April 5, 1927. 1,623,920

F. C. HARRIS

ELECTRIFIED MONORAIL SYSTEM

Filed Dec. 16, 1925

Fig. 1.

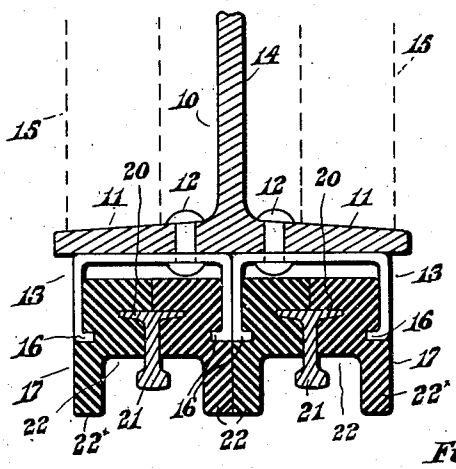


Fig. 2.

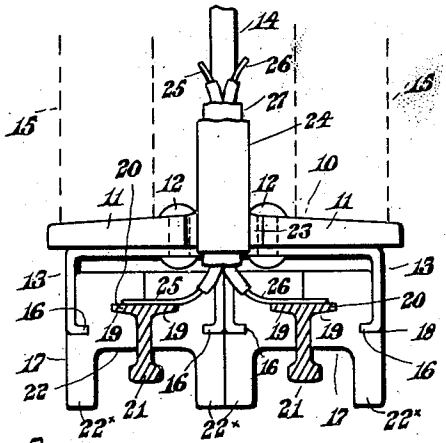


Fig. 3.

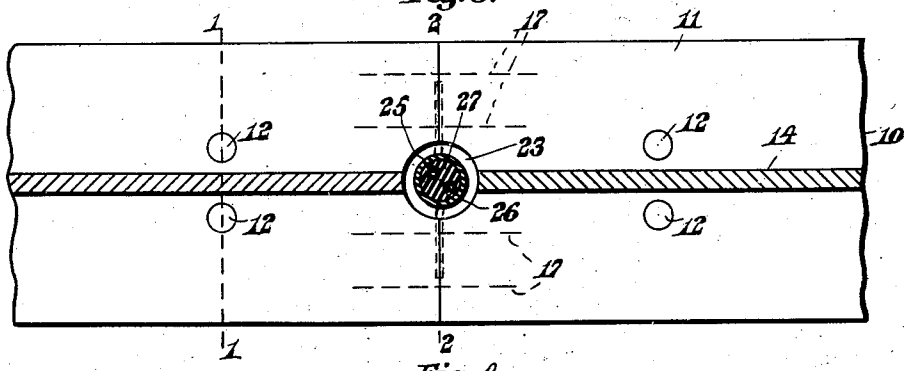


Fig. 4.

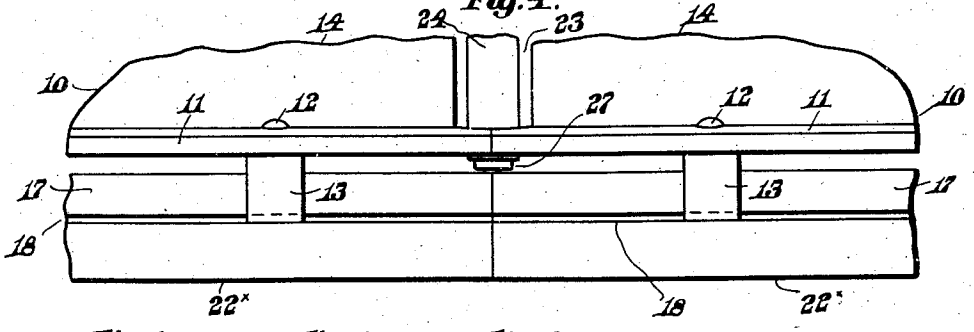


Fig. 6.

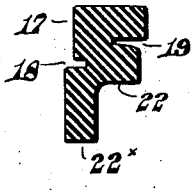
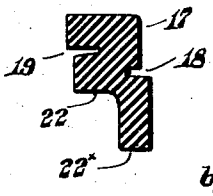


Fig. 5.



Fig. 7.



