No. 816,947. PATENTED APR. 3, 1906.

H. H. SPONENBURG.

RAILWAY RAIL STAY.

APPLICATION FILED NOV. 16, 1905.

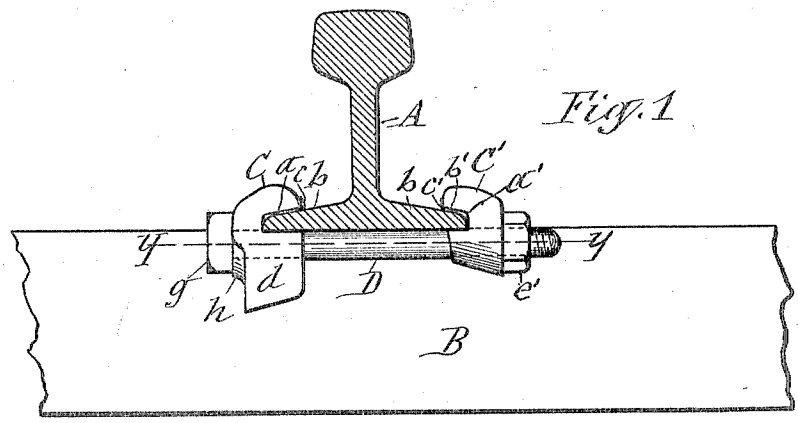

Fig. 1

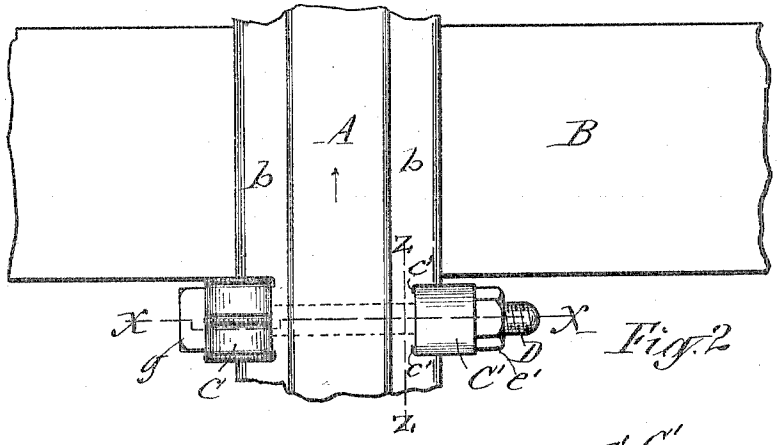

Fig. 2

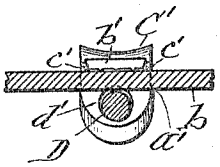

Fig. 5

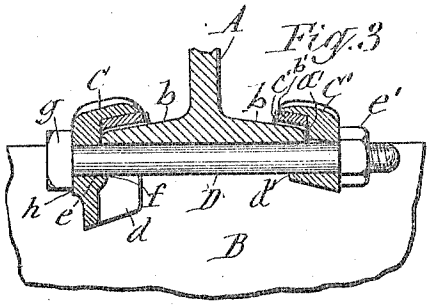

Fig. 3

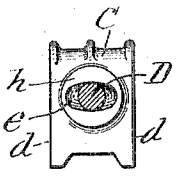

Fig. 6

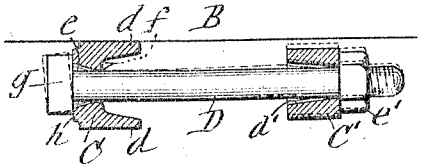

Fig. 4

WITNESSES:

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RAILWAY-RAIL STAY.

No. 816,947. Specification of Letters Patent. Patented April 3, 1906.

Application filed November 16, 1905. Serial No. 287,553.

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 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 rail-stays which are applied to railway-tracks for the purpose of securely anchoring the rails to their supporting-ties to prevent longitudinal creeping of the rails.

