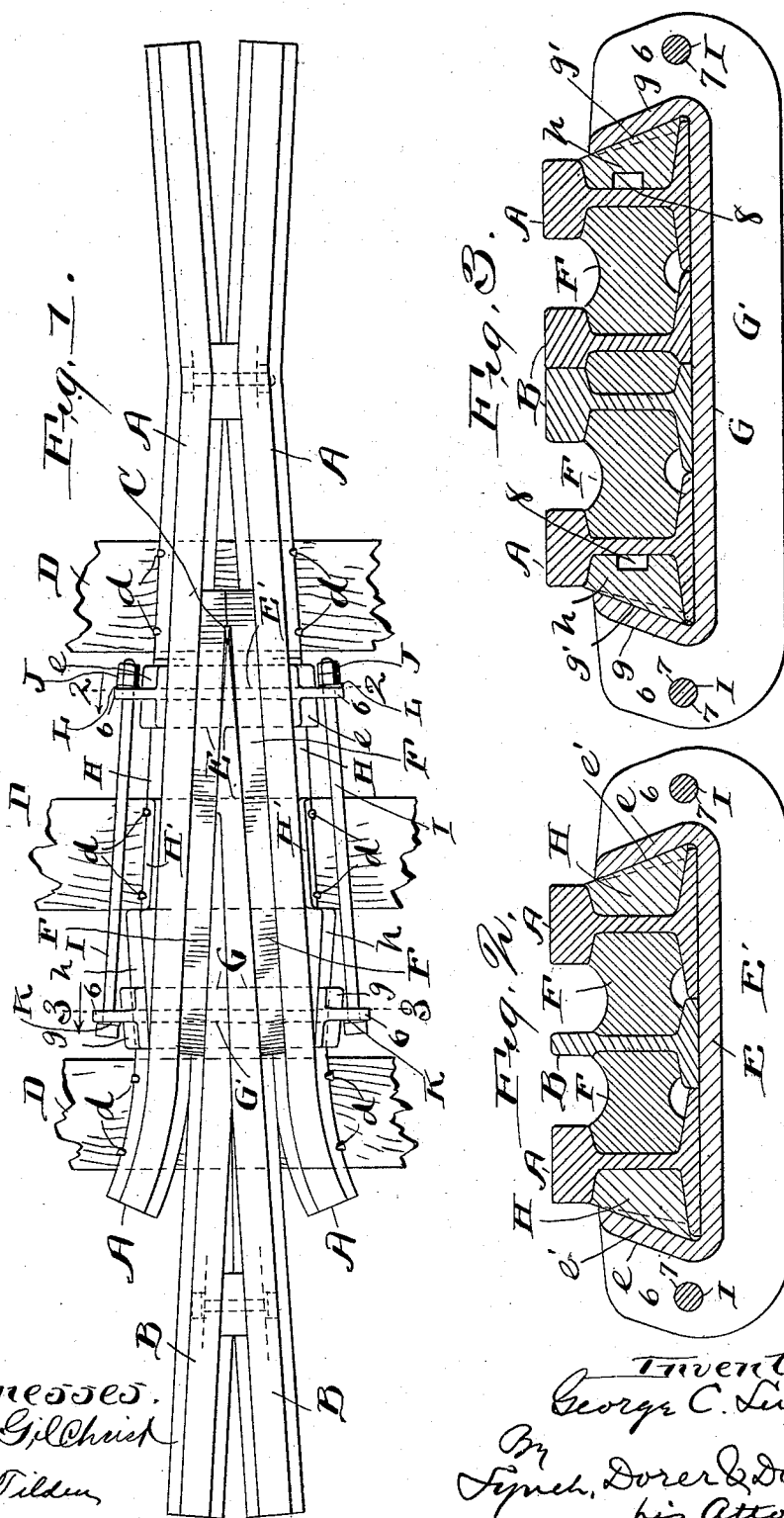


2 Sheets—Sheet 1.

No. 565,998.

Patented Aug. 18, 1896.



