

(No Model.)

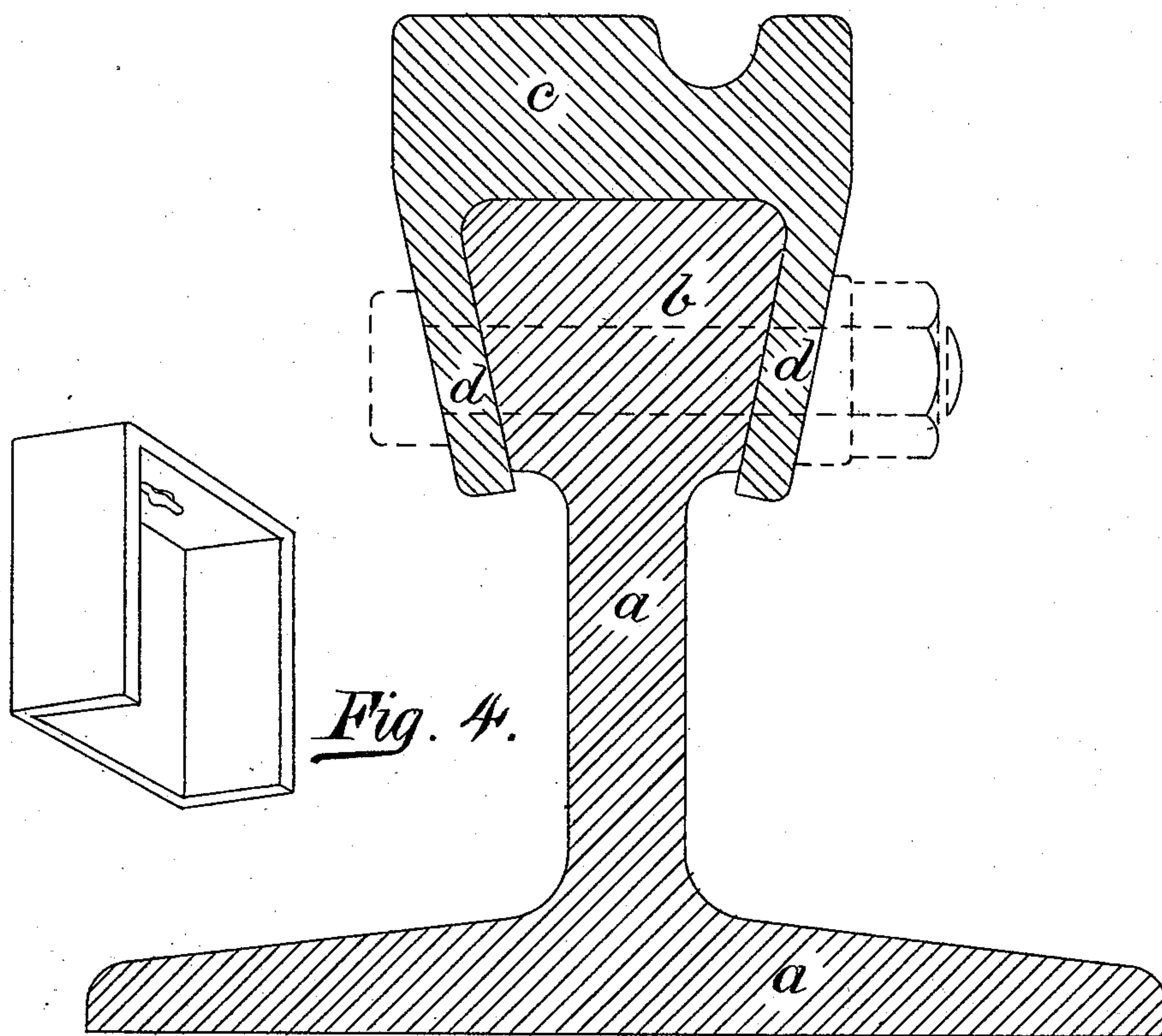
2 Sheets—Sheet 1.

W. TOWLER.  
TRAMWAY RAIL.

No. 539,836.

Patented May 28, 1895.

*Fig. 1.*



*Clark Jefferson.*  
*John Townsend.* } *Witnesses.*

*Inventor*  
*W. Towler*

(No Model.)

