

WILLIAM WHARTON, Jr.
Improvement in Guard-Rails.

No. 127,665.

Patented June 4, 1872.

FIG. 1.

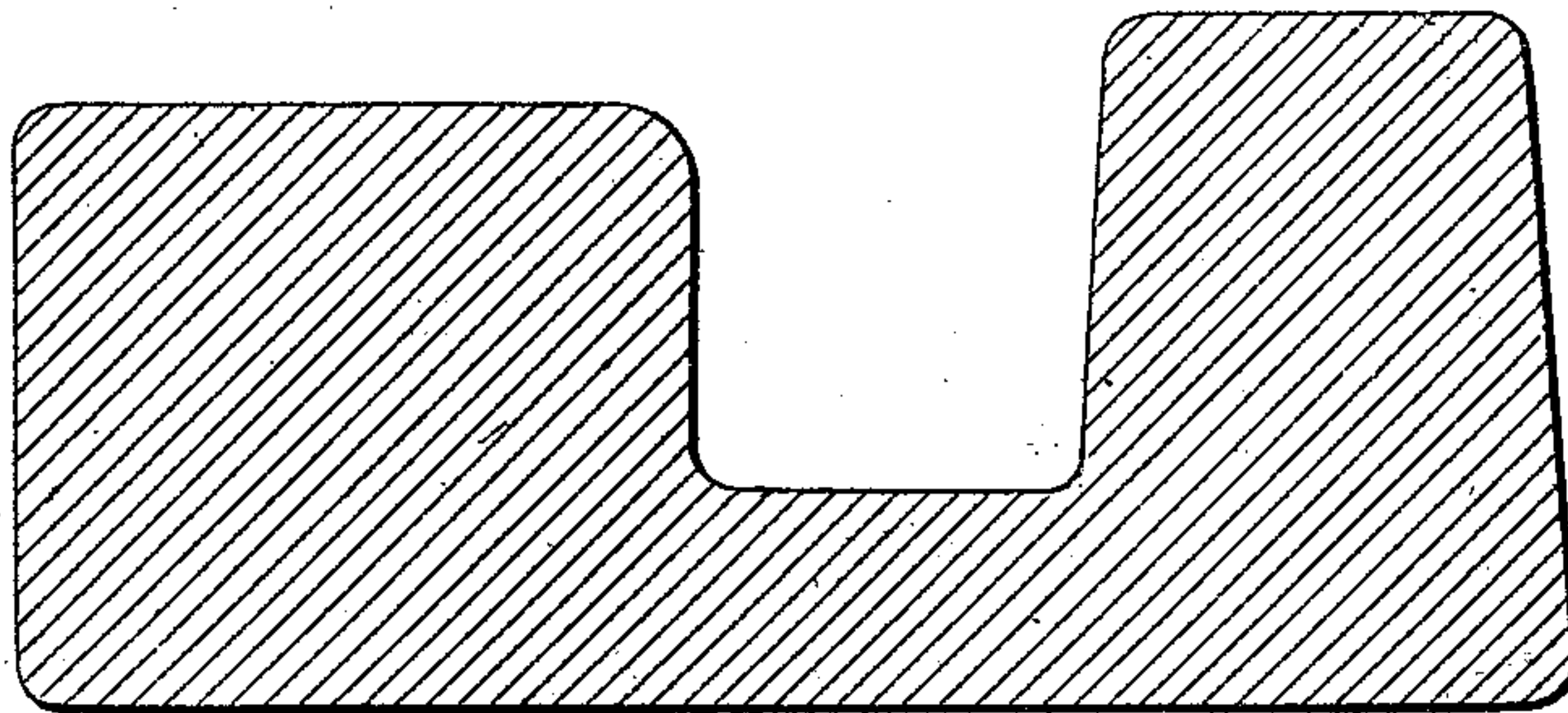
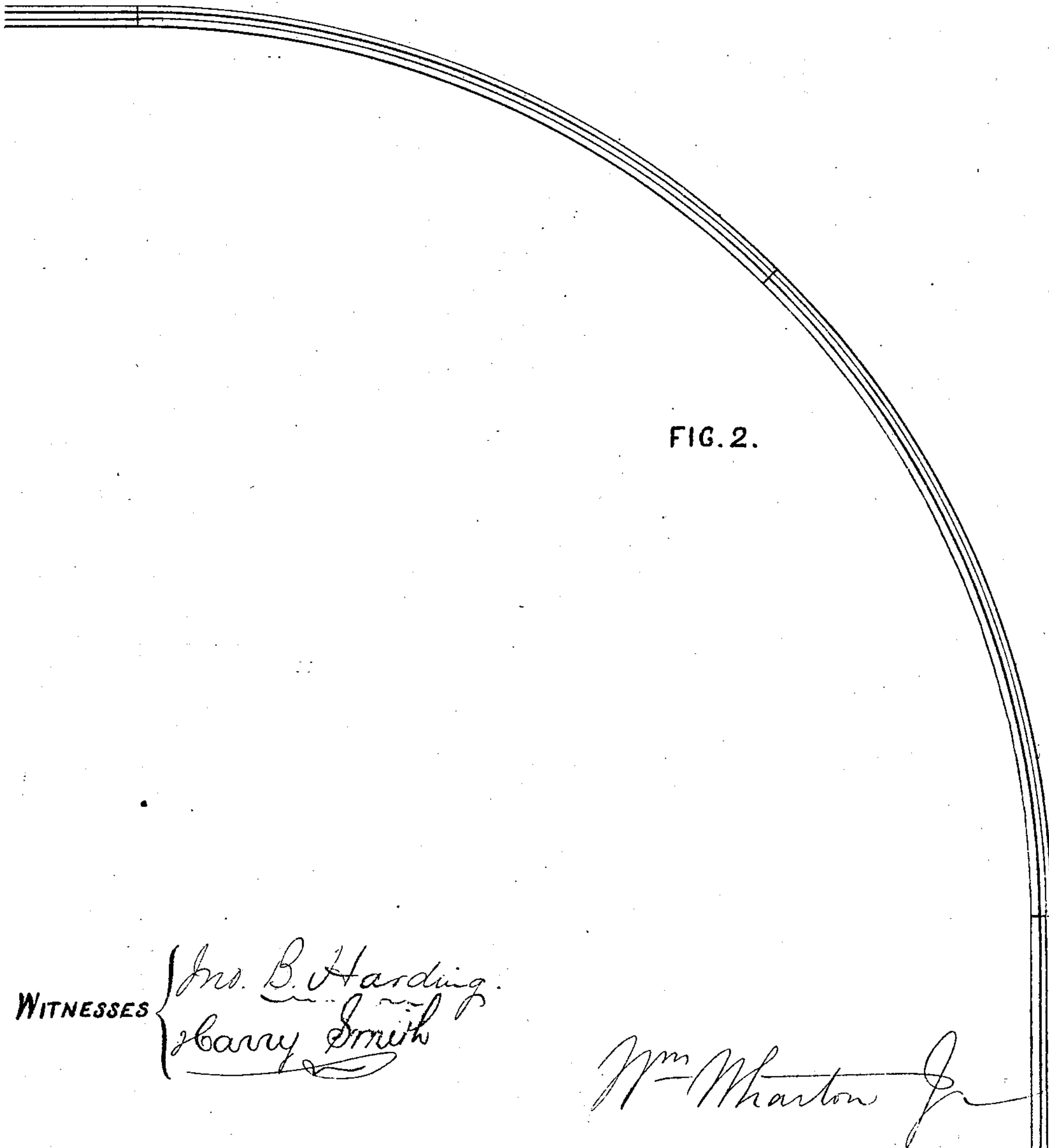


