment *b*, is formed with an upwardly-projecting boss *d*, which is provided with a groove *i*, receiving the rail-flange *a'* and forming the jaw *e*, which bears on the top of said flange.
 75 The base of the boss *d* is formed with a square or rectangular socket *f*, which extends through the bar C and intersects the groove *i*, which is under the jaw *e* and is occupied by the rail-flange *a'*. An aperture *b'* extends from the
 80 socket *f* through the top of the boss *d* for the purpose hereinafter explained. The side of the socket facing the aforesaid groove is inclined from the top outward, as shown at *g*, and is preferably extended downward by the
 85 flange O, which braces the abutment and has its side inclined corresponding to the inclined side *g* and in line therewith, as shown in Fig. 3 of the drawings.

D represents an upwardly-beveled wedge
 90 which is inserted into the socket *f* and has a vertical stem *e'* projecting from its top and passing through the aforesaid aperture *b'* and provided with suitable means for drawing the wedge upward, so as to cause it to
 95 press firmly on the edge of the rail-flange *a'*, and thus tightly grip the base of the rail A between the wedge and opposite jaw *c*. For

this purpose I prefer to provide the stem e' with screw-threads and apply thereto a nut f' , which bears on top of the boss d' , as shown in Figs. 3, 5, and 7 of the drawings. By turning the nut in one direction on the stem e' the wedge is drawn up, and its grip on the rail-flange is thus reinforced. I do not, however, limit myself to this specific means for tightening the wedge, inasmuch as such effect may be produced by other means, as exemplified in Figs. 9 and 10 of the drawings, in which the stem has a smooth surface and provided with a slot h for the reception of a tapered key h' .

The back d' of the wedge D is beveled to correspond to the inclination of the side of the socket f against which the wedge bears and is thus forced toward the rail A by the upward draft of the wedge. To obtain a more secure hold of the wedge on the rail, I provide the flange-engaging face of the wedge with vertical minute ribs $g' g'$, which effectually bite the edge of the rail-flange without weakening the rail. The number of such ribs may be varied, as illustrated in Figs. 9 and 10 of the drawings, to obtain the desired effect.

By forming the aforesaid abutment or flange b of the bar C at an angle in relation to the length of the said bar the opposite end portion of the bar is normally out of contact with the cross-tie and yields slightly to the longitudinal strain of the said rail, and thus the rail-gripping jaw c and wedge D are caused to more effectually pinch the rail-flanges $a a'$.

What I claim is—

1. The combination with the rail and its supporting cross-tie, of a rail-stay consisting of a bar disposed under the rail and provided on its opposite ends with rigid jaws for supporting the same on the rail-flanges and with means engaging the cross-tie, a wedge passing through one of said jaws and clamping the flanges between said wedge and the other jaw, and means for forcing said wedge to its clamping position, as set forth.

2. The combination with the rail and its supporting cross-tie, of a rail-stay consisting of a bar disposed under the rail and formed on its opposite ends with jaws for supporting the same on the rail-flanges, and with an abutment engaging the side of the cross-tie, a wedge passing vertically through one of the jaws and clamping said flanges between the wedge and the other jaw, and means for forcing said wedge to its clamping position, as set forth.

3. The combination with the rail and cross-tie supporting the same, of a rail-stay consisting of a bar disposed flatwise across the under side of the rail and formed on its opposite ends with jaws for supporting the same on the rail-flanges and with a depending flange adjacent to one of the jaws abutting against the side of the cross-tie, a wedge passing ver-

65 tically through the back of one of the jaws and clamping said rail-flanges between said wedge and the other jaw, and provided with an upwardly-projecting stem, and means engaging said stem for forcing the wedge to its clamping position, as set forth. 70

4. The combination with the rail and cross-tie supporting the same, of a rail-stay consisting of a bar disposed across the under side of the rail and formed at its opposite ends with jaws for supporting the same on the rail-flanges, and with an abutment engaging the cross-tie, a wedge passing through one of the jaws and clamping the flanges between it and the other jaw, a screw-threaded stem formed integral with the wedge, and a nut applied to said stem and operative for drawing the wedge to its clamping position, as set forth. 80

5. The combination with the rail and cross-tie, of a rail-stay consisting of a bar disposed across the under side of the rail and formed at one end with a hook-shaped jaw receiving one of the rail-flanges and formed at its opposite end with an upwardly-projecting boss provided with a jaw receiving the other rail-flange, a wedge passing through the latter jaw and clamping said flanges between it and the other jaw, and means for forcing said wedge to its clamping position, as set forth. 85 90

6. The combination with the rail and cross-tie, of a rail-stay consisting of a bar extending across the bottom of the rail and abutting against the cross-tie, and formed on its opposite ends with jaws for supporting the same on the rail-flanges, and with a wall back of one jaw, said wall facing the rail and inclined from its top outwardly, a wedge abutting against the said wall and passing vertically through the adjacent jaw and clamping the aforesaid flanges between it and the other jaw, and means for forcing said wedge to its clamping position, as set forth. 100 105

7. The combination with the rail and cross-tie, of a rail-stay consisting of a bar disposed across the bottom of the rail and provided with an abutment engaging the cross-tie and formed at one end with a hook-shaped jaw receiving one of the rail-flanges and at its opposite end with an upwardly-projecting boss provided with a jaw receiving the other rail-flange, a socket in the bottom of the bar extending into the boss and communicating with the latter jaw and provided with a wall facing the jaw and inclined from its top outward, a vertical wedge inserted into said socket and passing through the rear of the adjacent jaw and clamping between it and the hook-shaped jaw the aforesaid rail-flanges, and means for forcing the wedge to its clamping position, as set forth. 110 115 120

8. The combination with the rail and cross-tie of a rail-stay consisting of a bar disposed across the bottom of the rail and provided with an abutment engaging the cross-tie and 125

formed at one end with a hook-shaped jaw receiving one of the rail-flanges and at its opposite end with an upwardly-projecting boss provided with a jaw receiving the other rail-
5 flange, a socket in the bottom of the bar extending into the boss and communicating with the latter jaw and provided with a wall facing the jaw and inclined from its top outward, an aperture in the top of the boss communicating
0 with the socket, a vertical wedge inserted into said socket and passing through the rear of the adjacent jaw and clamping between it and the hook-shaped jaw the aforesaid rail-flanges, and formed with an upwardly - extending
5 screw-threaded stem protruding through said aperture, and a nut applied to said stem and

bearing on the boss and drawing the wedge to its clamping position, as set forth.

9. The combination with the rail and its supporting cross-tie, of a rail-stay consisting 20 of jaws tied to each other and engaging the flanges of the rail and provided with an abutment engaging the cross-tie in opposition to the longitudinal creeping of the rail, a wedge disposed to tighten the grip of the jaws on 25 the rail, and means for forcing said wedge to its gripping position.

HIRAM H. SPONENBURG. [L. s.]

Witnesses:

J. J. LAASS,

L. H. FULMER.