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UNITED STATES PATENT OFFICE.

FRANK C. HARRIS, OF BRIGHTON, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN MONORAIL COMPANY, OF CLEVELAND, OHIO, A CORPORATION.

ELECTRIFIED MONORAIL SYSTEM.

Application filed December 16, 1925. Serial No. 75,833.

This invention relates to monorails and particularly to devices of this character which support one or more conductors of electricity, the object of the invention being the provision of means for supporting the conductor beneath the monorail with its upper end between a plurality of insulating members and its lower end projecting below said insulating members.

This object is attained by the mechanism illustrated in the accompanying drawings.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described except as required by the scope of the appended claims.

Of the drawings:

Figure 1 represents a transverse section of a monorail embodying the principles of the present invention, said section being on line 1, 1, on Fig. 3.

Figure 2 represents a similar section of same on line 2, 2 on Fig. 3.

Figure 3 represents a plan of same.

Figure 4 represents a side elevation of same.

Figure 5 represents a section of the conductor.

Figure 6 represents a section of one of the strips of insulating material for supporting the conductor, and

Figure 7 represents a section of the other strip.

Similar characters indicate like parts throughout the several figures of the drawing.

In the drawings, 10 is a monorail or support having flanges 11 at its lower end which provide tread surfaces for the wheels of a trolley movable lengthwise thereof.

The upper end of the monorail 10 may be of any desired shape and supported from a superstructure in any well known manner.

Secured by rivets 12 to the under face of the support or monorail 10 are a plurality of U-shaped members 13 which are spaced apart at convenient distances.

The rivets 12 extend through the flanges 11 at points adjacent the web 14 of the monorail 10 so as not to interfere with the tread surface of the flanges 11 on which move the trolley wheels 15 (shown only in dotted lines).

The lower ends of each member 13 have oppositely disposed projections 16 which extend toward each other as shown.

Supported by these U-shaped members 13 are the insulating strips 17 arranged in pairs, each pair having formed in their outer side walls grooves 18 into which the projections 16 are disposed.

The outer side walls of the members 13 and strips 17 are well inside of the outer edges of the flanges 11 so that the device supported by the trolley wheels 15 cannot engage with these members and strips in its movement along the rail or support 10.

The adjacent faces of each pair of strips 17 have formed therein continuous grooves 19 which are oppositely disposed and into which extend the flanges 20 of the conductor bar 21, the lower end of which extends below the surface 22 of the strips 17.

This conductor bar 21 provides a means for electrifying switches, cranes, turntables and other trackage devices.

Each pair of strips 17 has extending downwardly therefrom on opposite sides of the conductor bar 21, the guard flanges or walls 22^x, these flanges extending downwardly below the under face of the conductor bar 21, thereby preventing accidental contact therewith.

The upper ends of the strips 17 are spaced from the under face of the support 10.

At a joint between the supports or rails 10, there is a hole 23 through which extends a cable 24, one wire 25 of which extends to one conductor bar 21 while the other wire 26 extends to the other conductor bar 21.

These wires 25, 26 are in electrical contact with said bars 21 and feed electricity thereto. The wires 25 and 26 are enclosed in insulating material 27.

By making the conductor bar 21 in this manner and supporting it between two insulating strips 17 the whole structure is in laminated form and each individual element may be easily curved to suit various conditions.

In structures now in general use there is

much difficulty experienced in thus curving the devices coacting with the monorail and this objection is wholly overcome by the structure herein shown and described.

In the structures of this character the conductor bars 21 are usually located above the monorail and as a consequence a more complicated system of connection is required and it is not easy to electrify the switches, etc. By placing the conductor bars beneath the monorail the means for making the electrical connections is greatly simplified, less headroom is required, and the conductor bars 21 are less exposed.

Moreover, by locating the conductor bar between the guard flanges 22^{x} of the strips 17 there is very little opportunity for a wire or other member to accidentally come into contact with a conductor bar 21 and cause a short circuit or other accident.

This provides a very simple means of supporting a conductor bar from a monorail, which may be readily installed, and in which the various elements may be easily bent to conform to the curvatures in the monorail.

It is believed that from the foregoing description the operation and many advantages of the invention will be understood.

