J. C. Hagan,

Railway Rail.

No. 101,611. Patented Apr. 5. 1870.

Fig. 1.

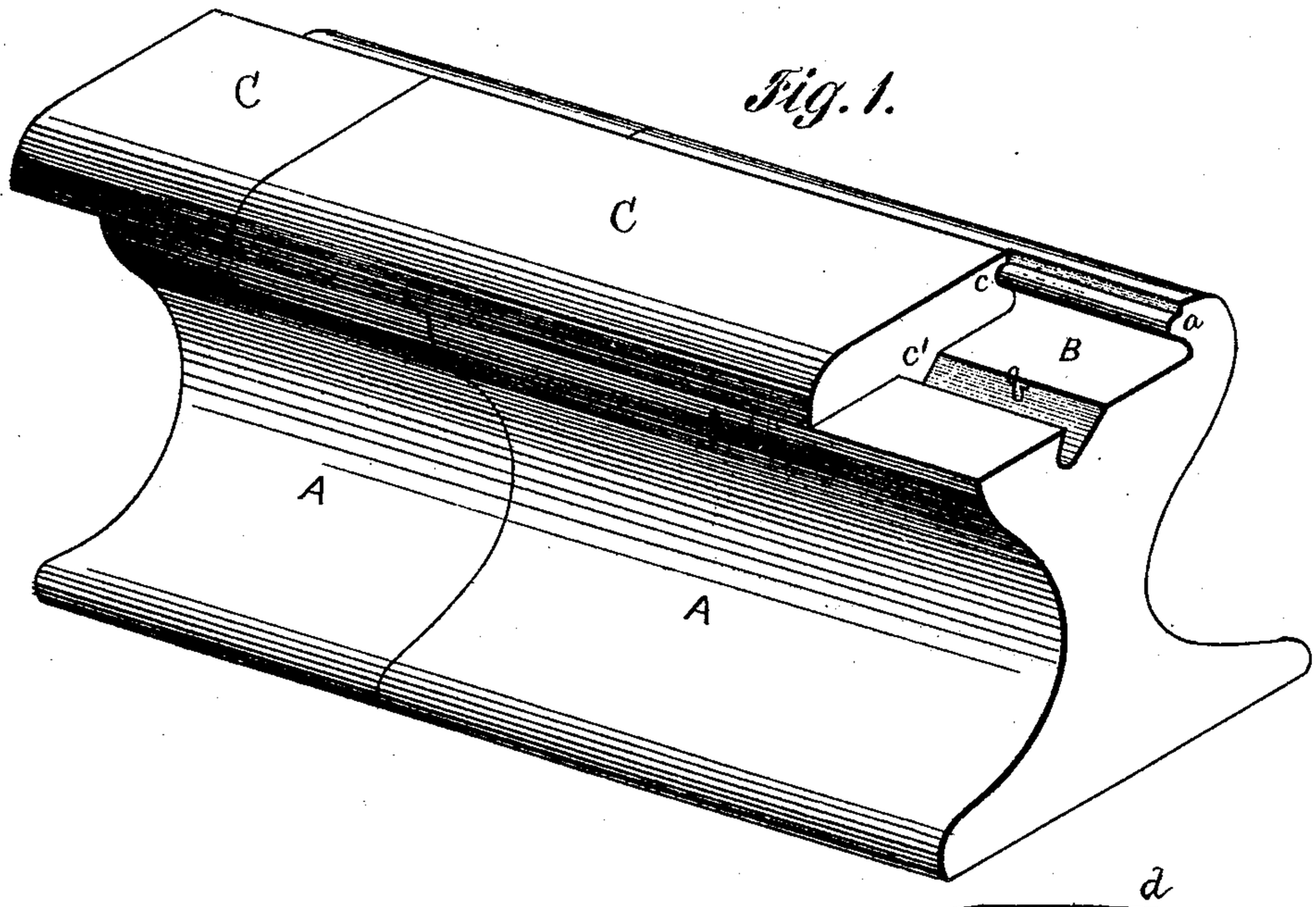
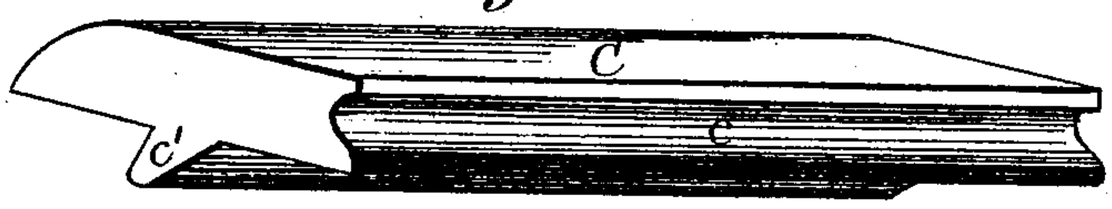


Fig. 3.



