

(No Model.)

W. R. SMITH.
RAILWAY TRACK.

No. 536,586.

Patented Mar. 26, 1895.

FIG. 1.

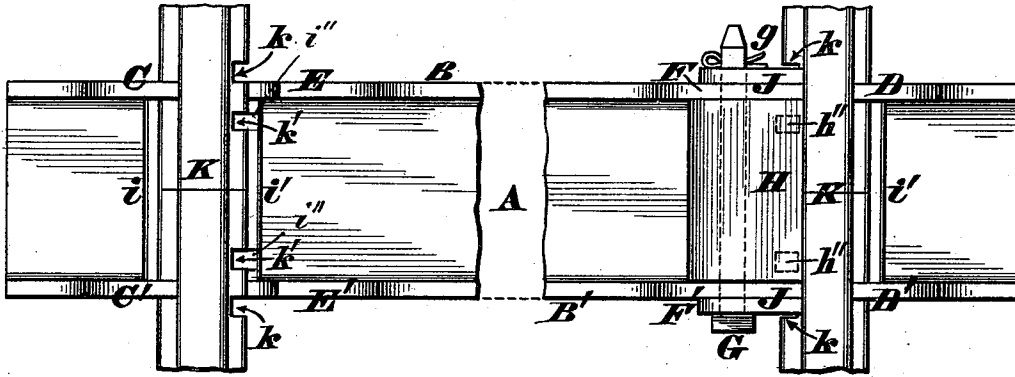


FIG. 2.

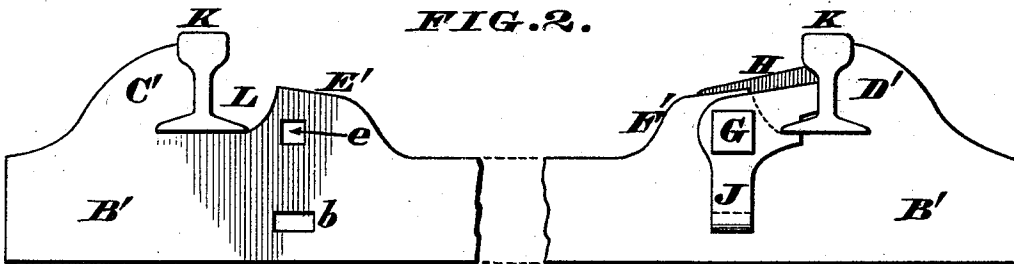


FIG. 3.

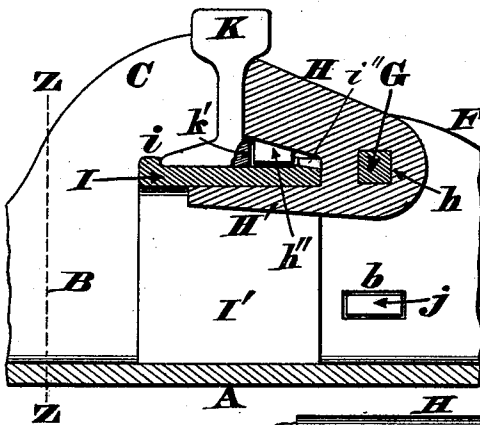


FIG. 4.

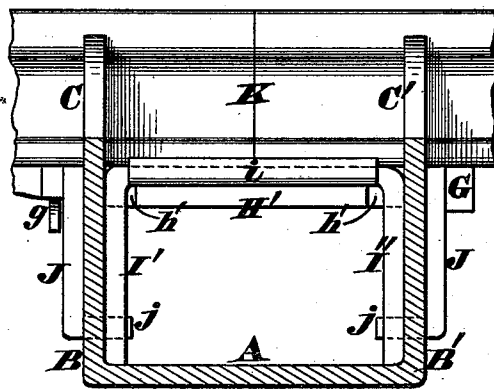
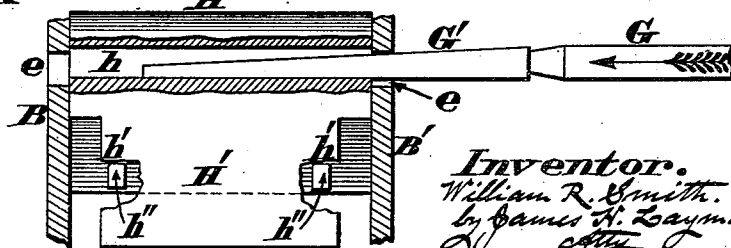


FIG. 5.



Attest.

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UNITED STATES PATENT OFFICE.

WILLIAM R. SMITH, OF COVINGTON, ASSIGNOR OF TWO-THIRDS TO JOHN W. FISHER, OF NEWPORT, KENTUCKY, AND JAMES P. CLIFTON, OF SANDUSKY, OHIO.

RAILWAY-TRACK.

SPECIFICATION forming part of Letters Patent No. 536,586, dated March 26, 1895.

Application filed December 5, 1894. Serial No. 530,931. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. SMITH, a citizen of the United States, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Railway-Tracks; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

In Letters Patent No. 528,309, granted October 30, 1894, to myself, John W. Fisher and Thomas Clifton, certain devices are shown for coupling a vertically-yielding track to a metallic cross-tie; but in the present case these devices are somewhat modified, and other attachments are so combined therewith as to afford a very rigid or immovable track, which is entirely free from fish-plates, spikes, &c., the details of this new construction being herein-after more fully described, and then pointed out in the claims.

