

E. M. WEAVER.
INSULATOR FOR THIRD RAILS.
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932,523.

Patented Aug. 31, 1909.

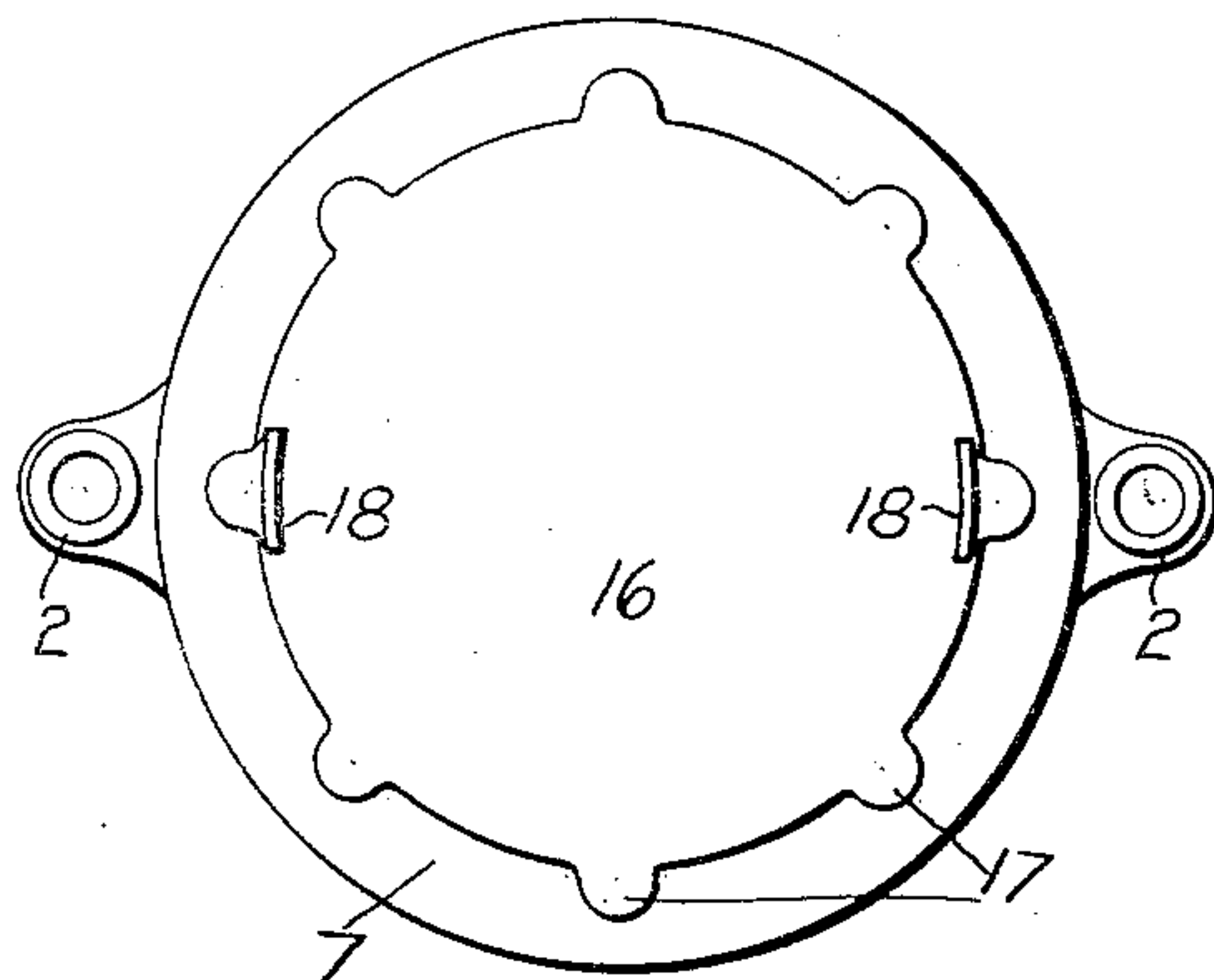


Fig. 1.

