R. W. DAVIS.

RAIL JOINT.

APPLICATION FILED SEPT. 25, 1913.

1,084,072.

Patented Jan. 13, 1914.

Fig. 1.

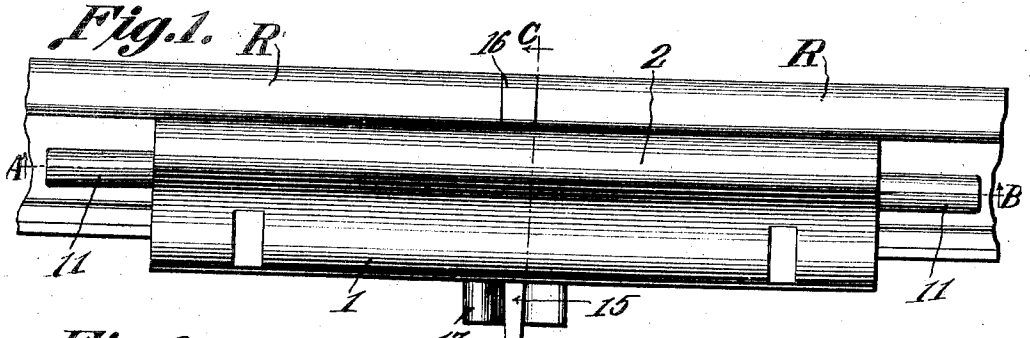



Fig. 2.

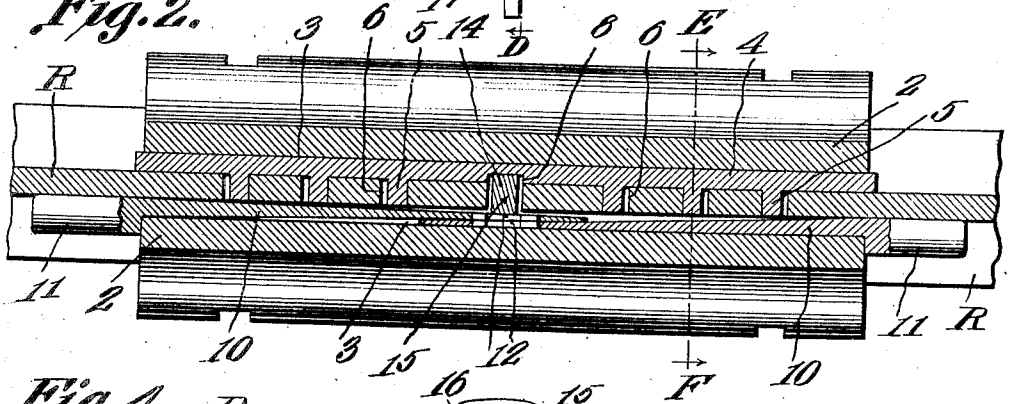



Fig. 4.

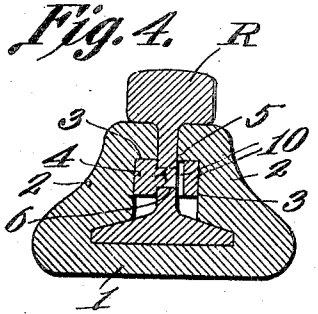



Fig. 3.

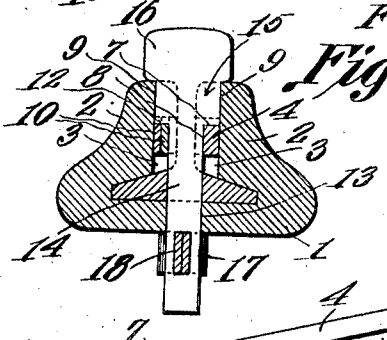



Fig. 5.

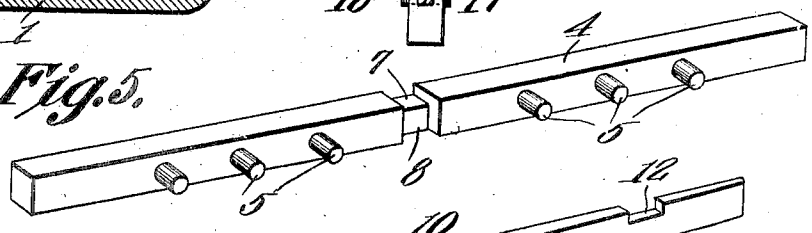
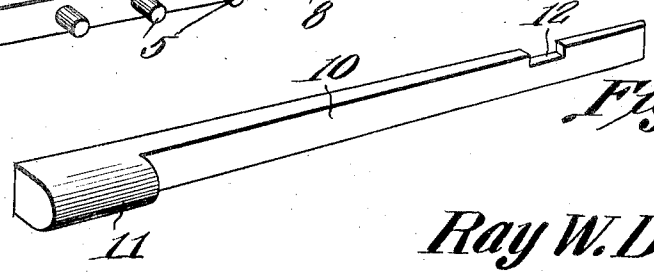



Fig. 6.




Witnesses

J. R. Toomey

S. Willson.

Ray W. Davis,

Inventor

by C. A. Snow & Co.

Attorneys

# UNITED STATES PATENT OFFICE.

RAY W. DAVIS, OF BROWNSVILLE, PENNSYLVANIA.

## RAIL-JOINT.

1,084,072. Specification of Letters Patent. **Patented Jan. 13, 1914.**

Application filed September 25, 1913. Serial No. 791,802.

