

No. 612,696.

Patented Oct. 18, 1898.

M. BARSCHALL.
RAIL JOINT FOR ELECTRIC RAILWAYS.

(Application filed Mar. 14, 1898.)

(No Model.)

Fig. 1.

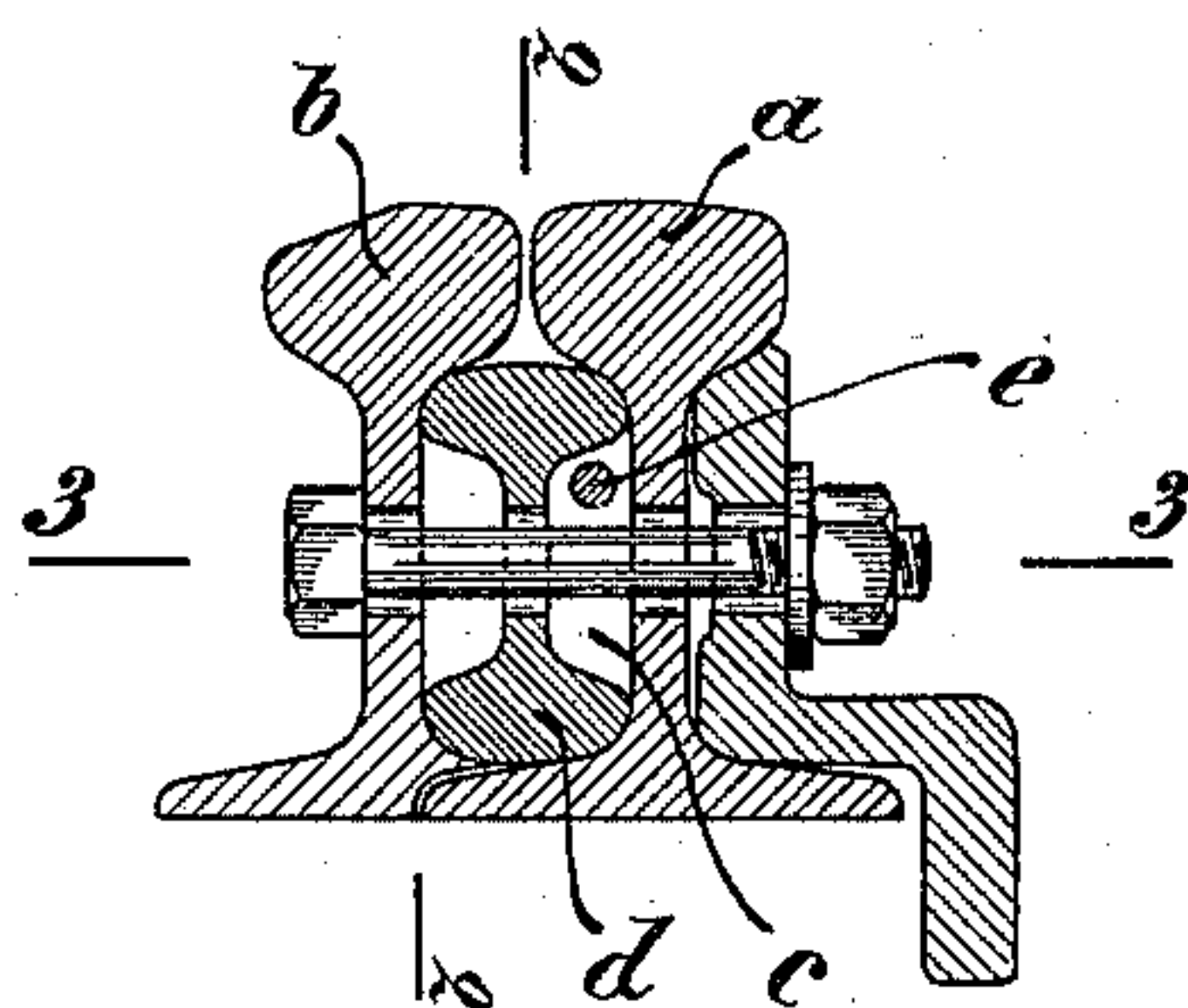


Fig. 2.

