

No. 882,041.

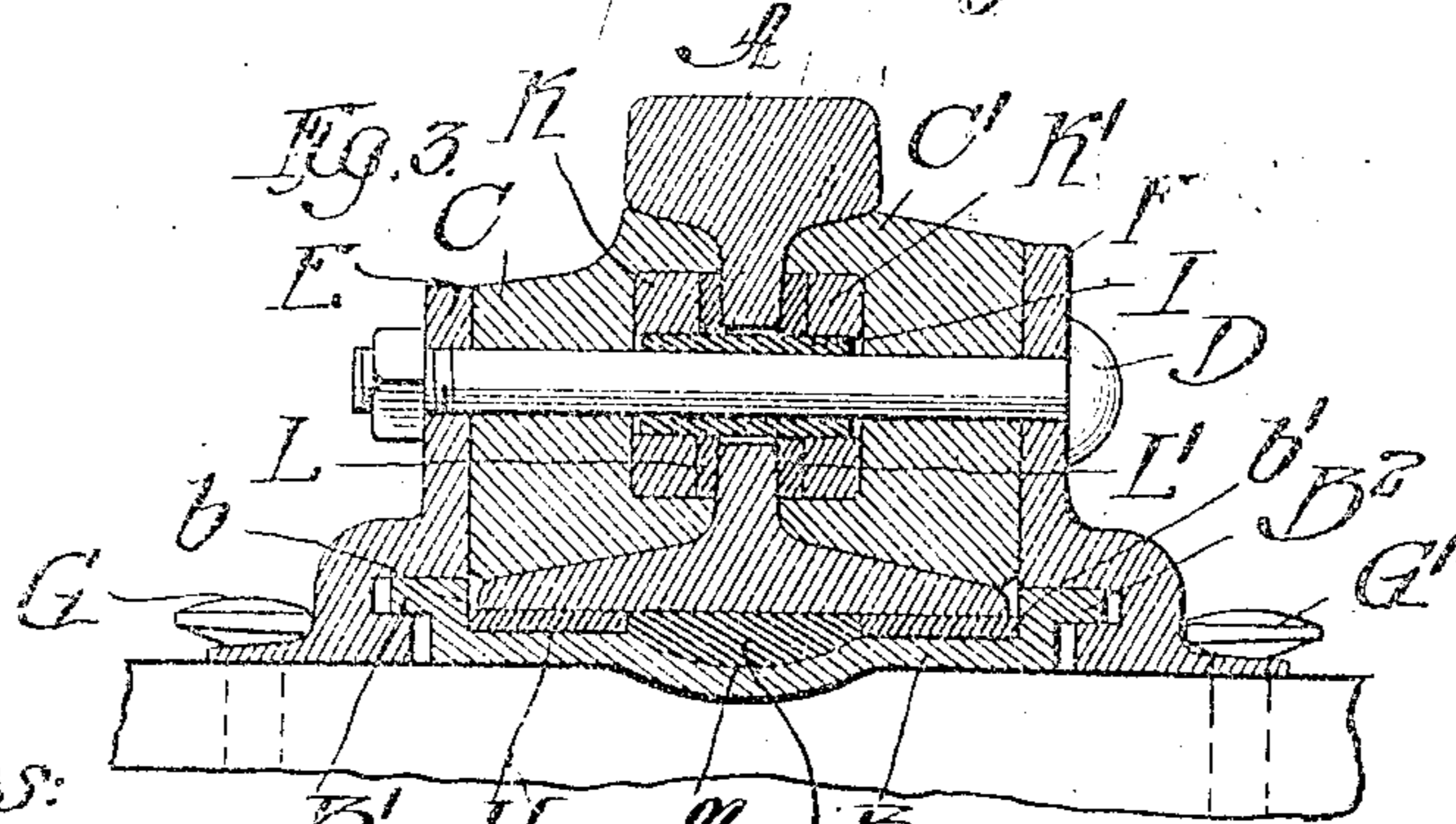
