

No. 856,385.

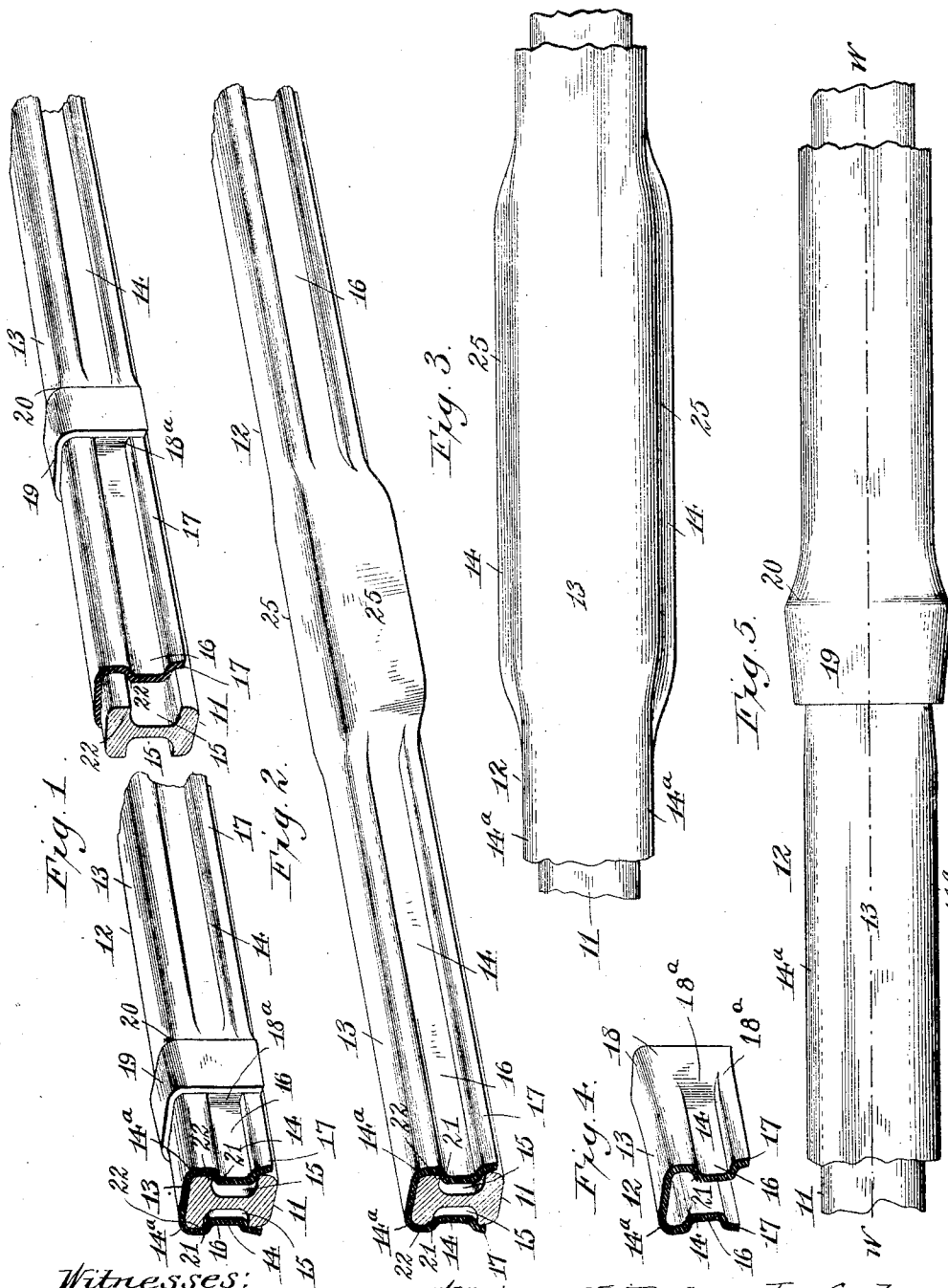
PATENTED JUNE 11, 1907.

W. H. BAKER.

INSULATING COVERING OR SHEATHING FOR CONTACT RAIL CONDUCTORS.

APPLICATION FILED MAR. 21, 1906.