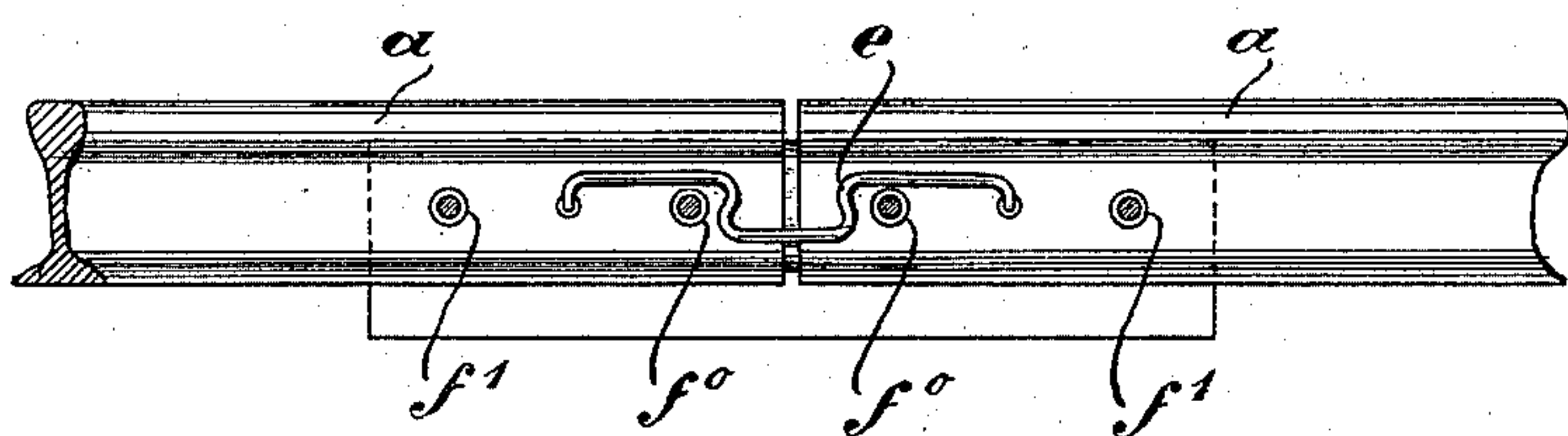
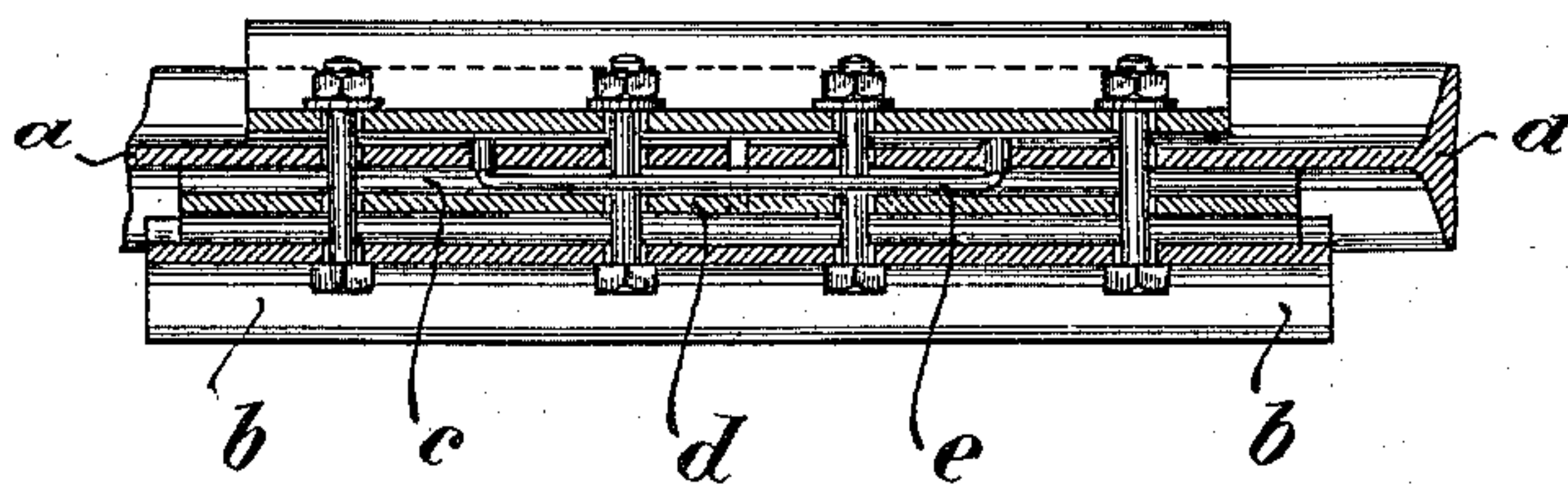


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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RAIL-JOINT FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 612,696, dated October 18, 1898.