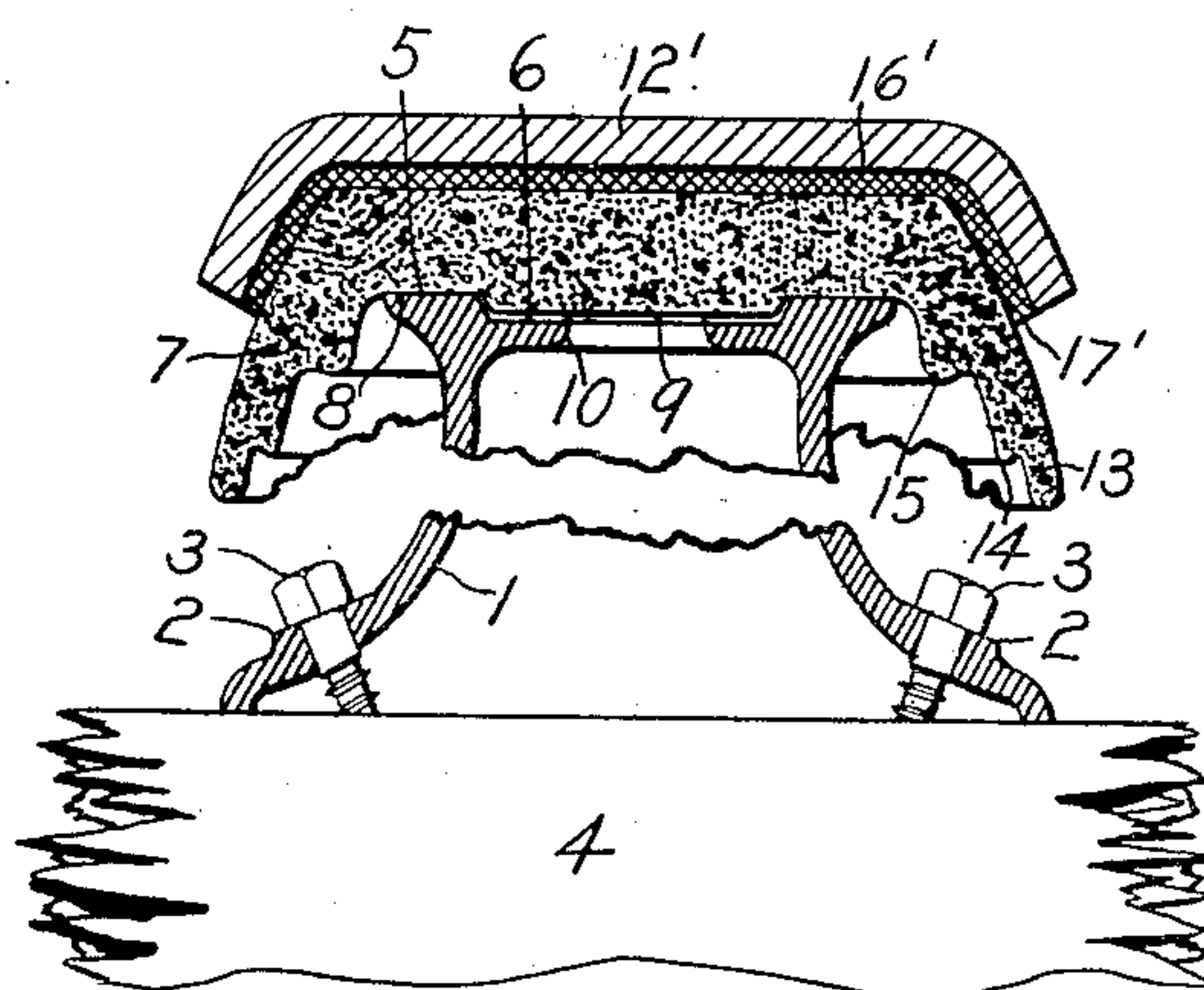


Fig. 4.

