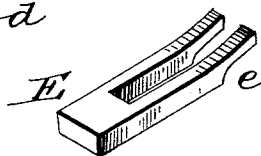
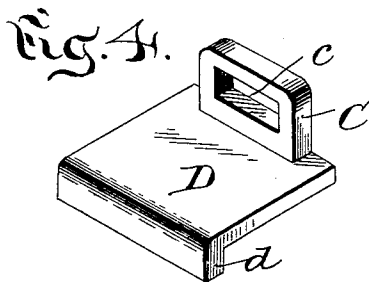
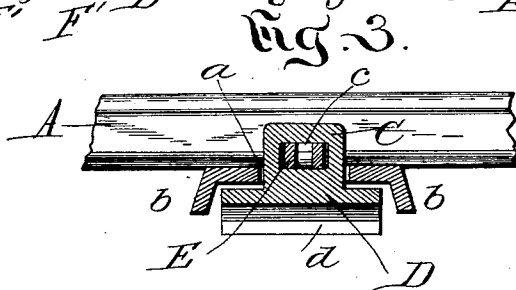
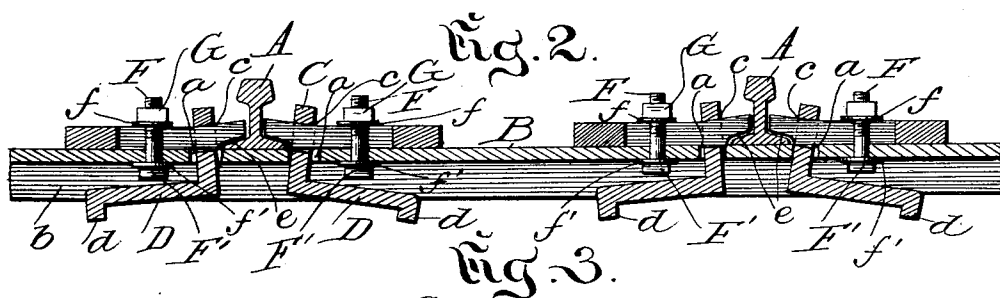
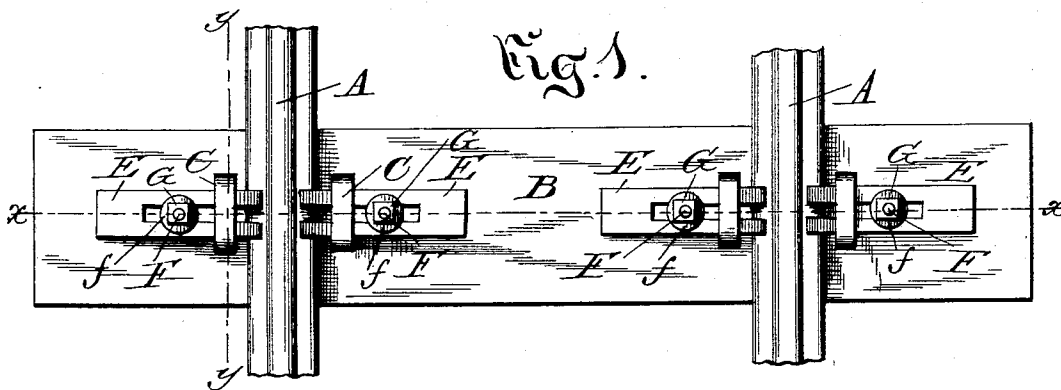


(No Model.)

L. GOLDER.
RAILWAY TIE AND FASTENING.

No. 541,325.

Patented June 18, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEWIS GOLDER, OF CLEVELAND, OHIO.

RAILWAY-TIE AND FASTENING.

SPECIFICATION forming part of Letters Patent No. 541,325, dated June 18, 1895.

Application filed November 13, 1894. Serial No. 528,654. (No model.)

To all whom it may concern:

Be it known that I, LEWIS GOLDER, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Railway-Ties and Fastenings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan or top view of one of my improved railway-ties and its fastenings for the rails. Fig. 2 is a longitudinal sectional view through the tie and fastenings on the vertical plane indicated by the broken line marked *x x* in Fig. 1. Fig. 3 is a transverse sectional view on line *y y* in Figs. 1 and 2. Fig. 4 is a perspective detail view of one of the fulcrumed bottom plates or binding-plates removed from the tie, and Fig. 5 is a perspective detail view of one of the bifurcated rail clamps or clips removed from the rail and tie.