Witnesses.
E. B. Gilchrist
Ella E. Tilden

Twenty Cor.
George C. Lucas
By
Fynch, Dorer & Donnelly
his Attorneys

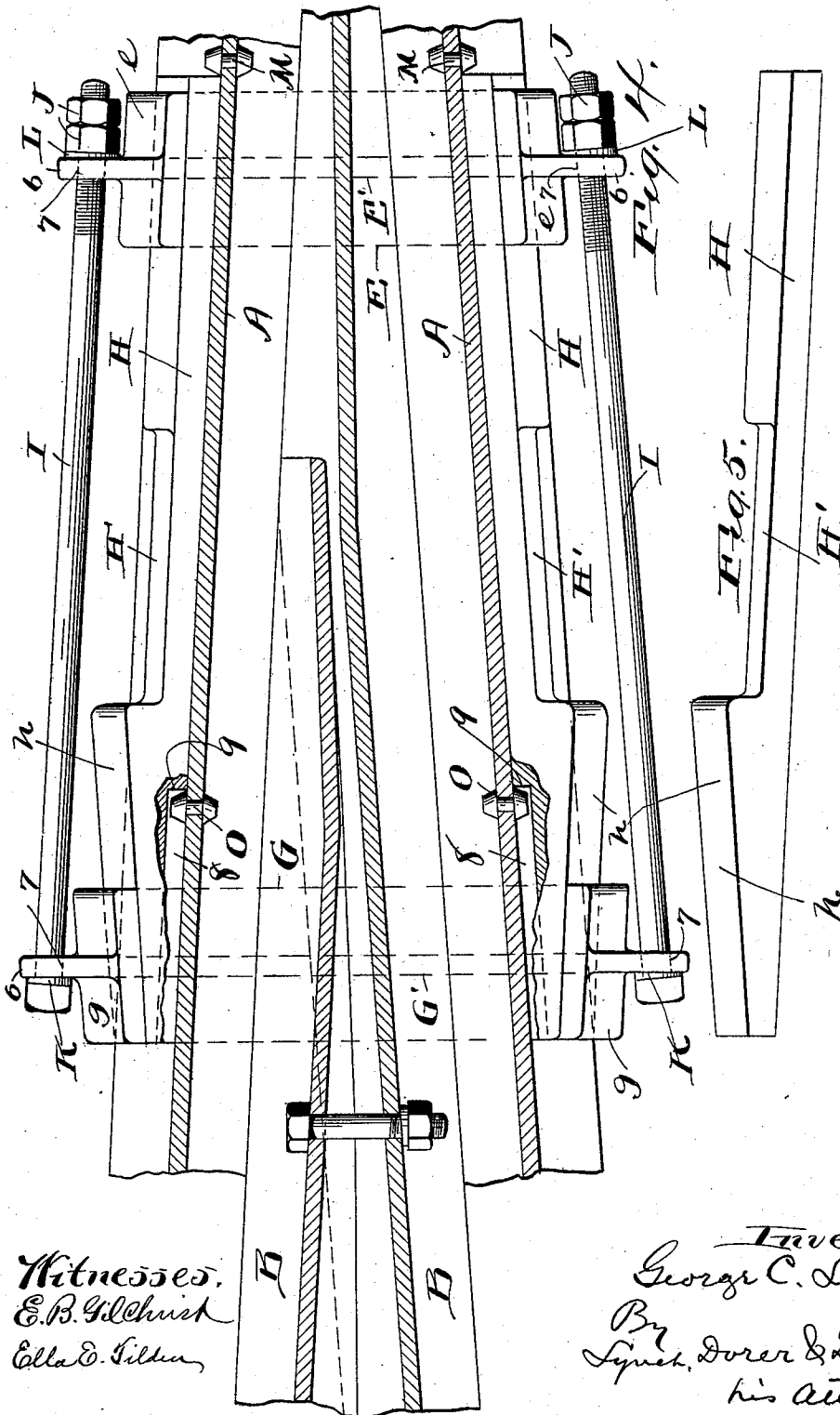
(No Model.)

2 Sheets—Sheet 2.

G. C. LUCAS.
RAILWAY FROG.

No. 565,998.

Patented Aug. 18, 1896.



Witnesses.
E. B. Gilchrist
Edna E. Sillman

Inventor.
George C. Lucas
By
Sykes, Dorer & Donnelly
his Attorneys

UNITED STATES PATENT OFFICE.

GEORGE C. LUCAS, OF CLEVELAND, OHIO.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 565,998, dated August 18, 1896.

