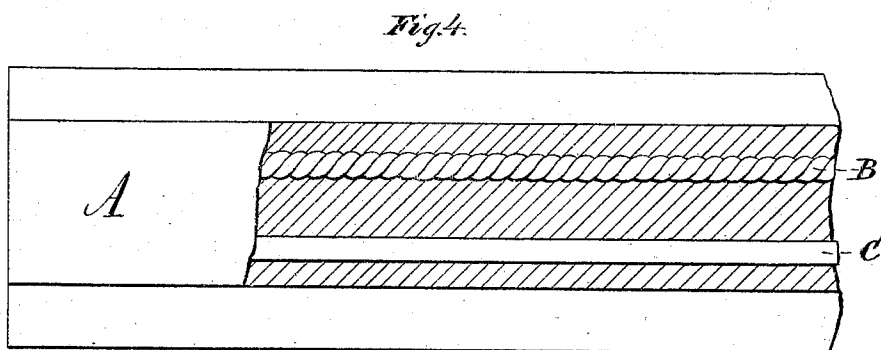
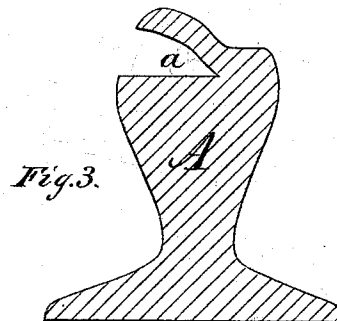
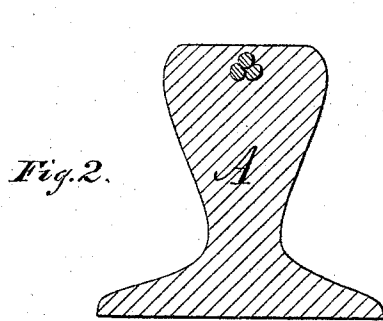
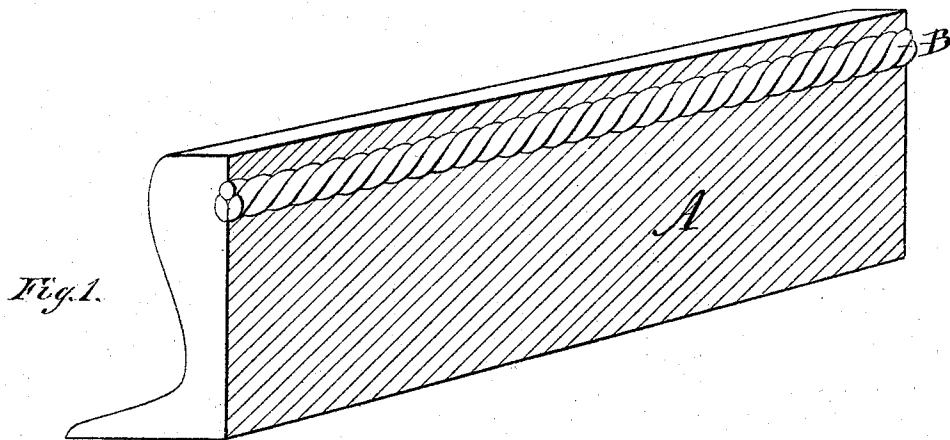


M. F. MCINTYRE.

Railroad Rails.

No. 137,463.

Patented April 1, 1873.



Witnesses.
Edw. F. Brown.
E. R. Brown.

Inventor.
M. F. McIntyre.

UNITED STATES PATENT OFFICE.

MALCOLM F. MCINTYRE, OF GIRARD, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD RAILS.

Specification forming part of Letters Patent No. **137,463**, dated April 1, 1873; application filed January 21, 1873.

To all whom it may concern:

Be it known that I, MALCOLM F. MCINTYRE, of Girard, in the county of Erie and State of Pennsylvania, have invented a new and useful Improved Railroad Rail; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing making part of this specification and to the letters and figures marked thereon.

The nature of my invention consists in a railroad rail, in which is inserted a rod of wrought-iron or a series of twisted wires running the entire length of the rail, for the purpose of preventing the breaking of the rail by frost or otherwise; or, in the event of breakage, to prevent displacement of the parts.

In the drawing, Figure 1 is a perspective view of a rail, partly in section, with a series of twisted wires inserted. Fig. 2 is a transverse section of the same. Fig. 3 is a transverse section of a rail, illustrating the manner of inserting the wire or rod. Fig. 4 is a top view of a rail, partly in section, showing both a rod and a series of twisted wires.

In the manufacture of rails by rolling, the bars are passed through a rolling-mill once, and then cut into the proper lengths, after which they are passed through different mills, or repeatedly through the same mill, until they acquire the proper form.

During their first passage through the mill, or immediately afterward, and before they are

cut into lengths and rolled a second time, I cut in one side of the upper and thicker part of the rails, by means of a suitable cutting-tool, a kerf or groove, as shown at *a*, in the rail A, Fig. 3 of the drawing. In this kerf or groove I insert, cold, a rod of wrought-iron or a series of twisted wires, as represented by B, Figs. 1 and 4. The kerf is then closed as far as possible, and the rail passed repeatedly through the rollers until the forming process is completed. The rod or the wires are thus incorporated with the rail without losing any of their good qualities, and the breaking of a rail by the action of frost or other ordinary cause is rendered almost impossible; but, in the event of breakage resulting from extraordinary force brought to bear upon a rail, the rod or wires will hold the parts together and prevent their serious displacement.

The rod may be used when desired, as shown at C, Fig. 4; but I prefer the wires on account of their superior strength and more thorough incorporation with the metal of the rail.

I claim as new and desire to secure by Letters Patent—

A railroad rail having a wrought-iron rod or series of twisted wires inserted therein or incorporated therewith, substantially as shown and described.

The above specification of my invention signed by me this 21st day of January, 1873.

M. F. MCINTYRE.

Witnesses:

E. R. BROWN,
EDM. F. BROWN.