

(No Model.)

H. S. NEWTON.
RAIL BOND.

No. 581,562.

Patented Apr. 27, 1897.

FIG-I-

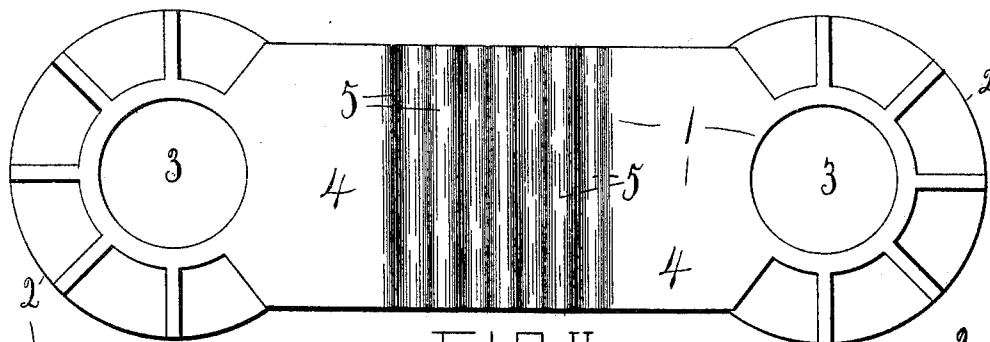


FIG-II-

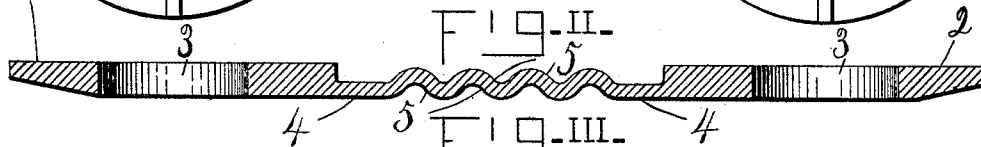


FIG-III-

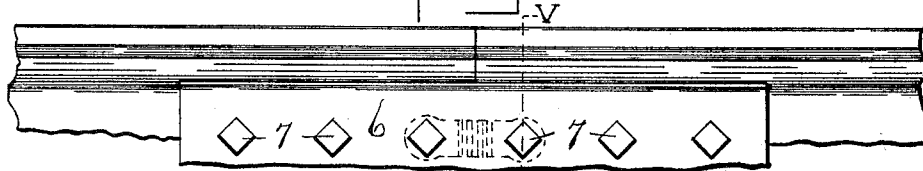
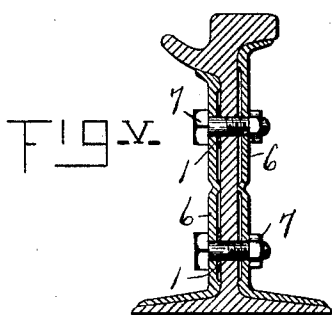
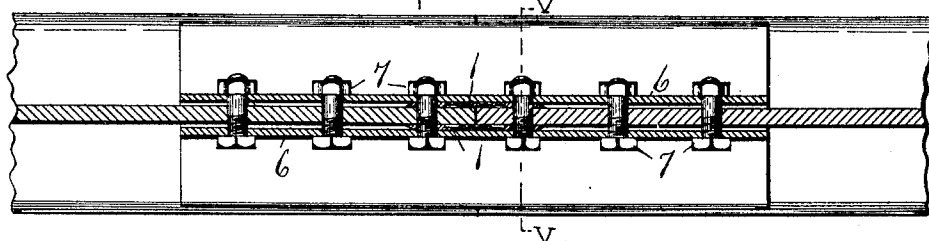


FIG-IV-



WITNESSES:

C. Schoenbeck
L. F. Weisburg

INVENTOR.

Henry S. Newton
BY *Alfred Wilkinson*
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UNITED STATES PATENT OFFICE.

HENRY S. NEWTON, OF SYRACUSE, NEW YORK.

RAIL-BOND.

SPECIFICATION forming part of Letters Patent No. 581,562, dated April 27, 1897.

