

No. 815,719.

PATENTED MAR. 20, 1906.

J. E. LEWIS.
RAILWAY FROG.

APPLICATION FILED JULY 20, 1905.

Fig. 1

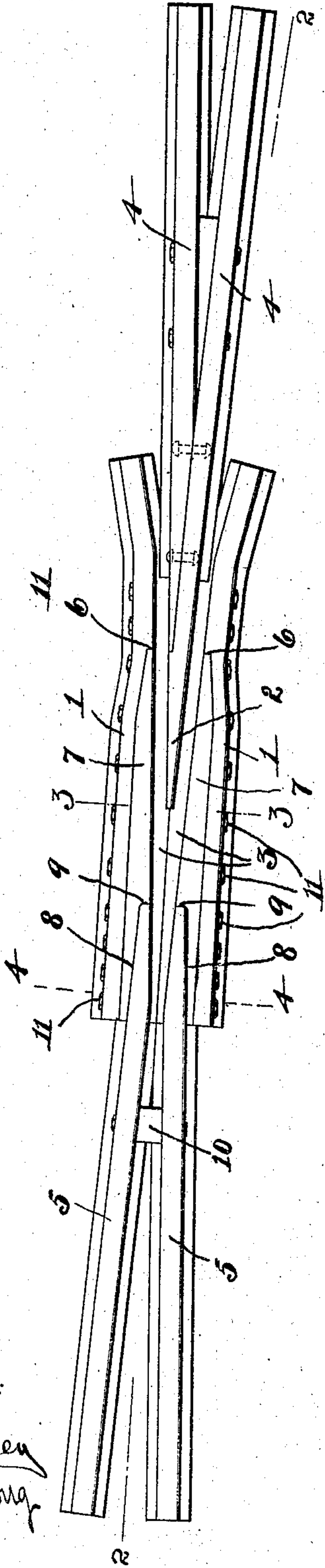


Fig. 2

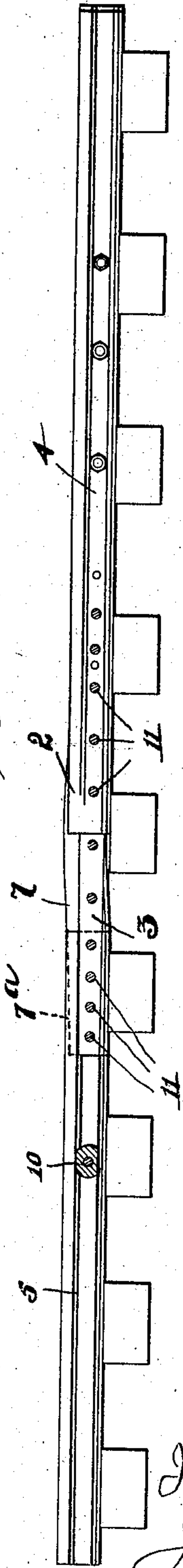


Fig. 3

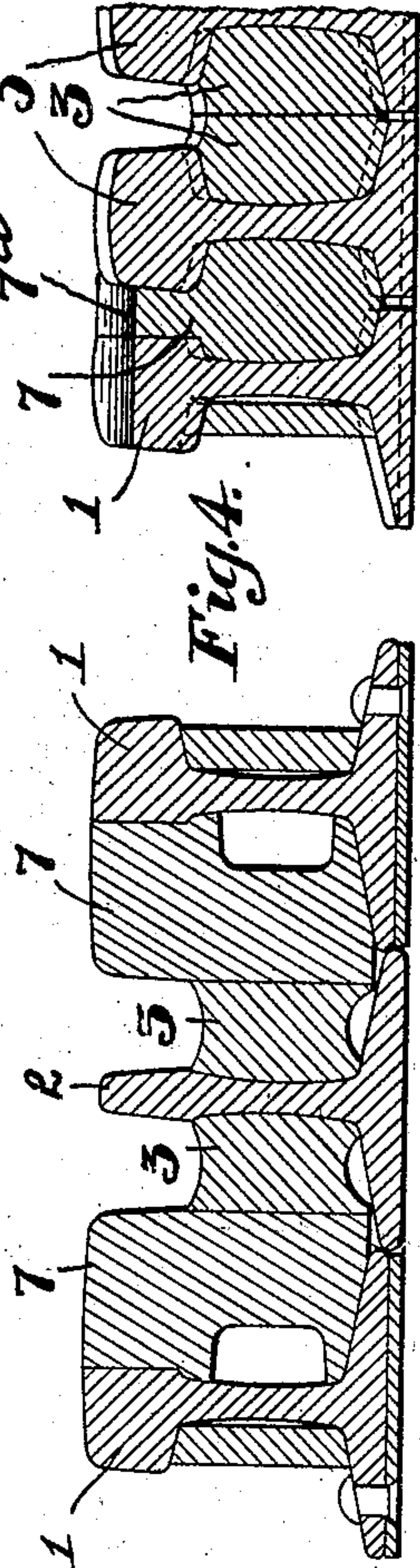
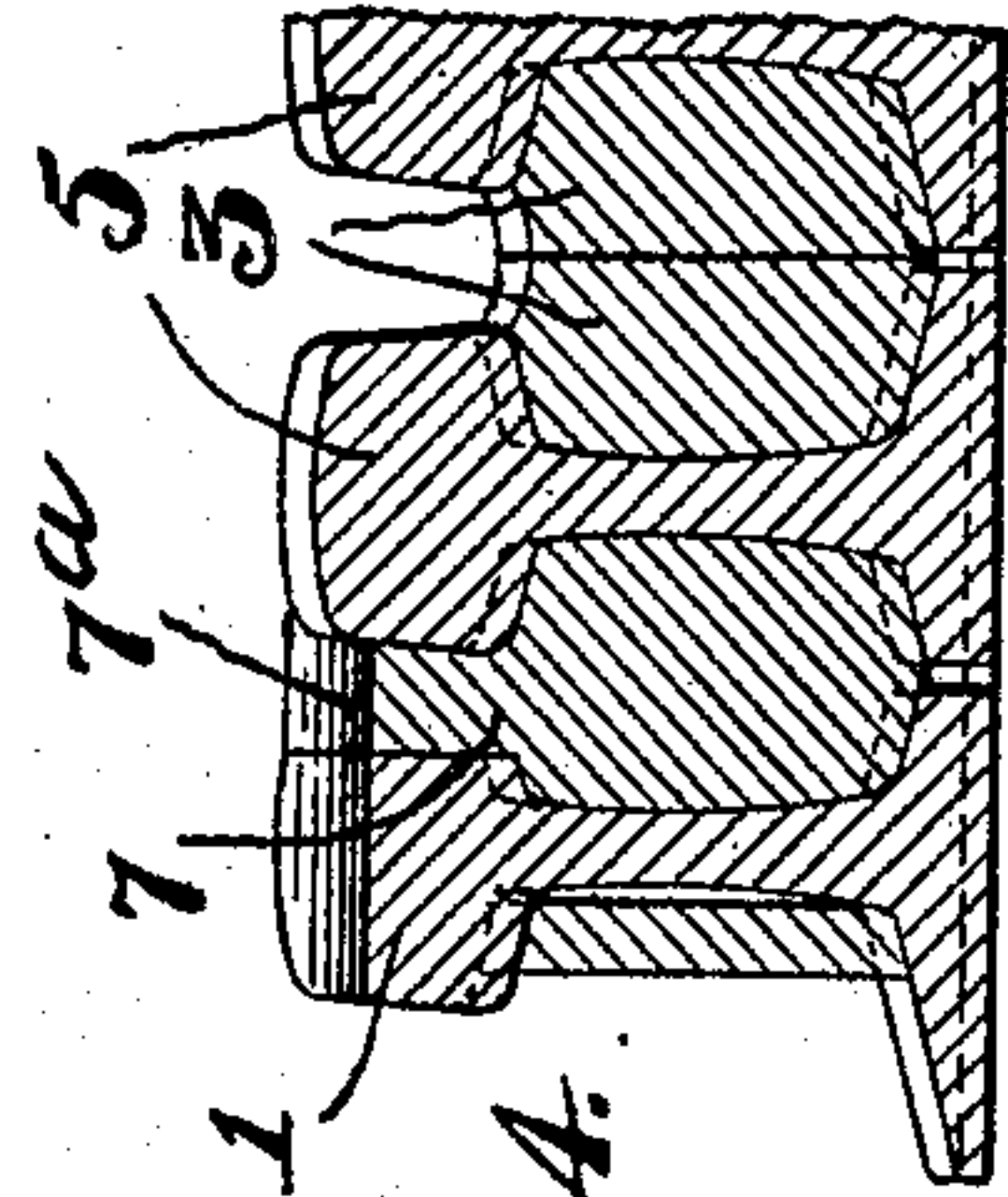


Fig. 4



WITNESSES:

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RAILWAY-FROG.

No. 815,719.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed July 20, 1905. Serial No. 270,456.

To all whom it may concern:

Be it known that I, JAMES E. LEWIS, a citizen of the United States, residing at Steelton, in the county of Dauphin, State of Pennsylvania, have invented certain new and useful Improvements in Railway-Frogs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view. Fig. 2 is a section on line 2 2, Fig. 1. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a section on line 4 4, Fig. 1.

This invention relates to that kind of railroad-frogs in which a hard-metal bearing-piece is inserted on the inner side of the wing-rails.

The primary object of the invention is to provide a frog of the kind in which said insert-piece shall be comparatively of considerable length and width and firmly held against longitudinal as well as lateral displacement.

Another object of the invention is to provide such a frog in which "guttered" car-wheels passing thereover will not wear a groove in the surface of the wing-rail, as is the case with frogs of the ordinary construction.

