

W. Ebbitt,
Railroad Frog,

N^o 29,255.

Patented July 24, 1860.

Fig. 1.

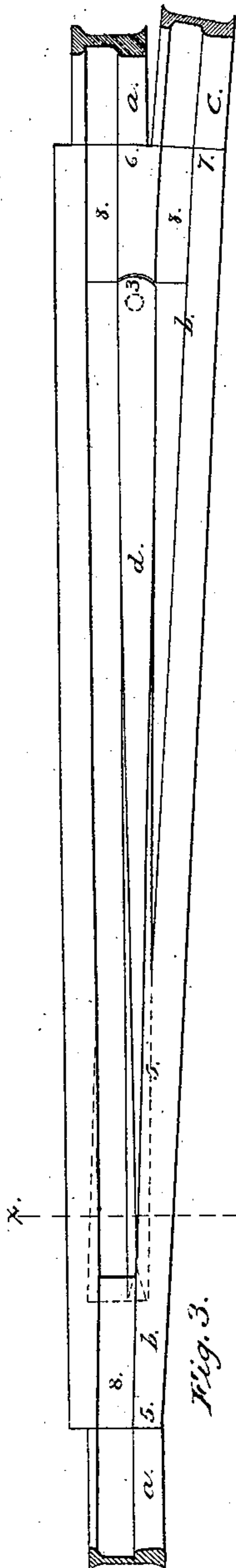


Fig. 2.

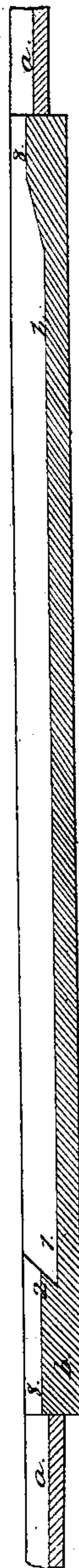
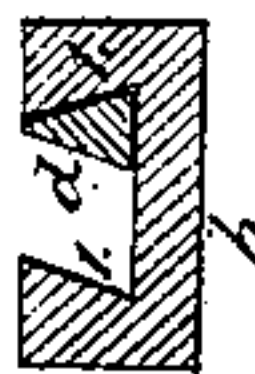


Fig. 3.



Witnesses;
Samuel W. Cornell
Chas. H. Smith

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UNITED STATES PATENT OFFICE.

WILLIAM EBBITT, OF NEW YORK, N. Y.

SWITCH-PLATE FOR CITY RAILROADS.

Specification of Letters Patent No. 29,255, dated July 24, 1860.

To all whom it may concern:

Be it known that I, WILLIAM EBBITT, of the city and State of New York, have invented and made a certain new and useful Improvement in Switch-Plates for City Railroads; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a plan of my said switch, Fig. 2 is a vertical longitudinal section, and Fig. 3 is a cross section at the line *x, x*.

Similar marks of reference denote the same parts.

In city railroads it is necessary to provide turn-outs to branch roads and for the purpose of passing from one track to the other on the main lines: for this purpose switch plates have heretofore been used in which is a tongue attached at the point from which the rails diverge, so as to direct the wheels onto either track: This tongue has heretofore been made of a tapering form but with vertical edges, and in order to maintain the necessary strength at the point of the tongue that part is left sufficiently broad and the groove in the plate is notched at its side to allow the tongue partially to enter and prevent the wheels coming directly against the entire end of the tongue: This is a great source of trouble because the notch in the plate interferes with the continuity of bearing for the wheels on the rail, and beside this the wheels run with a blow, more or less, against the projecting end of the tongue and cause the same to assume a beveled form on each side, and there is but little bearing surface on the top and the whole switch is speedily worn out: And beside the foregoing the inequalities in the switch cause the car to lurch about and the wheels come down with a violent blow when passing off one part onto another, this increases the speed with which the parts are worn out.

The nature of my said invention consists in forming the tongue of a beveled or triangular shape at and near the end, combined with an under cut rail so that the side of the tongue sets up close to the rail of the switch plate and takes the tread of the wheel jointly with the rail itself until the wheel has passed some distance onto the tongue and the car received a turning movement or direction, so that all concussion of

the wheels on the switch plate or tongue is avoided, all the difficulties heretofore mentioned are removed and the car runs over the switch plate as smoothly and noiselessly, or nearly so, as on a straight track, and the switch is no obstruction in running on the main track.

In the drawing *a*, represents a portion of one rail of the track at both ends of the switch plate *b*, and *c*, is a portion of one of the turn out rails or branch track, and my switch plate is represented as on one of the outer rails of the main track but the same might be applied to the inner rails of the double tracks in any usual position.

d is the tongue formed triangular near the end as seen in Fig. 3, and the sides of the groove in the switch plate are undercut or beveled at 1, 1, (see Fig. 3) to receive this tongue. The end of the tongue is also beveled and sets under an overhanging portion 2, see Fig. 2, which prevents the end of the tongue rising.

3, is the bolt or attachment of the tongue at the diverging point of the tracks.

The drawing represents the main track open, and it will be seen that the tread of the wheel, in running over the switch, bears on the part 5, of the switch plate and does not clear the same as the wheel runs onto the tongue until about one third the length of the tongue has been traveled over, the thread of the wheel finally passing from the part 6, onto the rail *a*. When the switch is open to the turnout the tread of the wheel travels unobstructedly over the part from 5, to 7, and the tongue *d*, taking on the inner side of the flange directs the wheel unerringly into the turnout.

In entering and leaving switch plates the cars are apt to receive concussion and not travel over the said switch steadily; this arises from the wear on the surface and passing the turnout plate on the other rail of the track to the switch: To obviate this I make the groove at the commencement and ends of the switch plate only the depth of the flanges. (These, on city railroads, in consequence of the brakes acting on the flanges, maintain an uniform size or nearly so) hence as the wheels pass onto these switch plates, or off of them the flanges take the bottom of the grooves and give direction in guiding and steadying the cars: This is shown in Fig. 2, at 8, 8; and by making the distance between the end of the tongue *d*,

and joint with the rail α , greater than usual as shown the car becomes more steady before striking the tongue and the wheels are guided better in entering the switch.

5 I have represented and described my switch plate as adapted to city railroads but I do not limit myself in this respect but intend to apply the same on any other character of railroad wherever available.

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

1. The tongue d having beveled sides at and near the ends thereof, in combination with the switch plate containing a beveled
15 or undercut groove as and for the purposes specified.

2. The steadying portion 8, 8, on the switch plate at the ends of the grooves to take the flanges of the wheels for the purposes specified, but this I only claim when combined 20 with the beveled tongue d , as set forth.

3. Forming the tongue d , with an inclined or beveled end taking beneath the part 2 of the switch to prevent the same raising as set forth. 25

In witness whereof I have hereunto set my signature this second day of July, 1860.

WM. EBBITT.

Witnesses:

LEMUEL W. SERRELL,
CHAS. H. SMITH.