2 SHEETS—SHEET 1.



Witnesses:
Christ Feinle
Harry Harris

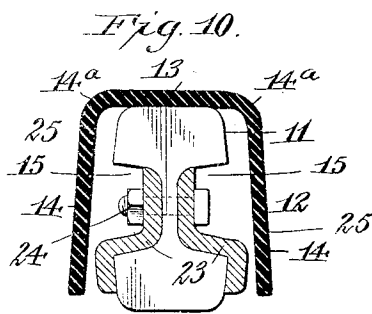
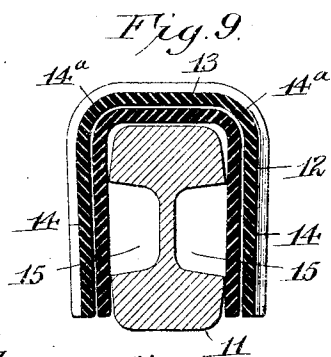
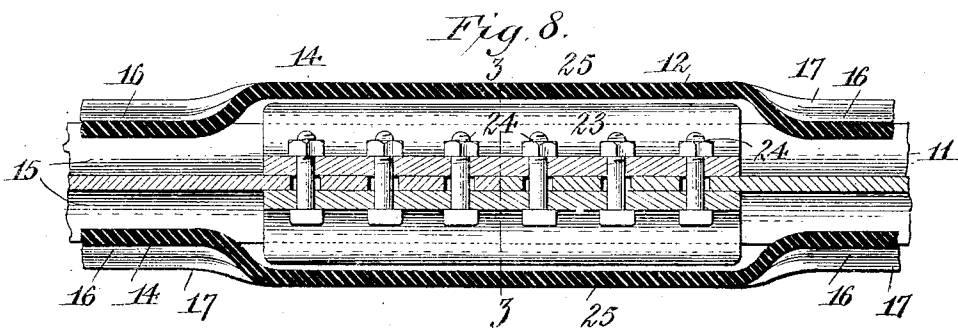
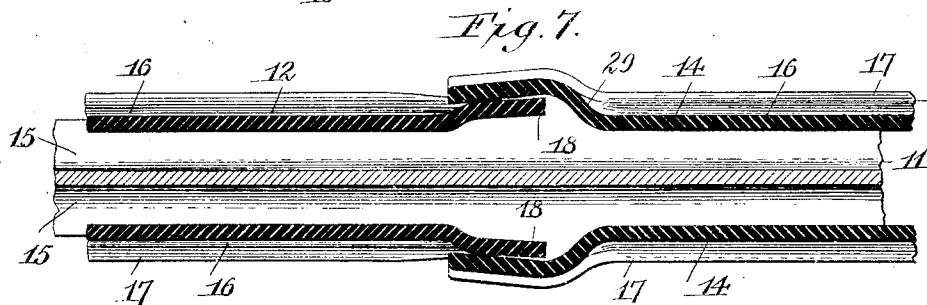
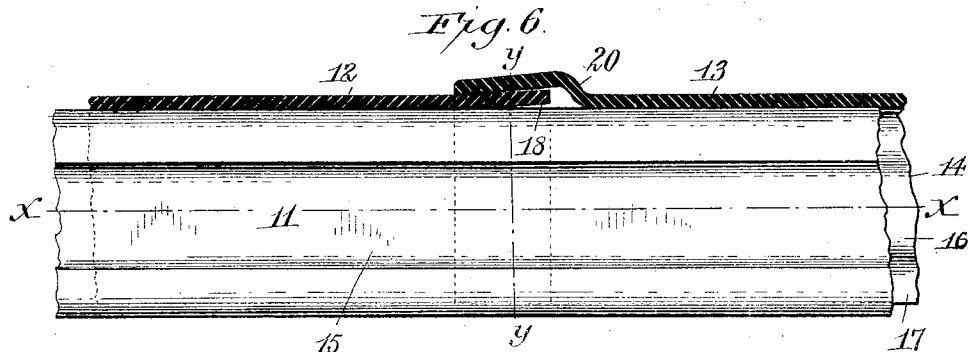
William H. Baker, Inventor.
By Emil Keuhart,
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. BAKER, OF LOCKPORT, NEW YORK, ASSIGNOR OF THREE-FIFTHS TO JESSE PETERSON, OF LOCKPORT, NEW YORK.

INSULATING COVERING OR SHEATHING FOR CONTACT-RAIL CONDUCTORS.

No. 856,385.

Specification of Letters Patent.

Patented June 11, 1907.

Application filed March 21, 1906. Serial No. 307,254.

To all whom it may concern:

Be it known that I, WILLIAM H. BAKER, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Insulating Coverings or Sheathings for Contact-Rail Conductors, of which the following is a specification.

My invention relates to insulating coverings or sheathings for contact-rail conductors to be used in third-rail or underground contact systems.

The primary object of my invention is the production of an improved insulating covering for contact-rail conductors, in which the conductor is protected against moisture at all points except the contact surface, and in which short-circuiting of the current is entirely obviated.

