Nov. 6, 1934. V. E. DUPUY 1,979,533

RAIL BOND

Filed Feb. 27, 1932

Fig. 1.

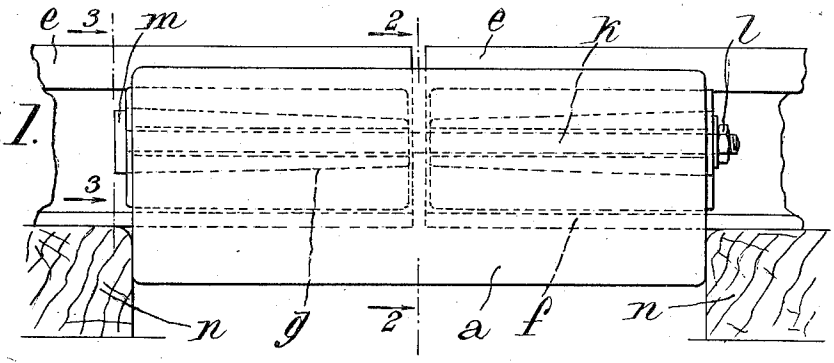


Fig. 2.

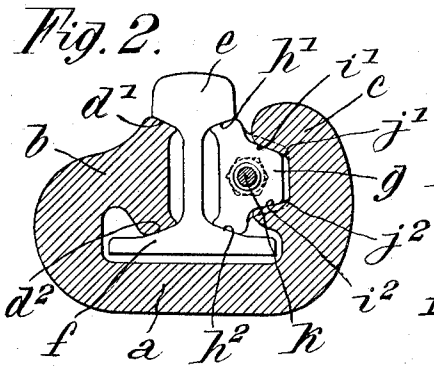


Fig. 3.

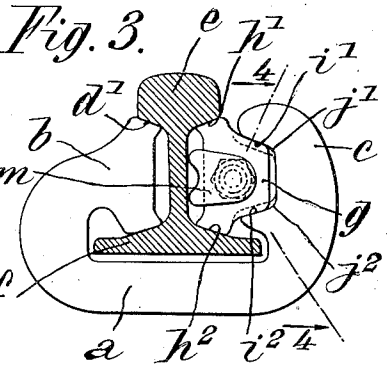


Fig. 4.

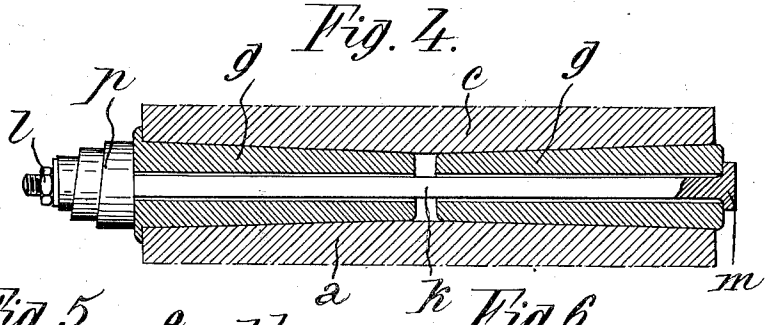


Fig. 5.

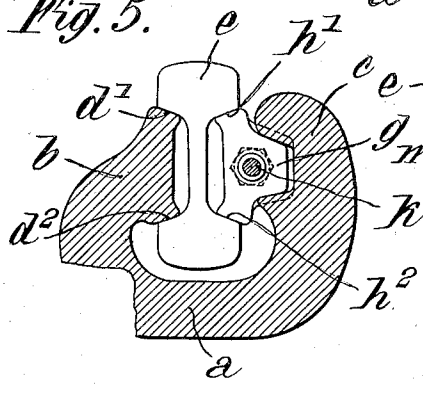
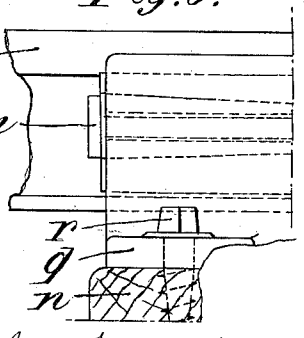


Fig. 6.



Victor Emile Dupuy INVENTOR

BY Mock & Blum ATTORNEYS

Patented Nov. 6, 1934 1,979,533

UNITED STATES PATENT OFFICE

1,979,533

RAIL BOND

Victor Emile Dupuy, Paris, France

Application February 27, 1932, Serial No. 595,473
In Belgium March 9, 1931

5 Claims. (Cl. 238—151)

The present invention relates to rail bonds and, more particularly, to those of the type utilizing mechanical elements for uniting the ends of adjacent rails.

One of the objects of the present invention is to provide a form of mechanical rail bond permitting thermal expansion of adjacent rails insuring against any possible lateral movement of the latter.

Further objects will appear in the course of the detailed description now to be given with reference to the accompanying drawing, in which:

Figure 1 is an elevation showing one illustrative embodiment of the invention;

Figure 2 represents a section taken on line 2—2 of Figure 1;

Figure 3 illustrates, in section, the device represented in Figure 1 as seen on line 3—3;

Figure 4 is a section taken on broken line 4—4 of Figure 3;

Figure 5 is a section similar to Figure 2 showing the invention applied to a rail of somewhat different form;

Figure 6 is an elevation of a form of assembly adapted to be anchored to ties or similar supporting elements.

