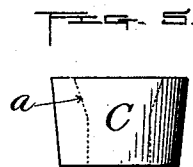
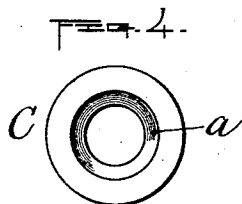
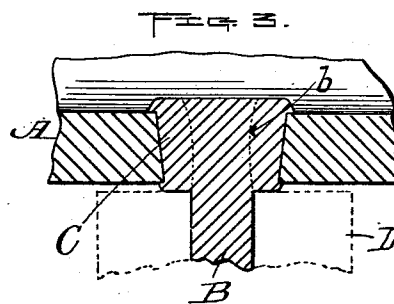
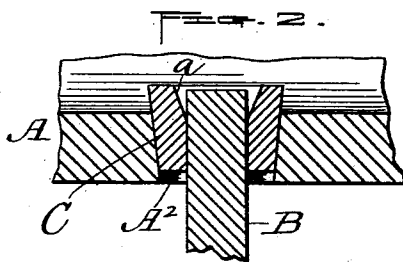
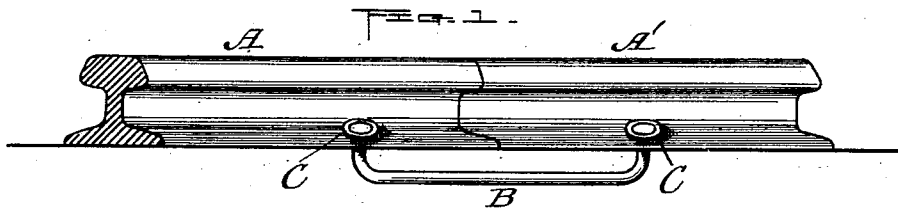


(No Model.)

G. H. SCOTT.
ELECTRIC RAIL BOND.

No. 571,888.

Patented Nov. 24, 1896.



WITNESSES;
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UNITED STATES PATENT OFFICE.

GEORGE HASKELL SCOTT, OF WORCESTER, MASSACHUSETTS.

ELECTRIC RAIL-BOND.

SPECIFICATION forming part of Letters Patent No. 571,888, dated November 24, 1896.

Application filed April 23, 1896. Serial No. 588,716. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HASKELL SCOTT, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Electric Rail-Bonds; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents two abutting rail-sections with my improved rail-bond applied thereto. Fig. 2 is an enlarged longitudinal section through one end of my said rail-bond fitted in the rail-flange opening preparatory to being headed over by hammering to fasten it in position, as will be hereinafter more fully described. Fig. 3 is a similar view to that shown in Fig. 2, showing said end of the rail-bond thus fastened in the rail-flange; and Figs. 4 and 5 represent an end and side view, respectively, of one of the collars of the rail-bond, which will also be hereinafter more fully described.

My invention relates more particularly to rail-bonds designed to be applied to the horizontal flanges of the rails, although it may be equally as well applied to the vertical flanges of said rails. The object thereof is to produce a rail-bond for electric railroads of simple and inexpensive construction, which may be easily applied, and whereby a perfect and secure electrical connection may be obtained between one rail-section and another.

Said invention consists of a connecting-rod of the usual length for connecting one rail with another and of two collars fitted one over each end of said connecting-rod and also adapted to be driven into the rail-flange opening, said collars being slightly tapered or conical-shaped upon the outside and with their longitudinal opening cylindrical in shape about half the length from their smallest toward their largest ends, and thence flaring outward tunnel-shaped toward said larger ends, as and for the purpose hereinafter more fully set forth.

To enable others skilled in the art to which my invention appertains to better understand the nature and purpose thereof, I will now proceed to describe it more in detail.

In the drawings, A A' represent the two abutting rail-sections previously referred to.

B is the connecting-rod between said rail-sections, and C C the collars which are fitted over the ends of said connecting-rod and in the rail-flange openings A².

The novelty of my invention lies principally in the construction of the collars C C, in connection with the connecting-rod and rail-flanges. Said collars are, as before stated, tapered or conical-shaped upon the outside, and their longitudinal openings in which the ends of the connecting-rod fit are made cylindrical in shape about half their length from their smallest toward their largest ends, and thence the remaining distance to said larger ends flaring outward tunnel-shaped, as is shown at *a* in Figs. 2, 4, and 5 of the drawings.

The transverse diameter of the collars at their smallest ends is about the size of the openings in the rail-flanges, so that when said collars are driven therein a tight fit is produced between said collars and the connecting-rod and rail-flanges. Being tapered or conical-shaped, as aforesaid, when they are thus driven in, the first few blows of the hammer upon the ends C' causes the centers thereof to "buckle" or expand laterally to such an extent as to slightly compress and "squash out" the metal of the connecting-rod to a smaller diameter at the point *b*, as is indicated by dotted lines in Fig. 3, thereby effectually holding said rod from slipping longitudinally in either direction.

In the operation of fastening one of the end devices of the bond in the rail-flange the collar is first inserted from the top. The end of the connecting-rod is then passed up from underneath into said collar to within a short distance of its upper end, as is indicated in Fig. 2. By now holding said connecting-rod with one hand and hammering, at first lightly, upon the top end of the collar the latter is driven down until a tight connection of the parts is obtained. By now hammering with more force the collar is caused to be expanded laterally at the center, as previously described, and is also headed over at the top against the rail-flange around its opening, said operation also causing the end of the connecting-rod to be headed over onto the in-

ternal bevel of the collar, as is shown in Fig. 3. By using a block against the bottom end of the collar, as indicated by dotted lines D in said Fig. 3, said bottom end of the collar may also be headed over onto the under surface of the rail-flange and thereby forming a doubly-secure bond connection.

By making the collars C C tapering or conical-shaped upon the outside and providing the same with the internal flaring bevel at their largest ends, as described and shown, it will at once be apparent that the collars and rod are held absolutely secure from longitudinal movement or from becoming loose in the rail-flanges and that a very tight and perfect electrical connection may be maintained between the parts and between one rail-section and another. It will also be apparent that a bond device thus constructed may be easily and quickly applied and that the cost thereof is reduced to a minimum.

The openings in the rail-flanges may be of cylindrical shape, as usual, or, if preferred,

they may be tapered slightly, as is shown in the drawings, by driving a tapering plug into the same, or otherwise formed in any other well-known way.

Having now described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

An electric rail-bond comprising in combination the connecting-rod, B, and the collars C, C, adapted to fit over the ends of said connecting-rod and in the rail-flange openings, said collars being tapered or conical-shaped upon the outside, and their longitudinal openings cylindrical in shape about half-way through from the smallest to the largest ends of the collars, and flaring outward, tunnel-shaped therefrom, to the larger ends of said collars, substantially as and for the purpose set forth.

GEORGE HASKELL SCOTT.

Witnesses:

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C. F. WESSON.