J. C. GILLETTE.

SECTION INSULATOR.

APPLICATION FILED AUG. 13, 1908.

1,019,451.

Patented Mar. 5, 1912.

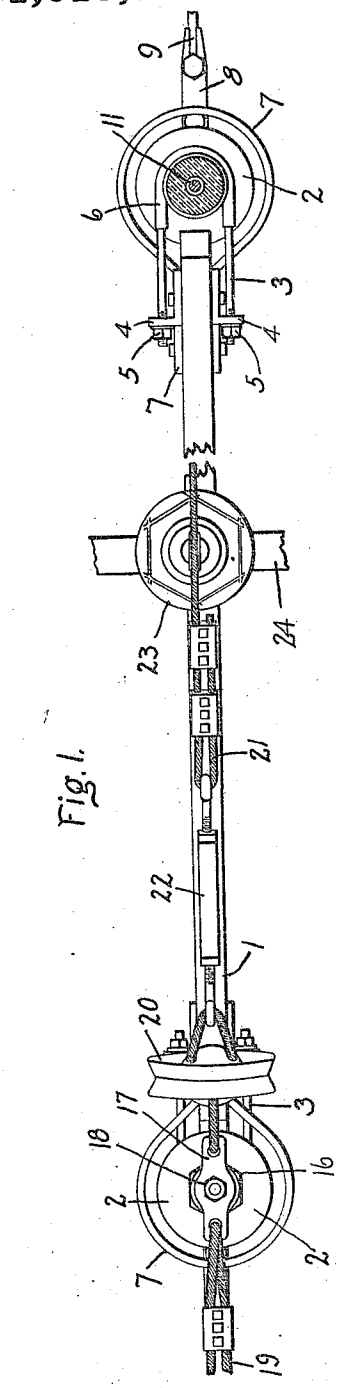

Fig. 1.

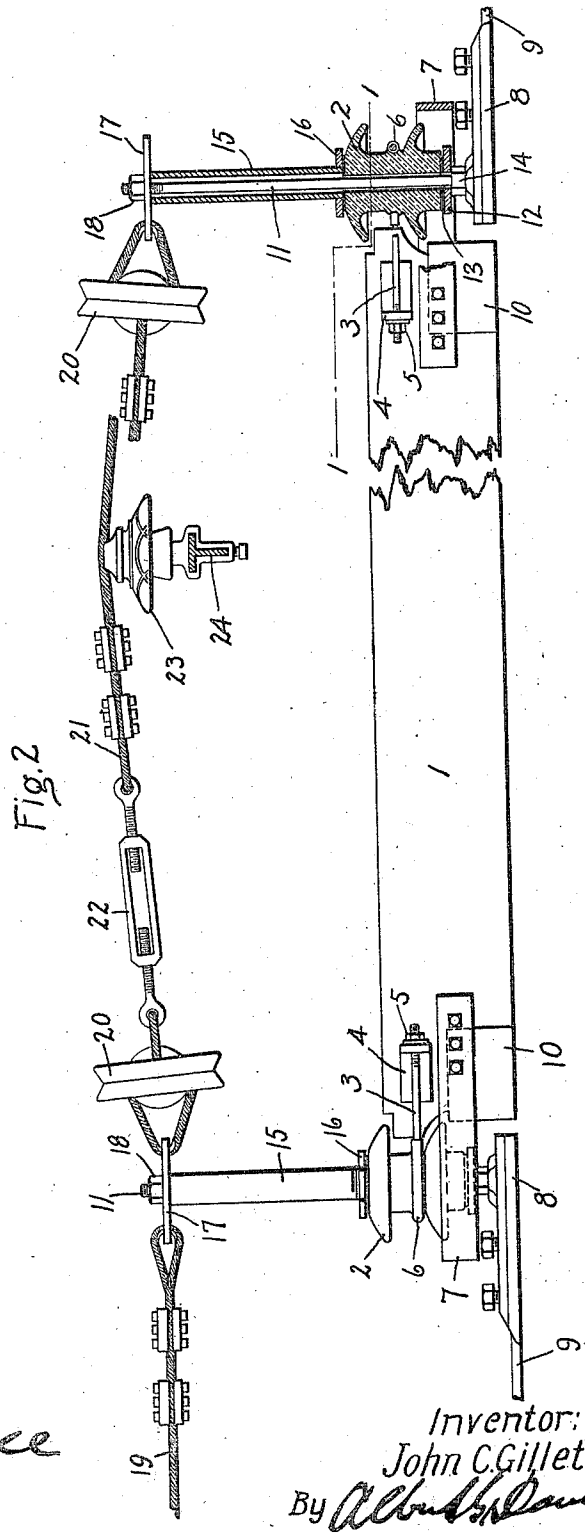

Fig. 2.

Witnesses:

Benjamin B. Hicks

Helen D. Ford

Inventor:

John C. Gillette,

By Albert G. Davis Atty.

UNITED STATES PATENT OFFICE.

JOHN C. GILLETTE, OF BALTIMORE, MARYLAND, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

SECTIONAL INSULATOR.

1,019,451. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed August 13, 1908. Serial No. 448,297.

To all whom it may concern:

Be it known that I, JOHN C. GILLETTE, a citizen of the United States, residing at Baltimore and State of Maryland, have invented certain new and useful Improvements in Section-Insulators, of which the following is a specification.

