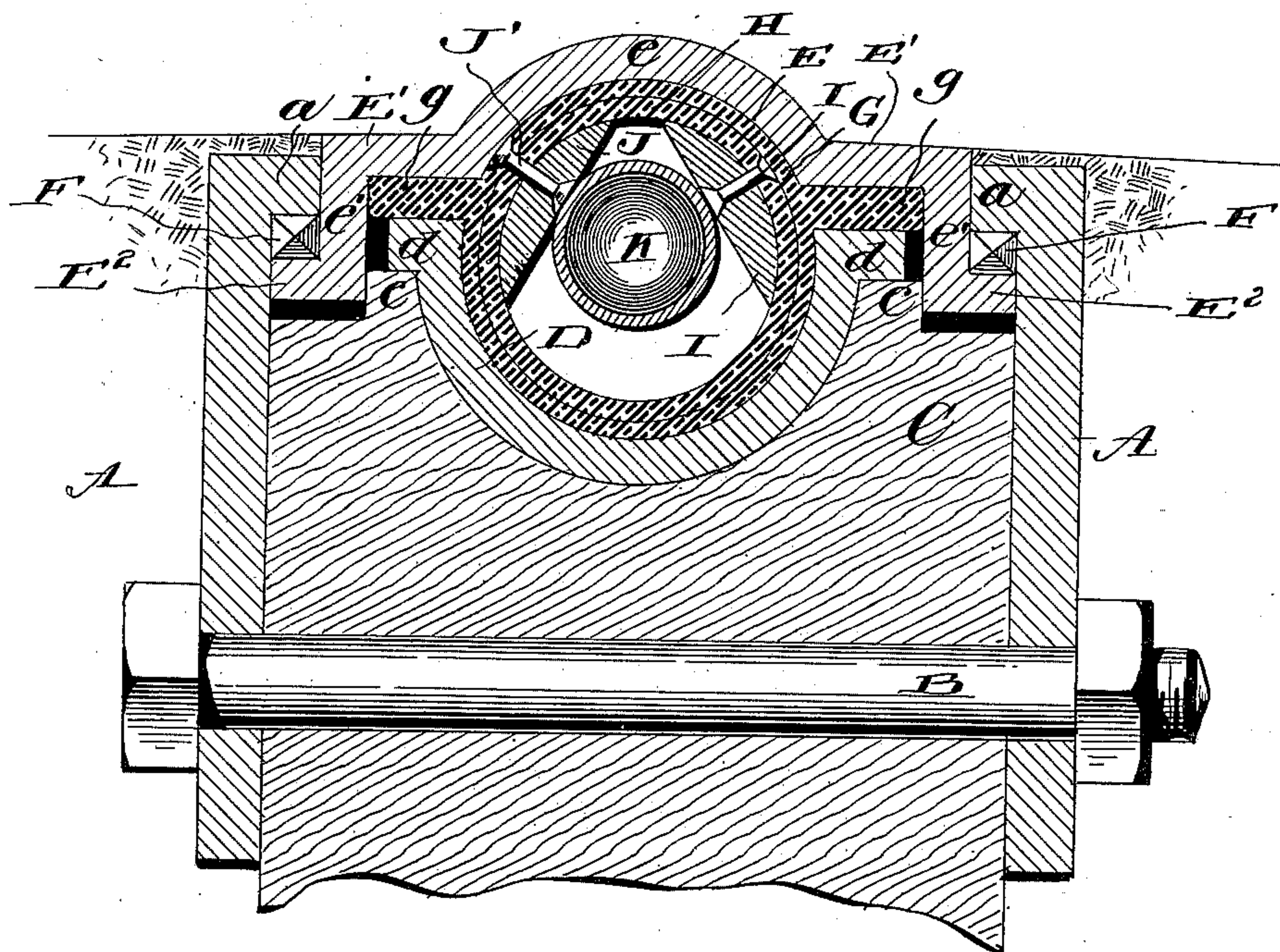


(No Model.)

W. S. HULL.  
ELECTRIC RAILWAY CONDUIT.

No. 566,397.

Patented Aug. 25, 1896.



Witnesses:

L. C. Hills  
E. A. Bond

Inventor:

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by E. B. Stocking Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM SHARKEY HULL, OF DALLAS, TEXAS.

## ELECTRIC-RAILWAY CONDUIT.

SPECIFICATION forming part of Letters Patent No. 566,397, dated August 25, 1896.

Application filed February 28, 1896. Serial No. 581,172. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SHARKEY HULL, a citizen of the United States, residing at Dallas, in the county of Dallas, State of Texas, have invented certain new and useful Improvements in Electric-Railway Conduits, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in electric-railway conduits, and it has for its object, among others, to simplify and cheapen the construction, to render it more efficient in operation and less liable to derangement or to injury.

I provide a conduit with guides for the traveling switch, one of said guides being a continuous one and the other a sectional one, one being insulated from the conduit and from the other guide-strip. A traveling switch consisting of one or more hollow balls is adapted to move in the conduit and upon the under sides of said guides. The conduit is of that form which is made in sections and the arrangement being such that only one section is "live," and that the one over which the car is passing, there being no ground in the other sections.

In its preferred form the invention embodies a tubular insulated section with the conductors in the form of segments of circular planes, there being no wires and the conductors being bare and erected to be contacted directly by the traveler. The sectional conductor comes in contact with the upper outside member of the conduit, which is also in sections. The other conductor is insulated from everything and runs to the power-house. The hollow spherical traveler is held up by the attraction of the magnet carried by the car and rolls between the conducting-guides, which are of any suitable material, one of said guides or conductors being a continuous one, while the other is in sections.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawing, which, with the let-

ters of reference marked thereon, forms a part of this specification, and in which is shown a transverse section through the conduit and the traveler, the latter being shown held up in contact with its guides.

