No. 760,307. PATENTED MAY 17, 1904.

C. A. A. CHENU.

COUPLING DEVICE FOR RAILS, SHAFTS, OR THE LIKE.

APPLICATION FILED FEB. 24, 1904.

NO MODEL.

Fig. 1.

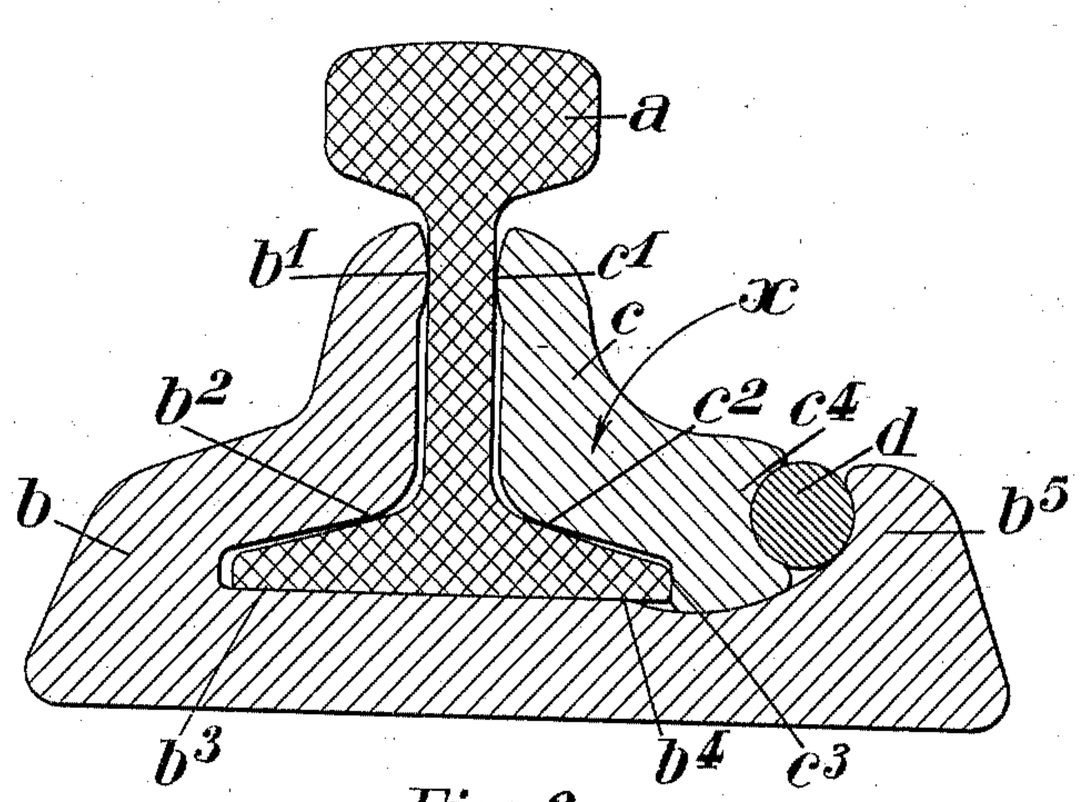


Fig. 2.

