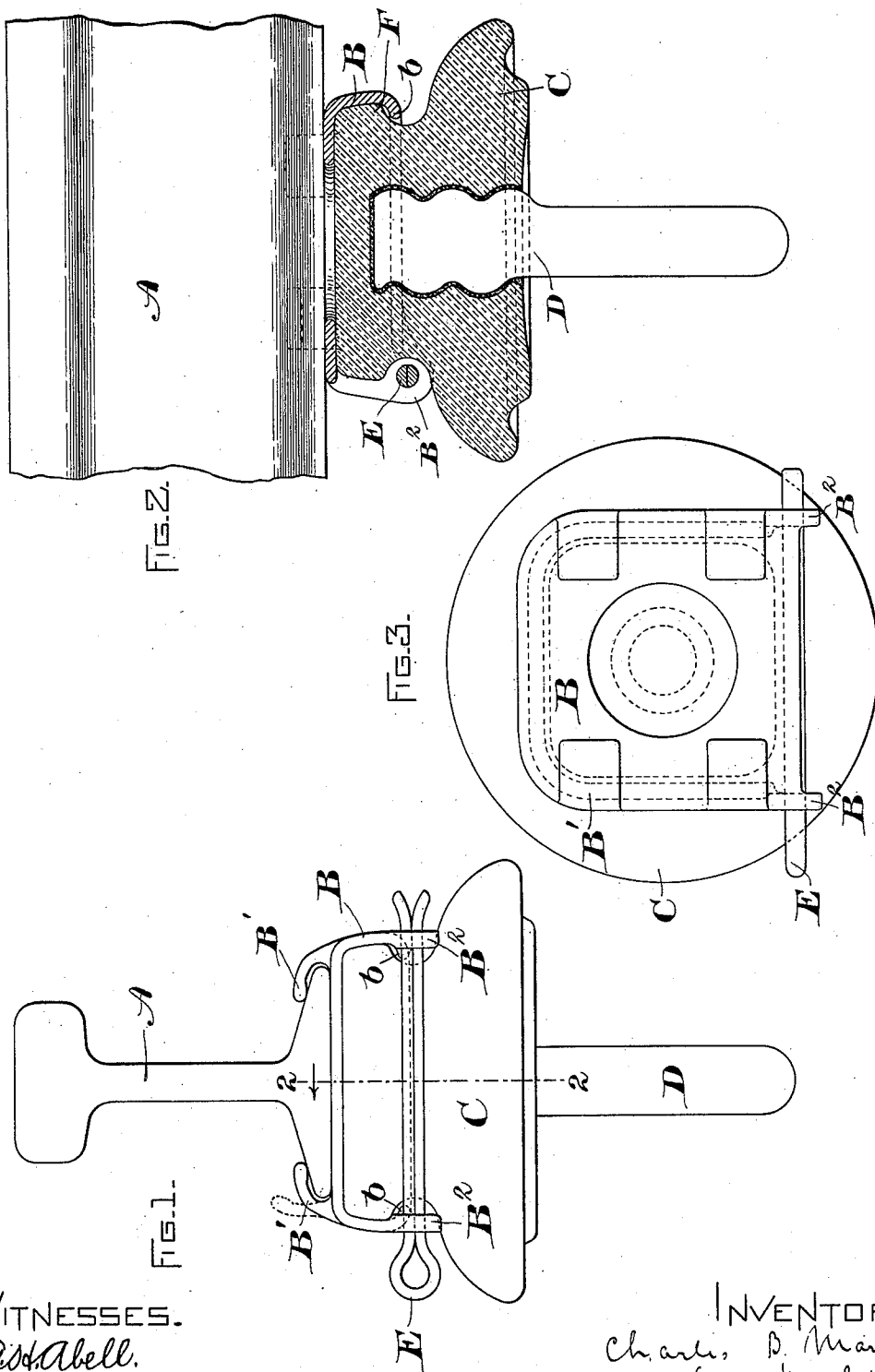


(No Model.)

C. B. MARTIN & E. M. HEWLETT.
INSULATOR.

No. 570,034.

Patented Oct. 27, 1896.



WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES B. MARTIN AND EDWARD M. HEWLETT, OF SCHENECTADY, NEW YORK, ASSIGNORS TO THE GENERAL ELECTRIC COMPANY, OF NEW YORK.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 570,034, dated October 27, 1896.

Application filed August 5, 1896. Serial No. 601,736. (No model.)

To all whom it may concern:

Be it known that we, CHARLES B. MARTIN and EDWARD M. HEWLETT, citizens of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Insulators, (Case No. 411,) of which the following is a specification.

The present invention relates to insulators, and is designed for use in connection with electric railways in which a third rail is used as a working conductor.

The invention has for one of its objects to provide an insulator which occupies a minimum amount of vertical space and at the same time presents a long creeping-surface for moisture, thus insuring high insulation.

The invention further has for its object to provide a cheap and reliable insulator which can be quickly applied to the rail and its support, and one which is simple in construction, comprising few parts, and these of such form that they are not liable to injury.