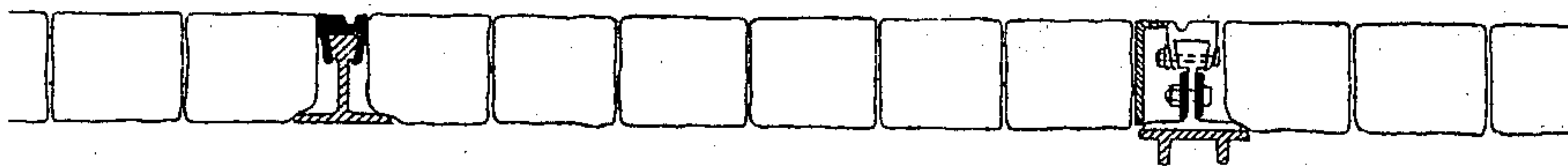
2 Sheets—Sheet 2.

W. TOWLER.  
TRAMWAY RAIL.

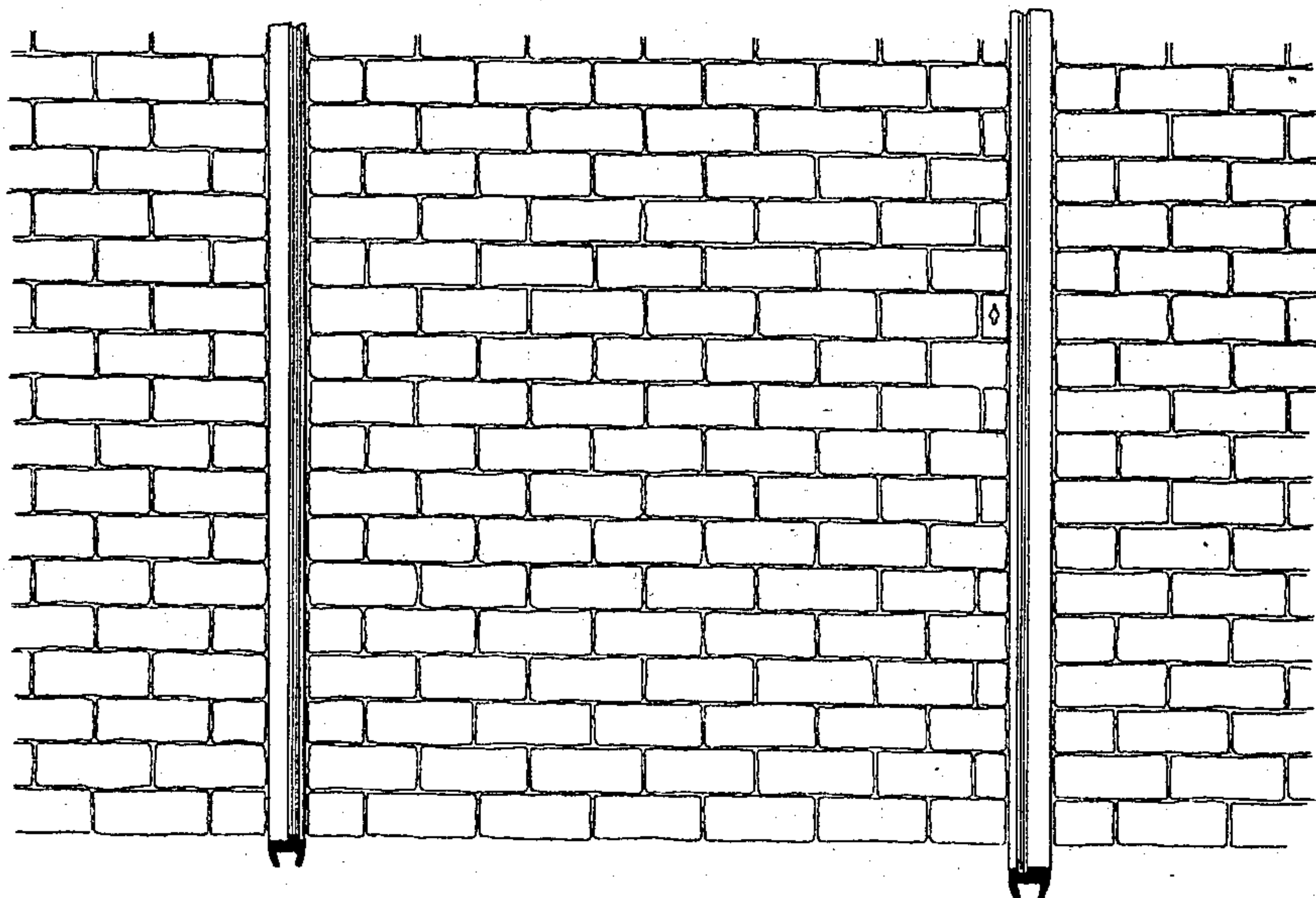
No. 539,836.

Patented May 28, 1895.