Referring to Figures 1 to 4 of the drawing, there is shown a pair of railway or tramway rails *e*, *e*, bonded end to end by an assembly composed of the following elements; a suitably shaped bed or cradle *a* terminating (1) at one side in a portion *b* provided with a pair of sloping surfaces d^1, d^2 formed to fit into intimate contact with the base portion *f* and with the head portion of rail *e* in the manner shown in Figure 2, and (2) at its other side in a portion *c* having a recess formed therein provided with tapering lateral walls j^1, j^2, said lateral walls being longitudinally both convergent and divergent in the direction of rails *e*; a pair of wedges *g* provided with lateral surfaces i^1, i^2 formed to coact with surfaces j^1, j^2, said wedges being also provided with pairs of surfaces h^1, h^2 similar in form and function to surfaces d^1 and d^2; a bolt *k* traversing wedges *g*, *g* and having a head portion *m* formed thereon in the asymmetrical shape shown in Figure 3 tending to prevent rotation when a nut is screwed onto the threaded end of the bolt; and a spring *p* interposed between one wedge *g* and the nut mounted on bolt *k*.

From the foregoing, it will be readily seen that, in order to lock a pair of rail ends securely together without any possibility of lateral play, it suffices to move bed or cradle *a* under the pair of rail ends so that surfaces d^1 and d^2 contact with one side of the rail in the manner shown and to then drive wedges *g* into opposite ends of cradle *a* so as to securely wedge surfaces d^1, d^2, h^1 and h^2 against the lateral surface of the rails. To lock the wedges in position bolt *k* may be slid into place so that head *m* occupies the position shown in Figure 3; spring *p* being then forced down by tightening an appropriate nut which may be of the self locking type, if desired. Wedges *g* will thus be held resiliently in place and will effect their wedging function. The use of spring *p*, is, obviously, optional.

A pair of rails may thus be quickly and securely bonded so as to secure against any possible lateral movement while insuring free expansion of the rail ends under temperature change.

The assembly shown in Figure 5 is in all respects similar to the one described, the bonding assembly being shown applied to a rail of different form than that illustrated in Figures 2 and 3.

Obviously, the invention is not limited in its application to rails, but may be applied to structural shapes of any section whatever by appropriately modifying clamping surfaces of the type of d^1, h^1.

Figure 6 has been added merely to show that cradle or bed *a* may be anchored to the ties, if desired, by providing flanges such as *q* and screwing an anchoring bolt *r* into place in ties *n* in a manner which will be obvious to those skilled in the art.

What I claim is:—

1. A rail joint for connecting together the adjacent ends of two rails which comprises in combination, a rigid assembling member extending beneath said ends of the rails at a certain distance from the under faces thereof, a flange integral with said member extending upwardly on one side thereof having its inner face shaped to fit exactly between the head and base flanges of the rails on one side thereof, another flange integral with said member extending upwardly on the other side thereof, wedging means adapted to be forced longitudinally between the last mentioned flange and said rails, said wedging means engaging on one side the other side of said rails so as to fit exactly between the head and base flanges thereof, and on the other side the second mentioned flange, the contacting surfaces of said wedging means and of said second mentioned flange being so shaped as to prevent any vertical relative displacement therebetween, and means for locking said wedging means in position.

2. A rail joint for connecting together the ad-

jacent ends of two rails which comprises in combination, a rigid assembling member extending beneath said ends of the rails at a certain distance from the under faces thereof, a flange integral with said member extending upwardly on one side thereof having its inner face shaped to fit exactly between the head and base flanges of the rails on one side thereof, another flange integral with said member extending upwardly on the other side thereof, and provided in its inner side with a longitudinal tapering groove, at least one wedge fitting in said groove and adapted to be forced longitudinally between the last mentioned flange and said rail, said wedge engaging the other side of at least one of said rails, so as to fit exactly between the head and base flanges thereof, and means for locking said wedge in position.

3. A rail joint for connecting together the adjacent ends of two rails which comprises in combination, a rigid assembling member extending beneath said ends of the rails at a certain distance from the under faces thereof, a flange integral with said member extending upwardly on one side thereof having its inner face shaped to fit exactly between the head and base flanges of the rails on one side thereof, another flange integral with said member extending upwardly on the other side thereof, and provided in its inner side with a longitudinal groove tapering from either end thereof towards the centre, two wedges fitted in said groove in opposite relation with respect to each other, each wedge being adapted to be forced longitudinally between the last mentioned flange and each rail respectively, said wedges engaging the other side of said rail so as to fit exactly between the head and base flanges thereof, and means for forcing said wedges towards each other.

4. A rail joint for connecting together the adjacent ends of two rails which comprises in combination, a rigid assembling member extending beneath said ends of the rails at a certain distance from the under faces thereof, a flange integral with said member extending upwardly on one side thereof having its inner face shaped to fit exactly between the head and base flanges of the rails on one side thereof, another flange integral with said member extending upwardly on the other side thereof, and provided in its inner side with a longitudinal groove tapering from either end thereof towards the centre, two wedges fitted in said groove in opposite relation with respect to each other, each wedge being adapted to be forced longitudinally between the last mentioned flange and each rail respectively, said wedge engaging the other side of said rail so as to fit exactly between the head and base flanges thereof, a bolt extending throughout both wedges parallelly to the general direction of said groove and at least one nut screwing on said bolt for forcing said wedges toward each other.

5. A rail joint according to claim 4 further comprising a spring interposed between said nut and one of said wedges.

VICTOR EMILE DUPUY.