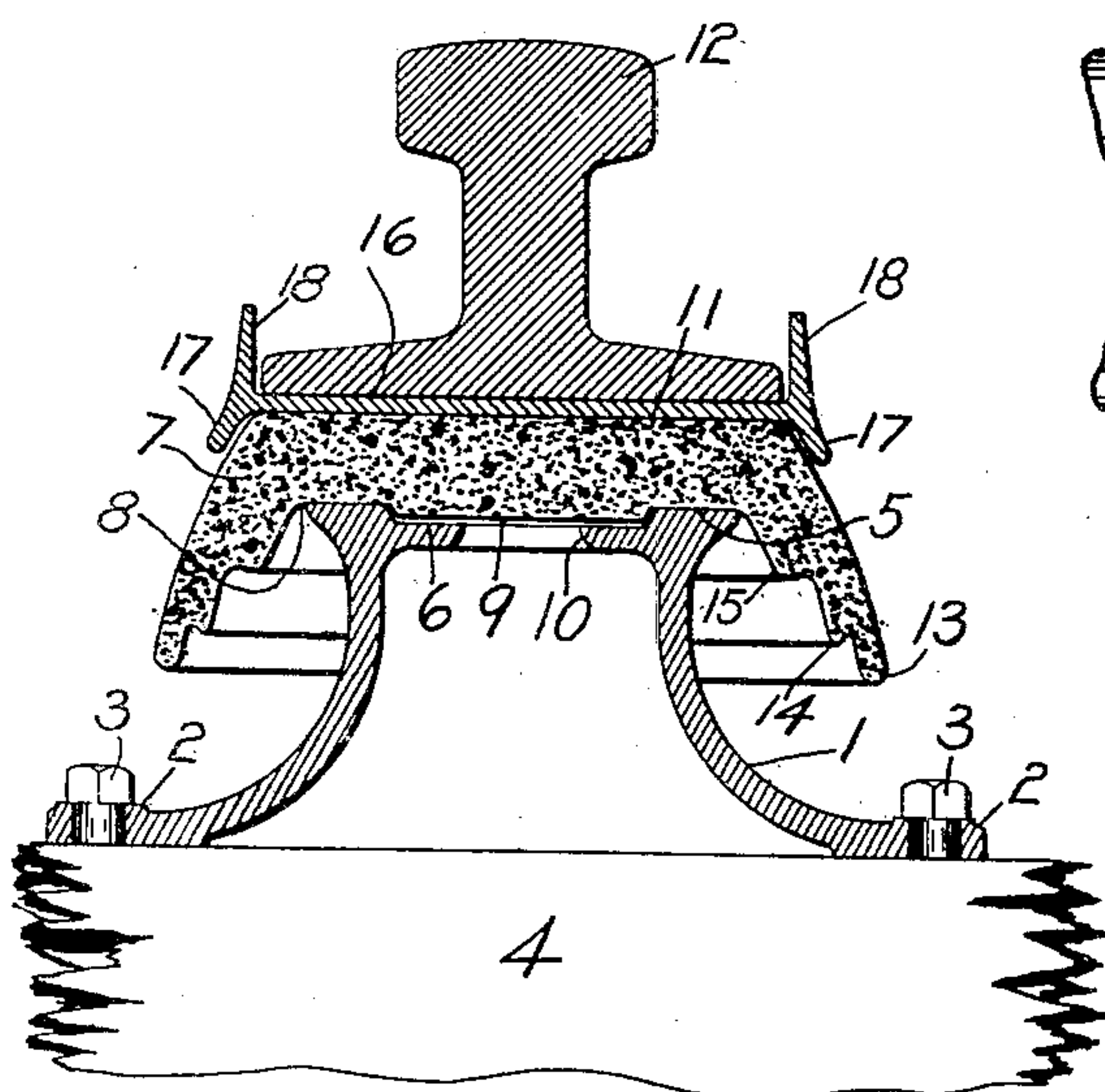


Fig. 2.

