

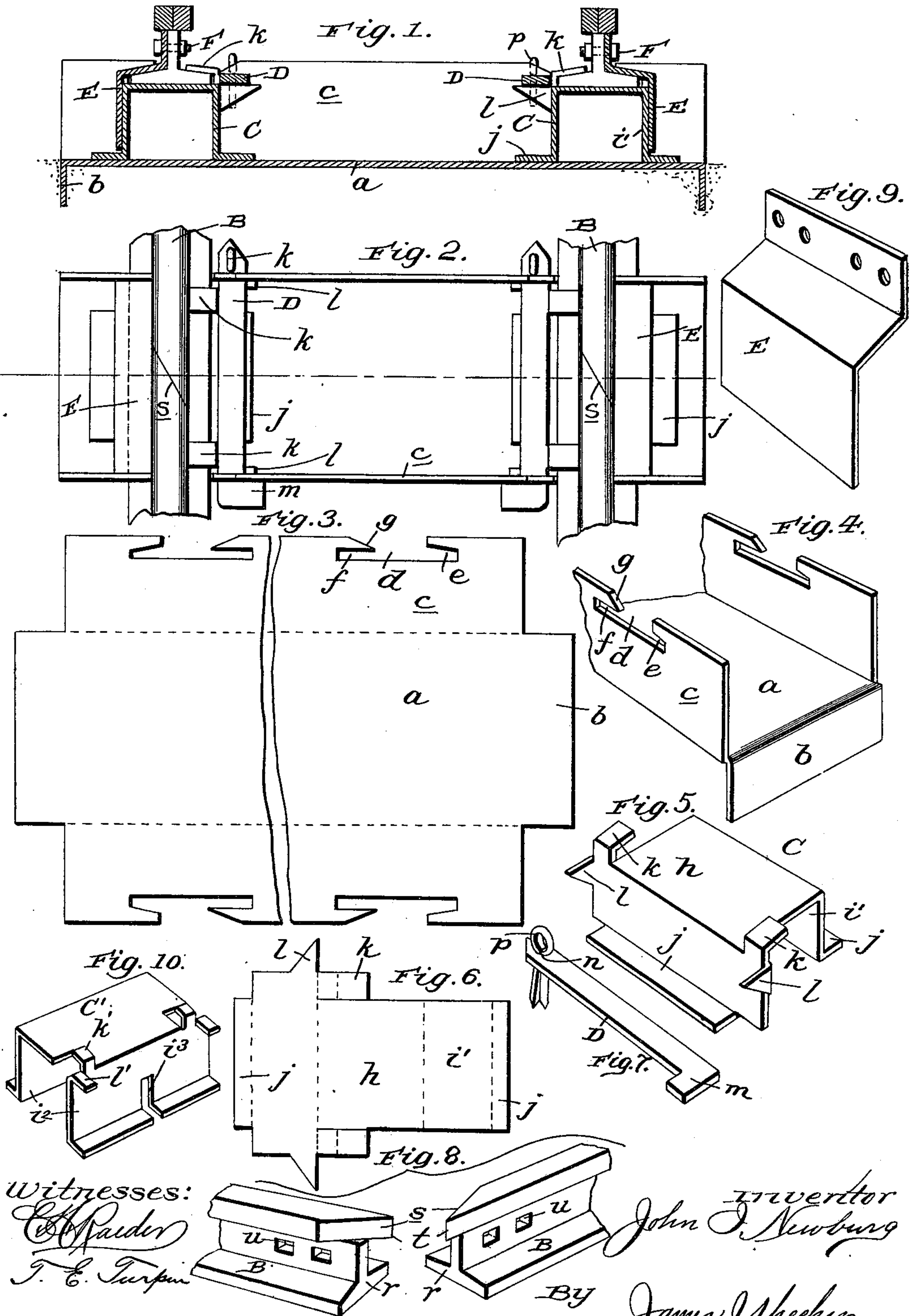
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J. I. NEWBURG.
RAILWAY.

