March 2, 1943. F. C. LAVARACK 2,312,989

RAIL BOND

Filed March 20, 1939

Fig. 1.

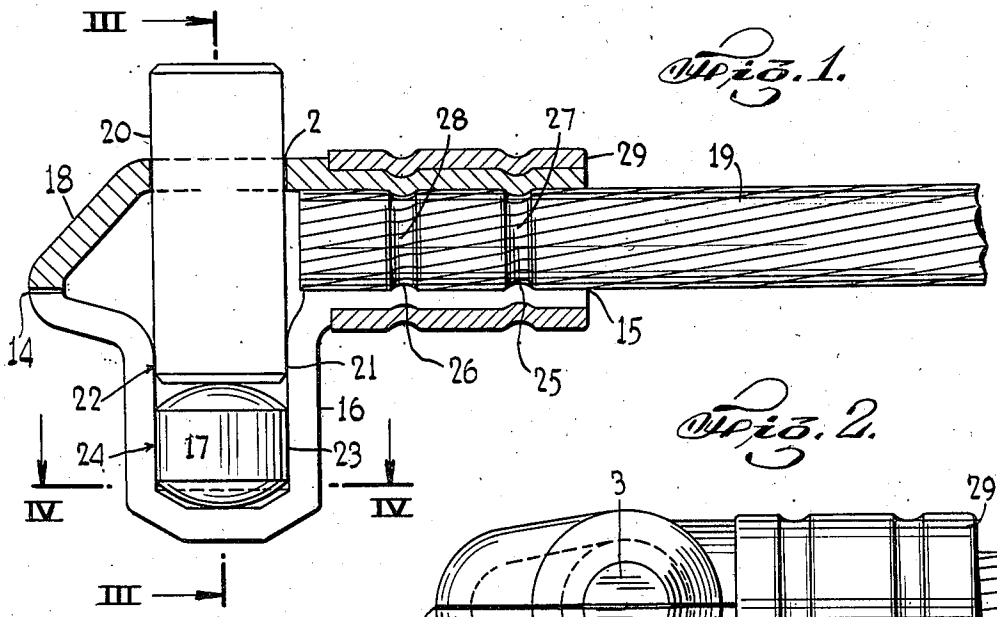


Fig. 2.

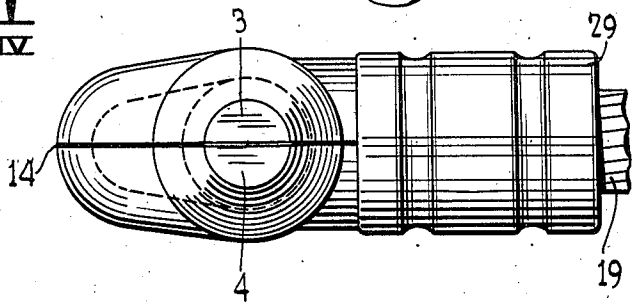


Fig. 4.

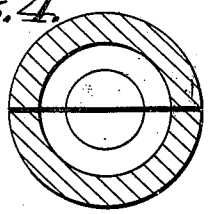


Fig. 5.