*Fig. 2.*



*Fig. 3.*



John Clark Jefferson  
John Townsend

Witnesses

Inventor

William Towler



# UNITED STATES PATENT OFFICE.

WILLIAM TOWLER, OF LEEDS, ENGLAND.

## TRAMWAY-RAIL.

SPECIFICATION forming part of Letters Patent No. 539,836, dated May 28, 1895.

Application filed January 22, 1895. Serial No. 535,785. (No model.) Patented in England January 27, 1893, No. 1,830.

*To all whom it may concern:*

Be it known that I, WILLIAM TOWLER, a subject of the Queen of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented new and useful Improvements in Tramways, (for which I have obtained a patent in Great Britain, No. 1,830, dated January 27, 1893,) of which the following is a specification.

My invention relates to rails for tramways and railroads, having removable caps attached thereto; and consists in the construction and combination of parts hereinafter more particularly set forth and claimed.

In the accompanying drawings, Figure 1 is a cross-section of a single tramway-rail of the girder type to which my invention has been applied. Fig. 2 is a cross-section of a tramroad, the right-hand side being taken at the junction of two rails; and Fig. 3 is a plan corresponding to Fig. 2. Fig. 4 is a perspective view of a side cover-box.

Similar letters refer to similar parts throughout the several views.

*a* is the permanent non-wearing body of the rail which is rolled with a head *b*, the cross section of which is of a dovetail shape, with the widest portion at the top.

*c* is the wearing part, or rail cap having on its upper surface a groove for the flanges of the wheel. This rail cap *c*, is rolled with side depending flanges *d*. These flanges *d* may be rolled parallel or slightly wider between their lower ends to facilitate rolling and also the placing in position of the rail cap *c* on the head *b*. The width between the roots of the flanges *d* is made equal to the width of the top of the head *b*, and to facilitate removal of the rail cap *c*, (as hereinafter described,) the length (or depth) of the flanges *d* is preferably made slightly greater than the depth of the head *b*.

When the rail cap *c* is placed on the head *b*, the depending flanges *d* are pressed close against the inclined sides of the head *b* by means of a screw—or hydraulic closing tool, on which the rail cap *c* is firmly secured to the head *b*. In the first instance the rail cap *c* may be rolled at the rolling mill on the head *b*, but after the first cap is worn out a fresh cap is attached in the manner described, without disturbing the girder portion *a* and

head *b*, and only the paving blocks close to the rail.

To remove the worn out rail cap *c*, the depending flanges *d* are opened out by a screw or hydraulic opening out tool, the claws of which are arranged to catch hold of the lower edges of the flanges *d* on their inner sides, where they project below the bottom edge of the head *b* as above described. When the bottom of the wheel-flange groove in the rail is all but worn through, the rail cap *c* may also be removed by splitting the thin bottom of the groove with a chisel, when both sides of the rail cap will be sufficiently loose to be drawn away; or the rail may be drawn off by a ripping tool.

The above described connection between the rail cap *c* and the head *b* I find quite secure for ordinary working conditions. For more perfect security under strain bolt-holes are made through both flanges *d* and the head *b*, as shown by dotted lines in Fig. 1, and bolts *e* inserted to prevent any possibility of the flanges *d* opening out. These bolts are preferably formed with chamfered heads and provided with chamfered washers. In order to be able to get at the nuts for tightening up without having to take up the paving, I provide iron cover boxes *g*, (shown in detail in Fig. 4,) which can be readily lifted out of place and returned again.

The rail *a* is preferably rolled less in depth than the ordinary rail by the thickness of the rail cap *c*.

Although I have described my invention as applied to a rail of inverted T section, it will be evident that the dovetail or flaring shape of the head *b* is the only part of the rail section essential to my invention, and that the lower portion *a* of the permanent part may be of other convenient section, for example of an inverted Y or bridge section. Further as several different forms of screw or hydraulic closing, opening and ripping tools can be readily devised, and as such form no part of my invention any description of such has been omitted. Lastly the permanent rail and head *a b* may be of cast iron instead of rolled iron or steel.

What I claim, and desire to secure by Letters Patent, is—

A rail *a* having an enlarged head *b* with

flaring sides, in combination with a rail-cap *c* having depending flanges *d* of sufficient flexibility to be fitted on the sides of the said rail-head by pressure and afterward bent outward again to permit the removal of the cap, and bolts passed through the said flanges and rail-head each bolt being provided with a nut

whereby the said flanges are drawn against the said flaring sides of the head substantially as set forth.

WILLIAM TOWLER.

Witnesses:

J. CLARK JEFFERSON,  
JOHN TOWNSEND.