

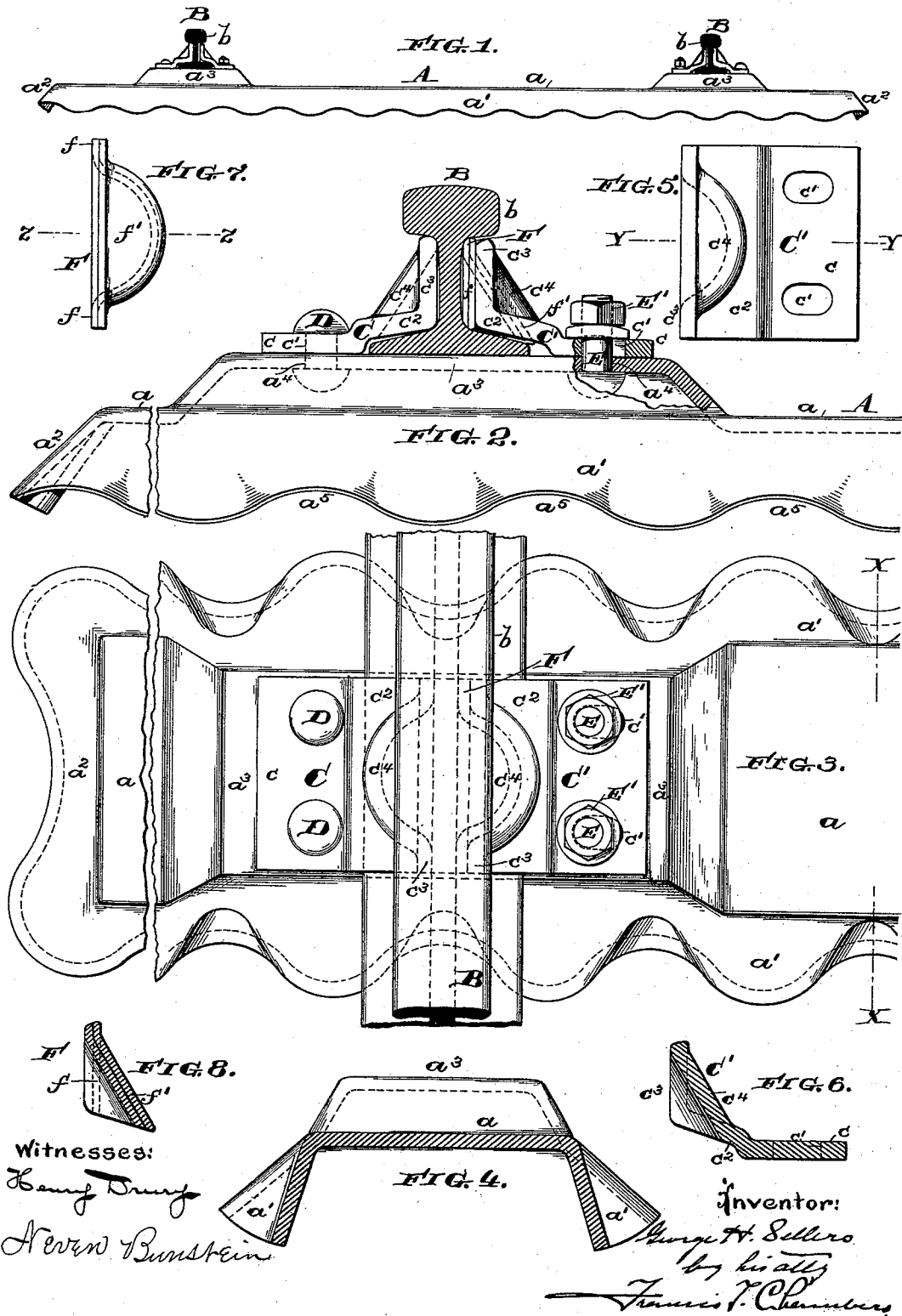
(No Model.)

2 Sheets—Sheet 1.

G. H. SELLERS.
RAIL TIE.

No. 486,959.