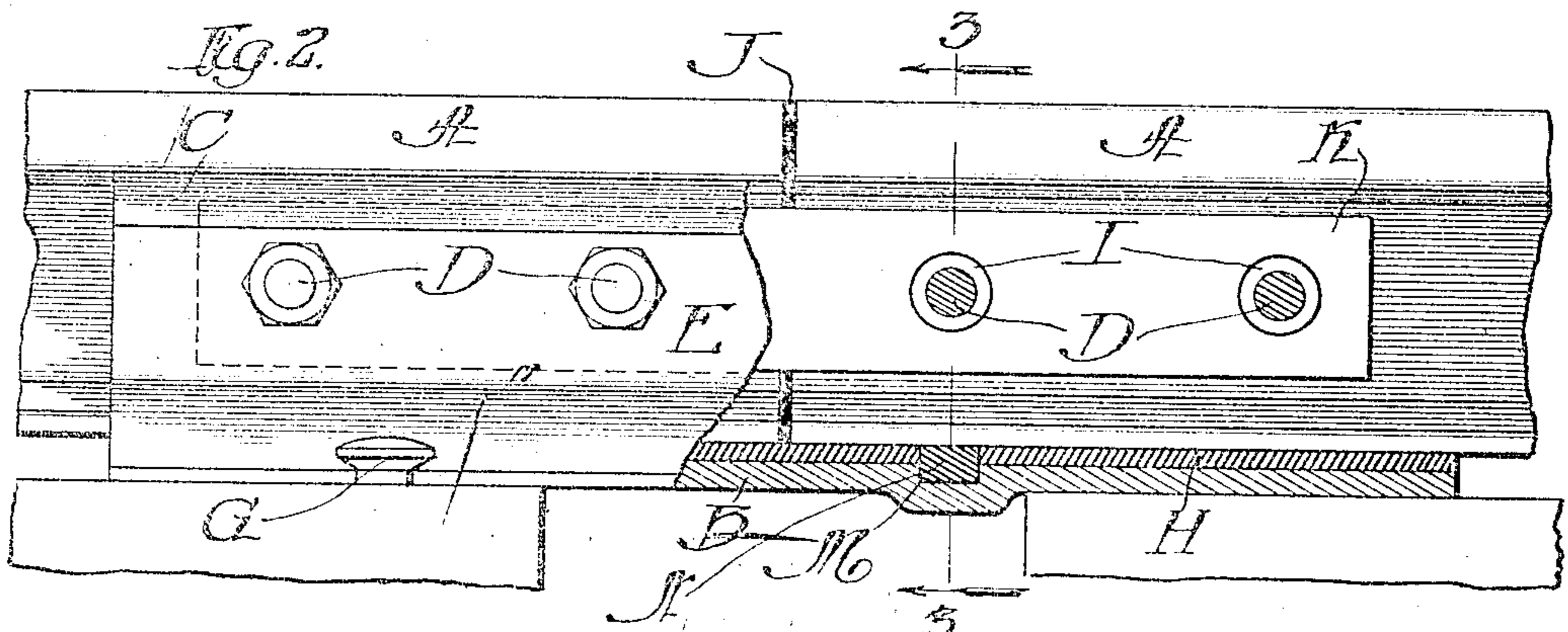