Application filed October 5, 1896. Serial No. 607,875. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. NEWTON, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Rail-Bond; and I do hereby declare that the following, in connection with the accompanying drawings, is a full, clear, and exact description of the invention.

My invention is a new and improved rail-bond for electric railways, and is a simple and economical form, belonging to the class of bond described in my application, Serial No. 602,277, filed August 10, 1896.

It consists, essentially, of a comparatively thin single piece or band of metal, preferably copper. It is cheap to make and fits snugly against the rail in the space left under the fish-plate. The ends or contact-plates have their inner faces made flat and smooth to fit against a smoothed portion of the rail, and are preferably covered with tin or solder for securing them thereto. The central portion of the band or flattened connecting-wire may be corrugated to permit expansion.

My invention will be better understood by reference to the accompanying drawings, in which the same reference-numbers refer to corresponding parts in all the figures.

Figure I is an elevation of my improved bond, substantially full size. Fig. II is a longitudinal cross-section thereof. Fig. III is an elevation of a portion of a rail and fish-plate, the bond being indicated in position under the fish-plate by dotted lines. Fig. IV is a longitudinal horizontal section through a rail and fish-plates, showing the bonds in position, one bond on each side of the rail. Fig. V is a vertical section on line V V of Figs. III and IV, showing two bonds on one side of the rail.

1 indicates the whole bond made in one piece, with the ends or contact-plates 2 2 having rather large smooth inner faces, to make good contact with a corresponding smoothed portion on the web of the rail. 3 3 are holes for bolts, and 4 is the central portion or flattened connecting-wire, having corrugations 5 to permit of expansion and contraction. As here shown, the ends are made circular and are reinforced on their outer face with ribs, which give a little additional stiffness. This

exact construction is not necessary, and I do not intend to limit myself thereto, for the form may be varied as long as the essential features of my invention are preserved.

The bond may be used without solder, but it is better to secure it in position by means of solder, as described in my former application. As here shown, the ends of the band, or the contact-plates, are about one-eighth of an inch in thickness and are arranged in one plane, and the flattened connecting-wire, substantially of the same thickness, is arranged in an outer plane, by which arrangement the faces of the ends may be forced into close contact with the rail. The exact thickness of the parts is not important, but by making them and the whole bond sufficiently thin material is saved and the bond fits into place in the space under the fish-plate. The bond is preferably made of such a length that when set in position each end hole 3 3 corresponds with a fish-plate hole, by which the necessity of drilling special holes for bond-bolts is avoided.

The bond is set in position with its end holes corresponding each with a fish-plate hole, and is securely clamped in position by temporary bolts or clamps. The ends are then sufficiently heated to soften the solder and secure the bond to the rail. The temporary bolts are then removed, the fish-plates 6 6 set in position, covering the bonds, and the fish-plate bolts 7 7, passing through the holes 3 3, assist in making the bond perfectly secure.

Having thus fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a rail-bond cast in one piece, end pieces having large, smooth inner faces covered with tin or solder arranged in one plane, and a widened, corrugated, connecting-wire arranged in an outer plane parallel to the first plane, so that the whole bond is thin at right angles to the rail.

2. In a one-piece rail-bond, end pieces having large, smooth contact-faces covered with tin or solder, holes therethrough corresponding with the fish-plate bolt-holes through fish-plate and rail, and a wide, thin connecting-wire.

3. In a joint for electric railroads, the com-

ination of rails, fish-plates, and one-piece
copper bonds, said bonds being thin so as to
fit in place under said fish-plates, and hav-
ing holes in each end corresponding with
5 holes through fish-plates and rails, and bolts
for simultaneously securing fish-plates and
bonds in position, substantially as described
and shown.

In witness whereof I have hereunto set my

hand, in the presence of two attesting wit- 10
nesses, at Syracuse, in the county of Onon-
daga, in the State of New York, this 3d day
of October, 1896.

HENRY S. NEWTON.

Witnesses:

FREDERICK P. SCHENCK,
L. F. WEISBURG.