The invention has reference to the class of rail-stays embodying two jaws clamped onto the respective flanges of the rail by means of a bolt passing across the bottom of the rail and provided with means abutting against the side of the cross-tie, and chilled iron or steel flange-gripping pieces confined in the top of said jaws. In this respect the present invention is particularly related to the style of rail-stay shown and described in my United States Letters Patent No. 799,361, issued September 12, 1905.

The object of this invention is to produce a rail-stay which shall be simple, strong, and durable and shall be very light in weight, so as to cheapen the manufacture, and at the same time provide a construction which will operate to increase its hold on the rail as the rail tends to creep longitudinally, and thus effectually resist such action of the rail.

To that end the invention consists in the novel arrangement and combination of the component parts of the rail-stay hereinafter fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 shows a transverse section of a railway-rail and its supporting-tie with my improved rail, stay applied thereto. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section on the line X X in Fig. 2. Fig. 4 is a longitudinal section on the line Y Y in Fig. 1. Fig. 5 is a vertical section on the line Z Z in Fig. 2; and Fig. 6 is a detail outer face view of the tie-abutting jaw, showing the clamping-bolt in cross-section.

Similar letters of reference indicate corresponding parts.

A denotes the railway-rail, which is supported upon the usual cross-tie B.

C represents one of the jaws of the rail-stay and which is composed, preferably, of malleable iron and is formed with a horizontal groove *a*, receiving one of the flanges *b* of the rail, in the top of which groove is preferably provided a chilled iron or steel plate *c*, which grips the top of said flange. Said jaw is also formed at its opposite sides with breasts or walls *d d*, disposed at right angles to the groove and extending under the rail, one of which breasts abuts against the side of the cross-tie B. By providing two of these breasts the jaw may be placed at either side of the rail, thus obviating making rights and lefts. This jaw C is provided with a transverse aperture *e*, having its top in line with the bottom of the rail, and thus intersecting the groove *a*, which aperture is tapered inwardly to form a fulcrum for the clamping-bolt D, as indicated at *f* in Fig. 4 of the drawings and for the purpose hereinafter explained. The bolt D extends across the bottom of the rail A and contiguous thereto and is formed with a head *g*, bearing on a boss *h*, formed on the vertical back of said jaw C. C′ denotes the other jaw of the stay and which consists of a malleable-iron block formed with a horizontal groove *a′*, receiving the other flange *b* of the rail. The groove of this jaw is provided in its top with a serrated chilled iron or steel plate *b′*, which grips the top of said flange and is confined in the groove by means of tongues *c′ c′*, formed on the jaw at opposite ends of the groove and bent over on the edge of the plate, as clearly shown in Fig. 5 of the drawings. This jaw C′ is free from the cross-tie and is formed with an outwardly-tapered transverse aperture *d′*, coinciding with the aperture of the jaw C and through which passes the aforesaid clamping-bolt D, provided with a nut *e′*, bearing on the vertical back of the said jaw. By this connection of the bolt with the two jaws the said jaws are held normally in a line parallel with the side of the cross-tie B.

By reason of the vertical backs of the jaws extending above the edges of the rail-flanges and the apertures thereof having their tops in line with the bottom of the rail the bolt-head and nut are afforded more direct bearings on the jaws, and thus they thoroughly brace the jaws and effectually prevent the same from twisting or turning on the rail-flanges.

By forming the said apertures *a* and *a′* of the jaws tapering, as described and shown, and providing the end of the bolt D at the

tie-abutting jaw C with the fulcrum *f* the opposite end of the bolt is adapted to swing laterally, so as to permit the other jaw C′ to be forced toward the cross-tie by the rail A when the latter tends to creep longitudinally in the direction indicated by the arrow in Fig. 2 of the drawings, and thereby cause the two jaws to increase their grip on the rail. Although the jaw C′ will be moved out of line with the jaw C when the rail tends to creep, at the same time it is obvious that the tapering apertures will permit the bolt to maintain the jaws at right angles to the rail-flanges. This action of the rail-stay is illustrated by dotted lines in Fig. 4 of the drawings.

