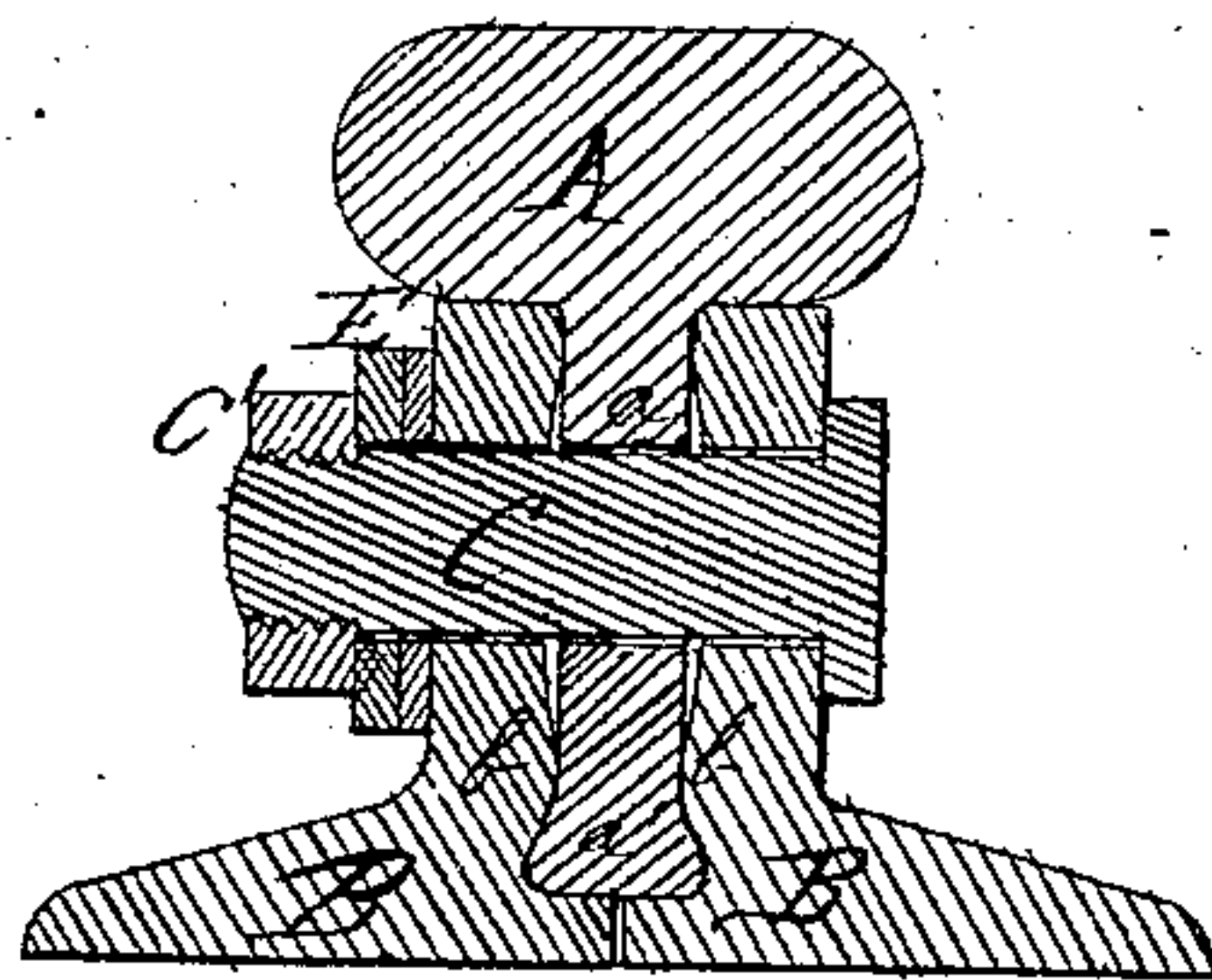
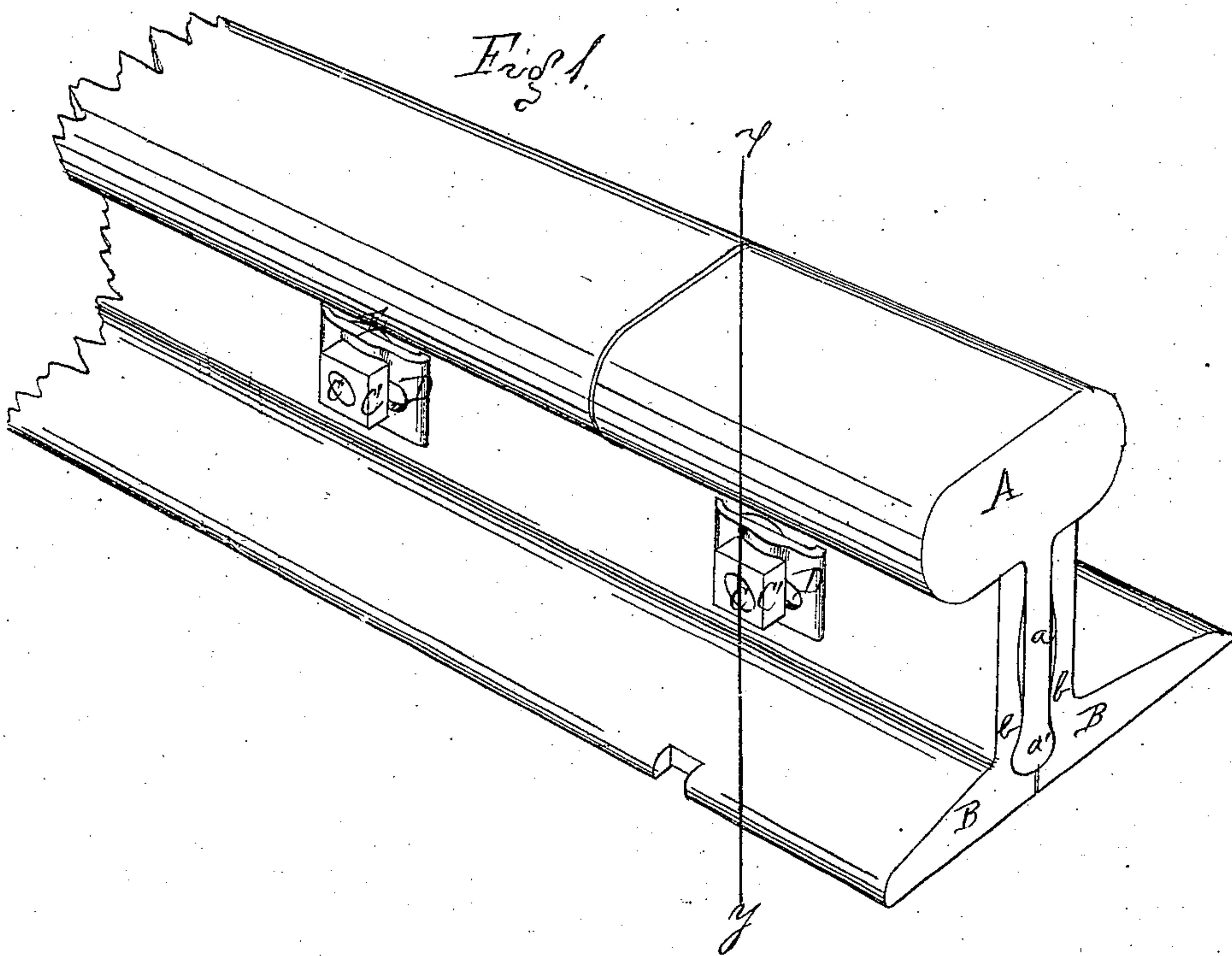


