(No Model.)

T. WALLACE.

RAIL BOND.

No. 564,415. Patented July 21, 1896.

Fig. 1

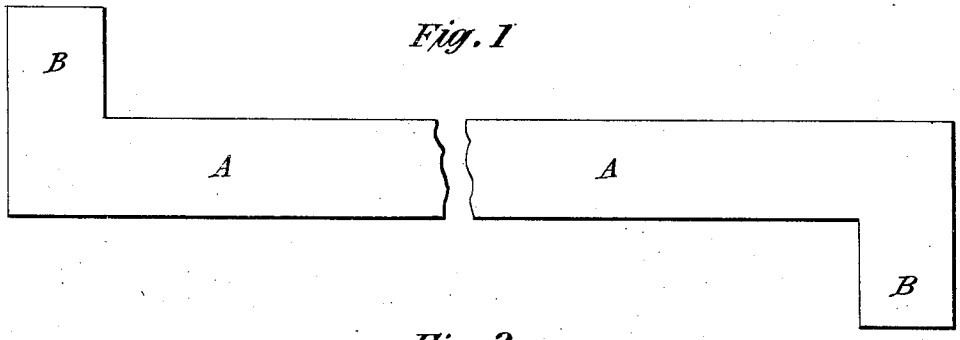


Fig. 2

Fig. 3

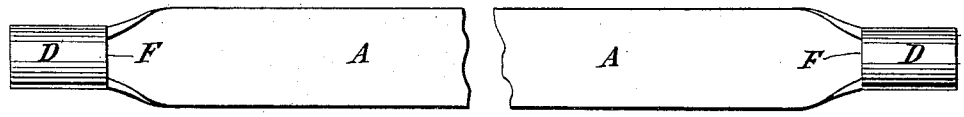


Fig. 5

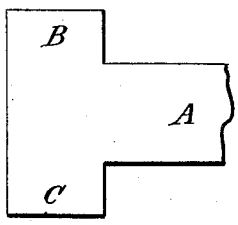
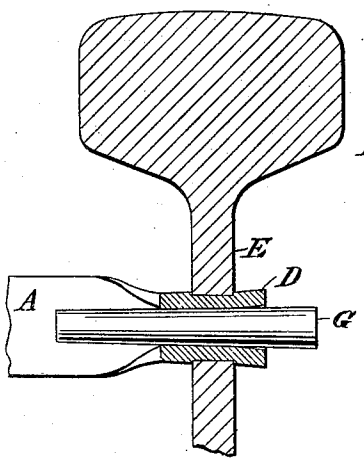


Fig. 4



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS WALLACE, OF ANSONIA, CONNECTICUT.

RAIL-BOND.

SPECIFICATION forming part of Letters Patent No. 564,415, dated July 21, 1896.

Application filed March 20, 1896. Serial No. 584,032. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WALLACE, a citizen of the United States, residing at Ansonia, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Rail-Bonds, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The present invention relates to means for connecting the rails of railroads together electrically.

The purpose of the invention is to produce a new and cheap rail-bond, of cheap construction and simplicity of manufacture, and which shall have improved means of effecting a perfect electrical contact with the railroad-rails.

The invention consists in general of a bond-blank made of a strip or ribbon of copper or other suitable metal having a wing or wings extending laterally from the same at each end and integral with the same when the ribbon is cut from sheet metal, and also of a finished bond shaped from such a blank, its lateral wings being shaped into the form of cylindrical plugs or sockets, the band or ribbon between the sockets remaining flat, the said sockets being adapted in form to fitting holes in the rails, and to receive plugs for expanding the metal of the same against the metal of the holes in the rails.

In the drawings, Figure 1 represents one form of a blank from which I construct my improved bond. Fig. 2 shows the socket ends of the bond partially shaped. Fig. 3 shows the bond completed. Fig. 4 shows a cross-section of a rail with the bond permanently attached to the same. Fig. 5 shows a modified form of the blank composing the bond.

Referring to the drawings in detail, A represents the main strip or portion of the bond which connects the two adjacent or abutting rails together electrically. This strip is of a ribbon-like form in suitable width and thickness and is cut from a sheet or plate of metal. In cutting the ribbon from the sheet the wings B B are left thereon, which are of a sufficient width to form the cylindrical sockets. In Fig. 1 I have shown these ears as on opposite sides of the strip, although they may be cut so as to be on the same side of the strip, and, as seen in Fig. 5, there may be two ears B C, each of such a breadth as corresponds to about one-quarter of the circle of the socket to be formed. A blank thus cut from sheet metal is submitted to the action of rolls, dies, spinning, or other like-acting machinery, and each end of the blank, together with the ear or ears thereon, is turned up into a socket-like form D. (Shown in Fig. 2.) I have left the socket in this figure partially incomplete to show more clearly its construction, that is, to illustrate that the outer edge of the ear closes upon the edge of the ribbon without forming a closed seam, or the edges of the ear, if a blank of form in Fig. 5 be used, close similarly upon each other, whereby the socket is left slotted from end to end. In Fig. 3 the sockets D are shown finished, one half the socket being formed from the ribbon and the other half being formed from the ear or ears on the ends of the same. Although I have shown an intermediate step, by Fig. 2, it is to be understood that the socket may be formed by one action of proper mechanism.

The socket D is to be inserted in a properly-formed hole in the web E or other portion of rail, as seen in Fig. 4, and driven firmly therein by hammer or other tool acting upon the inner end F of the socket. After the socket has thus been well seated in the rail a cone-shaped plug G is driven through the bore of the socket to further and permanently fix the socket in the rail. Preferably I drive this plug from the outer end of the socket. That is to say, in driving the socket into the rail it is more or less headed or jammed into that end of the hole in the rail, and by driving the plug into the outer end of the socket that end of the latter is expanded into and somewhat bulged or upset around that end of the hole to still further insure intimate contact of as much of the socket metal with the rail metal as is practicable.

I am aware that it has been proposed to attach a hollow, but not slotted, cylindrical piece to the end of a wire bond to insert such socket in a hole in a railroad-rail, and then to drive into the socket a plug or expanding piece, and I do not claim such a construction of bond. The particular features of my invention are that all the material of the bond is cut in one integral piece from sheet or plate metal, and that the sockets formed on

the end of such ribbon are composed of the metal of the ribbon and are lengthwise slotted. The embodiment of these features permit the economical and easy construction of the bond, obviate any necessity for welding, soldering, or otherwise joining parts of the bond to each other, and permit the sockets on the band to be readily and effectively expanded into intimate contact with the metal of the rail.

What is claimed as new is—

1. A rail-bond, for connecting rails together electrically, consisting of a ribbon or band of metal having each end brought to the form of a plug or socket, the metal of which is integral with the band and which plug or socket is shaped and properly adapted to be driven into a properly-formed orifice in a rail.

2. A rail-bond, for connecting rails together electrically, consisting of a ribbon or band of metal having each end brought to the form of a hollow and lengthwise-slotted socket, the metal of which is integral with the band and which socket is shaped and properly adapted to be expanded into a properly-formed orifice in a rail.

3. In combination with a railroad-rail provided with a hole or orifice, a rail-bond composed of a strip or band of metal the integral ends of which are shaped to socket form corresponding to the hole in the said rail, and a plug formed to be driven in the hole in said sockets and for securing the same in the hole in the rail, substantially as described.

4. In combination with a railroad-rail provided with a hole or orifice, a rail-bond composed of a strip or band of metal the integral ends of which are shaped into the form of a hollow and slotted socket corresponding to the hole in the said rail, and a plug formed to be driven in the hole in said sockets and for securing the same in the hole in the rail, substantially as described.

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