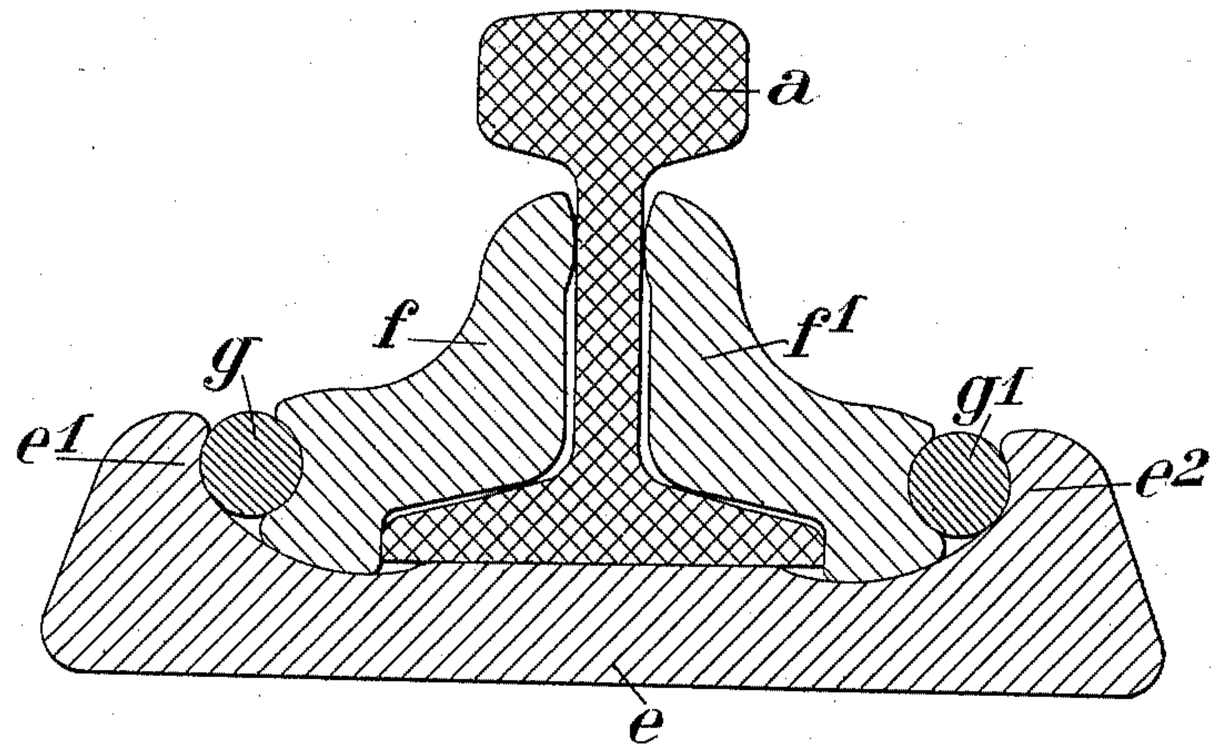
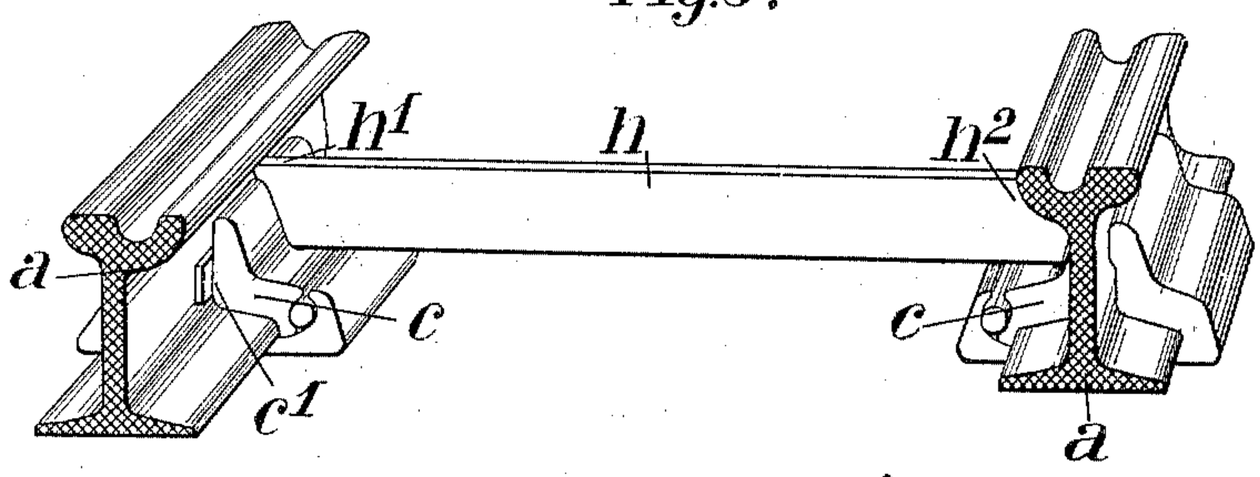


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES ALEXANDRE ARTHUR CHENU, OF ÉTAMPES, FRANCE.

COUPLING DEVICE FOR RAILS, SHAFTS, OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 760,307, dated May 17, 1904.

Application filed February 24, 1904. Serial No. 195,059. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALEXANDRE ARTHUR CHENU, a citizen of the French Republic, residing at 71 Rue St. Jaques, Étampes, Department of Seine-et-Oise, France, have invented a new and useful Improvement in Coupling Devices for Rails, Shafts, or the Like, of which the following is a specification.

The object of this invention is a device for coupling rails, bars, shafts, or the like of different section, placed either end to end, parallel or even transversely, though it is chiefly applicable to the coupling of rails of any section, and when iron cross-ties are used enables the latter to be fixed to the rails without the use of bolts.

The device consists of two jaws of suitable shape, the first of which starts from the bottom of the rail-head, fitting all round the base of the rail, reaching up to a certain convenient height on the other side and resting against a point or small surface on the stem of the rail and on the upper and under surfaces of the foot of the rail. The second jaw resembles the upper portion of the first and makes contact with the rail at three points—viz, on the stem and on the upper and lateral surfaces of the rail-foot. The whole device is tightened up by means of a tapering bar or wedge of suitable length. When double-headed rails are in question, the shape of the lower portion of the jaw is modified to fit the lower head.

