

No. 857,229.

PATENTED JUNE 18, 1907.

C. A. A. CHENU.
RAIL AND OTHER LIKE JOINT.
APPLICATION FILED JULY 21, 1906.

2 SHEETS--SHEET 1.

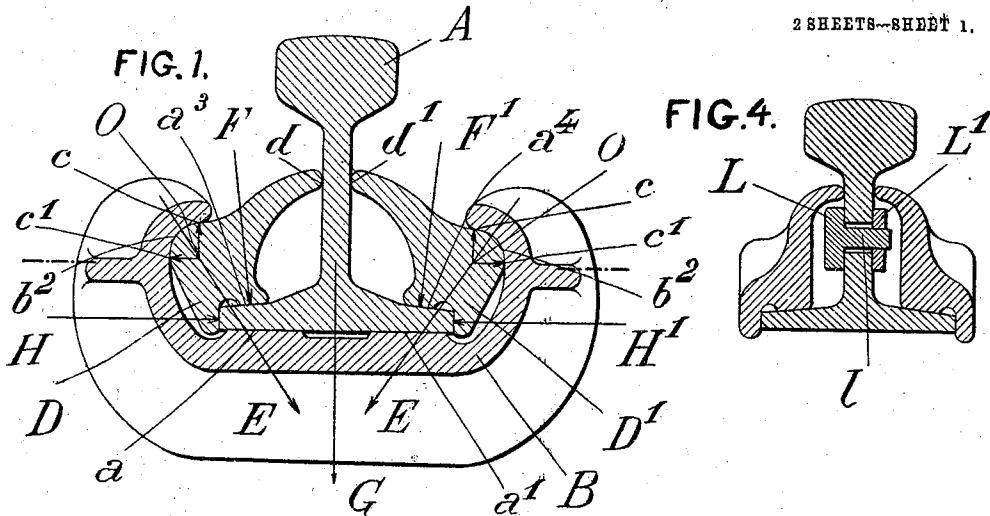
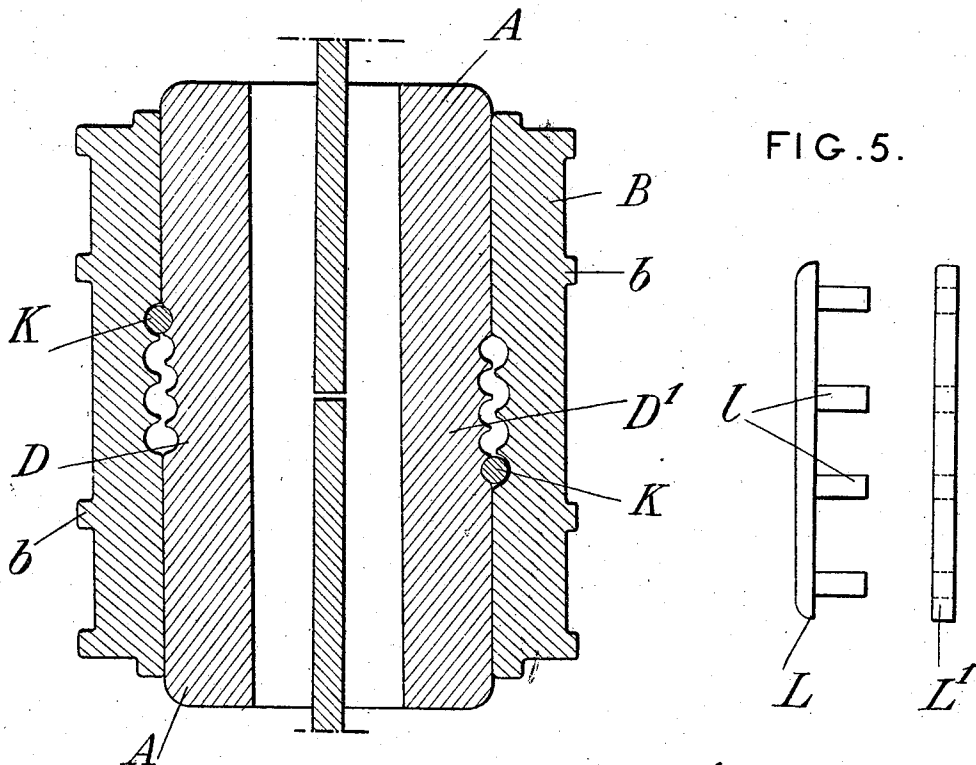


FIG. 3.



Witnesses:
J. J. McCarthy
A. E. Hausmann.

Inventor
Charles A. A. Chenu
by Foster Furman Watson
Attys.

No. 857,229.

PATENTED JUNE 18, 1907.

C. A. A. CHENU.
RAIL AND OTHER LIKE JOINT.
APPLICATION FILED JULY 21, 1906.

2 SHEETS—SHEET 2.

FIG. 2.

