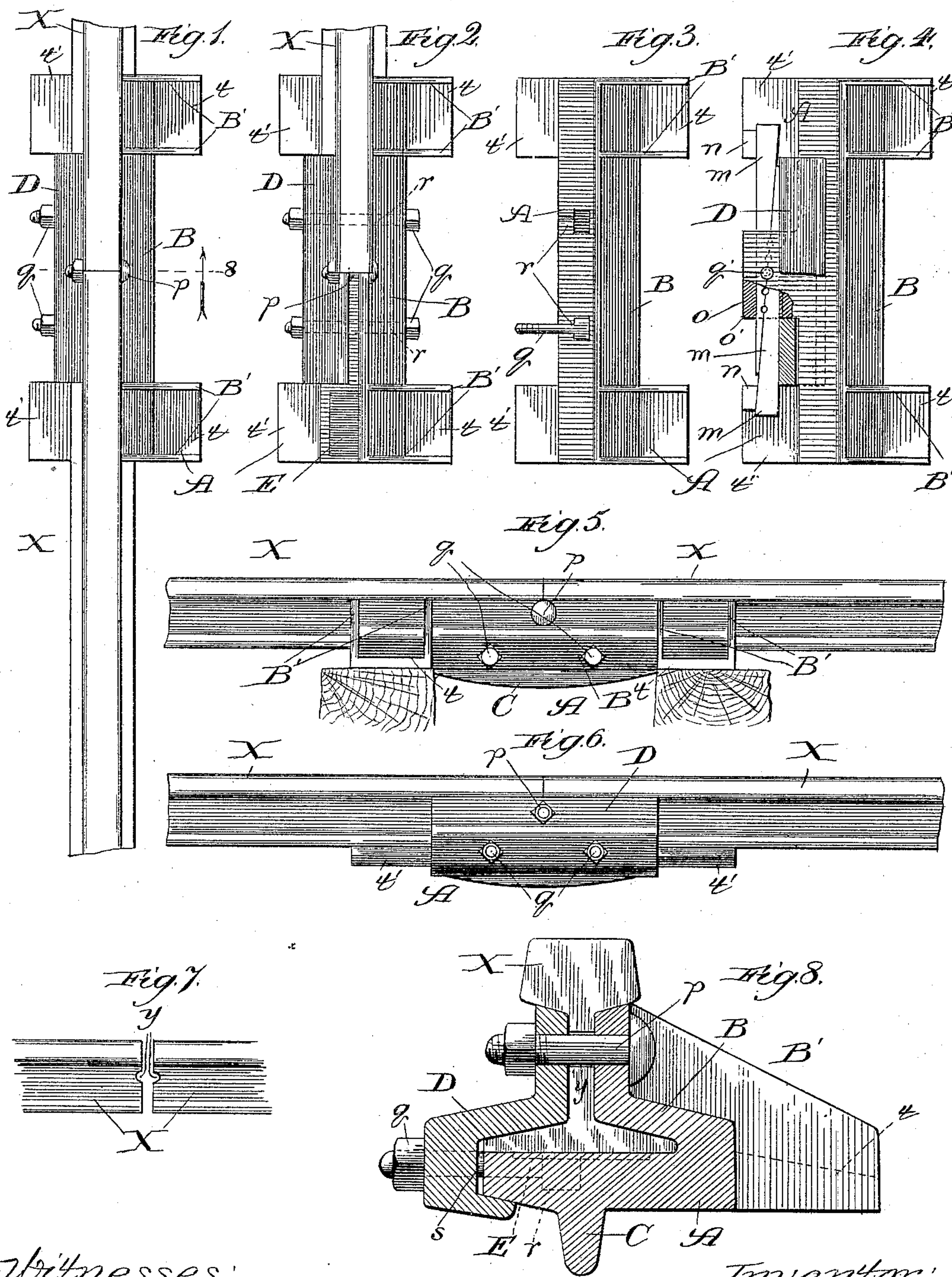


(No Model.)