102601

E. B. Shepard **PATENTED MAY 3 1870**

*Impt. in Compound Rail Road
Rails*



Witnesses
Alex. Mahon
N. N. Doubleday

E. B. Shepard
by his attorney
A. M. Smith

United States Patent Office.

EDWIN R. SHEPARD, OF SCRANTON, PENNSYLVANIA.

Letters Patent No. 102,601, dated May 3, 1870.

IMPROVED RAILWAY RAIL.

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, EDWIN R. SHEPARD, of Scranton, Luzerne county, State of Pennsylvania, have invented certain new and useful Improvements in Compound Railroad Rails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my invention.

Figure 2 is a sectional view through line *xy*, fig. 1.

The invention relates to that class of rails known as three-part rails, in which the head or upper portion is embraced and supported by two bases or lower portions, all three being secured together and in proper relative position by means of bolts or rivets.

Three-part rails are again divided into sub-classes by certain distinguishing features of construction, and the particular form to which my improvements are more especially adapted is known as the Latrobe rail, in which the shank of the tread is made wedging, having its widest end down, so as to be clasped between jaws formed upon the inner faces of the two bases, in such manner that, when the parts are riveted or bolted together, the tread cannot have an upward movement relative to the bases without spreading the latter apart.

One of the principal causes of failure in this rail was this: The tread would be swaged and driven down between the bases as the parts became accurately fitted to each other, thus crowding the wedging faces from each other and allowing a little play, which, by the passage of trains, rapidly increased, and soon hammered out and broomed up the parts to an extent which rendered them useless.

My invention has for its object the remedying of this defect, and consists in combining, with a compound rail of the above description, an automatic fastening device which will promptly follow up any mutual adjustment or wear between the different portions of the rail, preventing all looseness and consequent wear, as will be fully understood from the following description of the construction and operation of the fastening:

In the drawing—

A represents the head portion or tread of the rail, the shank, *a*, of which is formed at its lower end, substantially as shown at *a'*.

The two bases, B, conform in their general outline

to the form shown in the drawing, being provided with inclined or wedging faces *b*, adapted to engage with faces *a'* on tread A, for a purpose hereinafter explained.

C is a bolt passing through suitable slots in the shanks or ribs of the rail.

C' is a nut, having a thread of the ordinary description engaging with a thread upon bolt C, but the inner face of said nut is grooved, the grooves intersecting the center of the perforation.

D is an elliptic spring or washer, provided with a rib extending across its outer or upper face.

E is a supplemental washer, of leather or other elastic material, placed under the elliptic washer D.

I do not deem it necessary to enter into a detailed description of these fastening devices, as they form the subject of another application.

The operation of my improvements is as follows:

When the rails are first laid they fail of making a perfect joint, owing to certain unavoidable imperfections, but, as they become swaged together by the action of passing trains, the shank *a* is driven down between the shanks of base B, thereby forcing the inclines *a'* away from inclines *b*. Now, when the parts are merely riveted or ordinarily bolted together, this creates a looseness, allowing an upward and downward movement of the head relative to the base, which results in a rapid destruction of the rail. But, with my improved fastening, all this is remedied, and the durability of the rail is greatly increased, because the elasticity of washers D and E compel bolt C to take up the slack as fast as it may occur, and no serious looseness can occur, from the fact that the ribs and grooves upon nut C' and elliptic washer D prevent nut C' from backing off.

I do not claim broadly the combination of a self-tightening device with a compound railroad rail, as that is shown in a former patent of mine; but

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

A compound railroad rail, consisting of a central tread with a wedged-shaped shank, confined between two corresponding wedge-shaped recesses in the base pieces, in combination with a self-tightening device, substantially as set forth.

EDWIN R. SHEPARD.

Witnesses:

A. A. CHASE.

H. H. DOUBLEDAY.