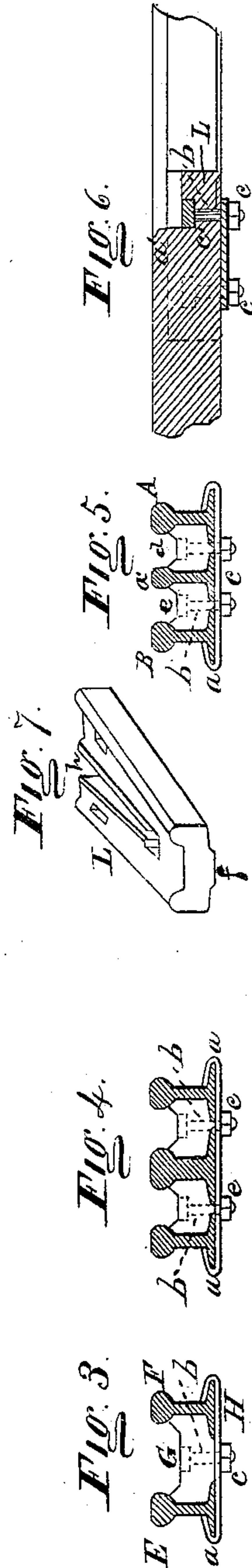
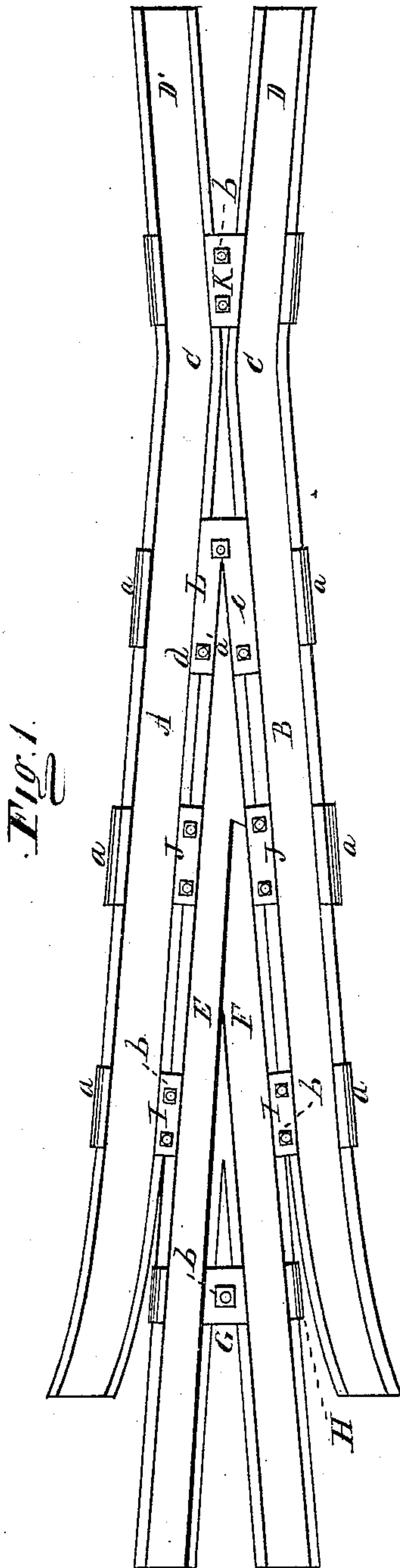
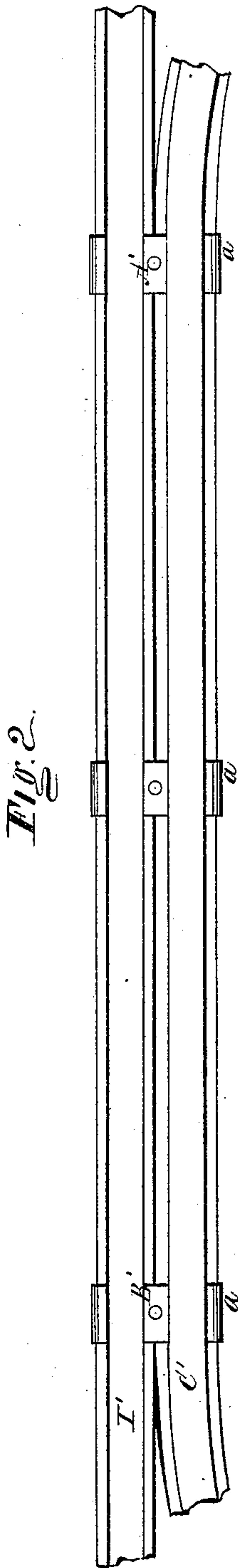


W. C. QUIGLEY.
RAILWAY FROG.

Patented Aug. 9, 1881.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM C. QUIGLEY, OF GALION, OHIO.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 245,315, dated August 9, 1881.

Application filed January 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. QUIGLEY, of Galion, in the county of Crawford and State of Ohio, have invented a certain new and Improved Railway-Frog; and I do hereby declare that the following is a full, clear, and complete description thereof.

The nature of my invention relates to railway-frogs and crossings; and the object in view is to avoid making bolt-holes in the rails, and to dispense with the use of a heavy iron bed-plate—an expensive but an essential element in railway-frogs as usually constructed—the invention being an improvement of a railway-frog and crossing for which a patent was granted to me, December 16, 1869, No. 222,734.