Patented Nov. 29, 1892.



(No Model.)

2 Sheets—Sheet 2.

G. H. SELLERS.
RAIL TIE.

No. 486,959.

Patented Nov. 29, 1892.

FIG. 9.

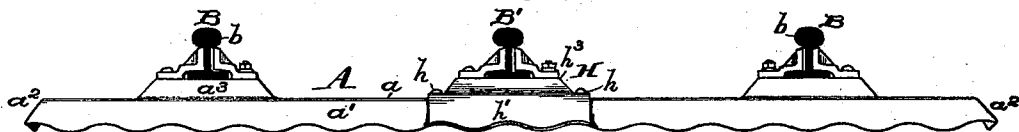


FIG. 13.

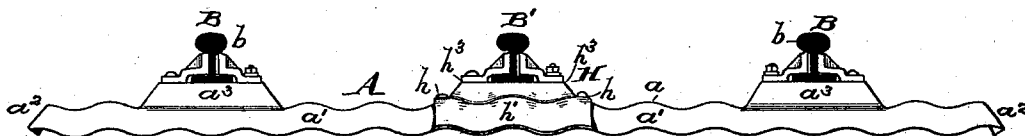


FIG. 10.

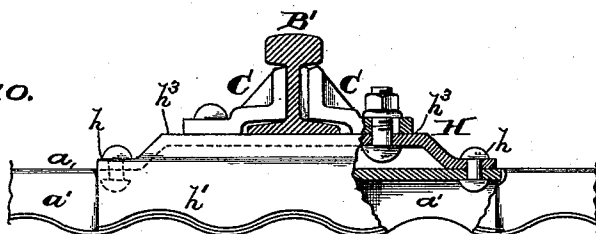


FIG. 11.

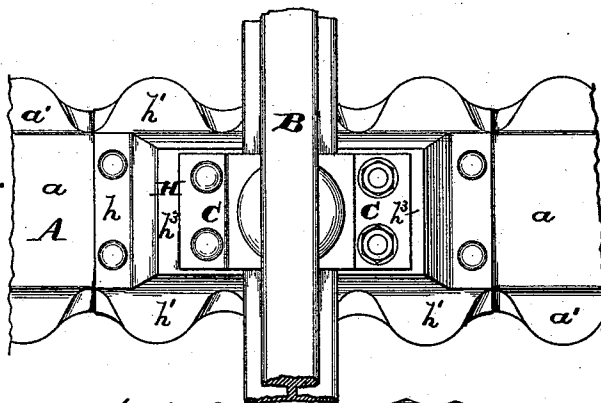
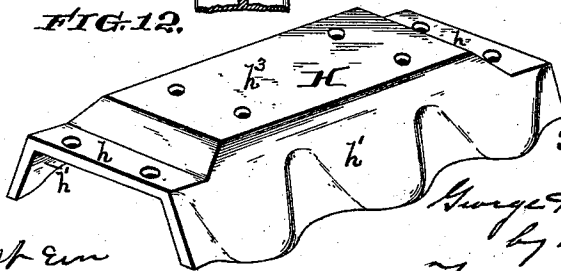


FIG. 12.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE H. SELLERS, OF RIDLEY PARK, PENNSYLVANIA.

RAIL-TIE.

SPECIFICATION forming part of Letters Patent No. 486,959, dated November 29, 1892.

Application filed February 21, 1890. Serial No. 341,346. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. SELLERS, of Ridley Park, county of Delaware, State of Pennsylvania, have invented a new and useful Improved Rail-Tie, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to the construction of railroad-ties and the devices used in connection therewith to fasten the rails thereto.

The object of my invention is to provide an improved metallic tie which can be easily and cheaply made, and which will be free from the tendency to shift its position on the ballast either longitudinally or vertically—a tendency which has been found very objectionable in many of the metallic ties heretofore devised.

