

# UNITED STATES PATENT OFFICE.

ABRAHAM REESE, OF PITTSBURG, PENNSYLVANIA.

## RAIL FOR STREET-RAILROADS.

Specification of Letters Patent No. 26,523, dated December 20, 1859.

*To all whom it may concern:*

Be it known that I, ABRAHAM REESE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Rails for Street-Railroads; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawing, forming part of the specification, in which—

Figure 1, is a perspective representation of a short section of a rail detached from the sill and with a spike inserted in its spike hole. Fig. 2, is a representation of a similar section of a rail turned over so as to show the face or side which is turned down in Fig. 1.

In both figures like letters of reference denote similar parts of the rails, &c.

My invention consists in so constructing rails for street railroads as hereinafter described, both sides or faces being finished alike, so that either side may be turned uppermost, and that when one side of the rail is worn, it may be turned over and used on the other side equally as well as a new rail.

To enable others skilled in the art to make and use my improvement, I will proceed to describe more particularly its construction and advantages.

My rail is designed to be made as is usual, of wrought or rolled iron; it consists of a flat bar of iron *a*, with an elevation *b* or projection of uniform height and width at one edge extending the whole length of the rail on one side, and a similar projection *c* of uniform height and width extending downward at the opposite edge, extending also the whole length of the rail. This makes the plate or bar which composes the rail, thicker at either edge than in the middle, while on either face of the rail, it is a plane surface, either level or slightly inclined from one edge to the projection or head of the rail, at the other edge on which head or projection, the tread of the car wheel travels. Thus both faces of the rail are exactly similar, and present a flat rail with a single projection, and that at one side of the rail. The flat portion of the rail, from the inner edge to the commencement of the head or projection, had better be a plane surface, because that portion on one face of the rail, lies on top of the longitudinal sill of the road, and has a better bearing if it be flat. The head of the rail on

either side (*b* or *c*) is but slightly elevated above the flat part or base of the rail, as the flange of the car wheels used on passenger or street railways, projects much less beyond the tread of the rail, than in wheels used on ordinary rail roads.

My improved rails are designed to be laid with the base or flat portion of the underside or face of the rail on the longitudinal wooden sill of the road, with the shoulder formed by the projection or head *c* on the under side of the rail pressing against the side of the wooden sill; or if it be preferred that the longitudinal sill should extend under the whole width of the rail a rabbet or depression is cut on the inner edge of the sill to receive the lower projection or head *c*, all on the base of the rail to rest on the sill, which answers the same purpose of giving the rail a lateral bearing against the inner side of the longitudinal sill, caused by the well known inclination of the car wheels to press outward against the side of the rails. This bearing of the under projection or head *c* of the rail against the inner edge of the longitudinal sill, enables the rail to resist the outward pressure of the car-wheels, and prevents the spreading of the rails. This is equally the case whichever face of the rail is turned upward.

The holes in the rails for driving the spikes to fasten the rails to the sills, are placed to one side of the central line of the rail. There are two sets of spike holes in each rail, one set designed to be used when the rail is used one side up, and the other set when the rail is reversed. These holes are countersunk, to receive the head of the spike, one set of holes marked *d* Fig. 2, being countersunk on the side of the rail which will be uppermost when those holes are to be used, and these holes are situate nearer the inner than the outer edge of the rail, as seen in Fig. 1, and so that when the wheel of the car passes over the rail, it does not pass over the heads of the spikes by which the rail is secured. These holes *d* are not countersunk on the under face of the rail, which is turned up in Fig. 1. The other set of spike holes marked *e* are situate nearer to the other edge of the rail than the central line, and are countersunk on the opposite face of the rail to that on which the holes *d* are countersunk, as will be seen by comparing Figs. 1 and 2.

Rails thus constructed possess very great

advantages for street railways over any other  
 rails with which I am acquainted, and I will  
 briefly enumerate a few of these advantages.  
 They are more easily rolled than rails of  
 5 ordinary construction, as both edges are of  
 the same thickness, for when one edge of the  
 rail is thick and the other thin, the thin edge  
 is apt to crack in rolling. But the chief  
 advantage of the mode of constructing rails  
 10 hereinbefore described, is their practical  
 utility for street railways in the following  
 particulars: They present less than ordinary  
 obstruction to the wheels of carriages, carts  
 and other wheeled vehicles used in the  
 15 streets of cities. That the head or projec-  
 tion of the rail which is turned down, press-  
 ing against the side of the sill, prevents the  
 spreading of the track, and greatly relieves  
 the lateral strain on the spikes, and that  
 20 when the head of the rail is worn out on one  
 side by the tread of the car wheels and by  
 the transverse passage of other wheeled ve-  
 hicles in crossing the track, the rail may be  
 reversed, and used the other side up for as  
 25 long or nearly as long as it was used before  
 one side was worn out; thus making the rails  
 wear almost, if not quite twice as long as

rails of ordinary construction; the reversed  
 rail being as good as new, because the head  
 of the rail which is turned up on the re- 30  
 versal of the rail, was previously turned  
 down, and at the inner edge of the track, and  
 not liable to injury.

Having thus described my improved rail  
 for street or passenger railways, what I 35  
 claim as my invention and desire to secure  
 by Letters Patent, is—

Making iron rails for street railways, of  
 the shape substantially as hereinbefore de-  
 scribed, having on each side a head or pro- 40  
 jection at one edge of the rail, with a flat  
 base extending from the projection or head  
 to the other side, both sides or faces being  
 finished alike, so that the rail may be used  
 either side up, and reversed when one side is 45  
 worn out.

In testimony whereof, the said ABRAHAM  
 REESE hath hereunto set his hand in presence  
 of us.

ABRM. REESE.

Witnesses:

MARTIN G. CUSHING,  
 C. W. LEWIS.