

No. 755,848.

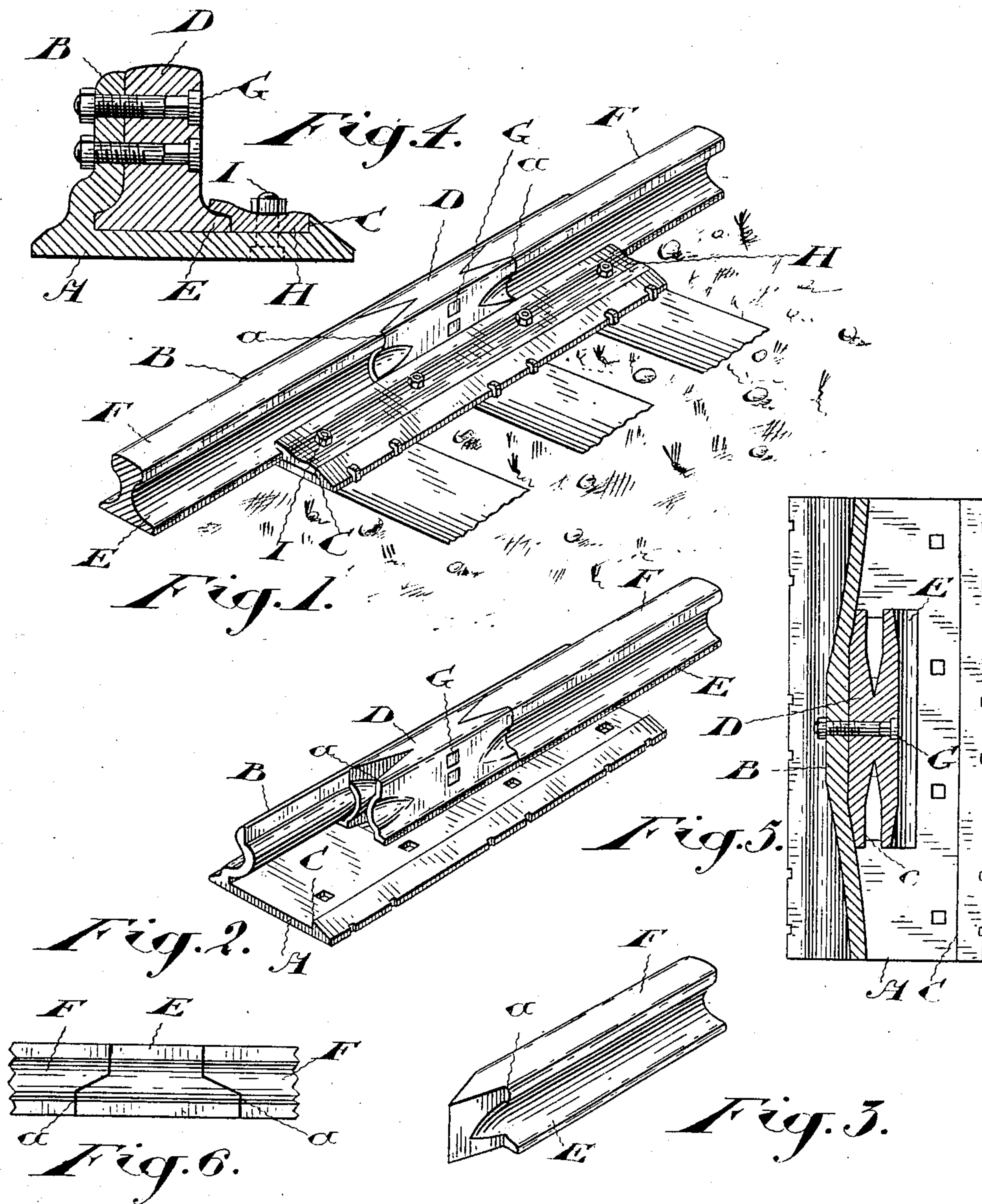
PATENTED MAR. 29, 1904.

J. B. CLIMO.

RAIL JOINT.

APPLIOATION FILED JULY 9, 1903.

NO MODEL.