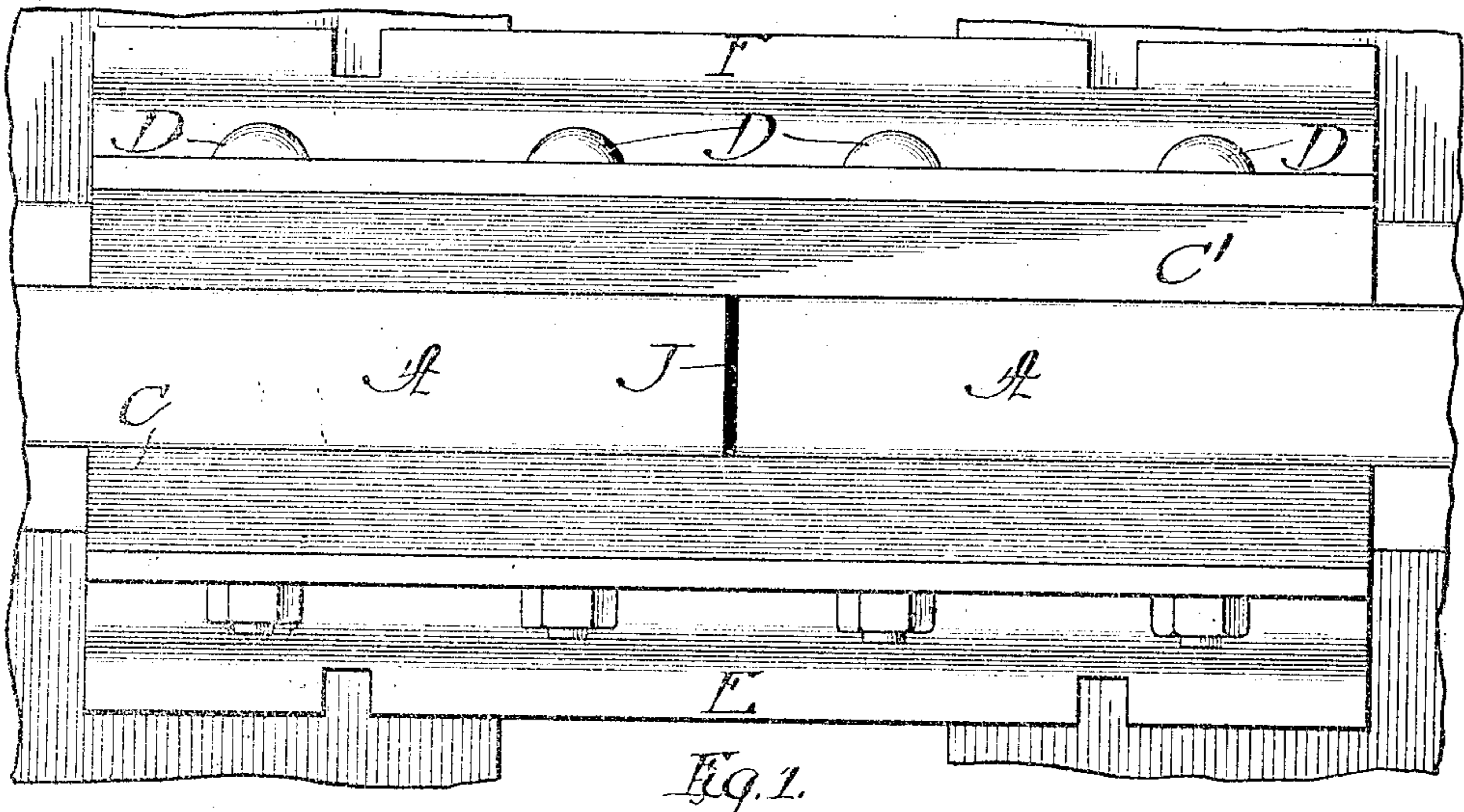
PATENTED MAR. 17, 1908.