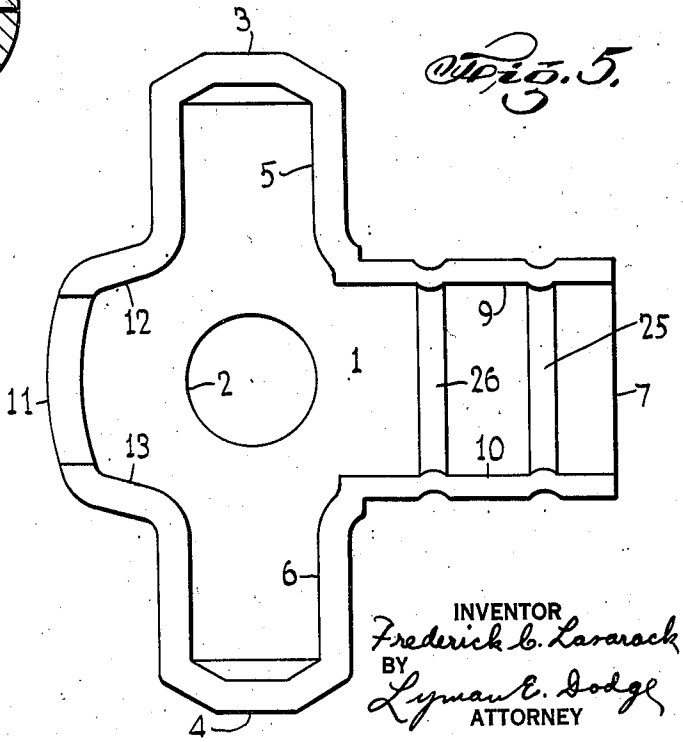
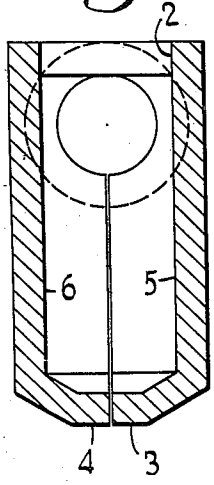


Fig. 3.



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RAIL BOND

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Application March 20, 1939, Serial No. 262,911

5 Claims. (Cl. 287—20.3)

This invention relates to conductors, especially to conductors usable on railways, and more particularly conductors known as rail bonds.

A principal object of this invention is to construct a device of the character described from substantially sheet material without the necessity of making excessive draws.

Other objects and advantages will appear as the description of the particular physical embodiment selected to illustrate the invention progresses, and the novel features will be particularly pointed out in the appended claims.

In describing the invention in detail and the particular physical embodiment selected to illustrate the invention, reference will be had to the accompanying drawing and the several views thereon, in which like characters of reference designate like parts throughout the several views and in which:

Figure 1 is a substantially vertical longitudinal sectional view of a device made in accordance with my invention with a conductor attached thereto in place; Fig. 2 is a bottom plan view of the device as shown in Fig. 1; Fig. 3 is a vertical sectional view on the plane indicated by the line III—III of Fig. 1, viewed in the direction of the arrows at the ends of the line; Fig. 4 is a horizontal cross-sectional view on the plane indicated by the line IV—IV of Fig. 1, viewed in the direction of the arrows at the ends of the line; Fig. 5 is a plan view of sheet material as first formed from which the device as shown by Fig. 1 is made.

In Fig. 5 there is shown a body having substantially a flat back 1 formed with an orifice 2. At oppositely disposed portions of the body 1 are well projections 3 and 4. Each of these well projections is formed with upstanding marginal portions as 5 and 6.

A sleeve projection 7 formed at a right angle to the oppositely disposed well projections 3 and 4 is also formed with upstanding marginal portions 9 and 10.

A nose projection 11 is formed on the other side of the orifice 2 in line with the sleeve projection 7 and is partially formed with upstanding projections 12 and 13.

The body 1 with its various projections and orifice could well be formed cold from substantially a sheet of material by the use of ordinary and well known dies.

After the body 1 with its various projections and marginal portions has been formed it is then partially folded in ordinary and well known manner as by the use of folding dies so that the marginal portions 5 and 6 are brought into abutment which also will bring the marginal portions 9 and 10 into abutment and the marginal portions 12 and 13 into abutment so that a bond terminal as shown by Fig. 1 is formed in which the top portion will exhibit no dividing line but the bottom portion from the point 14 to the point 15 will show a dividing line.

The terminal as shown in Fig. 1 will include a well portion 16 adapted for receiving an expanding pellet 17. This pellet 17 will be made of metal and preferably of copper and preferably of slightly softer copper than the body 1 which is also preferably of copper.

The bond terminal will also exhibit a sloping face or nose 18 which as is well understood by those skilled in the art, will serve to ward off passing objects such as dragging brake rigging. This is important because the bond terminal illustrated and described is one which is, in use, applied to the outside face of a railway rail head and so is often in danger of being struck and borne away by dragging rolling stock parts.