FIG. 2.



WITNESSES { *Geo. B. Harding*
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UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GUARD-RAIL.

Specification forming part of Letters Patent No. 127,665, dated June 4, 1872.

Specification describing an Improved Guard-Rail, invented by WILLIAM WHARTON, Jr., of Philadelphia, Pennsylvania.

Improved Guard-Rail.

My invention consists of a curved guard-rail of steel, on which the hard-rolled surface or "skin" is retained, as described hereafter, so that it will resist the excessive attrition to which guard-rails are subjected much more effectually than those made of cast or wrought-iron.

In the drawing, Figure 1 is a full-sized transverse section of the guard-rail, and Fig. 2 is a plan view, showing the guard-rail as applied to a city railway.

Prior to my invention curved guard-rails were generally made of cast-iron, in sections of such length as the nature of the curve and convenience of molding and casting might suggest. The objection to cast-iron guard-rails is the difficulty of maintaining the necessarily short pieces in their proper relative position, heavy vehicles tending to displace and fracture them, the result being a want of uniformity in the rails at the joints. Wrought-iron guard-rails have also been proposed, but they are as liable, or even more liable, to wear away rapidly than cast-iron guard-rails, as the latter have a hard exterior "skin," which resists the attrition of the car-wheels for a considerable length of time. Rolled steel also possesses a hard exterior skin as long as the bar is retained in the condition in which it left the rolls, the reheating of the bar, however, tending to soften the skin and to render the bar

less tough throughout. Discarding both cast and wrought iron, therefore, as materials whereof to make guard-rails, I make them of Bessemer or other steel, rolled to the desired shape, Fig. 1; and in order to retain the hard skin which results from the rolling I bend the bars to the desired curve while cold or while at such a low degree of heat that it will not affect the skin.

My improved guard-rail is readily distinguishable from both cast-iron and wrought-iron rails by those familiar with steel and iron, but is more especially distinguishable by its durability at those points where it is most subjected to the lateral attrition by the flanges of the car-wheels, this, the best test of the difference of my improved rail from ordinary rails, being rendered apparent in a short time after the rail has been placed on the track. As regards economy, my improved guard-rail is much cheaper than either cast or wrought iron rails, if its durability be considered in forming a proper estimate.

I claim as my invention, and as a new manufacture—

A curved guard-rail of steel, on which the the hard-rolled surface or "skin" is retained, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. WHARTON, JR.

Witnesses:

JNO. B. HARDING,
HARRY SMITH.