B. WOLHAUPTER.

INSULATING RAIL JOINT.

APPLICATION FILED SEPT. 21, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2

Fig. 4.

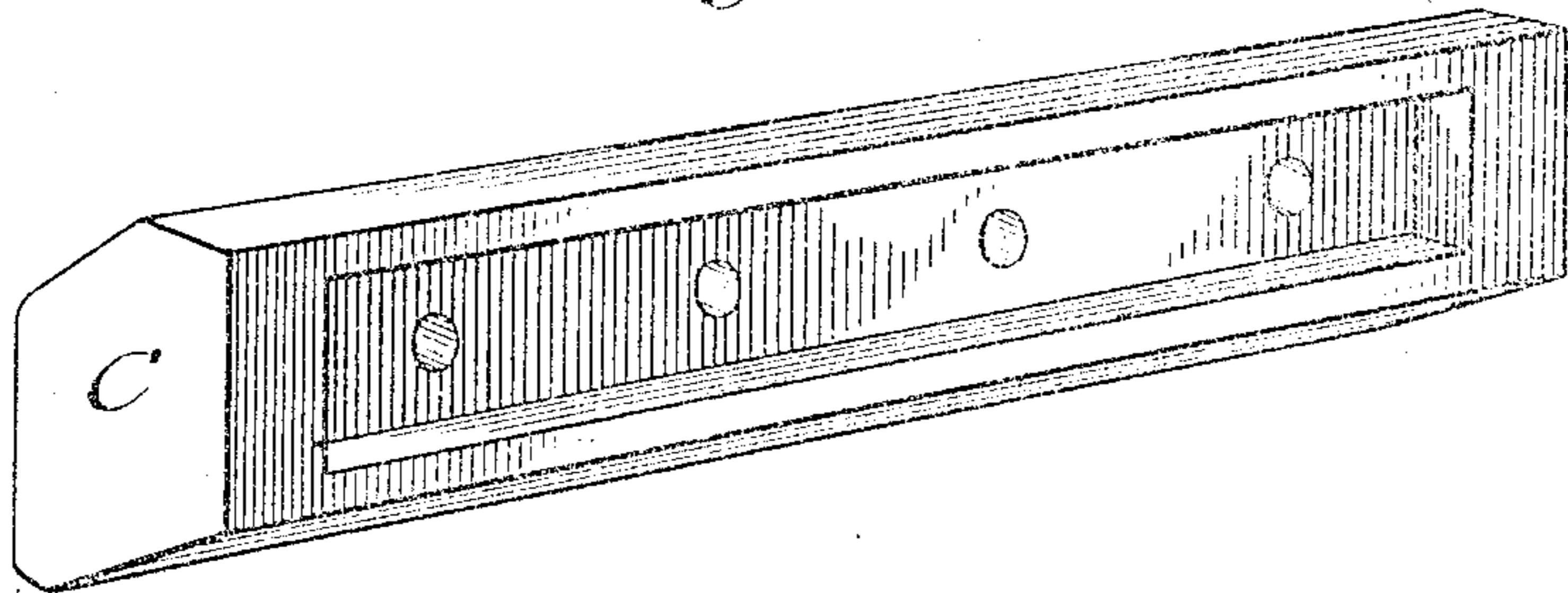


Fig. 5.

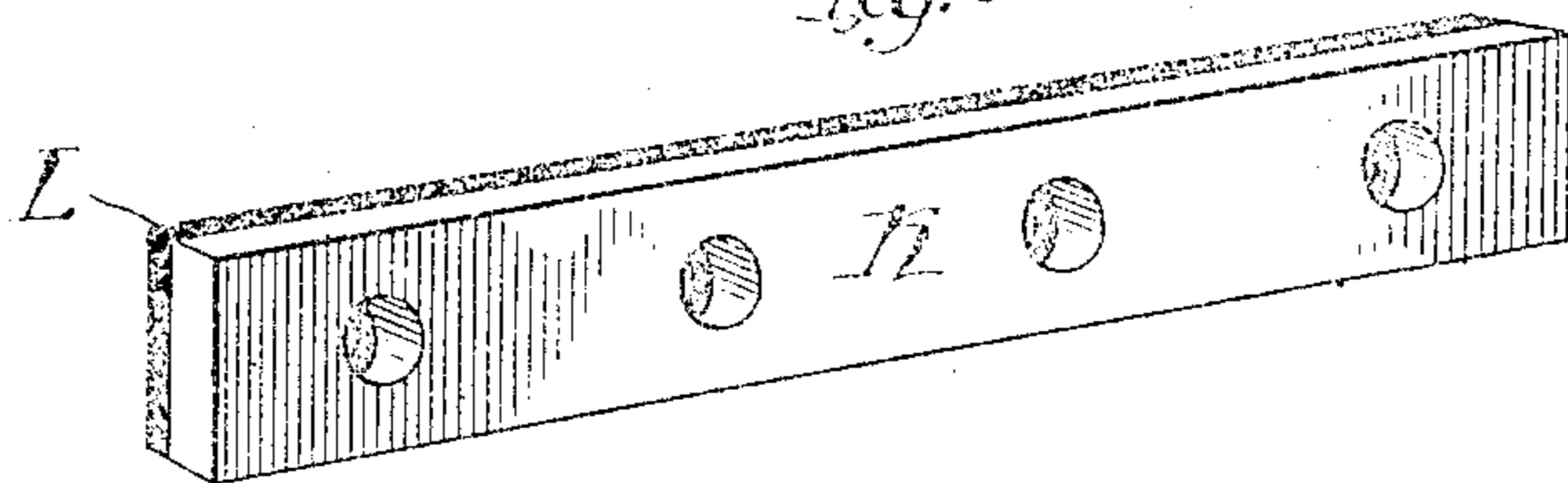


Fig. 6.