In the accompanying drawings, Figure 1 represents a cross-sectional view of the coupling device applied to single-headed rails. Fig. 2 is a modification. Fig. 3 shows the device in position for connecting rails by a cross-tie rod.

In Fig. 1, a represents the rail, b the jaw surrounding the rail, and c the locking-jaw. d is the wedge-pin. The jaw b makes contact with the rail at b' against the stem, also touching the upper surface of the rail-foot at b^2 and the lower surface of the foot between the points b^3 and b^4. The right-hand portion of the jaw b is bent round and shaped at b^5 in such a manner as to form an abutment and bearing-surface for the taper wedge-pin d. Besides, the jaw c is in contact with the rail at c' opposite the point b' on the stem of the rail, with the upper face of the rail-foot at c^2, and finally with the vertical edge of the rail-foot at c^3. At the point opposite the surface b^5 the jaw c is made of corresponding shape at c^4, so as to admit the wedge-pin d. Assuming the jaw b to be fixed, on inserting the wedge-pin d the jaw c is driven toward the left and commences to press against the rail-foot at the point c^3, forcing the foot into the jaw b. The result, therefore, of this first stage of tightening up the coupling device is to forcibly jam the left portion of the rail-foot into the jaw b. The point c^3 being thus fixed, the influence of the wedge-pin d on the jaw c is to cause this piece to turn in the direction of arrow x around the point c^3, so as to first press on the rail-foot at c^2 and then against the stem of the rail at c'. In this manner the rail is held firm, on the one hand immediately under the head between the points b' and c' by forces acting in a horizontal direction and, on the other hand, by pressure against the jaw b by forces acting vertically at the points b^2 and c^2 on the rail-foot.

In Fig. 2 the coupling consists of a fixed base e and two jaws f and f', similar to the jaw c. The base e is shaped at the points e' and e^2 on each side in a similar manner to the jaw b at b^5, and the whole device is tightened up by two taper wedge-pins g and g'. The fact that one of the jaws is caused by the wedge-pin to turn around a point of support situated on the rail itself results in the transformation of part of the more or less horizontal pressure set up by the wedge-pin into a vertical pressure acting downward on the rail-foot and tending to fix it on the support. In order that this pivoting movement may be possible, the point c^4 must be higher than the points c^3 and c^2.

An example of connecting two rails not placed end to end is shown in Fig. 3, which represents the connecting by a cross-tie. The device comprises similar parts to that illustrated in Fig. 1. The two ends h' and h^2 of the cross-tie h are bent round at right angles

and gripped in each case between the stem of the rail *a* and the part *c'* of the jaw *c*, which is shaped in a way to secure the desired effect.

An improved feature of the device described above is that in manufacture the different parts may be rolled.

The various parts of my device may be manufactured of any suitable material, and the form of the shells, wedges, or taper pins, &c., may be varied in details. For instance, certain parts may be hollowed out to reduce the weight, while others may be strengthened by ribs and like modifications made without departing from the main feature of the invention.

In addition to the facility with which the parts are united or separated the coupling devices present the additional advantages of simplicity of construction, suitability for application to bars of any profile, solidity, and security of coupling, obviating the use of bolts, allowing free expansion of the bars, and occupying little space.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In coupling devices of the character described the combination of a pair of suitably-shaped jaws adapted to grip the rails, bars or parts to be coupled; one of which jaws, under the influence of a taper wedge-pin acting on both, is caused to pivot in resting against the said rail or bar, the abutment for the said wedge-pin being formed as a part of the other jaw which is shaped to act in the same manner as the first jaw and to serve also as a support for the said rails, bars or parts to be coupled, substantially as described.

2. In coupling devices of the character described the combination of a pair of suitably-shaped jaws adapted to grip the rails, bars or parts to be coupled, one of which jaws under the influence of a taper wedge-pin acting on both, is caused to pivotally press horizontally against the stem of the parts and vertically from above downward onto the foot thereof, the abutment being formed as a part of the other jaw which is shaped to act in the same manner as the first jaw and at the same time to serve as a support for the rail, bar or like parts, substantially as described.

3. In coupling devices of the character described the combination with a pair of suitably-shaped jaws adapted to grip the parts to be coupled together, of a separate base-piece forming a support for the said parts, and tapered pins or wedges located between said jaws and abutments formed on said base-piece, the tightening up of which pins, causes the base-piece and the jaws to grip the parts in certain places, substantially as described.

4. In coupling devices of the character described the combination with two pairs of suitably-shaped jaws adapted to grip two bars, rails, or the like placed parallel to each other, by means of tapered pins or wedges located between the jaws of each pair, of a tie bar or rod having bent ends resting in a slot in the inner of each pair of jaws, said bent ends of the tie rod or bar being gripped between the bars or rails to be coupled, and the said inner jaws of each pair of jaws, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES ALEXANDRE ARTHUR CHENU.

Witnesses:

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