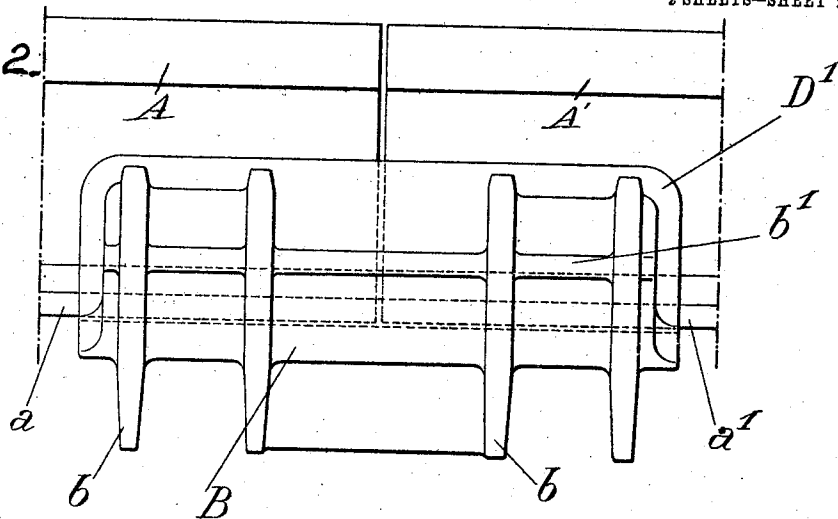


FIG. 6.

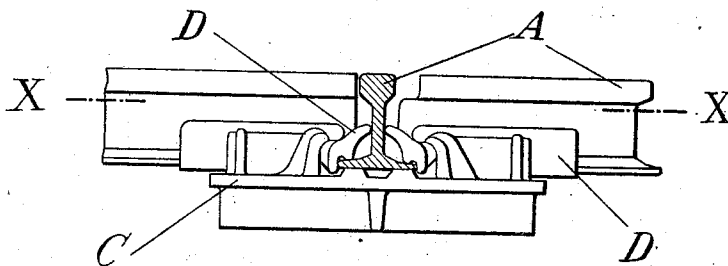
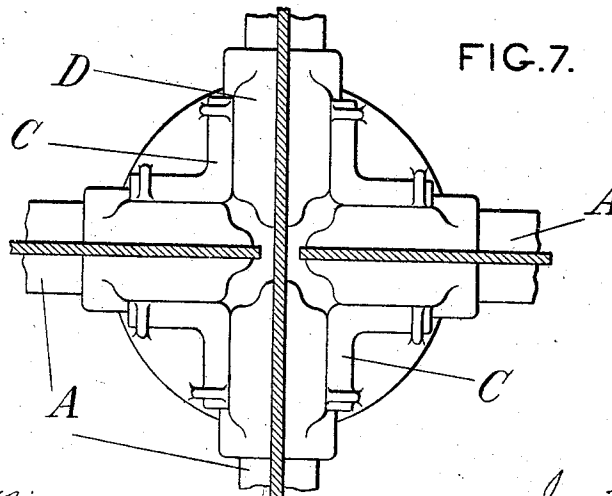


FIG. 7.



Witnesses:
J. M. C. C. C.
A. E. C. C.

Inventor
Charles A. A. Chenu
by *Foster Freeman Moore*
Atty

UNITED STATES PATENT OFFICE.

CHARLES ALEXANDRE ARTHUR CHENU, OF ÉTAMPES, FRANCE.

RAIL AND OTHER LIKE JOINT.

No. 857,229.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed July 21, 1906. Serial No. 327,202.

To all whom it may concern:

Be it known that I, CHARLES ALEXANDRE ARTHUR CHENU, engineer, residing at 71 Rue St. Jacques, Étampes, Department of the Seine and Oise, France, a citizen of the French Republic, have invented new and useful Improvements in Rail and other Like Joints, of which the following is a specification.

The invention relates to rail or like joints or devices enabling shaped pieces or bars of suitable section to be assembled together either end to end, parallel, or even transversely. The assembling is of such a nature that the pieces can expand or contract freely, the distance being limited or not according to circumstances.

In its essential features, the device comprises a chair, more or less surrounding the bars to be assembled end to end; and one, two or more wedge shaped jaws located between the chair and the bars, and of such a contour or section as is best adapted to effect the desired tightening at several points.

In the accompanying drawings several ways of carrying the invention into effect are illustrated.

Figure 1 showing in cross section a joint in which the bars or the like are assembled end to end so as to have both free and unlimited expansion. Fig. 2 is a side elevation thereof, and Fig. 3 is a sectional plan on line Y—Y of Fig. 1. Fig. 4 is a similar view to Fig. 1, of a modification of the device in which the provision for expansion is free but limited in extent, and Fig. 5 is a detail plan view of the two expansion plates of the modification shown in Fig. 4. Fig. 6 is a further modification illustrating a transverse joint, and Fig. 7 is a part sectional plan on line X—X of Fig. 6.

