R. Montgomery,

Railway Rail.

No. 107,798. Patented Sep. 27. 1870.

Fig. 2.

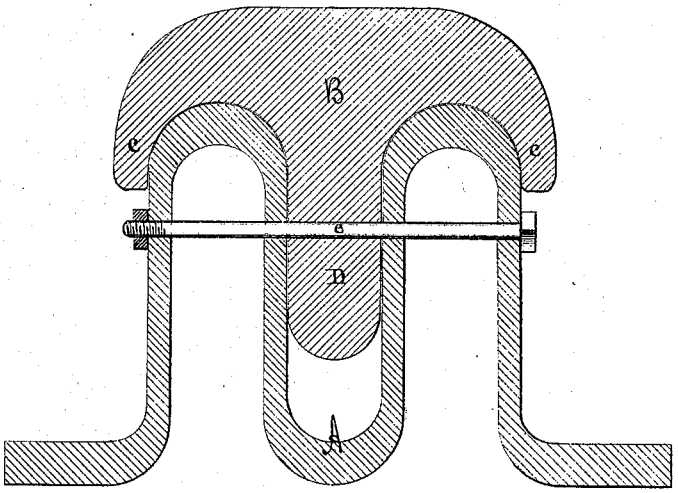


Fig. 3.

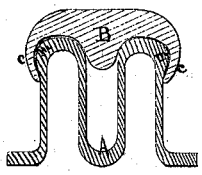


Fig. 4.

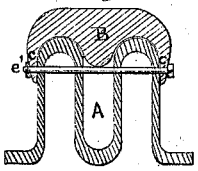


Fig. 5.

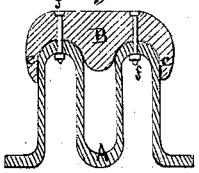
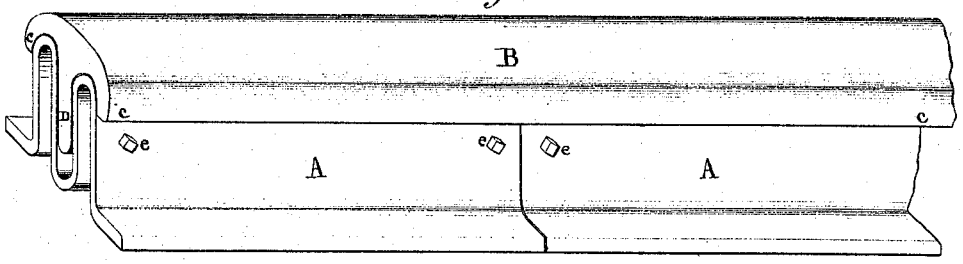


Fig. 1.



Witnesses { David A Burr
J. Bart.

R. Montgomery
Inventor

UNITED STATES PATENT OFFICE.

RICHARD MONTGOMERY, OF NEW YORK, N. Y.

IMPROVEMENT IN RAILWAY-RAILS.

Specification forming part of Letters Patent No. **107,798**, dated September 27, 1870.

I, RICHARD MONTGOMERY, of the city, county, and State of New York, have invented an Improved Railway-Rail, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to the combination of an extended metallic cap-plate or bar with the upper surface of a longitudinally-folded or corrugated beam or bar, the objects of my said invention being to produce a rail combining in itself the advantages in the economy of weight, strength of material, and rigidity incident to a longitudinally-corrugated beam, the endurance of the best steel rails, the freedom from jar and concussion of a continuous unbroken rail, and the novel advantage of a detachable head, easily removed and replaced when worn, without a disturbance of its base.

Description of the Accompanying Drawing.

Figure 1 is an elevation in perspective of my improved rail; Fig. 2, a transverse section of the rail illustrated in Fig. 1. Figs 3, 4, and 5 are similar sections, illustrating modifications in the combination of the cap and base of the rail.

General Description.

A is a beam, bar, or extended plate of iron or steel, longitudinally corrugated or bent into two folds, whose edges are bent outward in a plane with the arch of the central fold to form a base for the rail thus produced. This corrugated rail is readily manufactured by passing a pile or bloom of iron, or ingot of steel, at the proper temperature, through a series of suitably-grooved rolls, and I prefer to make it thicker in the crown of each arch or fold, to obtain thereby greater strength in the parts most fully exposed to tension and strain, with the utmost economy of metal. Upon the upper surface of this corrugated beam I secure a cap-plate of hardened iron or steel, by preference the latter, made to span the two arches or folds of the corrugated beam A and clasp the same firmly with its overlapping edges, as shown in the drawing.

B is the cap-plate or capping; *c c*, the overlapping edges thereof. This hardened capping B is, by preference, provided with a central longitudinal flange, D, Figs. 1 and 2, projecting from its under side to fit in between the folds of the base-beam and facilitate its secure attachment thereto. It is produced by passing the metal between suitable rolls until it is so shaped as to fit very exactly upon the arches of the corrugated beam, overlapping and embracing them closely, its central flange passing down closely between them, as illustrated in the drawing, Figs. 1 and 2. When this flanged capping B is used it is secured upon the corrugated base-rail by means of transverse bolts *e e* passing through the sides or web of the corrugated rail and through the flange of the capping, as shown in Fig 2.

By causing the cap-plates B to break joints with the base-beams A A, as shown in Fig. 1, a continuous even rail is obtained, and the use of fish-plates or joint-plates of any description avoided.

As fast as the capping wears away it may be readily removed and replaced by simply detaching the bolts by which it is held.

Where superior elasticity is required in the rail a lining of india-rubber or gutta-percha may be inserted between the cap and beam.

From the superior rigidity and strength of the corrugated base-beams A A fewer cross-ties by one-half will be required in a railway-track laid therewith than when the ordinary iron or steel T-rails are employed.

Although I prefer, for the sake of the convenience and economy, of a ready detachment and removal of the capping, when worn, without a disturbance of a base-beam when once secured in a track, I contemplate welding, cementing, or otherwise permanently securing the capping upon the corrugated base-beam by any of the well-known processes for capping iron rails.

Fig. 3 illustrates one of the forms of my improved rail, in which the capping is thus permanently united to the base without bolts, by cementation in a suitable furnace to a welding-heat and subsequent rolling. In this case I slightly enlarge the upper curves or arches of the corrugated beam on the outer sides thereof, as shown at *m m*, Fig. 3, so that the overlapping edges *c c* of the capping B will take hold thereon more firmly.

Fig. 4 illustrates the capping B formed

without a central flange, I, Fig. 2, but secured upon the base-beam by transverse bolts *e'* engaging its overlapping edges, and which may be used with or without welding.

Fig. 5 illustrates the capping B when secured by vertical bolts *f f*.

I do not claim, broadly, the combination of an extended cap-plate with a railroad-rail of any form or description, but limit myself simply, as hereinbefore set forth, to the combination, as described, of an extended cap-plate with longitudinally-corrugated rail, beam, or bar.

Claim.

I claim as my invention—

The combination of an extended capping plate or bar with a longitudinally grooved or corrugated beam, substantially in the manner and for the purpose herein set forth.

R. MONTGOMERY.

Witnesses:

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