Referring now to the details of the drawing by letter, A designates the brackets, provided at their upper ends with the inwardly-extending horizontal portions or flanges *a*, as shown, and these brackets are designed to be bolted by suitable bolts *b* to the wood timber or sleeper C, which is designed to be fastened to the cross-ties (not shown) in any suitable manner. The brackets with their inwardly-extending flanges or portions are designed for holding down the conduit, which in this instance comprises the lower substantially semicircular portion D, having the horizontal flanges *d*, as shown, resting on the lugs *c* of the sleeper.

E is the upper section of the conduit, having a central curved portion *e*, with the horizontal flanges E' at opposite sides thereof, from which extend the vertical portions *e'*, terminating in the outwardly-extending horizontal portions E<sup>2</sup>, between the upper faces of which and the under faces of the inwardly-extending horizontal portion *a* of the brackets are inserted wedges F or analogous means for holding down the upper section of the conduit.

G is a tube of insulating material arranged within the space inclosed by the upper and lower sections of the conduit and provided with the horizontal extensions *g*, which are confined between the flanges *d* of the lower section of the conduit and the horizontal portions E of the upper part thereof. Within this ring or tube G is another tube H of insulated material, which is water-tight.

I is the continuous conductor, which, as shown, is in cross-section in the form of a segment of a circle. It is held in position within the conduit by rivets I' or other suitable means, which are insulated from the cover of the conduit. J is the other conductor, which is formed in sections and is secured in position by rivets or analogous means J', which, however, extend through both insulating-tubes and contacts with the



cover or upper section E of the conduit. This conductor is in cross-section similar to that of the conductor I.

K is the traveling switch in the form of a hollow sphere, and although in this instance only one is shown it is evident that more than one may be employed where found necessary.

In practice the traveler is held up by the attraction of the magnet on the car and rolls along between the superimposed guides I and J, the former of which is insulated from everything and runs to the power-house. In the drawing the ball is shown as held up in operative contact with the conductors. It will, of course, be understood that when not under the influence of the magnet it drops to the bottom of the space within the insulating-tube. It will be observed that in this form there are no wires necessary.

Modifications in detail may be resorted to without departing from the spirit of my invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is--

1. The combination with the horizontally-divided conduit, of a continuous metallic conductor, and a sectional metallic segmental conductor laid upon the upper interior walls thereof and insulated from the same and from each other, and an inner, insulating-tube held between the sections of the conduit and a hollow metallic spherical switch adapted to travel bodily through the conduit in contact with said segmental conductor; substantially as described.

2. In a horizontally-divided conduit, a continuous metallic segmental conductor and a sectional metallic segmental conductor laid upon the upper interior walls thereof with their faces oppositely inclined and insulated from each other and from the conduit, and an inner, insulating-tube held between the sections of the conduit and a hollow metallic spherical switch adapted to move bodily through the conduit in rolling contact with said conductors; substantially as described.

3. A conduit composed of an upper and a lower section having horizontal flanges an inner insulating-tube, having horizontal portions held between said flanges and an inner insulating-tube, and metallic segmental guides and conductors held within the inner tube with their curved portions conforming to the curvature of the inner tube; substantially as described.

4. A conduit composed of an upper and a lower section having horizontal flanges, an inner insulating-tube, having horizontal portions held between said flanges and an inner insulating-tube, and metallic guides and conductors held within the inner tube, one being

insulated from the conduit and the other in electrical contact therewith; substantially as described.

5. A conduit composed of an upper and a lower section having horizontal flanges, an inner insulating-tube, having horizontal portions held between said flanges and an inner insulating-tube, and metallic guides and conductors held within the inner tube, one being insulated from the conduit and the other in electrical contact therewith, combined with a hollow spherical switch adapted to travel bodily through the inner tube in direct contact with said conducting-guides; substantially as described.

6. The combination with the brackets having inwardly-extending horizontal portions at their upper ends, of a lower semicircular conduit-section, an upper curved conduit-section having depending portions, an inner, insulating-tube having horizontal portions held between the flanges of the upper and lower conduit-sections and horizontal flanges and wedges interposed between said flanges and those of the brackets and segmental conductors secured within the conduit; substantially as described.

7. The combination with the brackets having inwardly-extending horizontal portions at their upper ends, of a lower semicircular conduit-section, an upper curved conduit-section having depending portions, and horizontal flanges and wedges interposed between said flanges and those of the brackets, and an insulating-tube within the conduit having horizontal portions held between the flanges of the upper and lower conduit-sections and segmental conductors secured within the upper portion of said tube; substantially as described.

8. The combination with the brackets having inwardly-extending horizontal portions at their upper ends, of a lower semicircular conduit-section, an upper curved conduit-section having depending portions and horizontal flanges and wedges interposed between said flanges and those of the brackets, and an insulating-tube within the conduit having horizontal portions held between the flanges of the upper and lower conduit-sections, and an inner insulating-tube and conducting-guides having inclined faces, and one secured to the inner tube and insulated from the conduit, and the other secured to both tubes and in electrical contact with said conduit; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM SHARKEY HULL.

Witnesses:

AMOS R. JOHNSTON,  
J. W. BEATY.