(Application filed Aug. 23, 1900.)

(No Model.)



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RAILWAY.

SPECIFICATION forming part of Letters Patent No. 672,066, dated April 16, 1901.

Application filed August 23, 1900. Serial No. 27,825. (No model.)

To all whom it may concern:

Be it known that I, JOHN I. NEWBURG, a citizen of the United States, residing at Vicksburg, in the county of Warren and State of Mississippi, have invented new and useful Improvements in Railways, of which the following is a specification.

My invention relates to improvements in railway sleepers or ties, and contemplates the provision of a simple and inexpensive sheet-metal tie susceptible of being anchored in position by ballast, so as to afford a solid and safe road-bed and one to which a rail or rails may be expeditiously and securely connected with but a minimum amount of labor in such manner as to permit of free expansion and contraction of the rails and free expansion and contraction of each rail independent of the others.

Another object of the invention is to join the meeting ends of the rails on the ties in such manner that a continuous unbroken surface is afforded to a car-wheel as it passes from one rail to another, or, in other words, the car-wheel is enabled to pass gradually from one rail to the contiguous one and during such passage is supported by the meeting ends of both rails, with the result that striking of the wheel against the ends of the rails and the shock and jar incident thereto are entirely obviated, and this notwithstanding the varying distance between the meeting rail ends due to expansion and contraction.

Another object of the invention is to provide in conjunction with the ties anticreeping plates which while permitting free expansion and contraction of the rails are calculated to effectually prevent the rails from creeping or being moved endwise when a number of trains pass over the same in the same direction.

Other advantageous features of the invention will be fully understood from the following description and claims when taken in connection with the accompanying drawings, in which—

Figure 1 is a view illustrating my improved sleeper or tie in longitudinal section and two rails and two anticreeping plates in transverse section. Fig. 2 is a plan view of the same. Fig. 3 is a broken plan view of the piece of sheet metal of which the sleeper

proper is formed. Fig. 4 is a perspective view illustrative of one end of the sleeper proper. Fig. 5 is a perspective view of one of the chairs forming part of the sleeper. Fig. 6 is a plan view of the piece of sheet metal of which each chair is formed. Fig. 7 is a perspective view of one of the keys for securing the chairs in the sleeper proper. Fig. 8 comprises disconnected perspective views of the meeting ends of two rails designed to be joined in accordance with my invention. Fig. 9 is a perspective view of one of the anticreeping plates. Fig. 10 is a perspective view of a modified chair which may be formed from a rectangular piece of sheet metal and is economical for that reason.

In Figs. 1 to 9 of the drawings similar letters of reference designate corresponding parts.

The body or sleeper proper of my invention is formed by properly bending a piece of sheet metal or other metal, such as shown in Fig. 3, and comprises a bottom wall *a*, depending flanges *b* at the ends of the bottom wall, designed to take into the ground, so as to hold the sleeper or tie against endwise movement, and side walls *c*, which rise from the bottom wall and are designed to receive suitable ballast between them and enable such ballast to securely anchor the sleeper or tie in position. In their upper edges at points adjacent to the ends of the sleeper or tie the said side walls have notches *d*, with which communicate offsets or undercuts *e f*, the former of which are designed to receive the outer portions of the bases of rails *B*, while the latter have the inner ends of their upper walls beveled, as indicated by *g*, to facilitate the introduction of the rail-bases into the notches *d* and offsets or undercuts *e*.

C C are the rail-chairs of my improved sleeper or tie. These chairs or benches are each formed by properly bending a piece of suitable sheet metal, such as shown in Fig. 6, and respectively comprise an intermediate upper portion *h*, upon which the rails *B* are designed to rest, legs *i'*, depending from opposite ends of the portion *h* and having outwardly-directed feet *j* at their lower ends, lugs *k*, rising from the extended end portions of the inner legs *i'* and adapted to be bent over the inner portions of the rail-bases, as

shown in Figs. 1 and 2, after said bases are placed in the notches d and offsets or undercuts e , and lugs or branches l , which extend inwardly from the ends of the legs i' and are adapted to rest at the inner sides of the walls c of the sleeper proper in a plane below the offsets f of notches d , as best shown in Fig. 1, for a purpose presently pointed out.