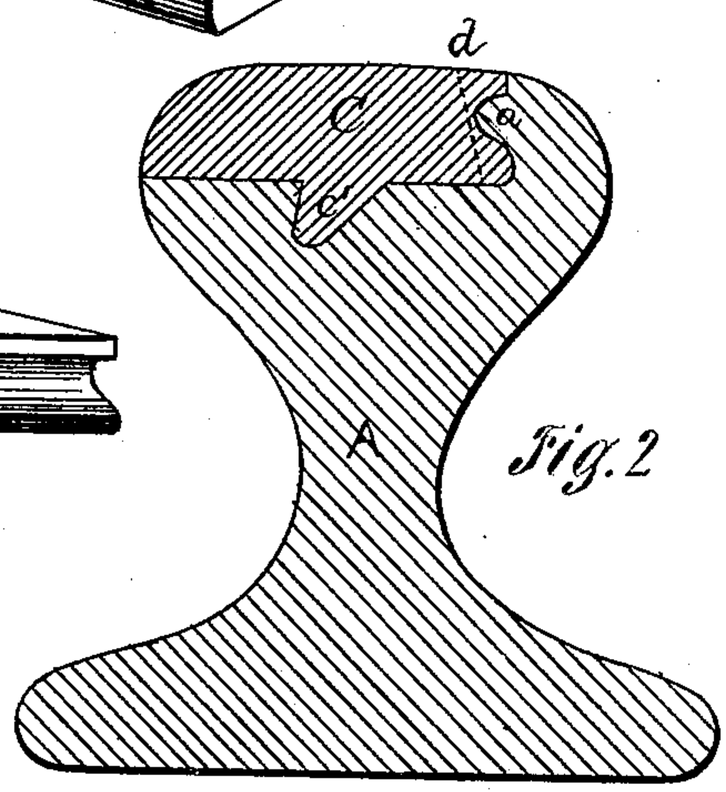


Fig. 2

Witnesses:

Geo. H. Hudson

Jno. H. McGill.

Inventor:

John C. Hagan.

By McGill, Grant & Co

Attorneys.

United States Patent Office.

JOHN C. HAGAN, OF NASHVILLE, TENNESSEE.

Letters Patent No. 101,611, *dated April* 5, 1870.

IMPROVEMENT IN RAILWAY-RAILS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN C. HAGAN, of Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Metal Rails for Railroads; and I do hereby declare the following to be a full and exact description thereof, reference being had to the annexed drawing forming part of this specification.

The nature of my invention consists in providing that portion of the top and side of a rail which comes in contact with the thread and flange of the wheel, with an adjustable head or crown, and attaching this crown to the rail by means of suitable grooves, tongues, and bevels, and causing it to overlap the joints of the rails, so as to form an unbroken line of smooth surface for the tread of the wheel to travel over, thereby preventing the disagreeable jolting of the cars so unpleasant to travelers, and destructive both to rails and rolling stock.

In the accompanying drawing—

Figure 1 represents a perspective view of a section of two rails with the adjustable caps so placed thereon as to break the joint of the rails.

Figure 2 is a sectional end view of a capped rail, and

Figure 3 is a perspective view of a section of the cap.

Similar letters of reference indicate corresponding parts in all the figures.

A A represent sections of the rails.

B represents the top or seat, upon which the cap rests.

a is a tongued shoulder, extending along the entire outside of the rail, and

b is a beveled groove or channel, sunk longitudinally along its top.

C is the cap.

c is a groove running along the inner side of the cap, and which incloses the tongue *a*, and

c' is a beveled spur or foot, which fills the channel *b*.

It will be noticed that the beveling of the spur or foot *c'*, when run in channel *b*, will, of itself, prevent the cap C from being removed from the rail in any other manner than sliding it out horizontally.

The tongue *a* in the shoulder of the rail and the groove *c* in the cap, are intended as additional security for holding the cap in the rail.

Instead of the tongue *a* and groove *c*, the inner sides of the shoulder and cap may be beveled to fit each other, as shown by the dotted line *d*, fig. 2.

The operation of my invention is as follows:

I lay the rails A A in the ordinary manner and then slide the caps C C onto them horizontally, so that the joints of the caps and the joint of the rails will not come in the same line. In this way I form a continuous and unbroken line of smooth surface for the tread of the wheel to travel on, and the flange to press against, which is not interfered with by the expansion or contraction of the metal. I also, by this arrangement, lock the rails so as to render their displacement by accident almost impossible, thus rendering travel over a road provided with my rails much safer than over one provided with the common rails.

These rail-caps may be made of steel, iron, or any other suitable metal.

It is well known that the iron rails now in use are very short lived, the weight of passing trains wearing and spliting off their crown or head, and thereby destroying the entire rail, the replacing of which is one of the heaviest items of expense that railroad companies have to meet.

Rails made on my improved principle will last an indefinite number of years without being replaced, for that portion of them subject to the wear and tear of passing trains, when injured, can be removed and replaced by new caps without displacing the rails, which will be a saving to railroad companies of millions of dollars.

Efforts have been made of late years to introduce steel rails, but their great cost has prevented their going into use.

The caps of my rails, when made of steel, will cause my rails to serve all the purposes of rails made entirely of steel, and at a cost of one-fifth that of steel rails.

Both the rails and their caps can be rolled in the form herein described, at a cost very little in addition to that of rolling the common rail.

Having thus fully described my invention,

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

The rail A, provided with the cap seat B, tongue or beveled shoulder *a d*, and beveled channel *b*, as described, and the cap C, curved on its outer edge, and provided on its inner edge with the groove *c* or bevel *d*, and on its bottom with the beveled tongue *c'*, as described, when both are used in combination with each other, in the manner and for the purposes herein set forth and described.

JOHN C. HAGAN.

Witnesses:

JAMES WOODMAN,

GEO. H. HUDSON.