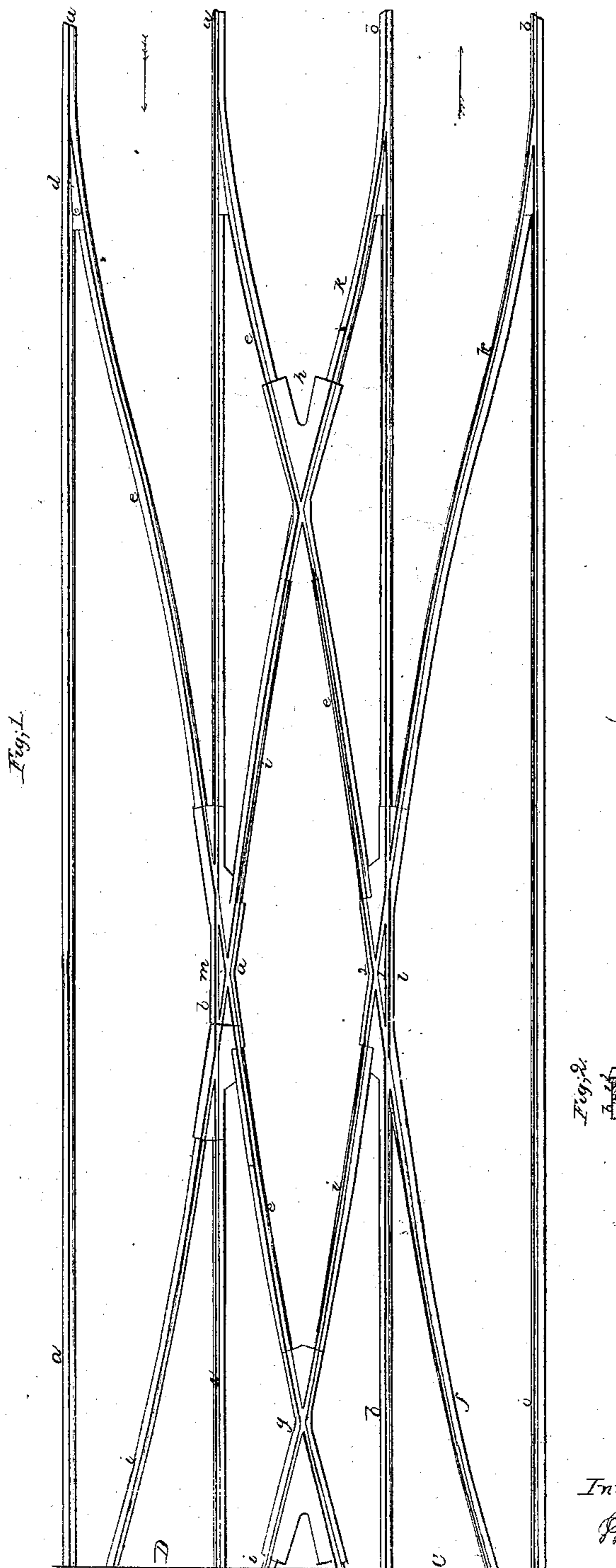


W. EBBITT.
FROG FOR RAILROAD TRACKS.

No. 33,381.

Patented Oct. 1, 1861.



Witnesses,
Lemuel W. Shull
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UNITED STATES PATENT OFFICE.

WILLIAM EBBITT, OF NEW YORK, N. Y.

IMPROVEMENT IN FROGS FOR RAILROAD-TRACKS.

Specification forming part of Letters Patent No. 33,381, dated October 1, 1861.

To all whom it may concern:

Be it known that I, WILLIAM EBBITT, of the city and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Frogs for Railroad-Tracks; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a plan of my said frogs as in place in the railroad-tracks, and Fig. 2 is a vertical cross-section of one of said frogs.

Similar marks of reference indicate the same parts.

My invention is especially adapted to city railroads. It is well known that in many instances the city cars start from one place and thence diverge and travel to different termini.

My invention is to facilitate the arrival and departure of cars from their respective stands by simplifying the frog-plates, so that a less number of switches and frogs are required than heretofore, and consequently less attention has to be given to the switches.

We will suppose that two different lines of cars have the same terminus and travel on the same tracks for a greater or less distance. We will call one line of cars C and the other D. They both approach the terminus on the track *a a* in the direction of the arrow, and both lines of cars leave by the track *b b*, traveling away from the terminus, as indicated by the arrow between the tracks *b b*. We will suppose the stand for the line of cars C to be a short prolongation of the track *b b* at the end marked C and that for the cars D to be a prolongation of the track *a a* at the end marked D. If a C car approaches on the track *a a*, it has to be switched off on the turn-out *e f* by the switch *d*, and in reaching its stand on the track *b b* crosses the ordinary frogs *g h*, and also my improved frogs *l* and *m*. Upon starting, the car C proceeds straight along on the track *b b* unobstructed by the frog *l*, that is grooved to correspond with the rails *b b*. If a car D approaches its terminus, the switch *d* is turned and the car proceeds right along the track *a a* to its stand;

but on leaving to go in the other direction said car D has to cross over onto the track *b b*. To effect this a switch (similar to *d*) at the junction of the tracks *i* and *a* is moved to direct the car onto the turn-out *i k k*, and the car crosses to said track *b b*, traveling over the frogs *g* and *h* and my improved frogs *l* and *m*.

The peculiarity of my frogs *l* and *m* consists in arranging the grooves corresponding with the grooved bars of the track in such a manner that said grooves surround a triangular piece 1 in the frogs. The object of this piece is to direct the wheels of the car and insure their proceeding in the same line as that on which they are traveling; or, in other words, if this triangular piece 1 were not used there would be three lines of grooves meeting and crossing each other at one point, and wheels approaching on one groove might be turned off and get into the wrong groove at the point of intersection. By introducing this triangular piece 1 in each frog *l* or *m* the points of intersection of the grooves are so separated that only two grooves intersect at one point instead of three. The part 2 of the frogs *l* or *m* is formed as a flange that is higher than the other portions of the frog to prevent the flanges of the car-wheels, which always come on that side of the frog, from running out of the groove. The grooves in the frog should be the depth of the wheel-flange and slightly beveled down at the ends of the grooves, so that the wheel can run either on the flange or tread, and thus avoid concussion in passing the intersections of the grooves. The frogs *l* and *m* are from the same pattern, simply turned around into the positions shown. By this arrangement I am enabled to properly direct the cars to their respective standing places, and also start them on the right track, by the use of only two switches *d* and the four frog-plates *g h l m*, while heretofore to effect this operation three switches have been required and eight frog-plates, and my two switches can be attended by one man, while heretofore two men have been required, and besides this I am enabled to get the turn-outs in a much less space, and in consequence of the intersections being di-

rectly opposite to each other there are no short lengths of rail, as heretofore, constantly getting loose.

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

1. The triangular piece 1 in the frog-plate (*l* or *m*) at the point of intersection of the three lines of track, for the purposes and as specified.

2. The arrangement of the frogs *g*, *h*, *l*, and *m*, relatively to the tracks, in the manner and for the purposes specified.

In witness whereof I have hereunto set my signature this 8th day of August, 1861.

WM. EBBITT.

Witnesses:

LEMUEL W. SERRELL,

THOS. GEO. HAROLD.