Witnesses

A. J. Colbourne
L. J. Mills.

Inventor

Jonathan. B. Glimo
by Bidout & Maybee
Atty.

UNITED STATES PATENT OFFICE.

JONATHAN B. CLIMO, OF LONDON, CANADA, ASSIGNOR OF TWO-THIRDS
TO ALEXANDER McPHADEN AND HUGH McKELVEY, OF NAKUSP,
CANADA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 755,848, dated March 29, 1904.

Application filed July 9, 1903. Serial No. 164,797. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN B. CLIMO, machinist, of the city of London, in the county of Middlesex, Province of Ontario, Canada, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

The object of my invention is to devise a strong rail-joint which will give a smooth continuous tread at the joints with ample provision for longitudinal expansion and contraction of the rails; and it consists, essentially, of a rail-chair in which is secured a rail-coupling piece having beveled ends and rail ends held in the chair in engagement with the coupling-piece in such a manner that they may expand or contract longitudinally, substantially as hereinafter more particularly described and then definitely claimed.

Figure 1 is a perspective view of my improved rail-joint. Fig. 2 is a similar view with one rail end and the key removed. Fig. 3 is a perspective view of a rail end. Fig. 4 is a cross-section of a rail-joint through the center of the coupling-piece. Fig. 5 is a plan view showing a modification of the beveled joint between the rail ends and the coupling-piece. Fig. 6 is a horizontal longitudinal section through the coupling-piece and the flange of the chair.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is a chair provided at one side with a vertical flange B and at the other with a vertical shoulder C.

D is a coupling-piece, its upper surface being formed as a tread of a rail and its sides centrally substantial plane surfaces save for a flanged base E, similar to the base of a rail. The central part of the flange of the chair exactly fits the central part of the coupling-piece, as shown particularly in Figs. 4 and 6. Toward the ends the flange of the chair is inwardly set to fit closely the sides of the rail ends F. The coupling-piece is sufficiently long to reach the inwardly-set portions of the flange of the chair, and the ends of the coupling-piece are inwardly set to fit these inwardly-set portions of the flange. The straight and inwardly-set portions merge into one another gradually, as shown particularly in Fig. 6. The result of this construction, so far as the coupling-piece is concerned, is that it is held from endwise motion independently of the bolts G by which it is clamped to the flange of the chair. The ends of the coupling-piece are beveled or tapered, preferably in the form of a V-shaped fork, as shown in Figs. 1, 2, 3, and 6. The rail ends are shaped to fit these V-shaped forks. On the inside of the rail the side of the V does not run out to the inside of the tread; but a short shoulder *a* is provided. This gives sufficient metal in the coupling-piece at the inside of the fork to prevent the latter being easily bent out of shape under the impact of the wheels. The rail ends and coupling-piece are held in place by the key H, which engages the shoulder C of the chair and fits over and engages the bases of the rails and the coupling-piece. This key is held in place by bolts I, passing through the bottom of the chair. The edges of the base of the chair are, as usual, notched to receive the spikes by which it is secured to the ties.

It will be seen that when the parts are pressed against the flange and base of the chair by means of the key they will be held in position quite independent of the bolts G, though the latter are preferable to give extra security.

In practice the rail ends will be set so that in cold weather they do not tightly fit up to the ends of the V-shaped openings in the ends of the coupling-piece, thus permitting room for expansion in hot weather.

It will be noted that owing to the shape of the sides of the coupling-piece a parallel portion *c* is formed at the center of each notch which fits the web of the rail, and thus holds the rail perfectly even when its V-shaped end is not fitted up to the end of the V-shaped notch in the coupling-piece.

While I consider the method of beveling the rail ends and coupling-piece which I show to be preferable, yet variations might be

made—such, for example, as that shown in Fig. 5—by means of which substantially the same effect can be obtained.

As will be seen from the drawings, I prefer to form the bolts with square necks and countersunk heads.