*To all whom it may concern:*

Be it known that I, RAY W. DAVIS, a citizen of the United States, residing at Brownsville, in the county of Fayette and State of Pennsylvania, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention relates to rail joints, one of its objects being to provide a joint of this character which obviates the necessity of employing bolts, nuts or the like and which will hold the rails securely assembled without, however, preventing any necessary expansion or contraction resulting from climatic changes.

A further object is to provide a rail joint of this type which will bind firmly upon the rails and properly support them at their meeting ends.

A further object is to provide novel means whereby the joint can be locked securely to the rails so as to prevent separation of the parts while the rails are in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a side elevation of the rail joint embodying the present improvements. Fig. 2 is a section on line A—B Fig. 1. Fig. 3 is a section on line C—D Fig. 1. Fig. 4 is a section on line E—F Fig. 2. Fig. 5 is a perspective view of one of the tie bars. Fig. 6 is a perspective view of one of the wedging strips.

Referring to the figures by characters of reference 1 designates a rail chair formed in a single piece of metal adapted to extend under the meeting end portions of rails R and having side flanges 2 adapted to overhang the base flanges of the rails and to extend upwardly under and close to the heads of the rails. The inner faces of the flanges 2 are cut away to form channels 3 whereby spaces are provided between the webs of the rails and the flanges 2. One of these spaces is adapted to receive a tie bar 4 having laterally extending lugs 5 adapted to extend into the openings ordinarily provided in the webs of the rails and which have been indicated at 6. Notches 7 and 8 are formed in the top and inner side respectively of the bar 4 close to the center thereof and are adapted to register with corresponding notches 9 formed in the inner sides of the flanges 2 at the centers of the upper edges thereof, these notches 9 opening into the channels 3. The space formed between the other side of the rail and the adjacent flange 2 is adapted to receive wedging strips 10. Two of these strips are provided, each strip being somewhat longer than one half the chair 1 and each strip being provided at its thick end with a head 11. The thin ends of the wedging strips are adapted to lap when the heads on these strips are forced against the opposite ends respectively of the chair and notches 12 are formed in the upper edges of the wedging strips and are adapted to register when the strips are thus positioned and also to register with the notches 9.

A slot 13 is formed in the bottom of the chair at the center thereof and is adapted to receive a tongue 14 extending downwardly from a key 15. This key is so proportioned as to slide downwardly into the opposed notches 9 and into the notches 7 and 12, one side of the tongue 14 being adapted to project into the notch 8. Key 15 is provided, at its upper end, with a flat head 16 of an outline corresponding with the transverse contour of the rail heads so that, when the key is in position, this head 16 will lie flush with the heads of the rails and constitute practically a continuation thereof.

In connecting the rails by means of the joint herein described, the tie bar 4 is placed against the webs of the two rails at one side so that the lugs 5 will extend into the ordinary bolt holes 6. When the rails are thus engaged their ends will be held apart a distance substantially equal to the thickness of the head 16. The rails are then inserted, with the bar 4, into the chair 1 until the notches 7 and 8 are brought into register

with one of the notches 9. The wedging strips 10 are then inserted between the rails and one of the flanges 2 and driven into the chair from opposite sides until their heads 11 come against the adjacent flange 2. When the wedging strips 10 are thus positioned, the notches 12 therein will aline with each other and also with the notch 9 thereabove. With the parts thus located the key 15 can be inserted downwardly into the notches 9 so that it will rest in the notches 7 and 12, while tongue 14 projects into the notch 8 and downwardly through the slot 13. The head 16 will rest on the flanges 2 and have its faces flush with the corresponding faces of the rail heads. This head 16 will fill the space between the ends of the rails. After key 15 has been inserted, a cotter pin 17 or the like can be inserted into a slot 18 in the projecting end portion of the key, thus preventing the key from being withdrawn upwardly from the chair.

It will be seen that as the lugs 5 do not fit tightly in the openings 6, any necessary expansion or contraction of the rails due to climatic conditions is permitted.

What is claimed is:—

1. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, and a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels.

2. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, and a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, said key having a head at its upper end interposed between and flush with the heads of the engaged rails.

3. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, said key having a head at its upper end interposed between and flush with the heads of the engaged rails, and means for engaging the key to hold it against withdrawal from the chair, said means being located under the chair.

4. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, and wedging means insertible into the other channel.

5. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, and wedging means insertible into the other channel from opposite ends of the chair respectively.

6. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, wedging means insertible into the other channel from opposite ends of the chair respectively, and means for limiting the inward movement of the wedging means within the chair.

7. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, and wedging means insertible into the other channel from opposite ends of the chair respectively, said wedging means being adapted to lap and having notches for the reception of the key.

8. A rail joint including a rail receiving chair having side flanges provided with channels in their inner faces, a tie bar having laterally extending lugs adapted to be seated within the bolt holes in the rails, a key insertible downwardly between the rails and into engagement with the tie bar and the chair to hold the tie bar and rails

against longitudinal movement relative to the chair, said tie bar being seated in one of the channels, wedging means insertible into the other channel from opposite ends of the chair respectively, said wedging means being adapted to lap and having notches for the reception of the key, and means for locking the key in the chair.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

RAY W. DAVIS.

Witnesses:
SELINA WILLSON,
I. E. SIMPSON.