

(No Model.)

M. K. BOWEN.
RAIL BOND AND CONNECTION.

No. 575,388.

Patented Jan. 19, 1897.

Fig. 1.

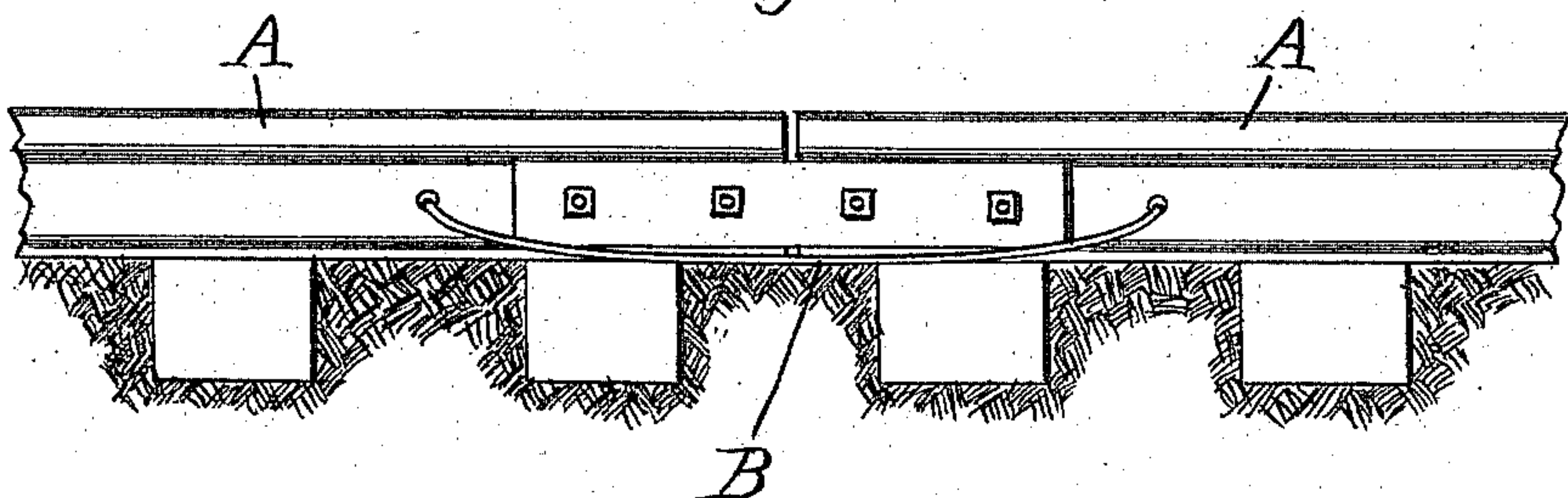


Fig. 2.

