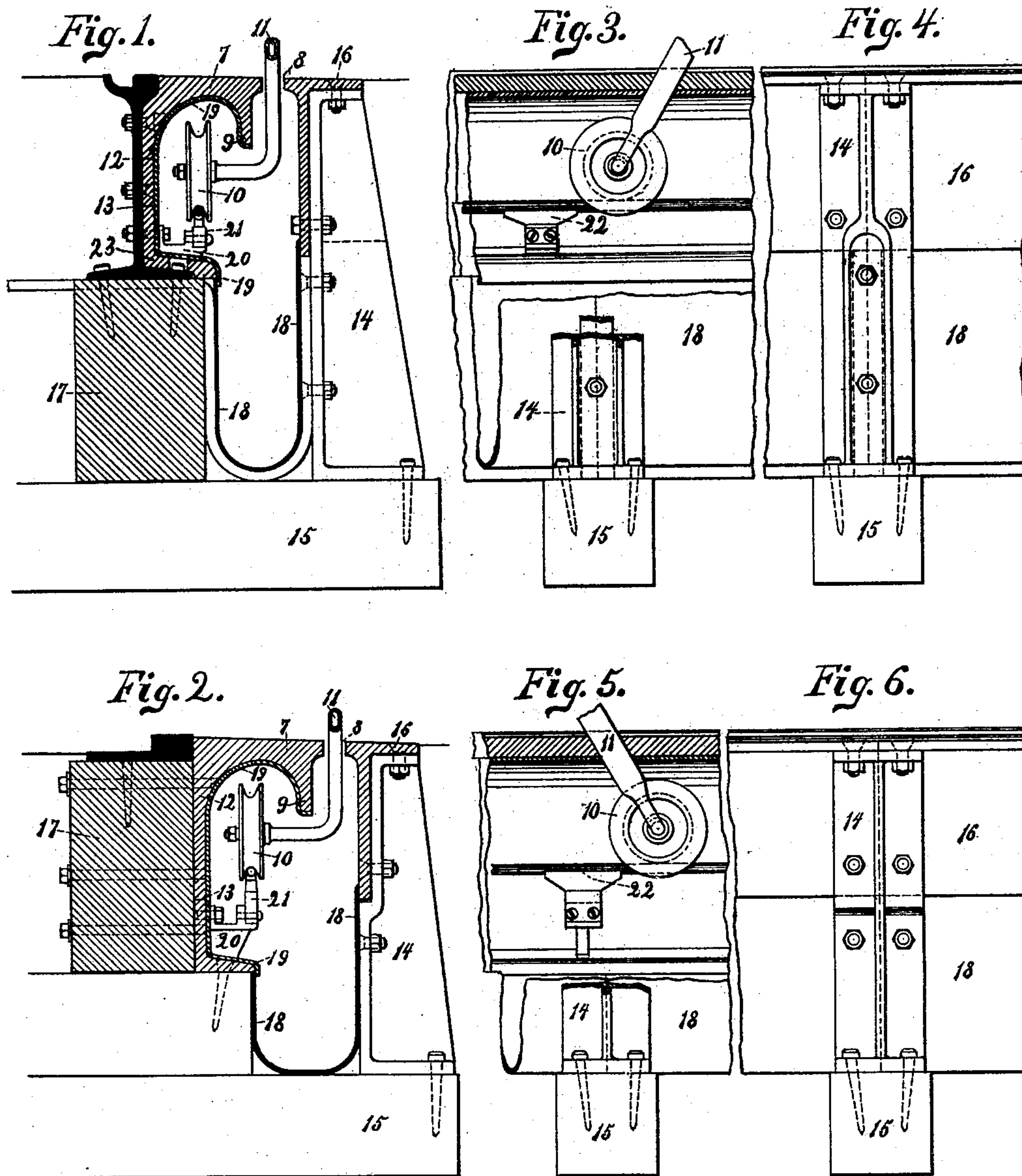


(No Model.)

J. W. HAYDEN.
CONDUIT FOR ELECTRIC RAILWAYS.

No. 487,735.

Patented Dec. 13, 1892.



John W. Hayden
INVENTOR

WITNESSES:

Jos. H. Grier
A. L. Randall.

