No. 703,274. Patented June 24, 1902.

J. E. JONES.

RAIL BOND.

(Application filed May 1, 1902.)

(No Model.)

FIG. 1.

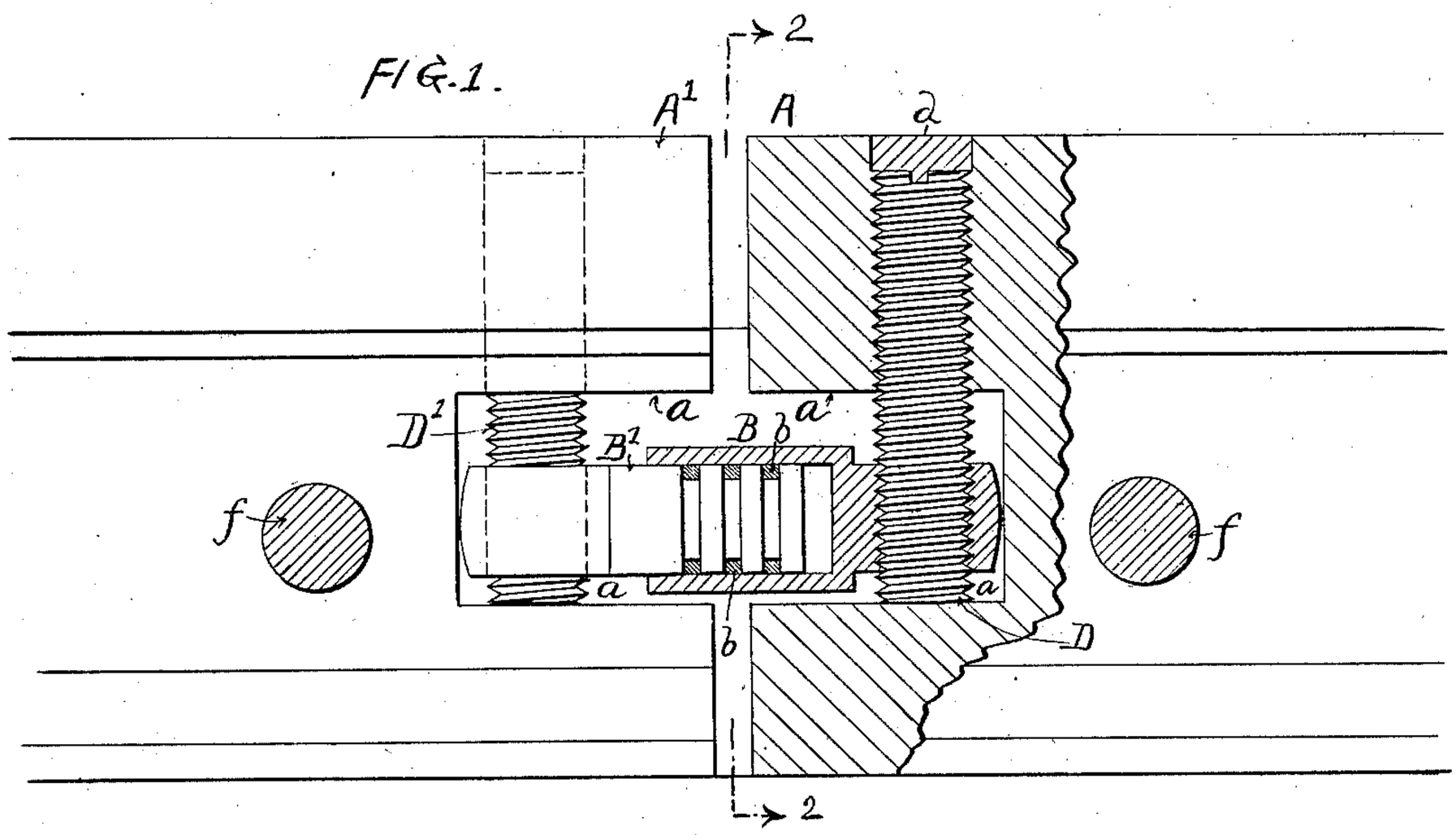
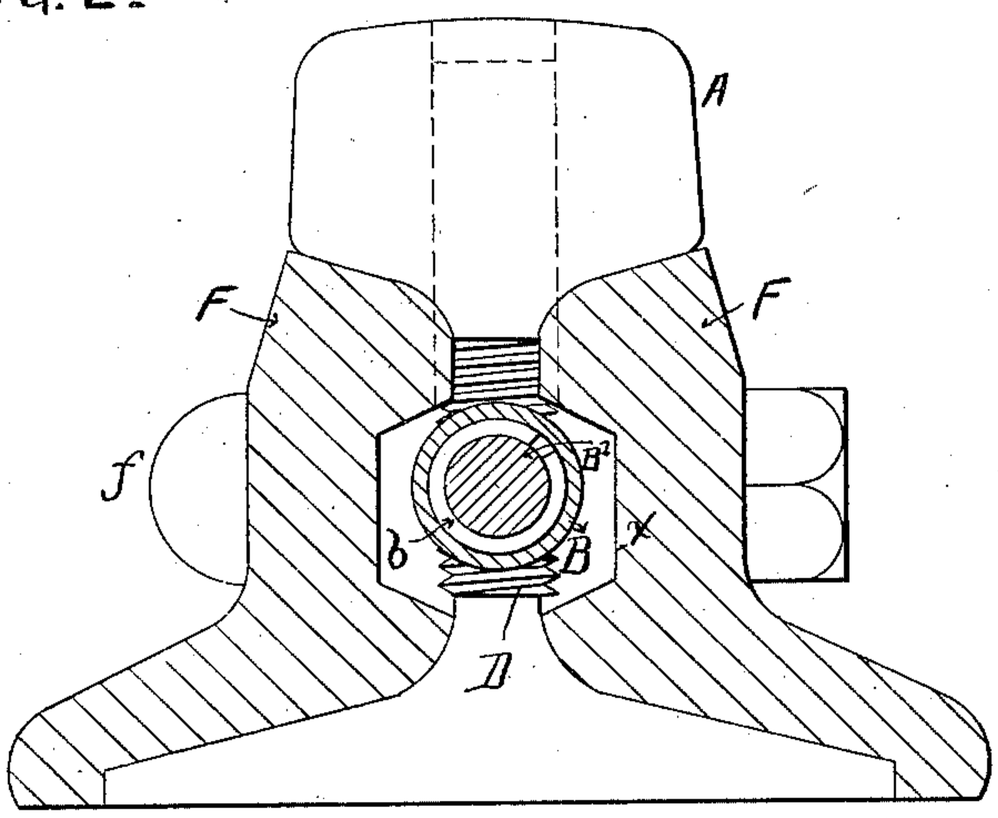