J. J. ANDERSON.
RAIL JOINT.

No. 436,572.

Patented Sept. 16, 1890.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES J. ANDERSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
NOEL BROSSEAU AND E. D. NORTON, OF SAME PLACE.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 436,572, dated September 16, 1890.

Application filed February 3, 1890. Serial No. 338,949. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. ANDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Rail-Joints, of which the following is a specification.

My object is to provide a rail-joint of simple and improved construction which will operate to clamp the rails together in a manner effectually to hold them against independent play at their adjacent ends; furthermore, to provide a rail-joint which may be readily and quickly placed in operative position where the rails are already laid; furthermore, to secure the rails by clamping whereby the use of bolts passing through the webs of the rails, which tend to weaken the rails and are liable to be injuriously affected by the expansion and contraction of the latter, may be dispensed with; furthermore, to provide the device with a non-resonant lining whereby the noise of trains passing over it shall be materially lessened, and, still further, to provide a rail-joint of peculiar construction whereby the highest degree of strength and durability is attained with a comparatively small amount of metal.

To the above ends my invention consists in the general construction of my improved rail-joint; and it also consists in details of its construction and combination of parts, as hereinafter set forth and claimed.

Referring to the drawings, Figure 1 is a broken plan view showing my improved rail-joint in operative position; Fig. 2, a similar view of a modified construction with one of the rails removed to display details common to all the constructions; Fig. 3, a plan view of the device shown in Fig. 1 with parts removed; Fig. 4, a plan view showing a further modification with parts broken away for purposes of illustration; Figs. 5 and 6, broken views showing the device illustrated in Fig. 2 in elevation, and taken, respectively, from the outer and the inner sides of the rails; Fig. 7, a broken view in elevation of the adjacent ends of rails, and Fig. 8 an enlarged section taken on line 8 of Fig. 1 and viewed in the direction of the arrow.

A is the base of the joint on which the rails rest, and, according to the generally-preferred practice of making joints between ties, the end portions of the base, which are formed with lateral extensions $t t'$, will rest upon the ties, as shown in Fig. 5.

Integral with the base A and extending on one side, preferably the full length of the latter, is a cheek B, which is re-enforced at the parts t with integral ribs B'.

Extending centrally along the under side of the base A, between the respective end portions $t t'$, is a web C, which may be shaped as shown, and operates as a strengthening medium for the device.

The bearing-surface of the cheek B is shaped, preferably, to conform to the outline of the rails X and fit closely over the flanges and against the webs and under sides of the heads of the rails. In placing the device in operative position the cheek B extends against the outer sides of the rails.

D is a clip, which extends against the inner sides of the webs of the rails in contact with the upper side of the flanges thereof, and may be shaped, as shown, with a longitudinal socket s to fit over the inner edge of the base A.

In the construction shown in Figs. 1 and 3 the base A is provided with bolt-openings r to receive the heads and portions of the shanks of nut-bolts q , which extend through eyes in the clip and operate to hold the latter in place. The upper side of the head of each bolt q should be flush, or nearly so, with the upper surface of the base, so that it may be held down by the rail. In the modification shown in Fig. 2 (which may be the preferred construction) the bolts q extend entirely across the base through bolt-openings r , provided therein for the purpose. When the clip is tightened up against the inner side of the rails by means of the nut-bolts q , it operates to clamp the adjacent ends of the rails firmly against the base A, so that their treads are in perfect alignment with each other, and that they shall be incapable of any appreciable independent play which would tend to produce jolting of the trains and lamination of the rails. The construction of the joint ren-

ders its base unyielding, so that no downward strain due to the weight of passing trains is exerted against the clip. The area of each of the enlarged end portions of the base which rest upon the ties is so great that they aid materially in reducing wear upon those ties, it being well known that where these joints are not employed the wear upon the ties nearest the ends of the rails is particularly great. The size of the ends *t*, furthermore, and the presence of the ribs *B'*, renders the device peculiarly effective as a brace to resist overturning of the rails.