A further object of my invention is to provide improved devices for securing the rails to the ties and which will permit the shifting of the rails sidewise in order to compensate for wear on the inside of the rail-head and keep the gage of the track true without altering the position of the tie; and a further object is to provide a convenient base for switch-rails.

The nature of my invention will be best understood as described in connection with the drawings in which it is illustrated, and the novel features which I desire to protect by Letters Patent are hereinafter clearly stated in the claims.

In the drawings, Figure 1 is a side elevation of one of my improved ties, showing the rails secured upon it. Fig. 2 is an enlarged side elevation of one end of the tie and the rail secured upon said end. A portion of the rail-supporting surface is cut away to show the manner in which the inner clip is attached to the tie. Fig. 3 is a plan view of the same portions of the tie and its connections as are shown in Fig. 2. Fig. 4 is a cross-sectional view of the tie, taken on the line xx of Fig. 3. Fig. 5 is a plan view of one of the clamps used for holding the rail in place. Fig. 6 is a sectional view of the said clamp, taken on the line yy of Fig. 5. Fig. 7 is a plan view of a metallic plate or liner used in connection with my clamp. Fig. 8 is a sectional view of the

said liner taken on the line zz of Fig. 7. Fig. 9 is a side elevation of my tie with the switch-rail support secured to it. Fig. 10 is an enlarged elevation of the part of the tie on which the switch-rail support is secured, showing said support, both it and the tie being partly in section. Fig. 11 is a plan view of the above parts; Fig. 12, a perspective view of the switch-rail support, and Fig. 13 a view showing a modification of my device.

A is my improved metallic tie, which is formed with downwardly-extending edges a' , fluted or corrugated in the manner shown and connected by the upper portion a . The sides, preferably, do not extend downward at right angles to the top a of the top, but flare out, as is best shown in the sectional view, Fig. 4. By fluting or corrugating the sides of the tie they are made, as it were, to interlock with the ballast of the road-bed, which, of course, extends into the corrugations and thus effectually prevents any lateral movement of the tie upon the ballast. This takes place not only on the inside and outside of the sides of the tie, but along its bottom edge, which is also fluted, as shown, in consequence of the fluting of the sides, and this wave-like form of the bottom edges of the tie is advantageous, also, in facilitating the packing of ballast beneath the tie. The purpose of having the sides a' of the tie extending outward in the way shown as to counteract the tendency of the tie to cut its way down through the ballast as it would do if it rested upon two parallel flanges. By flaring them out as the tie is made the effect is to bind the ballast together and lessen the tendency of the tie to cut its way into it, so that for all practical purposes the disturbance of the ballast is obviated. As shown in the drawings, the corrugations in the flared sides a of my tie are deepest along the bottom edge of the sides a , and gradually diminish toward the top, the metal being, as it were, crimped along its edges. This way of corrugating the sides of the tie is far preferable to any other, giving the divided wave lines along the edges of the tie and being easily formed. I prefer to make the ends of the tie as shown at a^2 —that is, to bend down the metal at this point as well as along the sides. This corrugation

of the sides or sides and ends of the tie is not only advantageous for the reasons already stated, but also because it develops the greatest strength of tie for the minimum amount of metal. The transversely-formed corrugations may extend across the top a of the tie, as is shown in Fig. 13, and whether formed across the edges or the top, or across both of them, said corrugations serve to engage the ballast and prevent the tie from slipping, and this is true whether the tie is used, as shown, with its flanges extending down or whether it is turned up and laid with its top a down upon the ballast. I prefer to strike up a portion of the tie at each end to serve as a bearing-surface for the rails. This struck-up bearing-surface is represented at a^3 , and it is a desirable feature for several reasons, notably because it enables me to cover the entire body of the tie with the exception of the bearing-surface for the rail with ballast so maintaining a more equable temperature by protecting it from the direct influence of the sun, so diminishing the variations in the length of the tie with consequent alterations of the gage of the road.