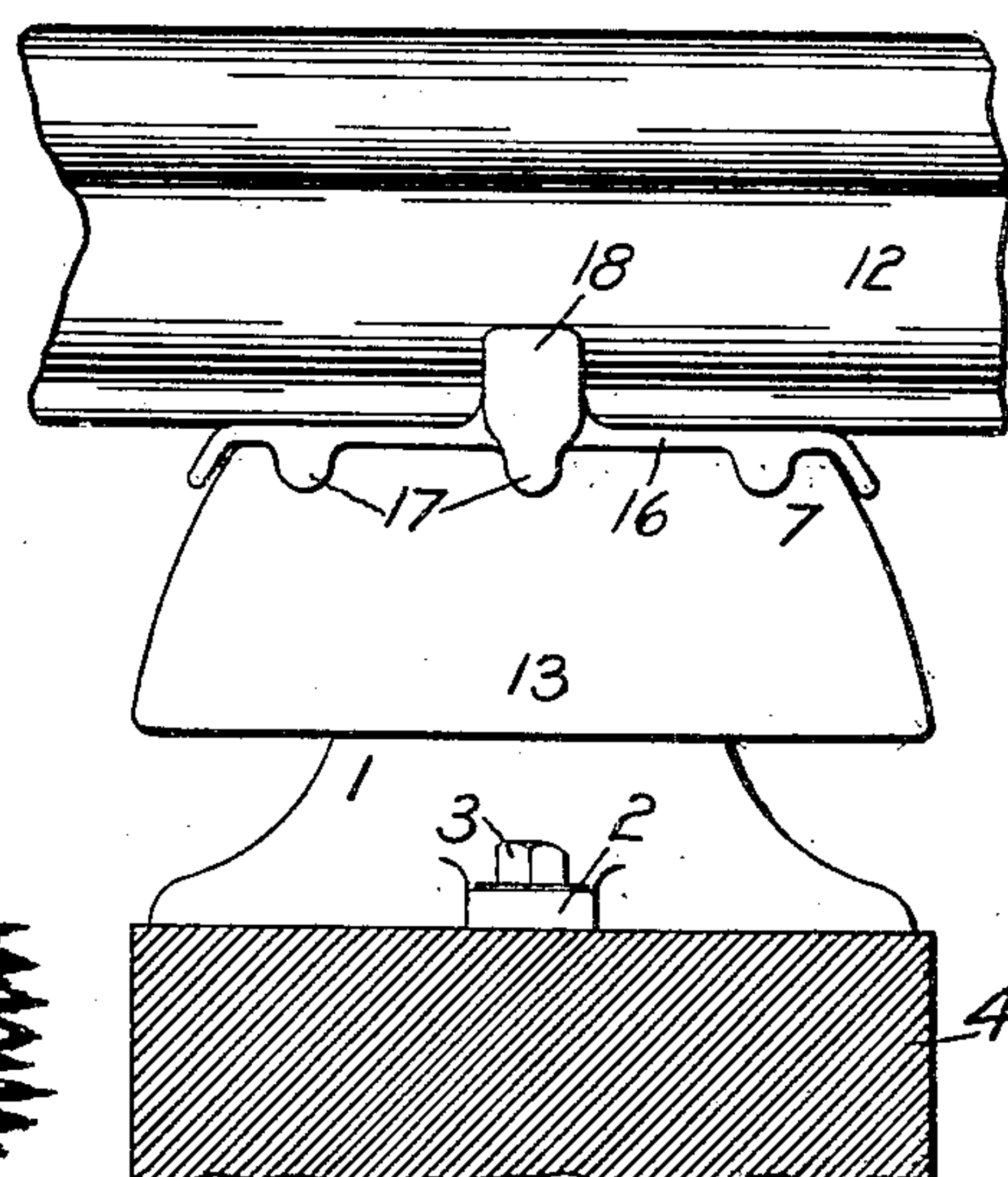


Fig. 3.

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UNITED STATES PATENT OFFICE.

EUGENE M. WEAVER, OF OZONE PARK, NEW YORK.

INSULATOR FOR THIRD RAILS.

932,523.

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To all whom it may concern:

Be it known that I, EUGENE M. WEAVER, a citizen of the United States, and a resident of Ozone Park, county of Queens, State of New York, have invented certain new and useful Improvements in Insulators for Third Rails, as set forth in the following specification.

This invention relates to insulators for third rails.

An object of the invention is to improve the construction of such an insulator in general.

Further objects are to distribute the crushing effect of a third rail over a comparatively large supporting area of the insulator having a dielectric strength sufficient to resist puncture and provide against surface leakage over the insulator to the support.

The invention also contemplates a generally improved structure comprising the third rail insulator proper, its standard and its cooperating rail seat.

The above and further objects of the invention will be apparent from the following description and claims when read in connection with the accompanying drawings which form part of this application and in which—

Figure 1 is a top plan view of the combined mechanism; Fig. 2 is a cross-section through the parts shown in Fig. 1 and showing a third rail in position; Fig. 3 is a side elevation partly in section of the parts shown in Fig. 2; Fig. 4 is a cross-sectional view showing a modification.

Referring now more in detail to the drawings: 1 indicates the supporting base or standard which may be formed of any suitable material as for instance cast iron, and may be provided with suitable bosses 2, pierced for the reception of lag screws 3, securing the base 1 to a tie 4. These bosses may be positioned so that the lag screws 3 are driven straight into the tie 4; as shown in Fig. 2, or so that they are driven in at an angle, as shown in Fig. 4.

