B. BEVELANDER.

Street-Railway Switches.

No. 161,001. Patented March 23, 1875.

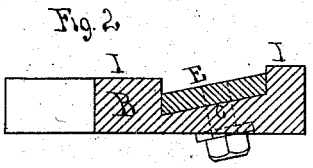

Fig. 2.

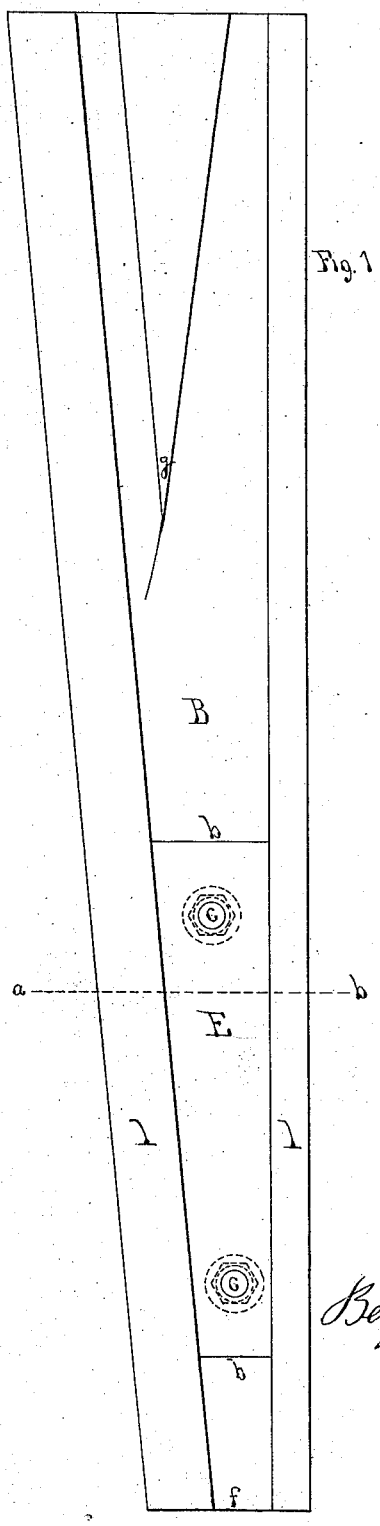

Fig. 1

Witnesses
John E Crane
Wm S. Brown

Inventor
Benjamin Bevelander

UNITED STATES PATENT OFFICE.

BENJAMIN BEVELANDER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND SIMEON L. PUTNAM, OF SAME PLACE.

IMPROVEMENT IN STREET-RAILWAY SWITCHES.

Specification forming part of Letters Patent No. **161,001**, dated March 23, 1875; application filed December 17, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN BEVELANDER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Railway-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan or top view, and Fig. 2 a cross-section on the line *a b* of Fig. 1.

This invention relates to the switches which are used in the tracks of horse-railroads for guiding the cars from one track or route to another, and it is an improvement upon my former invention, patented and dated August 11, 1874. In the use of my said former invention I have found by experiment that as the car-wheels run and at times slide laterally upon and down the inclines of the switch-rails made of cast-iron, a portion of the incline is cut or worn by the outer flanges of the wheels, so as to present a roughness or uneven surface on such portion of the incline, sufficient at times, and after considerable wear, to slightly impede the desired lateral sliding action of the car-wheels on the surface of the incline. To overcome the aforesaid difficulty I construct the switch-rail B with an opening, cavity, or recess in that part of the incline liable to become worn or cut by the car-wheel, such part being between the end *f* of the rail B and the switch-point *g* thereof, and forward of the latter and between the side rails I, and in this recess I apply a hard-metal plate, E, which is generally hardened steel. The top surface of this plate E is flush or even with the incline, and with the adjoining end surfaces *b* thereof. This hard-metal plate E is secured to and in the recess of the switch-rail by screws *c* passing through the rail into the plate, and capable of removal. This hard-metal plate confers great utility upon the said switch by largely increasing its wearing capacity, and by insuring the desired easy and free lateral sliding action of the car-wheels upon its hard smooth wearing-surface; and although it adds a trifle to the first cost of the switch, this is more than doubly compensated by the advantages resulting therefrom, as described. In practice, and if by long-continued use and wear the plate E of hard metal or hardened steel should become worn in or upon its upper side, the screws *c* may be withdrawn, and the plate removed from the recess in the rail, and turned over and reapplied in the recess, so as to bring its under side or unworn surface uppermost, and into wearing contact with the car-wheels, and in this position the plate is again secured by the screws *c*, as before. Other and newly-prepared and hardened-steel or hard-metal plates are easily and cheaply substituted for those which may, by long-continued use, become worn out on both sides, and thus the cost and expense of new switch-rails be avoided, considerably to the advantage of the party using them. Instead of hardened steel for the plates E, any other metal capable of being sufficiently hardened, or of itself sufficiently hard, may be used as a suitable substitute for the steel; and I contemplate that unannealed malleable-iron material, and some kinds of hematite iron, cast in proper form to fill the cavity in the incline of the switch-rail, may be made to endure nearly or quite as long, and as well, as the steel plates first described.

I claim as my invention—

The hard-metal plate E in the switch-rail B, between the end *f* and the switch-point *g*, and forward of the latter and between the side rails I, substantially as described.

BENJAMIN BEVELANDER.

Witnesses:

JOHN E. CRANE,

WM. S. BROWN.