UNITED STATES PATENT OFFICE.

JOHN W. HAYDEN, OF FORT WAYNE, INDIANA.

CONDUIT FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 487,735, dated December 13, 1892.

Application filed January 16, 1892. Serial No. 418,241. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HAYDEN, a citizen of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Conduits for Electric Railways; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in conduits for electric railways; and its objects are to provide an improved conduit with efficient means of drainage, an economical construction, improved insulation, and isolation from foreign substances to prevent leakage. I attain these objects by the mechanism and construction illustrated in the accompanying drawings, in which—

Figure 1 is a cross-section of my improved conduit as applied to tracks with girder-rails. Fig. 2 is a cross-section of the conduit as applied to tracks having tram-rails. Fig. 3 is a side view of Fig. 1 with the upper part of the outside of the conduit broken away to show trolley wheel and wire with supporting-standard. Fig. 4 is a side view of Fig. 1. Fig. 5 is a side view of Fig. 2 with part broken away to show trolley, and Fig. 6 is a side view of Fig. 2.

The conduit consists of a closed slotted box larger at the upper part and terminating at the lower part in a drain. One of its essential features is that the trolley-wire and its supports are placed in the upper part at one side of the slot, and a shield 7 of a particular construction protects them and the trolley-wheel from any dirt or other substance which may enter the slot.

The construction is as follows: The shield 7 forms the top of that part of the conduit in which is placed the conductor 22. Its inner flange 9 extends from the surface of the road-bed down near to a line horizontal and coincident with the center of the trolley-wheel and is adapted to form one side of slot 8. This shield 7 is also provided with an outer flange 12, which, for the purpose of supporting, is preferably constructed to conform

to a girder-rail, as shown in Fig. 1, or to a tram-rail and stringer, as shown in Fig. 2, to which it is attached for support; but it may be otherwise supported by a chair or in any other manner desired. The shield 7, with its inner and outer flanges, is constructed of metal, preferably, in one piece or integrally. Its outer flange 12 extends down to the point marked 13 and is firmly attached to the girder-rail or to the stringer, as shown. A lower plate or flange 23 is joined to said outer flange 12 at the point 13 and is substantially a continuation thereof, and extends downward and inward beyond the line of the trolley-wheel and connects with the upper part of the drain part. Its lateral extension forms a point of support for the standard 20, to which is attached the conductor 22. This shield and its two flanges and the lower plate 23 form that part of the conduit within which the standard supporting the conductor, the conductor and trolley-wheel or contact device are placed, as illustrated in Figs. 1 and 2. The outer part of the conduit is constructed as follows: Iron chairs or braces 14 are securely attached to a suitable support or foundation, preferably a cross-beam 15, which is placed below the drain part, and the chairs are adapted in form to rigidly support an outer part or plate 16, which is attached thereto in any suitable manner, preferably by bolts, as shown. This outer plate 16 extends from the surface of the road-bed down to the drain 18 and is adapted to form one side of the slot 8, as shown. The lower part of the conduit forms the drainage portion, and may be made of metal or any other suitable material. It is preferably constructed of longitudinal metal plates 18, attached to the chairs 14 on one side and to the stringer 17 on the other side, as shown in Fig. 1, or it may be otherwise secured. It is placed so as to be directly underneath the slot 8 and to one side of that portion of the conduit formed by the conduit-shield and its flanges, as described. This drain is provided with suitable outlets connected to a sewer or sand-pits, (not shown,) but common in the construction of drains. If desired, the drainage portion of the conduit may be constructed of tiling or other suitable material. The inner side of the shield 7 and its flanges and the flange 23 are preferably provided with a coating or lining 19 of

non-conducting material for electric insulation and adapted, also, to prevent condensation of moisture.

It is evident from the description and drawings that the construction of the flanges 12 and 23 in separate or distinct pieces is not an essential construction, but simply a preferable one. These two parts of that portion of the conduit admit of being constructed integrally—that is, in one piece or casting instead of two, as shown—and in such case the integral construction will not alter or change the function of the parts as shown. I do not, therefore confine myself to the preferable construction shown.