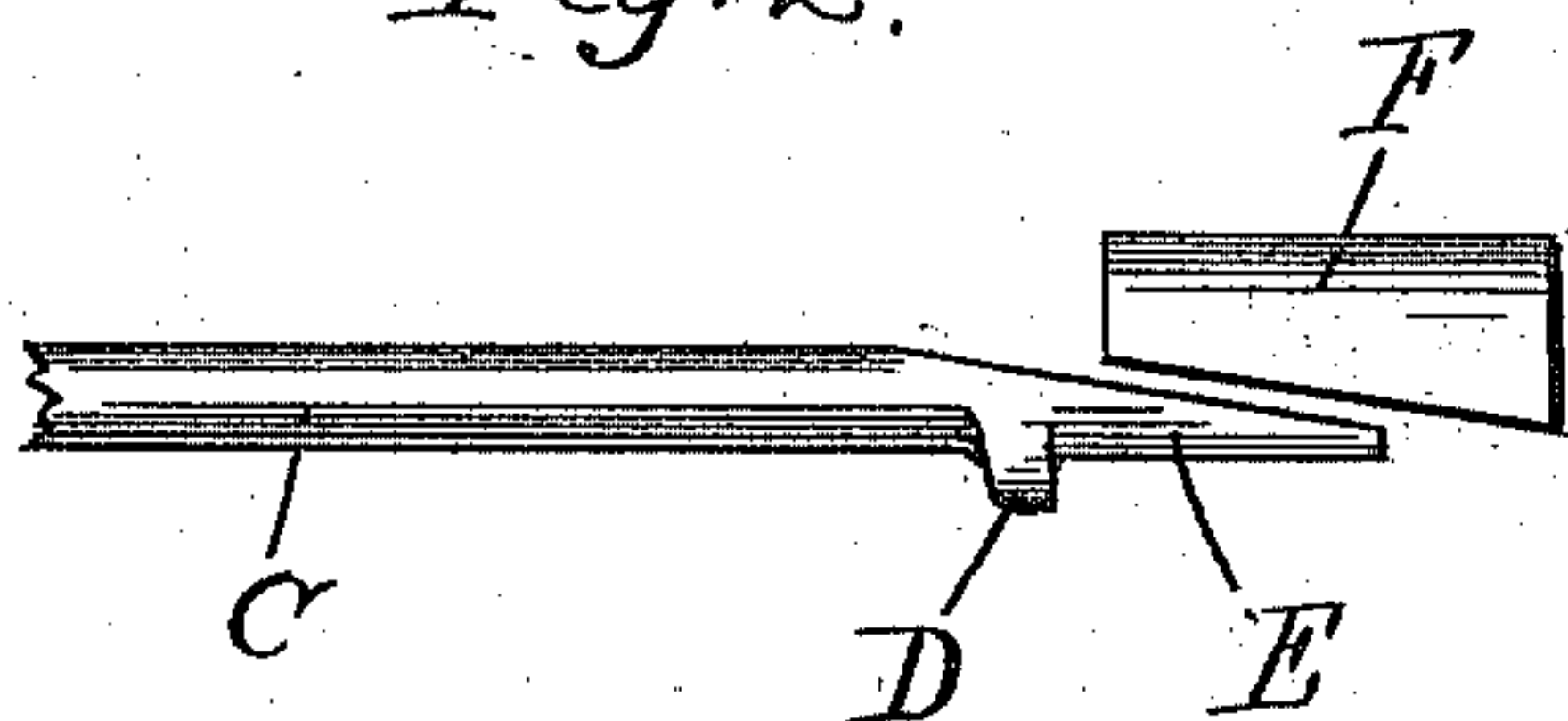


Fig. 3.