Another object of this invention is the production of a resilient insulating-covering formed in sections which are retained on the rail or conductor by their inherent elasticity, and which overlap at the joints and positively prevent leakage of water or moisture through the covering at such points.

Another object is to form certain of the sections with enlargements so as to provide for covering the contact-rail conductors at the joints where the bolted connecting or fish-plates extend beyond the sides of the conductors.

Still further objects are to provide one end of each section with a slightly flaring portion and its opposite end with an enlarged portion tapering toward its end so as to fit over the flaring portion of the adjoining section; thus providing means for shedding the water and preventing its entering between the overlapping ends of the sections.

With these and other objects in view, my invention consists in the construction, arrangement, and combination of parts to be hereinafter described, and particularly pointed out in the appended claims.

In the drawings,—Figure 1 is a broken sectional perspective view of my improved insulating covering applied to a contact-rail conductor. Fig. 2 is a perspective view of the intermediate portion of one section of my improved covering applied to a rail, showing a section in which provision is made to cover the rail-conductor at one of its joints. Fig. 3 is a slightly enlarged plan view of the en-

larged portion of the section shown in Fig. 2. Fig. 4 is a sectional perspective view of a portion of a section of the covering showing the flaring end thereof, the same being represented on the scale used for Figs. 1 and 2. Fig. 5 is a slightly enlarged plan view of the adjacent ends of two sections applied to a rail-conductor. Fig. 6 is a longitudinal section taken on line *w—w*, Fig. 5, the contact-rail conductor being shown in elevation. Fig. 7 is a horizontal section taken on line *x—x*, Fig. 6. Fig. 8 is a horizontal section through the enlarged intermediate portion of a section and the connected ends of two rail-conductors. Fig. 9 is a cross-section taken on line *y—y*, Fig. 6. Fig. 10 is a cross-section taken on line *z—z*, Fig. 8.

Referring to the drawings in detail, like numerals of reference refer to like parts in the several figures.

The numeral 11 designates a contact-rail conductor, herein shown in cross-section as of **I**-formation, but as this is one of many forms now in use, my invention may be modified for application to any other form of conductor. I desire also to state, that although this invention is particularly adapted for use on contact conductors having contact-shoes riding along the underside thereof, it may be applied to such conductors against which contact is made on the side or top thereof.

My improved insulating covering is designated by the numeral 12, and is formed in lineal sections so that any length of conductor may be covered. By arranging the covering in sections, any portion of the conductor is rendered easily accessible for examination, repairs, or other purposes, without uncovering other portions of the conductor. For standard length of rails, experiments have shown that sections of about forty-two inches are most convenient; but this may be varied to suit the manufacturer or users desires. The covering is substantially of **U**-formation in cross-section and when used in the manner herein shown, comprises a top wall 13, and opposing parallel side walls 14; the angular portions between the top and side walls being curved, as at 14^a, to conform to the particular contact-rail conductor herein shown. By reason of the conductor being of substantially **I**-formation, a longitudinal groove 15 is consequently formed in each side thereof, and in order to

provide means for retaining the covering on the rail the side walls of the covering are each provided with a longitudinal depressed or re-entrant portion 16, adapted to fit into the grooves of the conductor, said depressed portions terminating near the ends of each section. The lower marginal portions of the side walls are directed or flared outward to form a skirt 17 which also terminates near the ends of each section. By reason of this construction the side walls are measurably yielding and may be sprung outward when applying the covering to the conductor, the curved portion at the angle of the top and side walls aiding considerably in this respect. From the foregoing it is apparent that separate retainers or clips are unnecessary and that the side walls of the sections serve to retain the covering on the conductor in addition to acting as a protector. Where contact is made with the contact-rail conductor at the side or top thereof, the U-shaped covering may be applied accordingly so that all sides of the conductor, except the contact side, are covered.

One end of each section of the covering is flared outwardly, as at 18, slightly at the sides, and to a greater extent at the top. If desired, the sides at this end may be perfectly straight and the top only inclined or flared, but best results have been obtained by flaring both the top and side walls at this point. The depressed or re-entrant portions and the skirts of the sections terminate at points where the ends of the side walls are flared outwardly, as shown at 18^a, Fig. 4. The opposite end of each section is provided with an enlarged or overlapping portion 19; the top and side walls being bulged outward near the end, as at 20, and gradually inclined or tapered inward to the end edge of the section. The depressions and the skirts of the side walls terminate at points where the side walls are bulged outward.

