

No. 865,995.

PATENTED SEPT. 17, 1907.

C. T. BUCK.
RAIL JOINT.

APPLICATION FILED DEC. 14, 1906.

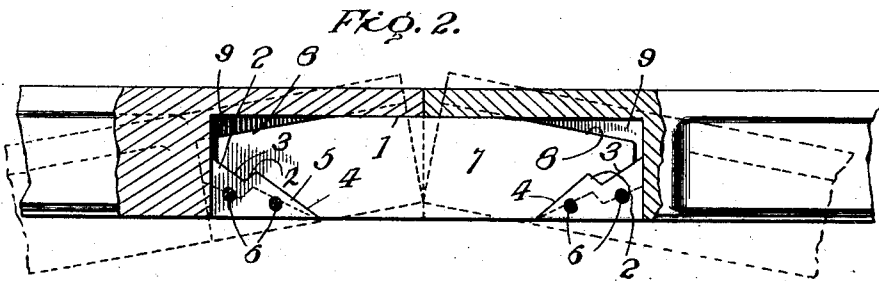
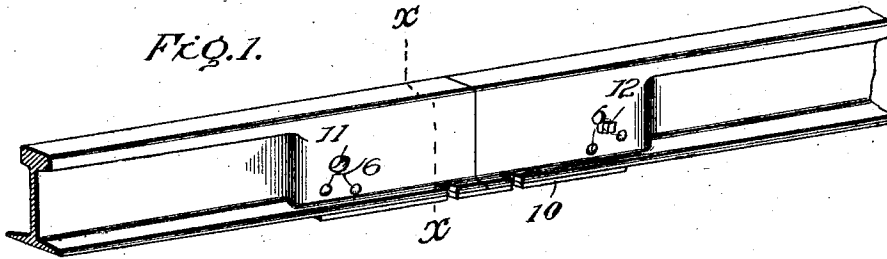
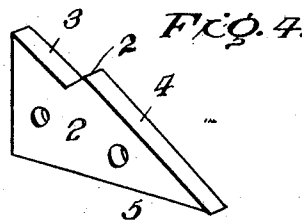
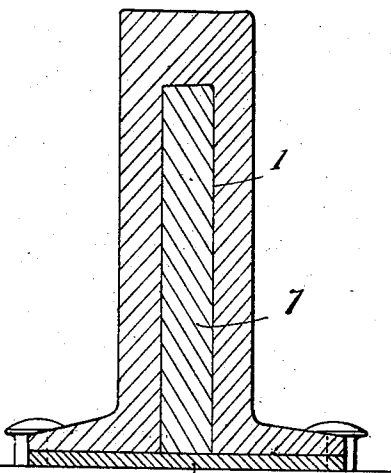


FIG. 3.



Witnesses

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RAIL-JOINT.

No. 865,995.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES T. BUCK, a citizen of the United States, residing at Waukegan, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention is designed to provide a rail joint which will be free from the usual bolts and fish plates and which will obviate relative play of the ends of adjacent rails which in practice produces the pounding which is injurious to rolling stock and annoying to passengers.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a rail joint embodying the invention. Fig. 2 is a side view of the joint, a portion of the near side of the end of each rail being broken away to show the key and the parts coöperating therewith, the full lines showing the normal position of the parts and the dotted lines indicating the position of adjacent ends referred to to release the key. Fig. 3 is a transverse section on the line $x-x$ of Fig. 1 showing a supporting plate beneath the joint and forming a rest therefor. Fig. 4 is a detail perspective view of a catch secured within the end portion of each rail for coöperation with the key.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In accordance with this invention, the end of each rail is provided with an opening 1 which may extend therein for any given distance, said opening preferably extending through the foot of the rail, although this is not essential. The opening 1 may be provided in any manner according to the manufacture of the rail. At the inner end of the opening is arranged a shoulder 2 which is inclined, said shoulder being located some distance from the plane of the foot of the rail and from said shoulder inclined walls 3 and 4 extend in opposite directions. The wall 3 inclines upwardly and inwardly, whereas the wall 4 inclines outwardly and downwardly. The shoulder 2 and inclined walls 3 and 4 may be provided in any manner and may form a part of the rail or constitute elements of a block separate from the rail and secured thereto by rivets, or other suitable fastenings. In the preferable construction, the catch, or block 5 is constructed separately from the rail and is

placed in position in the opening 1 and secured by rivets or fastenings 6 passed through registered openings in the part 5 and in the sides of the rail end embracing the said block 5. The ends of each rail are similarly formed, hence it makes no difference which ends are abutted when placing the rails in position.

