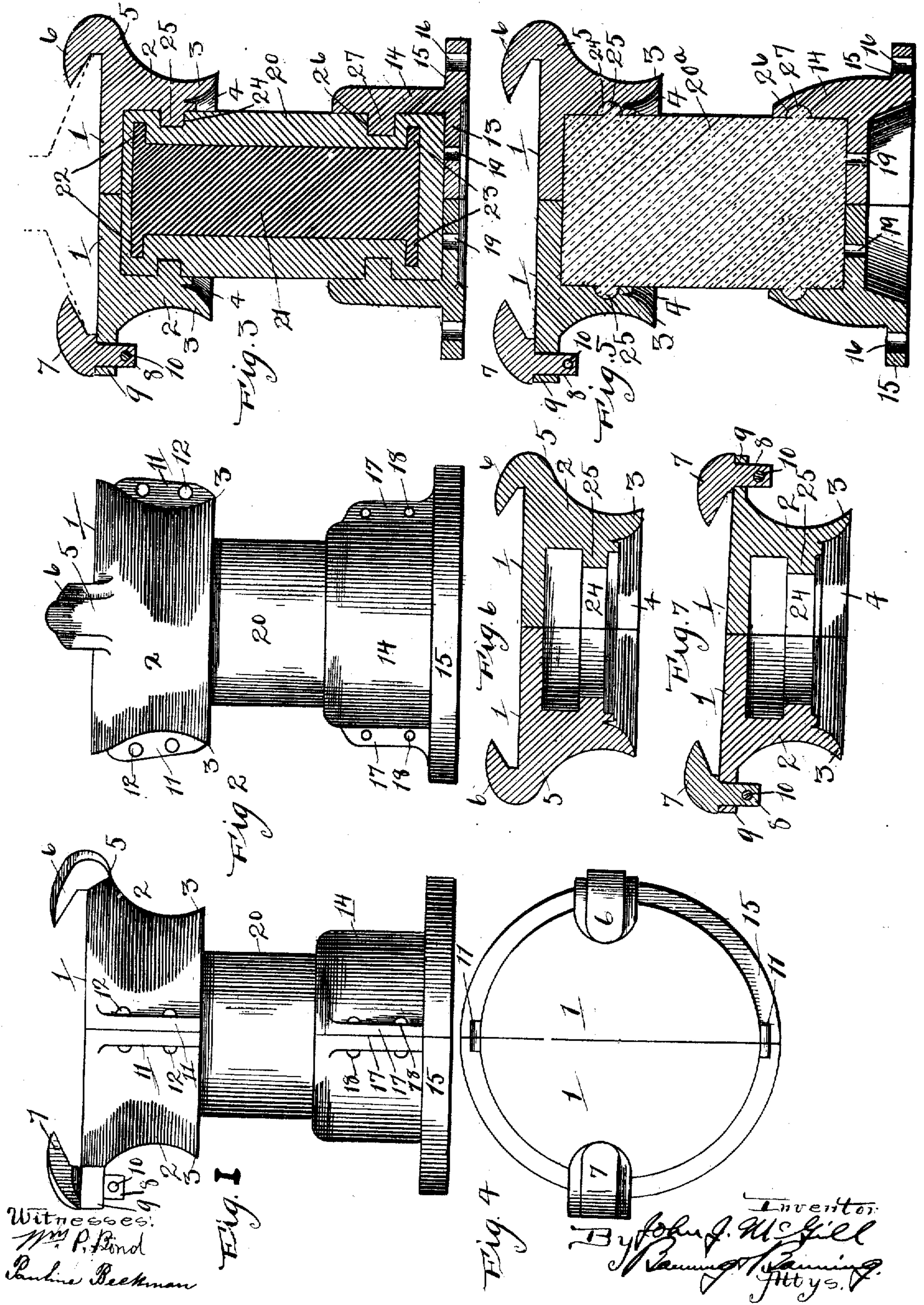


No. 829,416.

PATENTED AUG. 28, 1906.

J. J. MCGILL.
THIRD RAIL INSULATOR.
APPLICATION FILED DEC. 14, 1905.



UNITED STATES PATENT OFFICE.

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THIRD-RAIL INSULATOR.

No. 829,416.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed December 14, 1905. Serial No. 291,713.

To all whom it may concern:

Be it known that I, JOHN J. MCGILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Third-Rail Insulators, of which the following is a specification.

The invention relates more particularly to insulators for use with third rails, but which, as to some of the features thereof, can be used for insulating other contact appliances.