A full and complete description of my improvement in frogs is set forth and described in the following specification, reference being had to the annexed drawings, making a part of the same, in which—

Figure 1 is a plan view of my improved frog. Fig. 2 is a plan view of a guard-rail having applied thereto the principle of the frog-structure. Figs. 3, 4, 5, 6, and 7 are the detached sections, to which reference will be made.

Like letters of reference refer to like parts in the several views.

In the drawings, A and B, Fig. 1, represent the side rails of a frog, and C C the curves to give them the direction of the rails of the intersecting tracks, of which tracks they form a part. E and F are the central convergent rails of the frog, which are also parts of the rails of the intersecting tracks, the rail E being a continuation of the diverging part D, and the rail F a continuation of the diverging rail D'. These several specified parts of the frog are substantially like those parts of frogs in ordinary use; but instead of being secured down upon an iron bed-plate and to each other by bolts passing through the web of the rails in the ordinary way the same end is accomplished by stay-blocks, substantially as follows:

Between the central converging rails, E and F, is inserted a stay-block, G, Fig. 1, adapted to fill the space between the two rails, as seen in Fig. 3, in which it will be observed that the block abuts against the webs of the rails and extends upward to the head, and that the base

of the block rests upon the foot of the rails, while a rib along the under side of the block lies between the edges of the foot of the rails, and flush with the under side thereof, as seen in the drawings. The block thus fitted between the rails is retained in place by a clamp, H, which extends transversely across the under side of the rails, immediately under the block. Said clamp consists of an iron plate, the extreme ends of which are turned upward and back over upon itself, forming a hook, a, adapted to embrace the foot of the rail, as seen in Figs. 3 and 4 of the drawings.

I, J, and K are also stay-blocks, differing from the block G, above described, only in so far as adapting them to the difference in the spaces between the rails, said spaces being more or less wide, tapering or straight, according to the position of the rails in relation to each other. The several stay-blocks and clamps are bound to the rails by a bolt or bolts, b, Figs. 3 and 4, passing downward through the blocks and their respective clamps, which are thereby bound firmly together by nuts c on the under side of the clamps.

In my patented frog above referred to the terminal point *a'* of the converging rail E was held in its position to the side rails by a single stay-block and clamp. This particular part of the frog structure is the most exposed to the wearing and percussive action of the wheels of the train, and therefore requires to be more firmly and securely sustained than the rest of the structure, to resist the strain to which it is subjected, in view of which my former frog is found wanting in full security at this point. Therefore, to re-enforce this part of the frog, I use a bifurcated stay-block, L, Fig. 1, a detached perspective view of which is shown in Fig. 7. Said block, as will be seen in said figure, instead of being a single short solid block placed between the side rails, is one of considerable length and branching, one branch, *d*, of which extends back from the terminal point *a'* along between the rail E and the side rail, A, and the other branch, *e*, extends back along between the said terminal point and the side rail, B, while the terminal point *a'* is secured between them, as shown in Fig. 5, a transverse section.

The point a' is fitted in the tapering slot h of the block L, Fig. 7, which block is in close contact with the webs of the rails and extends up to the heads, as seen in Fig. 5. The base of this block rests upon the foot of the rails, with a rib, f , or projection on the under side, which lies between the bases of the rails. The upper face of the block L is grooved, as seen at e d , Fig. 5, to allow the passage of the flanges of the wheels without touching. The terminal point a' is thus re-enforced by the branches of the bifurcated block by their fitting respectively in the spaces between the point and the side rails, substantially as the single solid blocks fit in their respective places, as above described.

The arms or branches of the bifurcated stay-blocks may be extended along between the converging rails and the side rails, A and B, more or less distant, as the nature of the structure may determine, and so far between the rails as to dispense with the blocks I and J. The stay-blocks and rails are secured together in place by a clamp and bolts, substantially as are the solid single blocks.

The frog-structure, by being re-enforced by the use of the bifurcated block, is fully enabled to withstand all the strain and percussive violence that may be exerted upon it by the heaviest strain, and that without showing any weakening of the parts further than the natural wearing of the material.

Fig. 2 represents a guard-rail having applied thereto the blocks and clamps for binding them together.

It will be observed that the blocks A' and B' are placed at the junction of the curve of the rail C' and the straight-line rail I'. The

blocks, being placed at that particular point, prevent the yard-man from getting his foot caught between the rails, as his toe will strike against the block, thus preventing his foot from becoming wedged between the rails, and avoiding what are sometimes fatal accidents.

On examination of Fig. 6 it will be observed that the extreme point a' of the converging rails rests against the shank of the bolt, and that a portion of the end of the rail above the shank is cut back, thereby forming a shoulder, c' , below the head of the bolt, and upon which shoulder the head rests; hence, on screwing down the bolt, the point of the rail is held down by the bolt-head, thereby adding to the security of that part of the frog structure, which is re-enforced by the block L, through which the bolt passes in securing the point of the rail.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In railway-frogs, the bifurcated block L, formed substantially as described, provided with bolts and clamps, in combination with the central converging rails, EF, and side rails, for the purpose set forth.

2. In frog structures for railways, a shoulder, c' , formed in the extreme end of the converging rail E of the frog, in combination with the stay-block, bolt, and clamps, substantially as described, and for the purpose specified.

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

WILLIAM C. QUIGLEY.

Witnesses:

JO. M. MARTIN,
J. H. BURRIDGE.