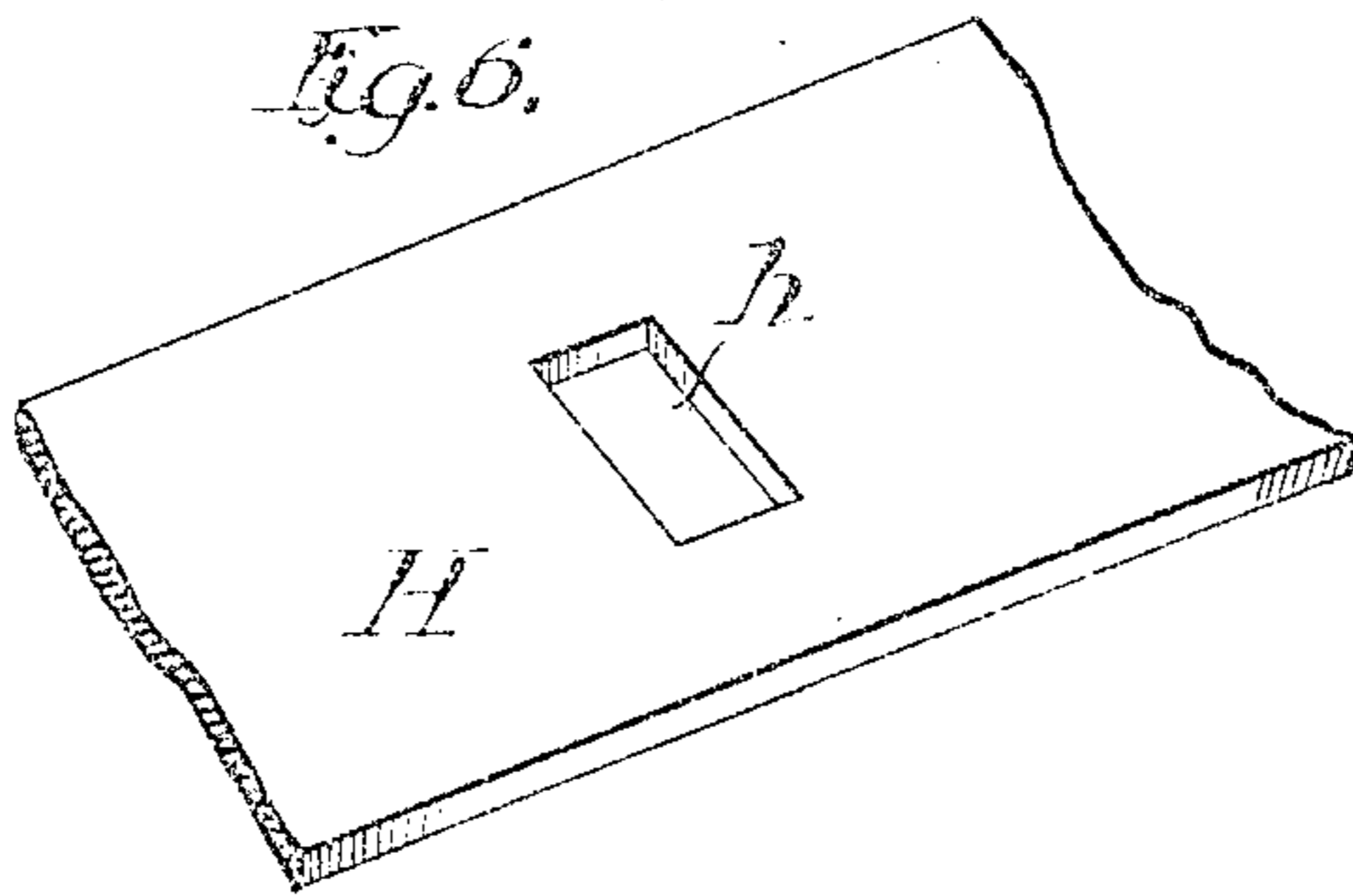
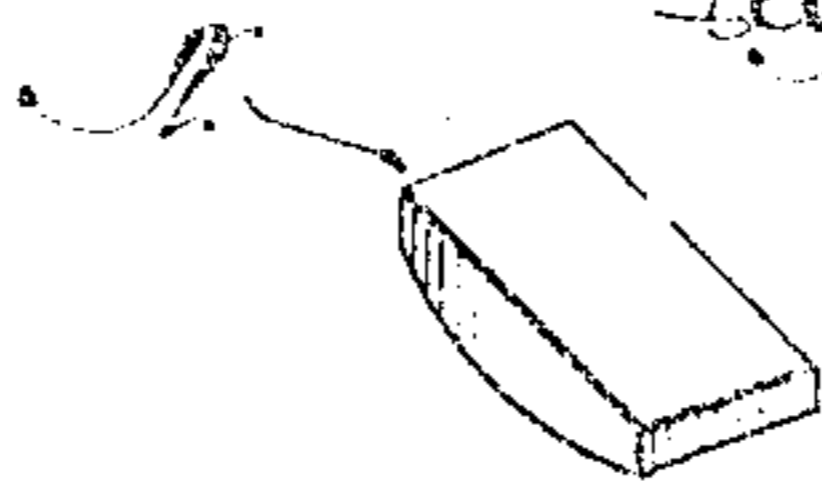