In applying the sections to the rail-conductor, the enlarged tapered end of each section overlaps and by its inherent elasticity, clasps the adjacent outwardly flared end of the adjoining section, in the manner shown in Fig. 6. The tapered and enlarged end of each section is therefore exposed, while the flared end thereof is covered with the tapered and enlarged end of an adjoining section. In this manner, water dripping or otherwise reaching the insulating covering is shed from the tapered ends and by reason of the overlapped end being flared, cannot possibly come in contact with the rail-conductor. The water flows down the sides of the covering and drips from the flared lower marginal portion of the side walls without coming in contact with the conductor. In addition to this, the flared lower marginal portions of the side walls also serve as a means to more conveniently apply the cover-

ing to the rails, the conductor acting against the inner sides of the flared ends similar to a wedge, and causing the side walls to spread or separate until the upper angle or shoulder 21 of the depressed or re-entrant portions in said walls pass the lower angles 22 of the upper side extensions of the conductor, whereupon the side walls spring into their normal or unstrained condition, the depressed or re-entrant portions thereof entering the longitudinal grooves in the conductor and positively retaining the covering to the latter.

A number of covering sections are required to cover one length of the rail-conductor, which is also formed in sections or lengths connected by fish-plates 23 secured by bolts and nuts 24. At the connections of the rail-lengths, each of the insulating sections covering the same has its side walls bulged outward, as at 25, in order to provide a continuous covering for the conductor. In the wooden covering now in use, the rail-conductor is only partly covered between joints, and entirely free at the joints, where considerable difficulty is encountered by reason of short-circuiting, and exposure.

My insulating protector or covering being made of fiber, is superior to and of greater longevity than devices now in use, and in addition to covering the rail-conductor at every point throughout its length, it positively prevents short circuiting of the current caused by moisture. It also protects the conductor and greatly lengthens the life of the same.

Having thus described my invention, what I claim is,—

1. An insulating covering or sheathing for contact rail-conductors formed of sections having yielding sides adapted to bear against the conductor by their inherent elasticity and having the ends thereof in overlapping relation with the sides of the overlapping portions clasping the adjacent overlapped portion of the adjoining sections.

2. A covering or sheathing for contact rail-conductors consisting of sections inclosing all but the contact side of the conductor and having the ends of the sections applied to the conductor in overlapping relation, said sections being formed of resilient insulating material adapted to clasp or embrace a portion of the conductor and be retained in position thereon by their inherent elasticity, and the overlapping portions in like manner clasping the overlapped portions.

3. An insulating covering or sheathing for contact-rail conductors formed in sections and each section having its upper wall at one end flared outward and said end covered by the adjacent end of the adjoining section.

4. An insulating covering or sheathing for contact-rail conductors formed in sections and each section having the walls at one end flared outward and said end covered by the adjacent end of the adjoining section.

5. An insulating covering or sheathing for contact-rail conductors formed in sections, and each of said sections having its top wall bulged outward near one end and tapered to said end and adapted to overlap the adjacent end of the adjoining section.

6. An insulating covering or sheathing for contact-rail conductors formed in sections, and each of said sections having its walls near one end bulged outward and tapered to said end and adapted to overlap the adjacent end of the adjoining section.

7. An insulating covering or sheathing for contact-rail conductors formed in sections and each of said sections having one end flared and its other end enlarged and tapered to overlap the adjacent flared end of the adjoining section.

8. An insulating covering or sheathing for contact-rail conductors comprising a top wall, and side walls measurably yielding to impinge against the sides of the conductor, each section having its walls at one end flared outward and the walls thereof near its other end bulged outward to form an enlargement, the walls of said enlarged end tapering to the end edge and overlapping the flared adjacent end of the adjoining section.

9. An insulating covering or sheathing for contact rail-conductors comprising lineal sections formed of yielding material and each section having opposed clasping walls and an enlarged end overlapping the adjacent end

of the adjoining section, the sections being retained by the yielding opposed walls impinging against the conductor and the overlapped ends of the adjoining sections.

10. An insulating covering or sheathing for contact-rail conductors of **I**-formation in cross-section, comprising sections of **U**-formation in cross-section, the parallel walls of said sections having longitudinal depressions adapted to enter the longitudinal grooves in the sides of the **I**-shaped conductor, one end of each section being flared, and the other end enlarged and tapered to the end edge, the enlarged and tapered ends of the sections overlapping the flared ends thereof.

11. An insulating covering or sheathing for contact-rail conductors being substantially of **U**-formation in cross-section with the opposite parallel walls thereof measurably yielding so that the covering may be applied to the rail and retain itself in any position, the covering consisting of sections having each a flared end and an enlarged end tapering to the end edge, the enlarged and tapered ends of the sections overlapping the flared ends thereof.

In testimony whereof, I have affixed my signature in the presence of two subscribing witnesses.

WILLIAM H. BAKER.

Witnesses:

FRANK S. NICHOLSON,
A. EDMUND LEE.