$D D$ are the lock and keys, which are flat, as best shown in Fig. 7, and are provided at one end with angular heads m and adjacent to their opposite ends with apertures n to receive cotter-pins p . The keys are placed and secured by the pins p in the offsets f of notches d after the chairs C are placed in the body or sleeper proper, and the rails B are arranged in the notches d and offsets e thereof and on the chairs. In such position the keys rest at the inner side of the lugs k and above the lugs or branches l of the chairs, and hence they are enabled to effectually prevent both inward and upward movement of the chairs. The rails B , as before stated, rest in the offsets e of the notches d and are engaged by the lugs k of the chair. From this it follows that the said rails are securely held against outward movement on the body or sleeper proper and are enabled to effectually prevent outward movement of the chairs.

As will be readily observed by reference to Fig. 5, the chairs C are of such a shape and size as to permit water to freely pass the same and flow out of the body or sleeper proper, as is desirable.

In lieu of the type of chair C (shown in Fig. 5) any other suitable chair might be employed—such, for instance, as the type illustrated in Fig. 10. This latter chair C' is, for the sake of economy, formed of a rectangular piece of sheet metal, and a number of them may be cut from a blank without waste. Said chair C' is provided with lugs $k' l'$, designed to serve the purposes of the lugs $k l$, respectively, of the chair C . It is also provided in its legs i^2 with notches i^3 , designed to permit water to freely pass out of the body or sleeper proper.

As shown in Figs. 1, 2, and 8, the meeting ends of the rails B have their bases and webs cut square, as indicated by r , so as to form a square joint between the same, while their heads are beveled, as indicated by s , the said bevels intersecting the square ends r of the bases and webs and forming points t , which extend beyond the square ends r , as shown. By virtue of this construction it will be seen that when the rails are arranged end to end there is a square joint between their bases and webs which effectually prevents them from lapping or moving too far in opposite directions when expanded; also, that there is a miter-joint between their heads. This latter is highly advantageous, because it serves to keep the rails in true alinement, notwithstanding the varying distance between the

rail ends due to expansion and contraction, and also because a smooth, continuous, and unbroken surface is afforded to a wheel in passing from one rail to another, and the objectionable striking of the wheel against a rail end and the shock and jar incident thereto are effectually prevented. This latter is largely due to the fact that when a wheel passes onto the point of one rail its major portion is on the wide portion of the head of the other rail, and as the wheel advances toward the point of the last-named rail it gradually passes to the first-named rail, so that when it reaches the point t or extreme end of the last-named rail its major portion will have reached and imposed its weight on the first-named rail.

$E E$ are anticreeping plates. These plates are preferably of the form shown in Fig. 9 in order to conform to the chairs C and the bases and webs of the rails B . They are interposed between the side walls c of the sleeper proper and are connected by transverse bolts F to the meeting ends of the rails B , so that in addition to serving as fish-plates for the rail-joint they are calculated to effectually prevent creeping of the rails—that is to say, casual endwise movement of the rails, such as is generally caused by a number of trains passing in the same direction and in succession over the rails. The apertures u in the webs of the rails through which the bolts F pass are preferably elongated in order to permit of free expansion and contraction of the rails. It is obvious, however, that the same end may be attained by making the apertures of the anticreeping devices E elongated in lieu of those of the rails.

It will be readily appreciated from the foregoing that I have provided a sleeper or tie which while highly efficient is very simple and inexpensive and also that I have provided in conjunction with the sleeper or tie a highly advantageous rail-joint and a device calculated to effectually prevent endwise movement of a rail with respect to the sleeper or tie. It will also be appreciated that my improved sleeper or tie is adapted to be readily anchored in position by ballast placed on the bottom wall and between the side walls of its trough-shaped body; also, that it is adapted to permit of the free escape of water to prevent the same from disintegrating or otherwise affecting the ballast. Moreover, it will be seen that the sleeper or tie is so constructed as to permit of ready and secure connection of the rails and that while comparatively light in weight it is stiff and strong and is calculated to afford a stable support for the rails and the weights imposed thereon.