Fig. 7.



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# UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF NEW YORK, N. Y., ASSIGNOR TO THE RAIL JOINT COMPANY.  
A CORPORATION OF NEW YORK.

## INSULATING RAIL-JOINT.

No. 882,041.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed September 21, 1906. Serial No. 335,653.

*To all whom it may concern:*

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Insulating Rail-Joints; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in insulating rail-joints of that class in which the joint embraces a base-plate which supports the ends of the rails, two wooden joint-bars, and a longitudinal stiffening plate or girder.

The invention consists in the matters hereinafter described and pointed out in the appended claims.

As shown in the accompanying drawings:—  
Figure 1 is a plan view of a rail joint embodying my invention. Fig. 2 is a side elevation of the same with parts broken away to show a portion of the base-plate and insulating layer in longitudinal section. Fig. 3 is a transverse section, taken upon line 3—3 of Fig. 2. Fig. 4 is a perspective view of one of the wooden joint-bars. Fig. 5 is a perspective view of a metal tie-bar used in connection with the wooden joint-bar. Fig. 6 is a perspective view of one end of the insulating strip or layer. Fig. 7 is a perspective view of a locking block employed in connection with said insulating strip or layer.

As shown in said drawings,—A A indicate the meeting ends of the rails, B a horizontal base-plate on which said meeting ends of the rails rest, C C' the wooden joint-bars which are fitted between the under surface of the rail heads and top surface of the base-flanges of the rails, and D D the track-bolts.

E and F indicate two longitudinal, vertically arranged stiffening or girder-plates located in contact with the outer faces of the joint bars and having interlocking engagement at their lower margins with the adjacent side margins of the base-plate B, in such manner that said girder-plates are laterally movable or adjustable with respect to the base-plate, but are held from vertical movement relatively to the base-plate so that they serve as stiffening members for said base-plate. At opposite sides of its rail seat the

said base-plate B is provided with inwardly facing longitudinal shoulders  $b$   $b'$  and outside of said shoulders, said base-plate is provided with outwardly extending horizontal flanges  $B^1$   $B^2$  located above the level of the bottom surface of the base-plate. The girder-plates E and F are provided near their lower margins with longitudinal grooves adapted to receive the outwardly extending flanges  $B^1$   $B^2$  of the base-plate and which form with said flanges the interlocking connection between the girder-plates and the base-plate hereinbefore referred to. The lower margins of said girder-plates E and F are preferably arranged in the same horizontal plane with the bottom surface of the base-plate, so that said girder-plates are adapted to rest upon and are supported by the ties. Spikes G G' are shown as inserted through notches in the outer margins of the outwardly extending base-flanges of the girder-plates, to secure the latter to the ties.

Interposed between the base-flanges of the rails and the base-plate B is a sheet or layer H of insulating material, and sleeves or thimbles I of insulating material are inserted through the bolt-holes in the rail-webs and surround the track-bolts where they pass through the same. The insulating layer H, the insulating thimbles I I, and the wooden joint-bars together constitute insulating means by which the rails are electrically insulated from each other, the direct passage of electric current from one rail to the other at their abutting ends being prevented by a layer J of insulating material interposed between the ends of the rails and conforming to the shape of the same.