The exact nature of the invention will appear from the following description.

In the drawings, 1 1 are the wing-rails; 2, the point of the frog; 3, the usual intervening filling-pieces; 4 4, the two track-rails converging to form the point, and 5 5 the two converging track-rails converging at the opposite or heel end of the frog.

In carrying out my invention I cut away the inner side of each of the wing-rails from a point 6, Fig. 1, some distance back of the end of the frog-point to the end of the said wing-rails in advance of the frog-point, the ends of the wing-rails to the rear of the frog-point being bent outwardly, as seen in Fig. 1, in the usual way. I insert in the space formed by cutting away the side of the wing-rail a hard-metal bearing-piece 7, one end of which abuts against the shoulder 6, formed by the cutting away of the wing-rail. I also make in the inner side of the opposite end portion of each of the bearing-pieces an offset 8, having a shoulder 9 for the reception of the ends of the rails 5, respectively. The heads of these

ends of the rails 5 are beveled, as seen in Fig. 1, so that their inner sides are in line with the inner sides of the bearing-pieces, respectively, which latter are in line with the inner sides of the respective wing-rails beyond the shoulders 6. The rails 5 would ordinarily be separated by a filling-block 10, so as to leave the necessary space between the ends of said rails for the passage of the car-wheel flange. The bottoms of said bearing-pieces 7 rest upon the top of the feet of the wing-rails and their outer sides against the cut-away heads and the webs of said wing-rails, respectively, all as seen in Fig. 3.

In the present instance for a purpose hereinafter explained the upper surface of each of the insert-pieces 6 are inclined from the heel toward the point of the frog, beginning at the free end of said pieces 7, in a plane slightly below the level of the rails 5, as indicated by dotted lines in Fig. 2, thence gradually rising to a plane above that of the frog-point and then just beyond the front end of the latter descending gradually to the level of the point, as shown by full lines in Fig. 2. The relative height of the bearing-pieces 7 opposite the end of said point also appears in Fig. 3. The object of making the insert bearing-pieces extend above the level of the end of the frog-point and then gradually descend to such level is to preserve said point from the wear or breaking down of the narrow end thereof, which would be liable to occur if the car-wheels were permitted to come against said end when a train is passing through said frog in a direction toward said point.

The wing-rails, insert bearing-pieces, filling-pieces 3, frog-point, and the rails 4 and 5 are firmly bound together by means of through-bolts 11.

It will be seen by the construction described that there is a comparatively long and wide body of hard-metal insert extending forward and rearward of the extreme end of the frog-point, and these insert bearing-pieces are firmly held in place against longitudinal and lateral displacement, one end of the bearing-piece abutting against the shoulder 6 of the wing-rail and the shoulder 9 of the other end portion against the rail 5. Further, as is well known, after the wheels of cars have run for some time upon railroads said wheels become guttered—that is, a more or

less shallow groove becomes worn in the tread of the wheel, thus forming a false flange on the outer portion of the periphery of the wheel. This flange is narrow, and consequently in the usual construction of frogs (in which the wing-rails and track-rails 5 are integral) as a wheel passes over a wing-rail toward the point of the frog the said false flange in time cuts or wears an oblique objectionable groove in the top of the wing-rail. With my construction the car-wheel advancing toward the frog-point is, so to say, "picked up" by the insert-pieces 7 as it (the wheel) comes opposite the heel portion of the frog by the said false flange riding upon the insert-piece. The periphery of the wheel riding upon said insert-piece and passing obliquely across the said insert-piece on the way to the frog-point does not wear a groove in said insert-piece, because the latter is of very hard metal—much harder than that of the usual wing-rails.

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

1. In a railroad-frog, the combination of the frog-point, the wing-rails having the inner sides of their heads cut away from a point back of the frog-point to the forward end of said rails, the hard-metal bearing-pieces inserted in the space formed by cutting away said rail-heads and having the lateral offsets at their free ends, and the track-rails having

the beveled ends fitted to said offsets, the inner side of each of said wing-rails, bearing-pieces and beveled end of said track-rails forming a continuous gage-line, substantially as and for the purpose set forth.

2. In a railroad-frog, the combination of the frog-point, the wing-rails, having the inner sides of their heads cut away from a point back of said frog-point, to the forward end of said rails, the hard-metal bearing-pieces inserted in the space formed by cutting away said rail-heads, and having the lateral offsets at their free ends, the track-rails having the beveled ends fitted to said offsets; the inner side of said wing-rails to the rear of said bearing-pieces, the inner side of the latter, and the inner side of the beveled end of said track-rails, forming a continuous line; and the upper surface of said bearing-pieces being upwardly inclined from a point opposite to and in a plane below the top of said track-rails to a point opposite to and in a plane above that of the frog-point, and then gradually descending to the plane of the top of said frog-point, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature.

JAMES E. LEWIS.

Witnesses:

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