Application filed May 6, 1896. Serial No. 590,474. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. LUCAS, of Cleveland, Cuyahoga county, Ohio, have invented certain new and useful Improvements in Railway-Frogs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in railway-frogs; and it consists in certain features of construction and combinations of parts hereinafter described, and pointed out in the claims.

The object of my invention is to clamp the rails and interposed filling of the frog together by a construction exceedingly simple, durable, and reliable, and easily taken care of and kept in order.

In the accompanying drawings, Figure 1 is a top plan of a railway-frog embodying my invention. Figs. 2 and 3 are transverse vertical sections on line 2 2 and line 3 3, respectively, Fig. 1. Fig. 4 is a top plan showing the rails in section and having portions broken away to more clearly show certain features of construction. Fig. 5 is a top plan of one of the wedge-forming bars.

Referring to the drawings, A A designate the outer rails or wing-rails of the frog, and B B represent the converging pointed inner rails. One of the rails B is shorter than the other and is called the "short-point" rail, and the other inner rail, the long-point rail, terminates in the point C of the frog.

Fig. 1 shows the wing-rails of the frog secured to railway-ties D by spikes *d*, and filling-blocks F are interposed between the outer rails and inner rails. The wing-rails, at opposite sides, respectively, of the pointed rails, converge in the direction of the frog's point, and said converging portions of the wing-rails rest upon two clamping-bars or yokes E G, arranged a suitable distance apart and made, preferably, of steel or wrought metal. Yoke or bar E extends in under the rails of the frog at or near the latter's point, and is consequently shorter than bar or yoke G, that extends in under the rails of the wider portion of the frog a suitable distance from said point.

Yoke or bar G is preferably ribbed upon its under side, as at G', to reinforce the same,

and bar or yoke E is similarly ribbed upon its under side, as at E', to reinforce it.

Member E terminates at each end in an upwardly-projecting jaw *e*, having, preferably, an undercut face *e'*, engaging the downwardly and outwardly sloping surface of a bar H, interposed between said jaw and the web of the adjacent wing-rail of the frog. That is, two bars H H engage the outer sides of and extend parallel with the different wing-rails, respectively, and each bar H fits the space between the head and base of the respective rail, and each jaw *e* overlaps the outer side of and is arranged parallel with the engaging bar H. It will be observed, therefore, that by shifting or adjusting bar E in the direction of the wider portion of the frog the rails and interposed filling of the frog are firmly clamped together by jaws *e* and the bars interposed between said jaws and the wing-rails.

Bar or yoke G terminates at each end in an upwardly-projecting jaw *g*, having, preferably, an undercut face *g'*, engaging the downwardly and outwardly sloping surface of a wedge *h*, interposed between said jaw and adjacent wing-rail from the inner end of the jaw. That is, two wedges *h h* engage the outer sides of the webs of the different wing-rails, respectively, and each wedge is adapted to fit between the head and base of the respective rail, and each jaw *g* overlaps and is arranged parallel with the outer side of the engaging wedge. The face of each jaw *g* and the outer side of the engaging wedge *h* have a trend or inclination longitudinally of them in a direction opposite or contrary to the inclination or trend of the portion of the adjacent wing-rail engaged by said wedge. It will be observed, therefore, that when wedges *h h* are held stationary and member G adjusted in the direction of the larger ends of the wedges the members of the frog will be firmly clamped together. Wedges *h h* are preferably integral with the different bars H H, respectively, and a web H' connects each wedge with and forms a part of the adjacent bar H.

Bolts I and nuts J are instrumental in securing the clamping-bars in the desired adjustment. Each of the jaws of the clamping-bars is ribbed upon its outer side, as at *g*,

not only to reinforce it, but to form a flange or ear having a bolt-hole 7, through which a bolt I extends. Two bolts I I are arranged at opposite sides, respectively, of the frog.

- 5 Each bolt extends through the bolt-holes in the ribs or flanges of the two clamping-jaws at the respective side of the frog, and a washer K is interposed between the head of the bolt and the outer side of the ribs on one
10 of said jaws, and another washer L is interposed between the nut or nuts on the bolt and the outer side of the ribs on the other jaw.