K K' are metal tie-bars applied against the opposite sides of the webs of the rail, and which are seated in longitudinal recesses formed in the inner faces of the wooden joint-bars C C' to receive them, as clearly seen in the perspective view, (Fig. 4). Said tie-bars are provided with bolt-holes through which pass the several track-bolts. The purpose of said tie-bars is to provide a connection between the track-bolts at points close to the webs of the rails, and thereby prevent the bending of the track-bolts when the rails contract such as might occur by reason of the engagement of the outer ends of the track-bolts with the girder-plates, if said tie-bars were absent. In connection with said tie-plates K K', insulating strips or

layers L L<sup>1</sup> are located between the inner faces of the tie-bars and the adjacent faces of the webs of the rails; said insulating layers L L<sup>1</sup> being preferably of the same width and length as the tie-bars. To insulate the track-bolts from the tie-bars, the holes in the latter and in the insulating layers L L<sup>1</sup> are made as large in diameter as the holes in the webs of the rails, and the insulating sleeves or thimbles I are made of sufficient length to extend through the rail webs, the insulating layers K, and the tie-bars J, so that they serve both to insulate the track-bolts from the rails and also from the said tie-bars.

An important advantage gained by the arrangement of the insulation between the joint-bars and the rails is that all of such insulation is inclosed by the wooden joint-bars and thereby protected from rain, moisture, and mechanical injury.

Provision is made in the joint illustrated for holding the insulating layer H in place or from shifting endwise from its proper position between the rail ends the base-plate G, as follows: In the said insulating layer H is formed an aperture *h* which, as shown in Figs. 2, 3 and 6, is of rectangular form, and in the base-plate beneath said aperture *h* is formed a recess or socket M (Figs. 2 and 3), preferably formed by depressing the metal of the base-plate by a swaging operation. A locking block or key N of insulating material is adapted to fit within the aperture *h* of the insulating layer, and also in the recess or socket M. Said key, by its engagement with the insulating layer and the base-plate, serves to prevent any shifting movement of the insulating layer on the base-plate. Said locking block N is shown as having a convexly curved lower surface, and the recess M as being of corresponding form. This particular form of the parts is, however, not essential.

It will be manifest that when the parts of the joint are assembled, the key N will be held in place, or in engagement with the insulating layer and base-plate, by its contact with the lower surface of the rail above it.

While the joint bars have been hereinbefore described as being made of wood, yet it is to be understood that in carrying out my invention, an insulating material, other than wood may be employed in the construction of such joint bars.

I claim as my invention:—

1. An insulating joint comprising a base-plate, a girder-plate having interlocking connection at its lower margin with said base-plate, a joint-bar of insulating material inter-

posed between the rails and girder-plate, a tie-bar interposed between the webs of the rails and the joint-bar and track-bolts extending through the rails, the tie-bar, joint-bar and the girder-plate.

2. An insulating joint comprising a base-plate, a girder-plate having interlocking connection at its lower margin with said base-plate, a joint-bar of insulating material interposed between the rails and girder-plate, a tie-bar interposed between the webs of the rails and the joint bar, track bolts extending through the rails, the tie-bar, joint-bar and girder-plate, and insulating sleeves inserted through the holes in the webs of the rails and in said tie-bar and surrounding said track-bolts.

3. An insulating rail-joint comprising a base-plate, a girder-plate, a joint-bar of insulating material interposed between the rails and the girder-plate, a metal tie-bar located adjacent to the webs of the rails, the said joint-bar being provided in its inner face with a recess to receive said tie-bar, insulating sleeves interposed between said track-bolts and the webs of the rails, and an insulating layer or strip applied between the webs of the rails and the said tie-bar.

4. An insulating rail joint comprising a base-plate, two girder-plates, joint-bars of insulating material interposed between the rails and the said girder-plates, metal tie-bars located adjacent to the webs of the rails, said wooden joint-bars being provided on their inner faces with recesses to receive said tie-bars, track-bolts inserted through the rails, the tie-bars, the joint-bars and said girder-plates, insulating sleeves inserted through holes in the webs of the rails and tie-bars and surrounding the track-bolts, and insulating layers or strips applied between the webs of the rails and the said tie-bars.

5. An insulating rail joint comprising a base-plate, an insulating layer applied between the rails and said base-plate, and means for holding said insulating layer in place upon the base-plate embracing an aperture in the insulating layer, an upwardly facing closed socket in the base-plate, and a key of insulating material inserted in said aperture and socket.

In testimony that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 14th day of September A. D. 1906.

BENJAMIN WOLHAUPTER.

Witnesses:

JAME E. DAUGHERTY,  
C. CLARENCE POOLE.