The objects of the invention are to furnish an insulator by which practically perfect insulation at both the top and bottom will be obtained; to construct an insulator having an upper or chair portion adapted to receive and support and retain the third rail or other contact appliance, a central portion or pedestal furnishing the insulation and a bottom portion or base for attachment to the tie or other support, the several parts when assembled constituting the insulator as a whole; to construct an insulator having an upper portion or chair made in two sections detachably connected together, an intermediate portion or pedestal constituting the insulator proper and formed of a single or solid piece, and a bottom or base made in two sections and adapted for attachment to a tie or other support; in providing the upper portion or chair of the insulator with a detachable ear or lug for enabling the third rail or other appliance to be readily inserted and withdrawn, and to improve generally the construction and arrangement of the several parts entering into the formation of the insulator as a whole.

In the drawings, Figure 1 is a side elevation of the insulator of the invention; Fig. 2, a side elevation looking at right angles to Fig. 1; Fig. 3, a vertical sectional elevation with the insulator as in Fig. 1 and showing in dotted lines the base of the third rail; Fig. 4, a top or plan view; Fig. 5, a sectional elevation showing a modified form of the intermediate portion or pedestal of the insulator; Fig. 6, a sectional elevation showing a modification in the formation of the upper portion or chair of the insulator, and Fig. 7 a sectional elevation showing another modified form of the upper portion or chair of the insulator.

The upper portion or chair of the insulator can be made of malleable iron or other

suitable metal or material possessing rigidity and strength. This upper portion or chair is made in two halves or sections, each having a plate 1 of a semicircular formation, making a complete circle when the two halves or sections are together. A semi-annular or circumferential flange 2 depends from each plate 1, and each flange has a lip 3 outwardly curved and forming an inner recess 4 to insure protection against the accumulation of moisture that might interfere with the proper insulation. As shown in Figs. 1 to 5, inclusive, one half or section of the upper portion or chair has a neck 5, with an upwardly and inwardly turned lip or ear 6, furnishing a recess between the upper face of the plate 1 and the under face of the lip or ear 6 to receive the edge of the base of the third rail or otherwise formed to suit the contour of the appliance with which the insulator is to be used. The companion half or section of the upper portion or chair of the insulator has a lip or ear 7 with a stem 8, which passes through a neck or ear 9 and is held in place by means of a cotter-pin 10 or other device, so as to be readily inserted in place or detached without any difficulty. Each half or section of the upper portion or chair of the insulator has on opposite sides an ear 11 with suitable holes in each ear for the passage of rivets or bolts 12, by means of which the two halves or sections are secured together.

The bottom portion or base of the insulator can also be made of malleable iron or other suitable material having the requisite rigidity and strength. The bottom portion or base is made in two sections or halves, each section or half formed of a plate 13 and a semi-annular rim 14, extending up from each plate, with a peripheral or circumferential flange 15 at the bottom of each semi-annular wall or rim 14, which flange has therein holes 16 for the passage of bolts or other securing means for attaching the insulator as a whole to a tie or other support. Each rim or wall 14 has on opposite sides thereof an ear 17, each ear having suitable holes for the passage of rivets or bolts 18, by means of which the two sections or halves of the base are secured together. Each plate 13 has therein a hole 19 for escaping any moisture that may accumulate on the upper face of the plates.

The intermediate portion or pedestal 20 can

be made of any suitable insulating material capable of being molded or formed into a shape having a body annular or circular in cross-section. This intermediate portion or pedestal constituting the insulating medium, as shown in Figs. 1, 2, and 3, can be made of molded mica or other insulating material with a core 21, which preferably is made of wrought iron or steel to insure against breakage. The insulator or pedestal 20 is formed solid and is cast or molded around the core 21, and, as shown, the core at its upper end has an annular projecting flange 22 and at its lower end an annular projecting flange 23 to insure the retention of the insulating material of the intermediate portion or pedestal 20 around and on the core. The upper end of the insulating material of the pedestal 20 has a circumferential groove or recess 24 to receive a corresponding ridge or rib 25 on each half or section of the upper portion or chair, so that when the upper portion or chair is in place it will be united securely to the intermediate portion or pedestal with insulating material between the chair and the base. The lower end of the intermediate portion of pedestal 20 has a circumferential recess 26 to receive a ridge or rib 27 on each half or section of the base, so that when the base is in position it will be secured around the intermediate portion or pedestal. The circumferential recesses 24 and 26, as shown in Fig. 3, are rectangular, and the ridges or ribs 25 and 27 are of a corresponding shape, and these recesses and ribs serve to hold the cap or chair and the bottom or base and the intermediate portion or pedestal firmly together and against end movement and so that the insulating material furnishes a perfect insulation between the cap or chair and the bottom or base. The upper end of the insulating material or pedestal 20 is entered deeply into the cap or chair, so that it will be practically impossible for moisture to enter and destroy the insulation, and further protection against the entrance of moisture exteriorly is obtained through the outwardly-curved flange or rib 3 of the cap or chair. Any moisture that might enter the base around the insulating material or pedestal will pass down and out through the holes or openings 19, thus maintaining the insulation at the bottom or base. It will thus be seen that between the cap or chair and the base of the insulator as a whole practically complete insulation is afforded by the interposed portion or pedestal of insulating material, consisting of a block of molded mica or other insulating material, as in the construction of Figs. 1, 2, and 3.