The key 7 consists of a plate corresponding in thickness to the depth and width of an opening 1 and approximating in length the combined length of openings 1 in adjacent rail ends. The upper edges of the key 7 slope for a distance from the ends of the extremities of the key as indicated at 8. The lower edge of the key near each end corresponds to the outline of the shoulder 2 and the inclined walls 3 and 4 so as to snugly fit the same when the key is in proper position and locks the ends of adjacent rails. A space 9 is formed between the upper inclined edge 8 at each end of the key and the upper wall of the opening 1, and this space represents the relative play of the end portions of the key and permits sufficient movement of the parts to enable the end portions of the key to become disengaged from the shoulders 2. The key 7 may be placed in position in any convenient way and when properly positioned, its end portions interlock with the shoulders 2 and thereby prevent longitudinal displacement of the rail. Inasmuch as the key 7 touches at its sides the inner walls of the openings 1, it is obvious that the ends of the rails are prevented from transverse displacement and are held in true alinement. When the joint is supported by means of a plate 10 which forms a rest therefor, perpendicular pressure upon the joint, as resulting from the passage of a train thereover, will prevent relative vertical movement of the ends of the rails since the vertical pressure will be distributed upon both ends bordering upon the joint by means of the key, the plate 10 sustaining the downward pressure imposed upon both the rail and the key. When it is required from any cause to loosen the joint, the ends of the rails are pried upward as indicated by the dotted lines in Fig. 2, and since the two rails and the key turn upon different fulcras, the shouldered ends of the key are disengaged from the shoulders 2 of the rail ends, thereby permitting separation of the parts. The key 7 being of metal and in metallic connection with the ends of adjacent rails, constitutes a tie, thereby enabling the rail to be used as an electric conductor without necessitating bonding of the same at the joints as is now commonly practiced, and as a result, the construction of electric lines is materially cheapened by a joint constructed in accordance with this invention.

While as stated herein, it is preferred to form the block 5 separate from the rail and attach the same thereto, nevertheless, it is to be understood that in some instances, it may be advantageous to form the

block 5 with the rail as a part thereof. This construction obviates the formation of joints and the necessity of employing fastenings, such as rivets or bolts 6.

The interlocking shoulders between the key 7 and the parts 5 are observable through openings 11 formed in a side wall of the rail ends bordering upon the opening 1 and which openings are adapted to be closed by plugs 12. The openings 11 are located opposite to the interlocking shoulders and upon removal of the plugs 12, the condition of the lock joints may be determined.

To secure the rail in case of contraction, or expansion, thin strips of rubber, or cork are applied to each side of the key about three-quarters of an inch from the top and bottom and extend parallel with the length of the key, said strips being secured to the key in any way found most advantageous.

Having thus described the invention, what is claimed as new is:

1. In a rail joint, the combination of rails having openings extending inward from their ends and provided with shoulders near the inner ends of the openings, and a key having end portions normally fitted in the openings of the ends of adjacent rails and provided with shoulders to interlock with the aforesaid shoulders of the rails, a space being provided between the upper edge of the key and the upper wall of the opening at each end of the key to admit

of loosening the joint by prying upward upon the contiguous ends of adjacent rails.

2. In a rail joint, the combination of rails having openings extended inward from their ends and having shoulders near the inner ends of said openings and inclined walls adjacent to the shoulders and extending therefrom in opposite directions, the one inward and upward, the other downward and outward, and a key having the upper edge near each end sloped, or inclined, and having shoulders upon its lower edge near opposite ends, and inclined edges extended from said shoulders, the shoulders and inclined edges of the key matching the shoulders and inclined walls near the inner ends of the openings of the said rail ends and the upper inclined edges of the key forming spaces with the upper walls of the openings of the rail ends to permit of loosening of the joint upon prying the same upward.

3. In a rail joint, the combination of a rail having an opening in its end, a block secured within the opening of the rail and having its upper edge inclined to provide a shoulder and inclined walls, and a key adapted to be inserted in the opening in the end of the rail and having its upper edge inclined and its lower edge corresponding to the upper edge of the aforesaid block.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES T. BUCK. [L. S.]

Witnesses:

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