A further object of the invention is to provide an insulator having a rail-clamp which, as a unit, can be detached from the insulator, leaving it in its fixed position; and the invention further consists in constructing the clamp in such a manner that when it is slipped into place upon the insulating-body it is securely held against lifting and rotation.

In carrying out the invention a pin or support is provided, which is mounted on the cross-tie or other support, and on the top of the pin is mounted an insulator composed of porcelain or other tough material having high insulating properties. These insulators, together with their supports, are mounted on the ties at intervals, and a number of metal clamps corresponding with the number of insulators per rail-section are threaded upon the rail from the ends, after which the rail is placed in position and the clamps fitted over the insulator and secured thereto by suitable means. The clamps are made of malleable iron and provided with lugs adapted to engage the lower flange of the rail. These lugs are so arranged that they will permit the clamp to slide freely upon the rail, and after it has been placed in the proper position they

may be hammered down, so that they grip the rail and maintain it in the proper position.

It is not always necessary or desirable to remove a rail-section in order to make repairs, and to provide for this the lugs on the clamps are arranged so that they may be pried open and the clamps removed without disturbing those remaining on the rail and new ones can be inserted in their places.

In the accompanying drawings, attached to and made part of this specification, Figure 1 is an end view of an insulator embodying our invention. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is a plan view of the insulator and clamp.

C represents an insulator provided with an enlarged base arranged to present an extended creeping-surface for moisture, reducing to a minimum the leakage from this source. The pin or support D is adapted to be mounted on the tie or other support and at its upper end is provided with a slightly-enlarged portion, preferably screw-threaded, so that the insulator C can be made and applied separately and held in place by means of cement or similar material, which can be poured in while in a molten state and allowed to cool. The top of the insulator C is square and provided with a flange F, projecting outward, the latter being adapted to form an attaching device for the clamp B.

The clamp B is made in the form of a box with the bottom and one side missing. On the top are situated lugs B', which are adapted to engage with the lower flange of the rail A. The sides and one end of the box have inwardly-curved portions b, Fig. 2. These are adapted to fit under the projecting edges of the flange F on the insulator C, and by their construction prevent the clamp B from lifting. On the sides of the box are formed lugs B². These are provided with holes in which is mounted the cotter-pin E, the latter securing the clamp to the insulator C.

In assembling, the supports D, with their insulators C, are mounted at suitable intervals on the ties or other support and a corresponding number of clamps B slipped upon the rail from the ends. The rail is then placed in position and the clamps B slid into place

upon the insulators C, the cotter-pins E securing them together, after which the lugs B' are hammered down to grip the rail. The four sides of the flange F being similar, the clamp B can be applied from any side.

It sometimes happens that it is desired to remove one or more insulators without disturbing the rail, and to provide for this the lugs B' are made of malleable iron, so that when it is desired to remove a clamp the lugs on one side are bent upward to the position shown in dotted lines in Fig. 1. After the clamp has been removed from the insulator it can readily be detached from the rail and the insulator removed by slipping the cross-tie or support to one side.

The clamp can be constructed with two of the lugs at right angles to the base, which are bent down after the clamp has been secured to the insulator, but in most instances it would be preferable to slip them on from the end of the rail.

These insulators are especially intended for use where the space between the top of the conductor-rail and the tie is limited on account of apparatus on the traveling vehicle, and for this reason it is necessary to make the insulators very low and to provide them with clamping devices which shall occupy a minimum amount of vertical space, yet at the same time having the mechanical strength to maintain the rail in its proper position.

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

1. In an insulator, the combination of a body of insulating material, a support therefor, a metal clamp for gripping the rail adapted to be slid upon the insulator when assembled, and means preventing the clamp from lifting.

2. In an insulator, the combination of a

body of insulating material, a flange thereon, a rail-clamp adapted to be slid upon the insulator when assembled, means for preventing the clamp from lifting, and a pin for holding the clamp in place.

3. In an insulator, the combination of a body of insulating material, a flange thereon, a rail-clamp made in the form of a box with the bottom and one side missing, permitting it to be slid upon the body of insulating material when assembled, lugs on the clamp for securing the rail, and means for securing the clamp to the insulator.

4. In an insulator, the combination of a body of insulating material, a flange thereon angular in outline and provided with equal sides, and a rail-clamp made in the form of a box with the bottom and one side missing, its internal dimensions corresponding with the external dimensions of the flange so that it may be slipped upon the insulator from any side.

5. In an insulator, the combination of a body of insulating material, a flange on the insulation, a clamp provided with downwardly-extending sides, and curved portions on the sides engaging with the flange for preventing the clamp from lifting.

6. As an article of manufacture, a clamp for an insulator, made in the form of a box with the bottom and one side missing, provided with lugs on the top adapted to engage with the rail, and curved portions on the sides for gripping the insulator.

In witness whereof we have hereunto set our hands this 31st day of July, 1896.

CHARLES B. MARTIN.
EDWARD M. HEWLETT.

Witnesses:

B. B. HULL,
A. H. ABELL.