The insulating material or pedestal instead of being formed of molded mica with a supporting-core could be formed of a solid piece of reconstructed granite or clay molded into a solid body of an annular shape in

cross-section, and this form of interposed portion or pedestal is shown at 20^a in Fig. 5. The interposed portion or pedestal 20^a serves the same purpose and is secured in place in the same manner as described for the interposed portion or pedestal 20, except that the annular recesses are formed in the body of the cap or chair and the base and the ridges or ribs are formed on the exterior surface of the interposed portion or pedestal.

As shown in Fig. 5, the recesses and the ridges or ribs are semicircular, and it is to be understood that either form of recesses or ridges can be employed as may be desired—that is, semicircular recesses and ridges can be used with the construction shown in Fig. 3 in place of the angular recesses and ribs, and the angular recesses and ridges can be used in place of the semicircular recesses and ridges of Fig. 5. The cap or chair instead of having one lug or ear fixed and the other ear or lug removable can have both ears or lugs removable, as shown in Fig. 6, and where it is not desired to have the third rail or other appliance quickly detachable both ears or lugs could be formed integral with the cap or chair, as shown in Fig. 7. It will be understood that the modified forms for the lugs or ears do not change in any way the essential feature of the invention, which is providing for practically complete insulation of the third rail through the medium of an insulator having a cap or chair, a pedestal of insulating material, and a base so arranged and united as that the interposed portion or pedestal of insulating material furnishes insulation between the cap or chair and the base that is practically perfect.

The parts are assembled by applying the two sections or halves of the cap or chair to the upper end of the insulating material or pedestal 20 or 20^a and when in place securing together the sections or halves by the ears 11 and rivets or bolts 12 or in any other suitable manner, so as to form a close union between the cap or chair and the pedestal of insulating material. The two sections or halves of the base are placed in position around the interposed portion or pedestal 20 or 20^a and secured by the ears 17 and rivets or bolts 18, so as to make a close fit between the base and the insulating material.

The parts when assembled constitute an insulator as a whole, having a receiver or chair and a bottom or base with interposed insulating material between the two by which practically complete and perfect insulation is obtained.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a third-rail insulator, the combination of a split cap formed of two companion sections, each section having a downwardly-projecting circumferential flange, a split base formed of two companion sections, each sec-

tion having an upwardly-projecting circumferential flange, a pedestal of insulating material interposed between the cap and base and entered into and closely united with the flanges of the cap and base respectively, means for securing together the flanges of both the cap and the base sections, and interlocking means between the pedestal and the flange of the cap and between the pedestal and the flange of the base, substantially as described.

2. In a third-rail insulator, the combination of a cap formed in two sections each section having ears on its opposite sides, a base formed in two sections each section having ears on its opposite sides, rivets or bolts for the ears of both the cap and base, and an interposed pedestal of insulating material between the cap and base and united closely to both the cap and base for preventing the accumulation of moisture, substantially as described.

3. In a third-rail insulator, the combination of a cap formed in two sections one sec-

tion having a fixed retaining-lip and the other section having a detachable retaining-lip, a base formed in two sections, and an interposed pedestal of insulating material between the cap and the base and closely united to both the cap and base for preventing the accumulation of moisture, substantially as described.

4. In a third-rail insulator, the combination of a cap formed in two sections, one section having a fixed retaining-lip and the other section having a detachable retaining-lip, a base formed in two sections, an interposed pedestal of insulating material between the cap and the base, a bead and recess uniting the cap and pedestal, and a bead and recess uniting the base and pedestal for preventing the accumulation of moisture, substantially as described.

JOHN J. MCGILL.

Witnesses:

OSCAR W. BOND,
WALKER BANNING.