The standard 1 provides a flat ring shaped seat 5 which overhangs the lower portion of the standard and it has a depressed or countersunk flat portion 6 within the ring shaped seat 5. It is, of course, to be understood that the ring-shaped seat 5 need not necessarily be a circular ring-shaped seat as a variation in its contour is permissible.

An insulating member 7 of porcelain or

other suitable insulating material is shaped to seat upon the faces 5 and 6 of the base 1, the underneath circular face 8 resting upon the face 5 and the downward projection 9 fitting in over the countersunk seat 6. An opening 10 may be provided as shown, through which cement may be applied to fill in the space between the surface 9 of the insulating section and the surface 6 and cement the insulating section to the base 1. The top surface of the insulating section 7 may be finished off flat and circular as indicated by the straight line 11. The portion of the insulating section between the surface 11 and the surface 8 is made of a sufficient thickness to resist direct puncture according to the potential of the current to be carried by the third rail 12.

The insulator 7 is provided with a depending petticoat 13 and may have a plurality of interior petticoats 14 and 15. The petticoats are designed so as to present sufficient insulating surface to prevent surface leakage over the insulating section to the metallic base 1. The distance from the lower edge of the petticoat 13 to the tie 4 or to the nearest point of the base 1 is proportioned so as to present a sufficient air gap to prevent arcing from a wet petticoat to the tie or base. To this end, it is contemplated as an advantage to concavely curve the base 1 as indicated.

A seat plate 16 of general circular contour is provided to fit over the insulating section 7 as a cap. A plurality of ears 17 project downwardly and take over the side of the insulating section to hold the cap against lateral displacement. Diametrically positioned upstanding ears 18 are provided to extend across the flanges of the third rail and hold the third rail from lateral displacement as will be understood.

In the embodiment shown in Figs. 1, 2 and 3, the cap 18 may be made of metal such as cast steel, and has downwardly projecting ears 17. However, if desired, the cap may be in the form shown in Fig. 4 and designated by 16', in which embodiment the ears 17 have been substituted by a continuous downwardly projecting flange 17'. In this embodiment the cap 16' may be made of soft metal or of any metal suitable for seating the channel shaped type of third rail indicated by 12'. It is also contemplated that the cap 16 of Figs. 1, 2 and 3 may be made of softer metal than steel and in fact

of any material suitable for the purpose, and which will distribute itself over the surface of the insulating section 7 to insure an even seat for the third rail.

5 In the embodiment shown in Fig. 4 a portion of the supporting base 1 has been broken away and it is to be understood that this base may be of any desired height to suit the conditions which may arise.

10 It should also be understood that many variations from the exact embodiments illustrated are contemplated in accordance with the accompanying claims.

What is claimed and what is desired to be 15 secured by United States Letters Patent is:

1. An insulator for third rails comprising, a metallic standard having a flat ring shaped seat at its top and extending outwardly to overhang the lower portion of the standard, 20 said standard also having a flat portion within and depressed below said ring shaped seat; and an inverted cup shaped insulating member having an interior ring shaped seating face and a downwardly projecting portion within said ring shaped face. 25

2. An insulator for third rails comprising a metallic standard having a flat ring shaped seat at its top and extending outwardly to overhang the lower portion of the standard, 30 said standard also having a flat circular por-

tion within and depressed below said ring shaped seat; and an inverted cup shaped insulating member having an interior ring shaped seating face and a downwardly projecting circular portion within said ring shaped face, said insulating member having an outwardly flared depending flange forming a petticoat portion. 35

3. An insulator for third rails comprising, a metallic standard having a flat ring shaped seat at its top and extending outwardly to overhang the lower portion of the standard, said standard also having a flat circular portion within and depressed below said ring shaped seat; and an inverted cup shaped insulating member having an interior ring shaped seating face and a downwardly projecting circular portion within said ring shaped face, said insulating member having an outwardly flared depending flange forming a petticoat portion and also having one or more interior petticoat portions formed on said flange. 40 45 50

In testimony whereof, I have signed my name to this specification, in the presence of 55 two subscribing witnesses.

EUGENE M. WEAVER.

Witnesses:

FRANKLIN W. WARD,
LEONARD DAY.