The terminal also provides a cylindrical sleeve portion into which the conductor 19 is positioned and which may be held therein by compressing the material of the sleeve 7 so as to firmly bind the conductor 19 in place.

The orifice 2 in the body 1 provides a means by which a pin 20 may be inserted so as to come in contact with the expanding and attaching pellet 17. When the well 16 is positioned, as is well understood by those skilled in the art, in a cavity in a rail head, the walls are supported by the walls of the cavity and when hammer blows are applied to the pin 20 the pellet 17 is expanded and forces the walls of the well 16 against the walls of the cavity and so holds the bond terminal in place.

The pin 20 may be looked upon as a permanent pin, permanently a part of the bond terminal. If it is to be made a permanent part of the bond terminal it is preferable to indent the sides of the well shown at 21 and 22 to prevent it from becoming disconnected from the bond terminal and in the same way the sides of the well will be indented at 23 and 24 to hold the pellet 17 in place. Applicant desires it to be understood, however, that he does not intend to exclude, by the showing of a pin 20 as it appears in the figure or by the statement in the specification, the use of a separate expanding pin which after having served its purpose of expanding the pellet 17 may be withdrawn.

In order to more securely hold the conductor

19 in the sleeve 7 applicant prefers to form projections as 25 and 26 on the sleeve projection 7 so that when the compression force is applied to the sleeve 7 the material of the sleeve will form grooves as 27 and 28 in the material of the conductor and so the more securely hold it.

In order to more securely hold the conductor 19 applicant also prefers to apply a collar 29 over the sleeve 7 and to compress the material of the collar into the grooved out portions of the sleeve 7 formed by making the shoulders 25 and 26.

Although I have particularly described one particular physical embodiment of my invention and explained the operation, construction and principle thereof, nevertheless, I desire to have it understood that the form selected is merely illustrative, but does not exhaust the possible physical embodiments of the idea of means underlying my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. The method of forming a railway rail bond terminal which consists first in forming a body into a blank with a substantially flat back formed with an orifice therethrough with two oppositely disposed well projections formed with upstanding marginal portions and with a nose projection formed for a portion of its length with upstanding marginal portions and with a sleeve projection formed with upstanding marginal portions and then in folding the blank to bring all opposite marginal portions in abutment.

2. The method of forming a railway rail bond terminal which consists first in forming a substantially flat sheet with an orifice, with a nose projection, with two oppositely disposed well projections and with a sleeve projection and then in folding the sheet to bring the well projections together to form a structure having a well for the reception of an attaching pellet, having a sleeve for the reception of a conductor, having a slanting nose for warding off passing objects and having an orifice for positioning a pin for expanding an attaching pellet in the well.

3. A railway rail bond terminal formed of substantially flat sheet metal provided with upstanding marginal portions folded in abutment to form a well, a sleeve and a slanting nose partially covering the well and forming an orifice in line with the central portion of the well for positioning a pin whereby an attaching pellet may be placed in the well in position to be expanded by a pin and an attaching conductor may be positioned in the sleeve and attached by compression of the sleeve.

4. A railway rail bond terminal formed of substantially flat sheet metal provided with upstanding marginal portions folded in abutment to form a well, a sleeve and a slanting nose partially covering the well and forming an orifice in line with the central portion of the well for the positioning of a pin whereby an attaching pellet may be placed in the well in position to be expanded by a pin and an attaching conductor may be positioned in the sleeve and attached by compression of the sleeve and a collar surrounding the sleeve whereby the conductor is more securely held by a compression of the collar.

5. A railway rail bond comprising, in combination: a substantially flat plate provided with upstanding marginal portions folded in abutment and forming a hollow well provided with an end wall for insertion into a rail cavity with the end wall bearing against the bottom of the cavity; a pellet positioned in the well; a pin positioned in the well outwardly of the pellet; means for positioning and holding the pin with its outer end in position to be struck whereby the pin may be struck by a hammer, the pellet expanded and the well attached mechanically and electrically in a rail cavity.

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