FIG. 2.



WITNESSES:

F. W. Wright

Walter Abbe

INVENTOR

JOHN ELMER JONES

BY Howson & Howson

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN ELMER JONES, OF HAZLETON, PENNSYLVANIA.

RAIL-BOND.

SPECIFICATION forming part of Letters Patent No. 703,274, dated June 24, 1902.

Application filed May 1, 1902. Serial No. 105,559. (No model.)

To all whom it may concern:

Be it known that I, JOHN ELMER JONES, a citizen of the United States of America, residing in Hazleton, in the county of Luzerne, State of Pennsylvania, have invented an Improved Rail-Bond, of which the following is a specification.

The most common form of electrical bond or connecting means between the adjacent ends of current-carrying rails is a piece of copper secured at its opposite ends to the webs or flanges of the rails and bent or looped to allow for expansion and contraction. Such a form of bond has two objections to it. One is that after a time the metal becomes very brittle and breaks under expansion and contraction, and the other is that tramps and others will break and carry off the connections for the value of the copper.

The main object of my invention is to provide a rail-bond which will be open to neither of these objections, but will provide a good electrical connection under all conditions and without being liable to get out of order.

In the accompanying drawings, Figure 1 is a longitudinal elevation, partly in section, of rail ends provided with my improvement; and Fig. 2 is a transverse section on the line 2 2, Fig. 1.

A and A′ are the adjacent ends of two rails through which electric current is to be carried, and these rails may be joined together by flanged fish-plates F F, secured by transverse bolts and nuts *f f* in any suitable way. The webs of the rails are cut away at *a* at the ends to receive and accommodate my adjustable rail-bond connection, consisting of a cylinder B and a piston B′, fitting closely in the cylinder. The cylinder B is mounted at its rear end upon a vertical screw D, the cylinder being tapped to receive and turn upon this supporting-screw. This screw is preferably screwed down through a tapped hole in the rail-head and the hole closed at the top by soft metal *d*. The lower end of the screw D rests upon the bottom of the cut-out part *a*. In like manner the piston B′ is mounted upon a screw D′, let into the rail A′.

In order to make a good joint between the cylinder and piston, the latter may have annular grooves formed in it for the reception of split rings *b b*, which by their expansive action bear against the inner wall of the cylinder. Amalgamating material may also be provided at the joint.

It will be seen that the whole bonding connection is covered, protected, and concealed by the fish-plates, the latter being cut away on their inner faces at *x*, Fig. 2, if necessary, to freely accommodate the parts. Owing to the fact that the cylinder and piston are practically pivoted upon their vertical supporting-screws D D′, the connection can swing upon those pivots to accommodate itself to any lack of alinement of the rails or of the positions of the screws D D′.

I claim as my invention—

1. The combination of rail ends having their webs cut away, and fish-plates, with a bond within said cut-away portion of the rails and concealed by the fish-plates.

2. The combination of rail ends having their webs cut away and fish-plates with a cylinder and piston bonding means within said cut-away portion of the rails and concealed by the fish-plates.

3. The combination of adjacent rail ends with a cylinder and piston bonding means and vertical pivoting-supports on the rails for the cylinder and piston, as and for the purpose described.

4. The combination of adjacent rail ends having screws let into them, with cylinder and piston bonding means mounted upon said screws, substantially as described.

5. The combination of adjacent rail ends having webs cut away with screws passing through said cut-away parts, cylinder and piston bonding means mounted on said screws and fish-plates inclosing them.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN ELMER JONES.

Witnesses:
C. A. B. HOUCK,
GEO. THOMPSON.