Owing to the fact that slight variation frequently exists in the size of the adjacent ends of rails and that in the production of the rail-joints more or less difference in the size thereof is frequently unavoidable, such exactness as to fit of the rail-joints upon the rails cannot always be effected as to obviate entirely the rattling together of parts. This rattling, while not enough to effect the stability of the device, is undesirable owing to the noise it produces. To overcome this difficulty I provide the upper surface of the base *A* toward opposite ends with vulcanized fiber, hard rubber, or other non-resonant lining *E*, preferably applied by countersinking it into the base, as indicated in Fig. 2 and by dotted lines in Fig. 8, to cause its upper surface to extend flush or approximately flush with the upper surface of the base.

To prevent the device through any cause from sliding along the rails, I provide a stop-bolt *p* to extend about midway of the length of the device between the adjacent ends of the rails. The stop-bolt *p* may be provided, as shown, with a bolt, which extends through eyes in the cheek *B* and clip, the webs of the rails being recessed at the ends, as shown at *y*, to fit over the stop. The bolt thus serves additionally to strengthen the clip by securing it to the cheek.

The object of the modification shown in Fig. 4 is to dispense with the bolts *q* for securing the clip in place.

The base *A* is formed on the inner side of the device with a lateral extension *o* of the full thickness of the base, and having a socket *o'* extending longitudinally through it which is oblong in cross-section. The parts *t'* of the end portions are reduced in thickness to lower the surface thereof, and are provided with lugs *n* at the adjacent corners of their outer edges. The lower portion of the clip *D* is cut away at the middle to fit around the extension *o*, and when placed in position it is tightened against the rails by cotters *m*, which are driven through the socket *o'* and bear against the outer wall of the socket and the studs *n* on the one side and the clip on the

other. Extending vertically through the projection *o* and centrally of the socket *o'* is a bolt-opening, and semicircular recesses are provided at corresponding intervals in the adjacent edges of the cotters *m* whereby as the latter are driven in from opposite sides their recesses may coincide at the bolt-opening of the projection *o* to afford a passage for a bolt *q'*, which, when inserted, operates to hold the cotters against withdrawal.

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

1. In a rail-joint, the combination of the base *A*, provided with enlarged end portions, to rest upon the ties, cheek *B*, integral with the base, to extend against the outer side of the rail, clip *D*, to extend against the inner side of the rail and having a socket *s*, embracing the edge of the base *A*, and fastening means, substantially as described, for securing the clip in place, substantially as set forth.

2. In a rail-joint, the combination of the base *A*, provided with enlarged end portions *t*, to rest upon the ties, cheek *B*, integral with the base, to extend against the outer side of the rail, ribs *B'*, integral with cheek and end portions *t*, clip *D*, to extend against the inner side of the rail and having a socket *s*, embracing the edge of the base *A*, and fastening means, substantially as described, for securing the clip in place, substantially as set forth.

3. In a rail-joint, the base *A*, provided near each opposite end on its upper surface with a separate section of lining *E* of non-resonant material, substantially as described.

4. In a rail-joint, the combination of the base *A*, provided with enlarged end portions, to rest upon the ties, cheek *B*, integral with the base, to extend against the outer side of the rail, clip *D*, to extend against the inner side of the rail and embracing the edge of the base *A*, one or more horizontally-extending bolt-openings *r* in the base below the plane of the under side of the rail, and a bolt *q* in each bolt-opening, securing the clip to the base, substantially as described.

5. In a rail-joint, the combination of the base *A*, provided with enlarged end portions, to rest upon the ties, cheek *B*, integral with the base, to extend against the outer side of the rail, clip *D*, to extend against the inner side of the rail and having a socket *s*, embracing the edge of the base *A*, one or more bolt-openings *r*, extending entirely across the base *A*, and a bolt *q* in each bolt-opening, securing the clip to the base, substantially as described.

JAMES J. ANDERSON.

In presence of—

J. W. DYRENFORTH,
M. J. FROST.