Like letters of reference designate corresponding parts in all the figures.

My invention relates to metallic railway-ties of that type which are provided with locking-attachments for fastening the rails to the tie, and consists in a novel arrangement and combination of the rails, tie, and fastening-devices, whereby the rails are locked firmly to the ties by the weight of passing trains operating upon a pair of lever-plates located beneath the tie and which bind the rail-clips or clamps against the base or bottom-flange of the rail; substantially as will be hereinafter more fully described and claimed.

On the accompanying drawings, the reference-letter A denotes the rails and B one of the metallic ties, which is cast with parallel and slightly diverging side-flanges, *b b*, as usual. Each rail A is bedded upon the flat top of the tie between, and impinging with its base against, two parallel transverse slots *a a*, through which are inserted, on opposite sides of the rail, the apertured, right-angled lugs C of the lever-plates or binding-plates D; one of which is shown in detail in Fig. 4. Each of these plates (of which there are four to each

tie, viz., two at each end, for each rail) consists of a flat, square or rectangular plate D, provided at one end, projecting upwardly at right angles with a lug C having a rectangular aperture *c*, and at the opposite end or side with a depending flange *d*, of the same width as the plate.

Each rail is held in place firmly upon the tie, between its appropriate pair of slots or apertures *a a*, by means of a pair of bifurcated clips EE, the two parallel limbs of which straddle a bolt F, inserted vertically through the flat top of the tie and having a washer, *f'*, placed upon it between its head *F'* and the under side of the tie. Another washer, *f*, is placed upon the upwardly projecting, screw-threaded end of the bolt so as to bear against the top or upper side of the bifurcated clip or fastening E, which is clamped between the flat top of the tie and the superimposed washer *f* by means of a nut, G. The bifurcated end of clip E is inserted through the rectangular aperture *c* in the right-angled lug C on plate D, which, as we have seen, is inserted through its registering slot *a* in the flat top of the tie-plate. The under side of the two parallel limbs of the clip E, which project through the apertured lug or projection C, is cut off so as to form a recess *e*, whereby the inner ends of both clips, arranged opposite to each other, on opposite sides of the rail, are enabled to overlap and press or bear against the flanges of the rail-base, as clearly illustrated in Fig. 2.

From the foregoing description, taken in connection with the drawings, the combination of the rail, tie, and fastening devices, and the operation of the latter, will readily be understood. By reference to Fig. 2 on the drawings it will be observed that each of the plates D, on the under side of the tie-plate, rests with its end-flange *d* upon the ballast H, and bears with its flat top or upper face against the head *F'* of the bolt F, thus forming a lever for which the bolt-head operates as the fulcrum. From this construction and arrangement it follows, that when heavy pressure is brought to bear upon the rail—as, for example, by trains passing over the road—bearing down upon the rail as indicated by the arrows, this downward pressure will be taken up by the flat top of the tie-plate upon which the rails are bedded; and as the depending flange *d*,

which supports one end of each of the bottom-plates or lever-plates D upon the ballast, extends farther or deeper down than the parallel bottom-flanges *b b* of the tie-plate, it follows that these transverse bearings or flanges *d d* will operate as fulcra for the tie, so as to tilt or rock the plates D upon their fulcra F, as indicated by the arrows in Fig. 2, and thereby draw the apertured lugs or projections C down against and upon the inserted ends of the bifurcated fastening-clips E where these overlap and bear against the adjacent sides or flanges of the rail-base, so as to press upon the rail-base and bed it firmly upon the tie-plate with a degree of pressure approximately commensurate to the weight or pressure to which the rails themselves are subjected.

If it is desired at any time to remove the rails, for repair or renewal, all that is necessary is to unscrew and loosen the nuts G, when the bifurcated clips E can readily be slipped

out of their apertured lugs C; thus releasing the rail-base so that the rails can be lifted off the tie and removed.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination of the rails A; flanged and slotted tie-plate B; lever-plates D having depending bearing-flanges *d* and upwardly-projecting apertured lugs C; bifurcated clips E recessed on the under side of their bifurcated ends; bolts F, washers *f f'* and nuts G; all constructed and combined substantially as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

LEWIS GOLDER.

Witnesses:

WILLIAM GREEN,
VICTOR GOURNWALD.