C C' are the clamps which when attached to the tie, as shown in the drawings, hold the rail in position thereon. The clamp C is secured to the tie in a permanent way, as by rivets D D, passing through holes c' in the clamp and a^4 in the bearing-surface of the tie. The clamp C' is adjustably secured to the tie, as by bolts E E, passing through holes a^4 in the bearing-surface of the tie and a slotted hole c' in the clamp and tightened by means of a nut E'. In all respects, except that I preferably form the hole c' in clamps C in the form of a slot, as shown, the two clamps are identical in construction, consisting of a flange c , adapted to rest upon the tie and by which they are secured to the tie, an inclined flange c^2 , formed so as to extend over the base of the rail, as shown, and an upwardly-extending flange c^3 , which extends along the web of the rail between its head and base, and the clamp is preferably formed in its center with a conical corrugation, as c^4 , extending from the upper part of the flange c^3 down to the outer part of the flange c^2 , the said corrugation greatly strengthening and increasing the rigidity of the clamp and forming a ready means for securing the liners.

F is a metal plate or liner adapted to extend along the web of the rail between its base and head and to be held in place by the clamp C or C'. Preferably it is formed, as shown, of a plate f , with a corrugation f' in its center corresponding in form to the inside of the similar corrugated portion c^4 of the clamp by corrugating clamps and liners to the same form. The latter are secured in place without the aid of bolts. One or more of these plates or liners are secured on the inside of the rail and between it and the clamp C', as shown in Fig. 2. It is well

known that the inner edge b of the rail-head is worn away by the flanges of the car-wheels passing on the track, and when this wear is continued to such an extent as to impair the gage of the track I remove the clamp C', take out a liner F, and moving the rail over toward the center of the track, insert the liner between it and the clamp C, and then again clamp the rail in place by means of the justable clamp C'. This being done on the whole series of ties compensates for the wear of the rail and restores the true gage to the track without disturbance of the cross-tie on the ballast.

H (see Figs. 9 to 13) is an adjustable rail-support intended to be secured upon such of the ties A as are crossed not only by the regular track, but by one or more rails B' of a switch. It consists of a rail-supporting platform h^2 , which, as shown, is similar to the platform a^3 of the tie. This platform is struck up from a base h h' , which is corrugated like the tie and so as to fit closely over it, and it is secured in place by bolts or rivets passing through it and the tie, as shown. This platform or rail-support H is of course adjustable along any part of the tie A, except where the supports a^3 are formed and where it would not be required for a switch-rail. The corrugations in the base of the support H interlock with those of the tie and it is thus effectually held against any tendency to slip or move longitudinally along the tie and does not depend upon bolts or rivets to resist this strain, while, as aforesaid, it can be easily adjusted upon any part of the tie over which a switch-rail will pass.

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

1. A metallic railway-tie having supporting-surfaces for the rails elevated above the plane of the top of the tie and downwardly-extending corrugated sides.

2. In combination with a railway-tie, rail-clamps C C', the clamp C being permanently and clamp C' adjustably secured to the tie, and one or more liners, as F, adapted for insertion between the clamps and the web of the rail.

3. In combination with a railway-tie, rail-clamps C C', having corrugations, as c^4 , formed in them, the clamp C being permanently and the clamp C' adjustably attached to the tie, and a corrugated liner or liners F, adapted to lie between the clamps and the web of the rail, all substantially as and for the purpose specified.

4. In combination with a metallic railway-tie having transverse corrugations formed in its body or sides and elevated rail-supports, and an adjustable rail-support with a corrugated base adapted to fit over the corrugations of the tie.

5. In combination with a metallic railway-tie A, having corrugated sides a' and elevated

5 rail-supports a^3 , rail-clamps C C', having a flange c, adapted to rest upon the base of the rail, a flange c^2 , adapted to extend along the web to the rail-head, and a conical flare c^4 , extending from the upper part of flange c^3 toward the outer edge of flange c^3 , the clamp C being permanently and the clamp C' adjustably attached to the tie, and a liner or

liners F, adapted to lie between the flange c^3 and the web of the rail, all substantially as 10 and for the purpose specified.

GEO. H. SELLERS.

Witnesses:

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