By the construction hereinbefore described both clamping-bars are shifted or adjusted
15 toward each other upon tightening the nut or nuts upon the aforesaid bolts, (jaws *e e* being moved in the direction of the wider portion of the frog and jaws *g g* being moved toward the larger ends of the wedges *h h*,) as
20 required to cause all of the clamping-jaws to act in clamping the members of the frog together. The construction is exceedingly simple and durable, and there is no liability of a displacement of any of the frog's members.

- 25 When the latter show enough wear, from long or severe usage, to render them loose, the nuts upon the bolts are tightened and the parts clamped together as tightly as ever.

The wedge-forming bars H are positively
30 prevented from displacement endwise, preferably by means of rivets M and O, secured to the webs of the wing-rails. (See Fig. 4.) Said bars are recessed or grooved, as at 8, at the inner sides of the wedges, and rivets O
35 engage the end walls or shoulders 9, formed at the inner ends of said grooves, and rivets M are contiguous to the opposite ends of said bars.

What I claim is—

- 40 1. In a railway-frog, the combination with the inner rails, the wing or outer rails' inwardly-converging portions adjacent to the inner rails, and the filling interposed between said wing-rails and inner rails; of two bars
45 H H bearing against the outer sides of the webs of said portions of the different wing-rails, respectively, the said bars, at their farther separated ends, terminating in wedges whose outer surface's trend longitudinally of
50 the wedge is opposite or contrary to the trend of the adjacent portion of the adjacent wing-rail; a clamping-bar extending transversely of the under side of the wedges of the aforesaid wedge-forming bars and terminating, at
55 the outer side of each wedge, in an upwardly-projecting jaw bearing against said wedge's outer side; another clamping-bar extending transversely of the under side of the frog and in under the opposite ends of the wedge-forming
60 bars and terminating, at the outer side of each wedge-forming bar, in an upwardly-projecting jaw bearing against said bar's outer side, and means for shifting or adjusting the jawed bars toward each other, substantially
65 as and for the purpose set forth.

2. In a railway-frog, the combination with

the inner rails, the wing or outer rails' inwardly-converging portions adjacent to the inner rails, and the filling interposed between said wing-rails and inner rails: of two bars
70 H H engaging the outer sides of the webs of said portions of the different wing-rails, respectively, the said bars, at their farther separated ends, terminating in wedges whose
75 outer side has a trend that is opposite or contrary to the trend of the adjacent portion of the adjacent wing-rail; a clamping-bar extending transversely of the under side of the wedges of the aforesaid wedge-forming bars
80 and terminating, at the outer side of each wedge, in an upwardly-projecting externally-flanged jaw bearing against said wedge's outer side; another clamping-bar extending transversely of the under side of the frog and in
85 under the opposite ends of the wedge-forming bars and terminating, at the outer side of each of said last-mentioned bars, in an upwardly-projecting externally-flanged jaw bearing against said wedge-forming bar's
90 outer side; two bolts arranged at opposite sides, respectively, of the frog, and extending through the flanges of the jaws at said side of the frog, and means in connection with the bolts for securing the jaws in the desired
95 adjustment, substantially as set forth.

3. In a railway-frog, the combination with the inner rails, the wing or outer rails' inwardly-converging portions adjacent to the inner rails, and the filling interposed between said wing-rails and inner rails: of two bars
100 H H bearing against the outer sides of the webs of said portions of the different wing-rails, respectively, the said bars, at their farther separated ends, terminating in wedges whose outer side has a trend opposite or
105 contrary to the trend of the adjacent portion of the adjacent wing-rail; a clamping-bar extending transversely of the under side of the wedges of the aforesaid wedge-forming bars and terminating, at the outer side of each
110 wedge, in an upwardly-projecting jaw bearing against said wedge's outer side; another clamping-bar extending transversely of the under side of the frog and in under the opposite ends of the wedge-forming bars and
115 terminating, at the outer side of each of said last-mentioned bars, in an upwardly-projecting jaw bearing against said bar's outer side; suitable means for adjusting the jawed bars longitudinally of the frog and securing them
120 in the desired adjustment, and stops formed upon the web of the wing-rails for preventing endwise displacement of the wedge-forming bars, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this
28th day of April, 1896.

GEORGE C. LUCAS.

Witnesses:

C. H. DORER,

ELLA E. TILDEN.