This invention relates to devices for insulating the sections of overhead trolley wires, and it is especially adapted for use in high speed roads employing a catenary suspension for its high potential overhead working conductor.

The object of the invention is to provide simple but effective means for electrically separating but mechanically connecting the adjacent ends of the trolley wire and the messenger in two contiguous sections of the road, and to properly support the entire device upon the cross-arm or span wire of the roadway structure.

The specific details of construction are hereinafter set forth, and the features of novelty are particularly pointed out in the claims.

In the accompanying drawing, Figure 1 is a top plan view of my improved section insulator, and Fig. 2 is a side elevation, both figures being partly broken away and partly in section.

A runner bar 1 of insulating material, such as wood, narrow in width but of sufficient depth to be stiff and rigid, supports at each end a porcelain insulator 2 of the spool type. The preferred means of support is a U-shaped yoke 3 which straddles the insulator and the end of the runner bar. The ends of the yoke are screw-threaded, and pass through holes in L-shaped brackets 4 which are bolted to the sides of the runner bar. The yokes are secured in place by nuts 5, by means of which it is possible, also, to adjust the insulators so that they will stand with their axes in the plane of the runner bar. That portion of the yokes which encircles the insulators is preferably cushioned, as by means of a piece of rubber hose 6 to prevent vibration shocks from chipping the insulator. A stout circular metallic guard 7 surrounds the insulator at a little distance from the same, to prevent it from being struck by the trolley pole in case the latter jumps off the trolley wire or the runner bar.

A trolley shoe 8 is supported below each insulator, said shoe being provided with suitable means for clamping the end of the trolley wire 9. The shoes are in line with the lower edge of the runner bar, whose ends are preferably shod with sheet steel 10 to reduce the wear. Each shoe is secured to the lower end of a bolt 11 which runs up through the insulator, a washer 12 and a piece of fiber 13 being interposed between the insulator and the nut 14 which locks the bolt in place in the shoe. The bolt extends up above the insulator and is stiffened by a sleeve 15 which has a flange 16 at its lower end bearing upon the top of the insulator. This flange may be a nut screwed upon the end of the length of pipe which constitutes the sleeve. On top of the sleeve is a plate washer 17, held in place by a nut 18 on the projecting upper end of the bolt. In each end of the washer is a hole, one for the attachment of the messenger wire or cable 19, and the other for the attachment of the anchorage for the same. Said anchorage consists preferably of two line strain insulators 20, one attached to each washer, and a length of wire cable 21 connecting said strain insulator. A turn buckle 22 may be included in this connection for adjusting it to the proper length.

The cable 21 passes over the top of a bracket insulator 23 mounted on a cross-bar or arm or span wire 24. The weight of the entire section insulator is carried by this bracket insulator.

This device provides a long air gap between the ends of the trolley wire, and also interposes efficient porcelain insulators which can be designed for any desired voltage. The trolley wire is held rigidly in line with the runner bar so that the trolley wheels will pass along the device without jumping, even at high speeds.

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

1. A section insulator for messenger supported trolley wires comprising a runner bar of insulating material, an insulator secured to each end thereof, means carried by said insulators for supporting the ends of the trolley wire under tension, and an adjusting and supporting connection provided at its ends with insulated devices for engaging said trolley wire supporting means and for receiving the ends of the messenger.

2. A section insulator for messenger sup-

ported trolley wire systems comprising a runner bar of insulating material, an insulator secured to each end thereof, an upright bolt in each insulator, a trolley wire shoe attached to the lower end of each bolt, means for attaching the messenger cable to the upper end of each bolt, and an adjusting and supporting connection between the upper ends of said bolts, and said connection including one or more strain insulators.

3. A section insulator comprising a runner bar of insulating material, a spool insulator at each end of said bar, a U-shaped yoke connecting said insulator and bar, an upright bolt in said insulator, and an insulating connection between the upper ends of said bolts.

4. A section insulator comprising a runner bar of insulating material, a spool insulator at each end of said bar, a guard surrounding said insulator, and secured to said bar, an upright bolt in said insulator, and an insulating connection between the upper ends of said bolts.

5. A section insulator comprising a runner bar of insulating material, a spool insulator at each end thereof, an upright bolt in said insulator extending below and above the same, a trolley shoe attached to the lower end of said bolt, a sleeve on the upper portion of said bolt, a plate washer clamped on top of said sleeve, and an insulating connection between the plate washers including a turn buckle.

6. A section insulator comprising a runner-bar of insulating material, an insulator at each end thereof, an upright bolt in each of said insulators, a sleeve on the upper portion of each of said bolts, a plate washer clamped on top of each of said sleeves, a strain insulator attached to each washer, and a length of cable connecting said strain insulators.

7. A section insulator comprising a runner-bar of insulating material, an insulator at each end thereof, an upright bolt in each of said insulators, a sleeve on the upper portion of each of said bolts, a plate washer clamped on top of each of said sleeves, a strain insulator attached to each washer, a length of cable connecting said strain insulators, and means for tightening said cable.

In witness whereof, I have hereunto set my hand this 5th day of August, 1908.

JOHN C. GILLETTE.

Witnesses:
WILLARD E. LOFGREN,
SAMUEL M. SACHS.