I have entered into a specific description of the construction and relative arrangement of parts embraced in this the preferred embodiment of my invention. I do not desire, however, to be understood as confining myself to such specific construction and arrangement

of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claims.

In addition to the advantages set forth in the foregoing it will be seen that by virtue of the construction of my improved ties it is impossible for the rails to spread; also, that the railway embodying my invention is not liable to be affected by flood or fire.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a metallic sleeper or tie, the combination of a trough-shaped body having notches in the upper edges of its side walls and offsets or undercuts at opposite sides of said notches and communicating therewith, a rail-chair arranged in the body, a rail having its base arranged on the chair and also having one side of said base arranged in the undercuts at one side of the notches in the side walls of the body, and coacting means in the undercuts at the opposite sides of the notches and on the rail-chairs for holding said chairs, substantially as specified.

2. The combination of a sleeper or tie comprising a trough-shaped body having notches *d* in the upper edges of its side walls and offsets or undercuts *e f* at opposite sides of said notches and communicating therewith, a rail having one side of its base arranged in the undercuts *e* of the body, a rail-chair arranged in the body, below the rail, and provided with means for engaging the same, and coacting means on the chair and in the undercuts *f* of the body for holding the chair, substantially as specified.

3. In a sheet-metal sleeper or tie, the combination of the trough-shaped body or sleeper proper having depending flanges and also having notches *d* in the upper edges of its side walls, and outer and inner offsets or undercuts *e f* communicating with the said notches, chairs arranged in the trough-shaped body and having intermediate horizontal portions and legs depending therefrom, and also having lugs, some of which are adapted to engage the bases of rails, and transverse keys resting in the undercuts *f* of the body over the other lugs of the chairs, substantially as specified.

4. A metallic sleeper or tie comprising a body having notches in its upper edge and offsets or undercuts at opposite sides of said notches and communicating therewith, a rail-chair arranged in the body and provided with means for engaging a rail, and coacting means

in the undercut at one side of the notches and on the rail-chair for holding said chair, substantially as specified.

5. The combination of a metallic sleeper or tie comprising a trough-shaped body having notches in the upper edges of its side walls and offsets or undercuts at opposite sides of said notches and communicating therewith, a rail-chair arranged in the body and provided with means for engaging a rail or rails, coacting means in the undercuts at the opposite sides of the notches and on the rail-chairs for holding said chairs, a rail or rails arranged on the chair and in the offsets at one side of the notches in the trough-shaped body, and an anticreeping device arranged in the trough-shaped body between the side walls thereof and connected to the rail or rails, substantially as specified.

6. The combination of a metallic sleeper or tie comprising a trough-shaped body having notches in the upper edges of its side walls and offsets or undercuts at opposite sides of said notches and communicating therewith, a rail-chair arranged in the body and provided with means for engaging rails, coacting means in the undercuts at the opposite sides of the notches and on the rail-chairs for holding said chairs, rails arranged on the chair and in the offsets at one side of the notches in the trough-shaped body, and a combined fish-plate and anticreeping device arranged in the trough-shaped body between the side walls thereof and connected to the rails, substantially as specified.

7. The combination of a trough-shaped metallic tie, a rail or rails bearing on the side walls thereof, and connected thereto, and an anticreeping device arranged in the trough-shaped tie between the side walls thereof and connected to the rail or rails, substantially as specified.

8. The combination of a trough-shaped metallic tie, rails bearing adjacent to their meeting ends on the side walls thereof and connected thereto, and a combined fish-plate and anticreeping device arranged in the trough-shaped tie between the side walls thereof and connected to the contiguous portions of the rails, substantially as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN I. NEWBURG.

Witnesses:

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