Application filed March 14, 1898. Serial No. 673,810. (No model.)

To all whom it may concern:

Be it known that I, MAX BARSCHALL, merchant, a subject of the King of Saxony, residing at Berlin, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Rail - Joints for Electric Railways, (for which applications for patents were filed in Germany October 23, 1897; in Austria October 25, 1897; in Hungary October 25, 1897; in France December 27, 1897; in Switzerland December 31, 1897; in Great Britain January 1, 1898; in Belgium January 10, 1898, and in Italy January 10, 1898,) of which the following is a specification.

The invention relates to rail-joints for that kind of electric railways in which the track is used as a return-line for the current. In these railways the so-called "electric bond" between the subsequent rails consists in a separate conductor joining the ends of the rails. The conductor is usually carried around the fish-plate; but it has been suggested to make it considerably shorter and to better secure it against injuries and theft by placing it between the web of the rails and the outer fish-plate. In this case the fish-plate, to make room for the reception of the conductor, has an outwardly-curved cross-section, so that it is no longer capable of fulfilling its principal purpose, which consists in transferring the load from the end of one rail to the end of the other, for the evident reason that it is bent down by vertical stress.

According to the present invention the aforescribed advantageous position of the conductor may be realized without weakening the mechanical rail-joint, which, on the contrary, is strengthened and otherwise improved. To attain this object, the outer fish-plate is replaced by an auxiliary rail fixed on the sleepers which are next to the rail-joint, as described in Letters Patent No. 532,421, dated January 8, 1895. The cavity between heads, webs, and feet of the rails presents a sufficient space for the conductor even in the case where this cavity is partly filled up by an intermediate fish-plate, which is in contact with the head and foot of the track-rail ends, as well as of the auxiliary rail.

In the annexed drawings, which represent an example of such a rail-joint, Figure 1 is a cross-section of the rail-joint. Fig. 2 is a sectional elevation of the joint, the section being

taken along the line 2 2 in Fig. 1. Fig. 3 is a horizontal section on the line 3 3 in Fig. 1. 55

In the example of such a rail-joint shown in the drawings the ends of the track-rails *a* at one side and the auxiliary rail *b* at the other side include a space *c*, which is open at both ends and filled up by the intermediate fish-plate *d* only to such an extent that the electric conductor *e* may be placed in the same space. Each end of this conductor is shown as being incorporated into the web of the track-rail end at a point between the holes *f*⁰ and *f*¹ for the screw-bolts. 60

Where it is admissible to take less care as to preserving the resistance of the track-rail end, it will be preferable to place the connection between each end of the conductor and the rail-web between the hole *f*⁰ and the extreme end of the rail. 65

To secure a sufficient space for a conductor of a large cross-section without weakening the cross-section of the intermediate fish-plate *d*, the said conductor *e* may be bifurcated, one branch being placed in the space between the intermediate fish-plate *d* and the auxiliary rail *b* and the other branch between the intermediate fish-plate and the track-rails, as shown. In this case the outer branch is carried through holes in the web of the intermediate fish-plate. 70

What I claim as my invention, and desire to secure by Letters Patent, is— 85

1. In an electric-railway track the combination with the rail-joint of an auxiliary rail supported by the sleepers and a conductor connecting both jointed track-rails and placed in the space between the track-rails and the auxiliary rail, essentially as described. 90

2. In an electric-railway track the combination with the rail-joint of an auxiliary rail supported by the sleepers, an intermediate fish-plate placed in the space between the track-rails and the auxiliary rail and a conductor connecting both jointed track-rails and placed in the space between the track-rails and the auxiliary rails aside of the intermediate fish-plate, essentially as described. 95

In witness whereof I have hereunto set my hand in presence of two witnesses. 100

MAX BARSCHALL.

Witnesses:

HENRY HASPER,
C. H. DAY.