Referring to Figs. 1 to 3, A A are the two rails or bars to be joined, which are partially surrounded at the joint by the chair B which is a shell or piece of C section, preferably strengthened as shown by longitudinal and cross ribs b b^1 . The flat base a , a^1 of the bars or rails, rest on a corresponding surface of the chair B. Wedge shaped jaws D D¹ for securing the stability of the joint, are located oppositely between the bars and the over-turned edges b^2 , b^3 , of the chair. The chair B assumes a slightly oblique position in relation to the rails which obliquity has been exaggerated in Fig. 3, in order to make it more apparent.

The jaws D D¹ are so shaped as to produce

the necessary component forces for tightening or wedging up the joint. Each jaw bears on the chair with a curved bearing surface which forms approximately an arc of a quarter circle in extent, as shown at c , c^1 , so that the force represented by the arrow O E which is set up will pass through the point o while the direction of the force is oblique with respect to the contact surface a , a^1 , between the rails A A¹ and the chair B. Each jaw contacts with the rails A A¹ in two places, laterally at the extremity of the base; and at the top against the sloping upper face a^3 , a^4 , of the base. Thus the force O E is resolved into a horizontal pressure H H¹, and a pressure F F¹ normal to the face a^3 , a^4 , as shown by the arrows. The two pressures H and H¹ being equal and directly opposed balance each other. The two forces F and F¹ resolve themselves into a single vertical resultant G, which presses the rails against the face a , a^1 of the chair B. In this manner the stability of the joint is completely insured. In addition, the jaws D D¹ are in contact with the webs of the rails A A¹ at d , d^1 , but without pressure, in order to prevent any lateral displacement of the web under strain.

It will be evident that when two bars of a different shape from that represented are to be assembled, it is possible by altering the profile of the chair B, and that of the jaws together with their number if necessary, to obtain tightening forces of such power and direction as to retain a maximum stability of the joint at all times.

To prevent accidental loosening of the joint, pins or spikes K may be inserted between the chair and the jaws, these pins being lodged in corresponding recesses in the parts.

The joint described will expand and contract freely without any limitation of the distance between the rail ends. To limit the expansion and contraction it is sufficient as shown in Figs. 4 and 5, to place expansion plates, L L¹ on each side of the webs of the rails, one plate being provided with gudgeons l passing through corresponding holes in the rails and in the other plate; or alternatively both plates and the web of the rails may be traversed by bolts.

When it is desired to assemble bars transversely, such for instance as at a railroad crossing, use is made of the device shown in Figs. 5 and 6. In this modification, the chair C is fitted with projecting angular jaws

arranged in such a manner that the wedge shaped jaws D make the joints tight in all directions. This joint can be permitted free expansion and of either limited or unlimited extent.

It will be understood that the above described methods of rail jointing are applicable to bars other than railway rails, for instance to girders for flooring and other structures, in fact to bars or the like of various profiles whatever their use.

The above described methods of jointing enables in the first place an absolutely firm joint, with tightening forces of strictly defined direction and power to be obtained; secondly the parts may be produced both cheaply and be strongly made and finally such joints insure ease in assembling and disconnecting the parts.

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 a rail joint, the combination with the rails, of a chair having its edges curved inwardly toward the web of the rails, and jaws arranged between the chair and rails and bearing against the rail bases at the sides and on the upper surfaces thereof, and also contacting with the inwardly turned edges of the chair.

2. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its edges bent inwardly toward the web of the rails and forming curved bearing surfaces, and wedge shaped jaws arranged between the rail and said curved bearing surfaces of the chair, said jaws engaging the rail bases at the sides and on the upper surfaces at points between the sides and the webs of the rails.

3. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its edges extending upwardly above the rail base, and jaws arranged between the rails and upwardly extending edges of the chair, each jaw having two independent contact surfaces engaging the rail bases, one engaging a side of a base and the other bearing upon the top of said base at a point between the edge thereof and the web of the rail.

4. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its side edges extending above the bases of the rails, and wedge shaped jaws extending between the rails and said edges of the chair, each jaw having two independent points of contact with the rail bases and a third point of contact with the webs of the rails.

5. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its edges bent inwardly toward the webs of the rails and providing curved bearing surfaces above the plane of the bases of the rails, and wedge shaped jaws arranged between the rails and said curved bearing surfaces, each of said jaws having a lateral bearing surface, engaging the webs of the rails, and two depending contact surfaces, one engaging the upper surfaces of the rail bases, and the other extending below said top surfaces and bearing against a side of the rail base.

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

CHARLES ALEXANDER ARTHUR CHENU.

Witnesses

HERNANDO DE SOTO,
CLAUDIUS LUSON.