The advantages of my device are numerous. In the first place a practically continuous tread is formed for the wheels instead of the sudden change from one rail end to the other which is met with in the ordinary construction. It is this sudden transition from one rail end to the other which causes so much of the disagreeable jar and vibration of the ordinary rail-joint. Not only is my construction more conducive to comfort, but the rails last longer, as the jar of the wheels passing over the ordinary square rail ends soon flattens out and destroys the rails at the joint. As with my joint the rails are not liable to this destructive action at their ends, they may be made somewhat lighter, thus effecting a considerable saving of expense, which will counterbalance the increased expense due to the adoption of my form of rail-joint.

A further advantage of my rail-joint is that from one-half to three-quarters of an inch can be allowed for expansion or contraction without detriment to the joint, thus entirely preventing the spreading of rails, which is now a frequent occurrence owing to the rails being set close to avoid jar.

What I claim as my invention is—

1. In a rail-joint the combination of a chair; an independent coupling-piece having a rail-tread and beveled ends and securely held in the chair; rail ends shaped to fit the coupling-piece; and means for holding the rail ends in the chair with freedom to move endwise, substantially as described.

2. In a rail-joint the combination of a chair; an independent coupling-piece having a rail-tread and V-shaped forked ends and securely held in the chair; rail ends shaped to fit the coupling-piece; and means for holding the rail ends in the chair with freedom to move endwise, substantially as described.

3. In a rail-joint the combination of a chair having at one side a flange shaped to fit the side of a rail, and at the other side formed with a vertical shoulder; a coupling-piece having a rail-tread and beveled ends and secured to the flange of the chair; rail ends shaped to fit the coupling-piece and also fitting against the side flange of the chair; a key adapted to engage and fit over the bases of the rail ends and coupling-piece and abutting against the shoulder on the chair; and bolts securing the key to the rail-base, substantially as described.

4. In a rail-joint the combination of a coupling-piece having a rail-tread and beveled ends; rail ends shaped to fit the coupling-piece; a chair having a flange at one side, the central part of the flange and coupling being shaped

to engage one another to resist end motion of the coupling and the outer parts of the flange being shaped to fit against the sides of the rail ends; a key adapted to engage the chair, the rail end, and coupling-piece to press them into contact with one another; and detachable means connecting the key with the chair, substantially as described.

5. In a rail-joint the combination of a coupling-piece having a rail-tread and V-shaped forked ends; rail ends shaped to fit the coupling-piece; a chair having a flange at one side, the central part of the flange and coupling being shaped to engage one another to resist end motion of the coupling and the outer parts of the flange being shaped to fit against the sides of the rail ends; a key adapted to engage the chair, the rail end, and coupling-piece, to press them into contact with one another; and detachable means connecting the key with the chair, substantially as described.

6. In a rail-joint the combination of a coupling-piece having a rail-tread and beveled ends; rail ends shaped to fit the coupling-piece; a chair having a flange at one side, the central part of the flange and coupling being shaped to engage one another to resist end motion of the coupling and the outer parts of the flange being shaped to fit against the sides of the rail ends; a key adapted to engage the chair, the rail end, and coupling-piece to press them into contact with one another; detachable means connecting the key with the chair; and a bolt connecting the coupling-piece with the flange of the chair, substantially as described.

7. In a rail-joint the combination of a coupling-piece having beveled ends and flanged base; rail ends shaped to fit the ends of the coupling-piece; and a chair adapted to engage the base of the rail and coupling-piece to hold the latter in line with the former, substantially as described.

8. In a rail-joint the combination of a coupling-piece having V-shaped forked ends and flanged base; rail ends shaped to fit the ends of the coupling-piece; and a chair adapted to engage the base of the rail and coupling-piece to hold the latter in line with the former, substantially as described.

9. In a rail-joint the combination of a coupling-piece having V-shaped forked ends and flanged base provided with central parallel portions to engage the web of a rail end; rail ends shaped to fit the ends of the coupling-piece with their webs in engagement with the said parallel portions; and a chair adapted to engage the base of the rail and coupling-piece to hold the latter in line with the former, substantially as described.

Nelson, British Columbia, June 26, 1903.

JONATHAN B. CLIMO.

In presence of—

EDWARD H. WILKINSON,
CLEOPHAS VICTOR GAGNON.