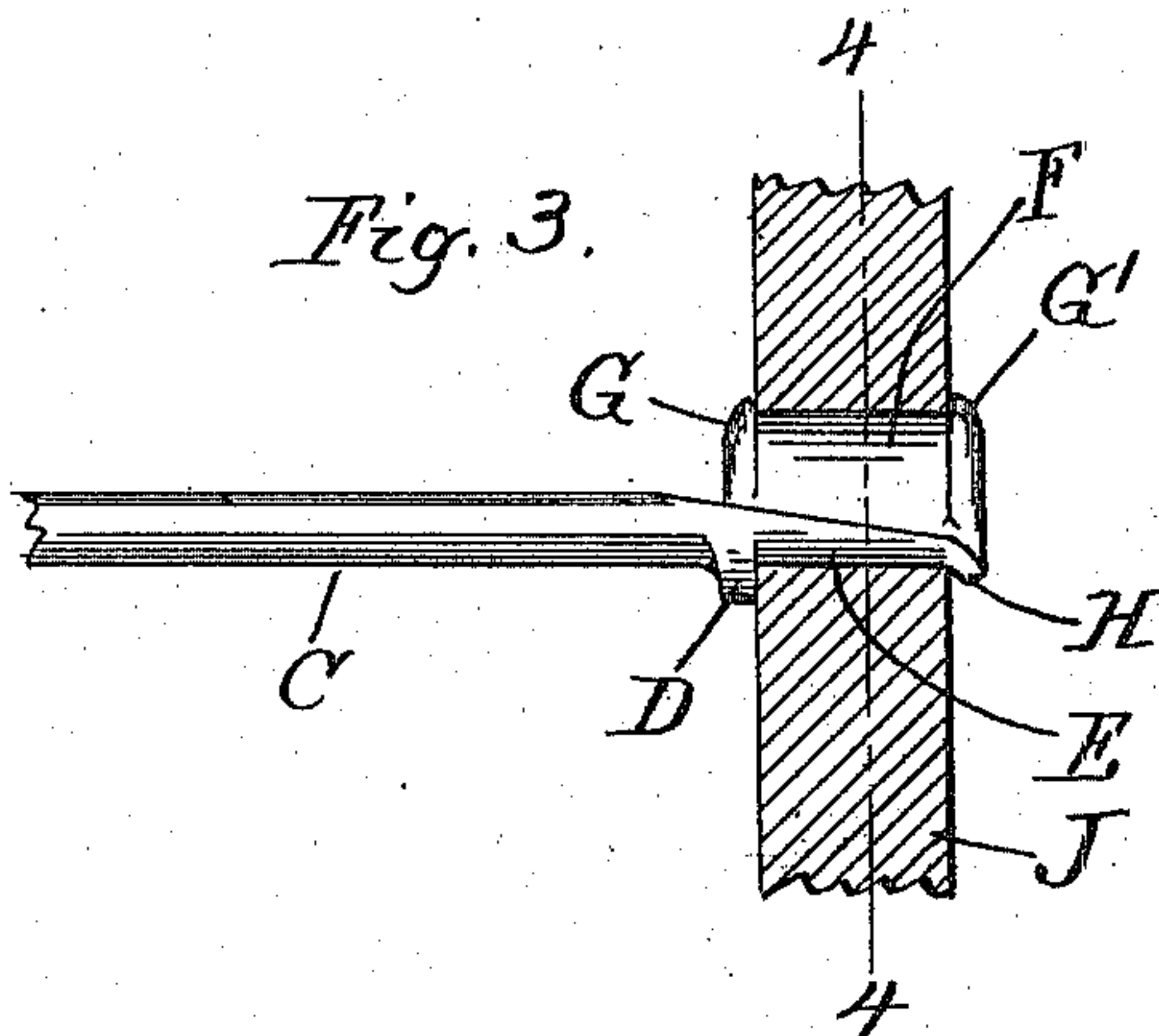
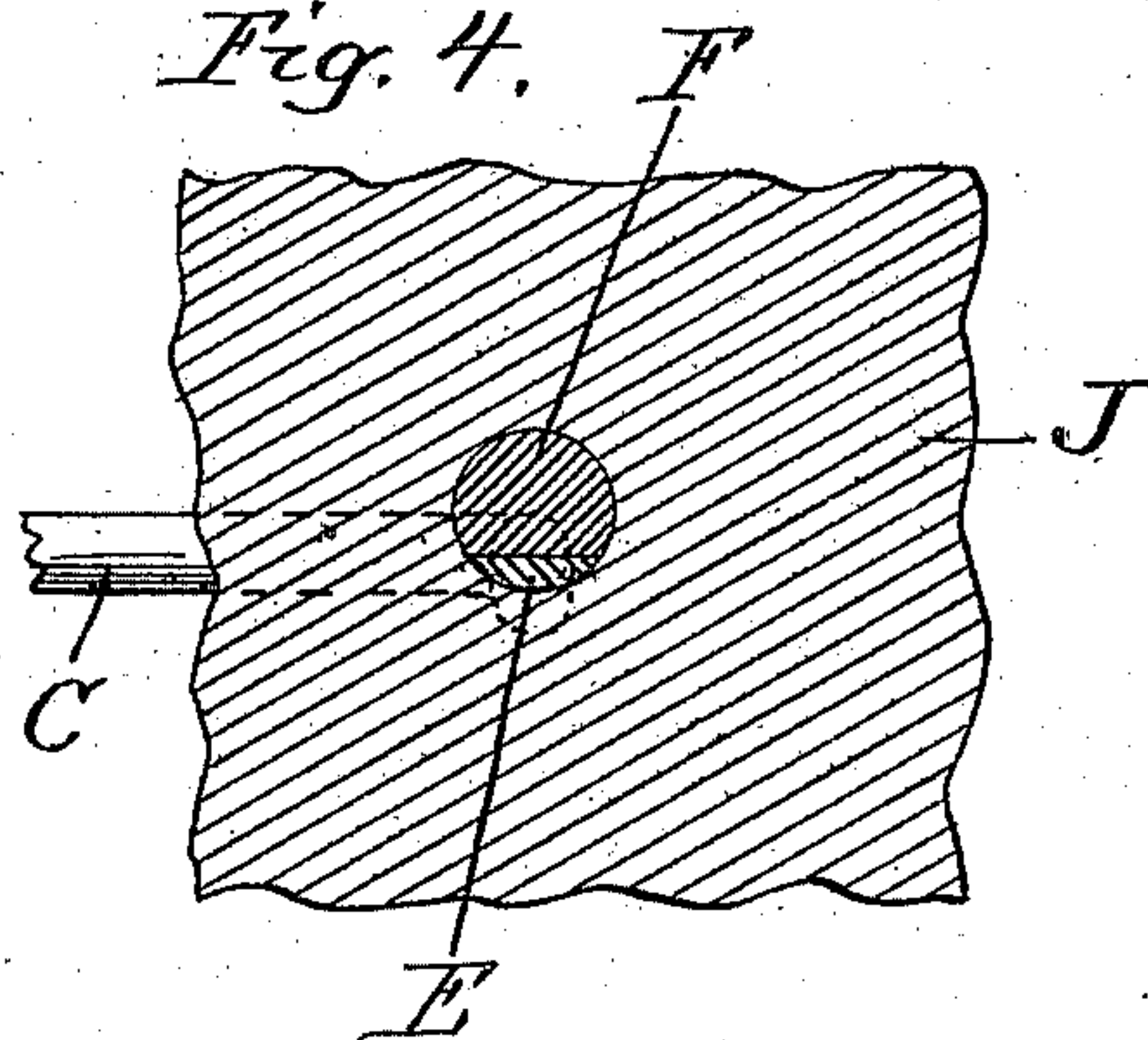


Fig. 4.