While I have shown my device constructed and applied in what I now consider its preferred form, it should be understood that the insertion of the serrated plates or the provision of teeth for the jaws is not essential, and that while I have shown the bolt connecting the jaws as provided with a head at one end and a nut at the other end, whereby the jaws are held in their gripping position, although they may be drawn or driven to gripping position in any suitable manner, yet the bolt may be made to engage the jaws in any way which will obtain the end in view, such as by providing the bolt with a hook at one end or with a wedge at one or both ends or in any other manner which is shown in the prior patents granted to me.

What I claim is—

1. The combination with the rail and cross-tie, of a rail-stay comprising two separately-formed jaws applied to opposite sides of the rail and disposed normally in a line parallel with the side of the cross-tie, one of said jaws engaging the side of the cross-tie and the other jaw free therefrom, and means clamping the jaws in their positions and permitting the free jaw to be forced toward the cross-tie by the creeping action of the rail and maintaining the jaws at right angles to the rail as set forth.

2. The combination with the rail, and underlying cross-tie, of a rail-stay comprising two separately-formed jaws gripping the opposite rail-flanges and disposed normally in a line parallel with the side of the cross-tie, one of said jaws abutting against the side of the cross-tie and the other jaw free therefrom, and a bolt extending across the bottom of the rail and contiguous thereto and operative for clamping said jaws in their positions, said bolt being adapted to swing laterally whereby the free jaw is permitted to move toward the cross-tie as the rail tends to creep and thereby increase the grips of the two jaws on the said rail-flanges as set forth.

3. The combination with the rail and cross-tie, of a rail-stay comprising two separately-formed jaws gripping the respective flanges of the rail and disposed normally in a line parallel with the side of the cross-tie, one of the jaws abutting against the cross-tie and the other jaw free therefrom, and a bolt extending contiguously across the bottom of the rail and clamping the jaws in their positions, said bolt having a swinging connection with the tie-abutting jaw to permit the free jaw to move toward the cross-tie as the rail tends to creep and to maintain the two jaws at right angles to the rail-flanges as set forth.

4. The combination with the rail and cross-tie, of a rail-stay consisting of two separately-formed jaws, each provided with a vertical back extending above the edge of the rail-flange and with a transverse aperture, the top of which is in line with the bottom of the rail, a bolt passing through said apertures and provided with a head and a nut, each of which bears on the back of a jaw and has its bearing extending above the rail-flange as set forth.

5. A railway-rail stay comprising two separately-formed jaws, one of which is provided with a horizontal groove receiving one of the rail-flanges and with a breast abutting against the side of the cross-tie, and the other provided with a horizontal groove receiving the other rail-flange, and disposed free from the cross-tie, said jaws being provided with coinciding apertures, and a bolt passing through said apertures and extending across and contiguous to the bottom of the rail and clamping said jaws in their positions, the aperture of the abutting jaw being tapered inwardly and the aperture of the free jaw tapered outwardly whereby the said bolt is adapted to swing laterally to permit the latter jaw to be forced toward the cross-tie by the creeping action of the rail to cause the two jaws to increase their grip on the rail as set forth.

6. A railway-rail stay comprising two separately-formed jaws provided with horizontal grooves receiving the respective rail-flanges and with serrated flange-gripping plates confined in said grooves, one of the jaws provided with a breast abutting against the side of the cross-tie and the other jaw free therefrom, coinciding apertures in said jaws intersecting the bottoms of the grooves, a bolt passing through said apertures and extending across the bottom of the rail and clamping the jaws in their positions and having a fulcrumed connection with the tie-abutting jaw whereby the said bolt is adapted to swing laterally to permit the other jaw to be forced toward the cross-tie by the creeping action of the rail and thereby increase the grips of the two jaws on the rail as set forth.

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Witnesses:
M. WILBUR,
GILES S. FARMER.