Having thus described my invention, I claim—

1. A monorail; a plurality of U-shaped members secured thereto and depending therefrom provided with inwardly extending projections; two strips of insulating material extending the entire length of said monorail and having depressions to receive said projections; and a conductor bar interposed between and supported by said insulating strips.

2. A load-supporting monorail; a plurality of U-shaped members secured thereto and depending therefrom provided with inwardly extending projections; two strips of insulating material extending the entire length of said monorail and having in their outer walls depressions to receive said projections and in their inner walls oppositely disposed grooves; and a conductor bar interposed between and supported by said insulating strips, said conductor bar having flanges disposed within said grooves.

3. A monorail; a plurality of U-shaped members secured thereto and depending therefrom provided with inwardly extending projections; two strips of insulating material having in their outer walls depressions to receive said projections and each having its outer wall extending downwardly to form a guard flange; and a conductor bar interposed between and supported by said insulating strips, said conductor bar having its lower end higher than the lower ends of said guard flanges.

4. A load-supporting monorail having outwardly extending wheel-supporting flanges; a plurality of U-shaped members secured to and depending from said flanges with the lower ends of each extending toward each other; insulating strips supported by said lower ends and extending the entire length of said monorail; and a conductor bar interposed between and supported by said strips.

5. A monorail having outwardly extending wheel-supporting flanges; a plurality of U-shaped members secured to and depending from said flanges with the lower ends of each extending toward each other, the outer ends of said U-shaped members being well within the edges of said flanges; insulating strips supported by said lower ends; and a conductor bar interposed between an supported by said strips.

6. A load-supporting monorail; a plurality of insulating strips supported by and extending the entire length of said monorail but separated therefrom said strips having grooves formed in the contacting walls of each pair; and a T-shaped conductor bar interposed between each pair of strips with its flanges disposed in said grooves.

7. A monorail; a plurality of insulating strips supported thereby and separated therefrom and having grooves formed in the contacting walls of each pair; and a T-shaped conductor bar interposed between each pair of strips with its flanges disposed in said grooves, the lower ends of said conductor bar being above the lower ends of guard flanges forming a part of said insulating strips.

8. A monorail; a plurality of insulating strips supported thereby and separated therefrom, said strips being arranged in pairs with a T-shaped channel in each pair and extending the entire length of said rail; and a T-shaped conductor bar disposed in each channel.

9. A load-supporting monorail; two rows of U-shaped members secured thereto and depending therefrom; two strips of insulating material supported by each row of U-shaped members and extending the entire length of said rail; and a conductor bar with its upper end interposed between and supported by each pair of strips.

10. A load-supporting monorail; two rows of U-shaped members secured thereto and depending therefrom and having inwardly extending projections; two strips of insulating material supported by the inwardly extending projections of each row of U-shaped members and extending the entire length of said rail; and a conductor bar with its upper end interposed between and supported by each pair of strips.

11. A load-supporting monorail; a plurality of insulating strips suspended therefrom in pairs and extending the entire length of said rail; and a conductor bar in-

terposed between and supported by each pair of strips.

12. A load-supporting monorail; a plurality of insulating strips suspended therefrom in pairs and having oppositely disposed grooves, said strips extending the entire length of said monorail; and a T-shaped conductor bar interposed between each pair of strips with its flanges extending into said grooves.

13. A monorail; an insulating member suspended therefrom and extending the entire length thereof, and a conductor bar having its upper end embedded in said insulating member and its lower end projecting below said insulating member.

14. A load-supporting rail; a plurality of strips of insulating material in two rows depending from said rail and supported thereby, said strips in each row abutting at their ends; and a conductor bar interposed between and supported by said rows of insulating strips.

15. A load-supporting rail; two continuous strips of insulating material depending from the bottom of said rail and supported thereby, said strips having downwardly extending edges; and a conductor bar interposed between, supported by and protected by the downwardly extended edges of, said insulating strips.

16. A load-supporting rail; two continuous strips of insulating material beneath said rail and secured thereto; and a conductor bar provided with laterally extended horizontal edges, interposed between and supported within grooves in said insulating strips.

Signed by me at 746 Old South Bldg., Boston, Mass., this 12th day of December, 1925.

FRANK C. HARRIS.