The object of the construction in sections, forming the flanges 12 and 23 as described, is that in such case the shield, with its flange 12, can be readily removed for inspection and repairs to the trolley-wheel and conductor-wire without disturbing the chair, standards, and their connections; but where the flanges 12 and 23 are constructed integrally, then the outer part or plate 16 may be removed for inspection and repairs.

I have described above my preferable construction; but the construction shown admits of making the flanges 12 and 23 integrally and continuous in one piece, as stated, and supporting the shield and lower plate 23 by other means than the girder-rail or tram-rail and stringer, if desired, and where otherwise supported the conduit may be placed between the rails of the track. The chairs 20 are attached to the flange 23, preferably to its lower and horizontal section, for the purpose of supporting the standards 21, to which a flange supporting the trolley-wire 22 is secured. The standard 21 and all the connections, chairs, and standards are thoroughly insulated, and may, if desired, be constructed of insulating material, such as compressed fiber or other well-known substances. These chairs and standards are placed at intervals adapted to support lineally without sagging any size of trolley-wire or conductor which may be required.

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

1. In a conduit for electric railways, the combination of a shield provided with two flanges, the inner one being adapted to form one side of a slot for the passage of a trolley-lever and the outer one extended downward in like direction, and with the top of the shield and said inner flange forming the upper portion of that part of the conduit in which are placed the conductor and trolley-wheel, a lower plate or flange forming the continuation of said outer flange extending downward and laterally inward beyond the line of the trolley-wheel, the lateral extension forming a support for a standard to which is attached a conductor, the lower plate being also adapted to form with said shield that

part of the conduit in which are placed the conductor and contact device, a track-rail and its support attached to said shield and lower plate, forming a support therefor, an outer part or plate extending from the surface down to the drain part and adapted to form one side of the slot for a trolley-lever, a chair or brace extending down and secured to a cross-beam below the drain part and adapted to support said outer plate and maintain it in position, a cross-beam forming a support or foundation for said chair and brace, and a drain part placed below said lower plate directly under the slot and to one side of that portion of the conduit containing the conductor and contact device.

2. In a conduit for electric railways, the combination of a shield provided with two flanges, the inner one being adapted to form one side of a slot for the passage of a trolley-lever and the outer one extended downward in like direction, and with the top of the shield and said inner flange forming the upper portion of that part of the conduit in which are placed the conductor and the trolley-wheel, a lower plate or flange forming the continuation of said outer flange, extending downward and laterally inward beyond the line of the trolley-wheel, the lateral extension forming a support for a standard to which is attached a conductor, the lower plate being also adapted to form with said shield that part of the conduit in which are placed the conductor and contact device, an outer part or plate extending from the surface down to a drain and adapted to form one side of the slot for a trolley-lever, a chair or brace extending down and secured to a suitable support or foundation below a drain and adapted to support said outer plate and maintain it in position, and a drain placed below said lower plate directly under the slot and to one side of that portion of the conduit containing the conductor and contact device.

3. In a conduit for electric railways, the combination of a shield provided with two flanges, the inner one being adapted to form one side of a slot for the passage of a trolley-lever and the outer one extended downward in like direction, and with the top of the shield and said inner flange forming the upper portion of that part of the conduit in which are placed the conductor and the trolley-wheel, a lower plate or flange forming the continuation of said outer flange, extending downward to and laterally inward beyond the line of the trolley-wheel, the lateral extension forming a support for a standard to which is attached a conductor, the lower plate being also adapted to form with said shield that part of the conduit in which are placed the conductor and the contact device, an outer part or plate extending from the surface down to a drain and adapted to form one side of the slot for a trolley-lever, a drain part placed below said outer plate, and means to support the same and preserve the integrity of the slot.

4. In a conduit for electric railways, the combination of one part of the conduit in which is placed the conductor with an outer part or plate extending from the surface of
5 the road-bed down to a drain adapted to form one side of the slot or passage-way for a trolley-lever, a chair or brace attached to said outer plate and adapted to support and maintain it in position, a suitable support or foundation for said chair or brace, placed below a
10

drain, and a drain formed in the lower part of the conduit.

In testimony whereof I hereunto subscribe my name, in the presence of two witnesses, this 11th day of January, A. D. 1892.

JOHN W. HAYDEN.

Witnesses:

ALBERT BAKER,
H. C. HARTMAN.