Witnesses,
E. F. Wray.
Lilly Johnstone.

Inventor
Menard K Bowen
by Francis W. Parker,
his Atty.

UNITED STATES PATENT OFFICE.

MENARD K. BOWEN, OF CHICAGO, ILLINOIS.

RAIL BOND AND CONNECTION.

SPECIFICATION forming part of Letters Patent No. 575,388, dated January 19, 1897.

Application filed October 9, 1895. Serial No. 565,134. (No model.)

To all whom it may concern:

Be it known that I, MENARD K. BOWEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail Bonds and Connections, of which the following is a specification.

My invention relates to rail-bonds and electrical conductors for connecting the adjacent rails in an electrical railway system.

It is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the two ends of the rail with my conductor connecting them. Fig. 2 is a view of the conductor and the wedge separated. Fig. 3 is a view of these parts brought together and firmly seated within the rail. Fig. 4 is a section on line 4 4, Fig. 3.

Like parts are indicated by the same letters in all the figures.

A A are rails, the adjacent ends of two of them being connected by the conductor B. This conductor consists of the body C with the lateral projection D and the wedge-shaped portion E.

F is a wedge. G and G' are the upset ends of the wedge; H, the upset end of the wedge-shaped portion of the bond.

J is the web of the rail.

I have here illustrated one form of my invention, though it will be readily understood that there are other forms or other constructions and arrangements of the same parts or of similar parts which will accomplish the same result in substantially the same way. In rail-bonds of this character it is very desirable to have a relatively large head, hence the difficulty in making the bond, for it is not easy to upset or form on the end of a relatively thin wire a head large enough to give the required contact-surface. In making these larger heads it is difficult to avoid having several pieces, but of course in work of this kind the fewer the number of pieces the better. Moreover, these several pieces should come together in the rail with the least possible difficulty, that is to say, it should not be necessary for the parts to fit each other very snugly or smoothly in the first instance, but variations in size and shape should be

permissible. This is because of the fact that the holes will vary somewhat in size and location, and the parts of the conductor and conductor-head are themselves liable to some variation incident to wear and injury resulting from shipping and the like. Now in my bond or connector the end of the conductor, which is of relatively small cross-section, preferably is shaped or formed as indicated in the drawings, that is, the end is drawn out into a sort of wedge-shaped piece with an enlarged arc for its outer circumference and a flange or projection. A wedge, preferably of the same material as the conductor, is now provided, the same being of such size and shape as to complete the cylinder, of which the wedge-shaped portion of the bond is a part, and which also has an inclined surface to engage the inclined surface of the end of the bond. These parts are now brought together within the aperture in the web of the rail, and they are forced or driven together, as indicated in Fig. 3, and preferably until the heads or ends are both upset, so as to hold all the parts in secure position after they have been expanded, so as to make a sort of coal-well between the adjacent inclined surfaces of the wedge and conductor and between their outer surfaces and the metal of the web.

I lay no stress upon the size or proportions of the end of the wedge or indeed upon their particular shapes, as the main point is that I combine a part having one inclined surface with a formation on the end of the conductor having an opposed inclined surface, the two parts being forced firmly together within the rail, neither being inclosed or surrounded by the other. If it were desired, the outer surfaces could be slightly inclined and the whole could be itself slightly tapered. Such a variation in shape is suggested by dotted lines in Fig. 4. The conductor is preferably relatively small in cross-section, as above stated—that is, relatively small in comparison with the completed head.

I claim—

A rail-bond comprising a conductor of relatively small cross-section with one end cut away so as to form an inclined surface, said

conductor provided with a lateral projection near the end thereof, a large portion or end normally separate from said bond and provided with inclined surfaces, the two adapted
5 to engage each other when forced together within the walls of the web of the rail so as to form a bond of relatively small cross-section having enlarged ends in contact with the rail, substantially as described.

MENARD K. BOWEN.

Witnesses:

DONALD M. CARTER,
LILLEY JOHNSTONE.