In the annexed drawings, Figure 1 is a plan of a portion of my rigid railway-track, the center of a tie being broken away, and the fasteners for one of the rails being omitted. Fig. 2 is end elevation of said track. Fig. 3 is an enlarged transverse section of a rail and its fasteners. Fig. 4 is an enlarged transverse section of one of the metallic-ties, said section being taken at the line Z—Z, of the preceding illustration, and the rail being seen in elevation. Fig. 5 is a sectional plan of the under side of a fastening cramp, which is seen in the act of being attached to a tie, the lower plate of said cramp being broken away to expose a pair of lugs.

The metallic cross-tie that supports my rigid track is substantially the same as seen in the patent above referred to, being composed of a base-plate A, vertical side-flanges B, B', outer abutments C, C', D, D', and inner lugs E, E', F, F', the lugs being perforated, as seen at *e*, in Fig. 2 to admit a square bolt G, that carries a non-rotatable cramp consisting of an upper plate H and a lower plate H', these two members, H, H', being shaped like jaws that can grasp the base of a rail and a chair I that assists in supporting said rail K. This

cramp H, H', fits snugly between the flanges B, B', of the tie; but the lower plate H' is cut away, as seen at *h'*, *h'*, in Figs. 4 and 5, to clear the end flanges I', I'', of the chair, which flanges rest upon the base-plate A.

h'', in Figs. 3 and 5, represents lugs or ribs projecting from the under side of plate H, for the purpose of engaging with notches *k'* in the rail base, which base fits between the up-turned lips *i*, *i''*, of the chair. The inner lip of each chair must be cut away, as seen at *i''*, in Figs. 1 and 3, to allow the lugs *h''*, to enter the notches *k'*, but by cutting away each lip, as above described, there will be no necessity for inserting the chair within the tie in any special manner.

The square-bolt G, which is usually secured in place by a spring-pin *g*, seen in Figs. 1 and 4, has a keeper J applied to it, said keeper being of the bell-crank shape represented in Fig. 2, and adapted to engage with a notch *k*, in the rail-base. The vertical arm of this keeper is carried down a suitable distance, outside the tie flange, and terminates with a short, lateral bend *j* that engages with a slot *b* in said flange, by which arrangement shifting of said keeper is effectually guarded against. For ties of ordinary width, one of these keepers will be sufficient for each rail, but for wider ties, to support the abutting ends of a pair of rails, I prefer employing two of these bell-crank devices, as represented in Fig. 1.

In laying my improved railway-track, the various chairs I are first properly placed in the trough-shaped ties, and then the rails K are seated in the recesses L, between the abutments C, and lugs E. The cramp H H', is now inserted between the flanges B, B', the keepers J applied to the exteriors of said flanges, and then the bolt G is passed through said cramp and keeper and secured in place by the pin *g*, or otherwise. Consequently, the rails are rigidly secured to the ties, the stout abutments C, C', D, D', preventing outward shifting of said rails, while the cramps H H', secure them against upward and inward movement, and the keepers J, by engaging with the base-notches *k*, hold said rails against longitudinal play. This longitudinal shifting of

the rails is further guarded against by causing the lugs or ribs h'' , of the cramp to engage with the notches k' , of the rail-bases.

It is preferred to have the longitudinal bore h , of the cramp slightly out of line with the holes e , of the tie-flanges B, B', as seen in Fig. 5, in order that the act of driving a tapering key G', through said bore will wedge said cramp toward the rail a limited distance, after which act, the bolt proper, G, is forced in until it gradually displaces said wedge, and thus completes the operation of securing the rail in place; but previous to this application of the cramp filling pieces, or washers, may be inserted between it and the rail to compensate for any possible wear and tear of the track.

It will be noticed that the present construction of track, like that seen in my patent previously referred to, dispenses entirely with fish-plates and their objectionable bolts and nuts, and as the cross-ties are wholly metallic, the use of spikes is impossible.

Finally, in a modification of my invention, the chairs may be omitted, in which case the cramps will simply grasp the rail bases.

I claim as my invention—

1. The combination, in a railway-track, of a metallic cross-tie, having upturned side-flanges; a chair fitted within said tie; a rail supported upon said chair; a non-circular bolt secured in said side-flanges; and a non-rotatable cramp carried by said bolt, and grasping the chair and rail-base, thereby dispensing with fish-plates, bolts and spikes, in the manner described.

2. A railway-track consisting of rails rigidly secured to metallic cross-ties by a system of non-rotatable cramps fastened between vertical flanges of said ties, and bell-crank keep-

ers attached to the exteriors of said flanges, as herein described.

3. A railway-track consisting of rails rigidly secured to metallic cross-ties by a system of non-rotatable cramps fitted between vertical flanges of said ties, and keepers attached to said flanges and engaging with notches in the rail-bases, as herein described.

4. A rigid railway-track consisting of the metallic cross-ties A, having abutments C, C', D, D', lugs E, E', F, F', and perforated side-flanges B, B', e , and rails K, K, resting upon said flanges, in combination with a system of non-rotatable cramps H H', that grasp the rail-bases, all as herein described.

5. The combination, in a railway-track, of the metallic cross-tie A, having upturned side-flanges B, B'; a rail K, supported upon said flanges, and having its base notched at k' ; a non-circular bolt G, secured to said flanges; and a non-rotatable cramp H H', carried by said bolt, and provided with a lug h'' , that engages with said notch k' , all as herein described, and for the purpose stated.

6. A rigid railway-track, consisting of the metallic cross-tie A, having upturned side-flanges B, B'; a chair I, having upturned lips i , i' , and downturned end-flanges I', I'', rest upon the base-plate of said tie; a rail K carried by said chair; and a non-rotatable cramp H H', fitted between the tie-flanges B, B', and grasping said chair and the base of said rail, all as herein described, and for the purpose stated.

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

WILLIAM R. SMITH.

Witnesses:

JAMES H. LAYMAN,
ARTHUR MOORE.