

May 6, 1924.

L. STEINBERGER

1,493,054

BALL AND SOCKET INSULATOR CONNECTION

Filed Feb. 14, 1919

Fig. 1.

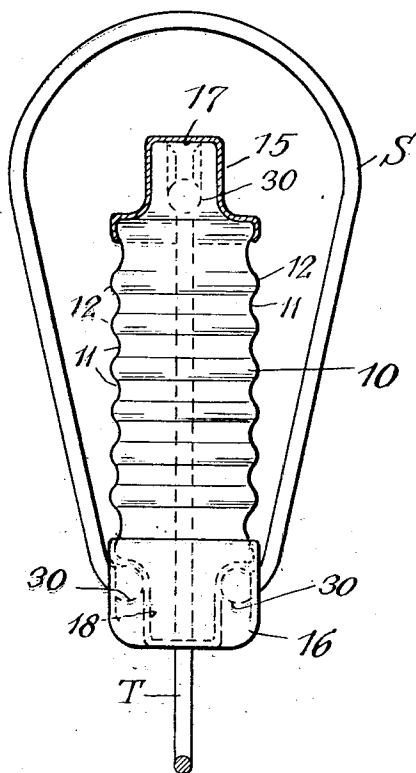


Fig. 2.

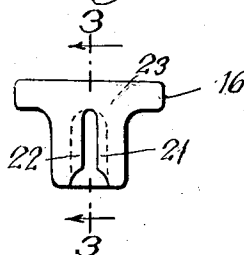


Fig. 3.

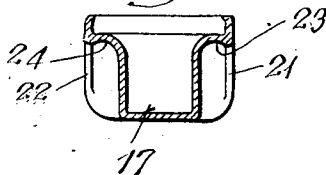


Fig. 5.

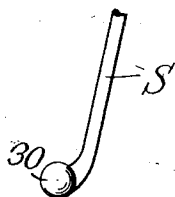
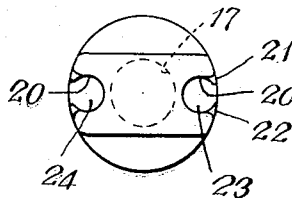


Fig. 4.



Har. Schermer

Louis Steinberger INVENTOR  
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## UNITED STATES PATENT OFFICE.

LOUIS STEINBERGER, OF BROOKLYN, NEW YORK.

BALL-AND-SOCKET INSULATOR CONNECTION.

Application filed February 14, 1919. Serial No. 276,903.

*To all whom it may concern:*

Be it known that I, LOUIS STEINBERGER, a citizen of the United States, and a resident of the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in Ball-and-Socket Insulator Connections, of which the following is a specification.

My invention relates to an insulator structure by means of which the strain members thereof are connected to the respective ends of the insulator body by a ball and socket connection.

One of the objects of my invention is to provide an insulator structure the strain members of which have a universal connection with each other.

Another object is to provide an insulator body with reinforced ends having seats for the reception of the free ends of the strain members so that the insulator body and strain members will have a universal or pivotal connection one with the other.

Other objects will appear from the subjoined specification and claims.

Referring to the drawings:

Fig. 1 is a side view partly in section illustrating the assembled insulator body and strain members.

Fig. 2 is a side elevation of one of the protecting caps.

Fig. 3 is a vertical section through line 3—3 of Fig. 2.

Fig. 4 is a plan view of one of the protecting caps.

Fig. 5 is a detail showing the construction of one of the projecting ends of the strain member.

In the drawings in which the same reference character indicates the same part in the several views, 10 represents an insulator body which is of substantial length and cylindrical in shape, the surface thereof being corrugated so as to provide grooves 11 and projections 12. The body of the insulator may be made of any suitable material for that purpose, but I prefer to use the insulating material well known in the art as electrose.

Secured to each end of the insulator body are hollow metal caps 15 and 16. These caps are secured by molding the same to the body of insulating material when that material is moldable, and in the event that the insulator body is composed of vitreous ma-

terial such as porcelain, the caps may be secured in place by cement, as well known.

The caps 15 and 16 are provided with central cavities 17 and 18 for the reception of the respective ends of the insulator body and on each side of the caps at points diametrically opposite each other, is situated a groove 20, the lower portion of which is closed by lips 21 and 22, the closed portion being substantially spherical in shape to form a socket for the purposes hereinafter explained.

The strain members S and T may if desired or required be made of spring or yielding material and are provided with projecting free ends which are preferably globular in form and the strain members are so constructed that the free ends thereof will be at such a distance apart as to substantially equal the diameter of the metal cap measured from the inner side surface of the above mentioned sockets.

In assembling the insulator and strain members the insulator body with its metal capped ends is pivotally secured to the respective free ends of the strain members by permitting the globular or ball portions of the free ends of the strain members to enter the sockets 20 and pass into the inner sockets or seats 23 and 24.

From this construction it will be seen that the strain members are permitted to swing as it were, in directions opposite each other so that there will be a universal movement between the strain members and the connecting body of insulating material and consequently the structure will be so articulated that it will give when subjected to strains due to wind pressure or to any other force.

As changes of construction could be made within the scope of my invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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

1. In an insulator of the class described, a body portion of insulating material having two protecting caps located one at each end thereof, two U-shaped strain members disposed in planes at right angles to one another, the curve or bend of each of said members being disposed adjacent one end of

said body and the free ends of said members being pivotally connected with the cap at the other end of said body portion, whereby said body portion will be subjected to compression when in use.

2. In an insulator of the class described, a body portion substantially cylindrical in form and made of insulating material, two metallic protecting caps located one at each end of said body portion, two U-shaped strain members disposed in planes at right angles one to the other, the curve or bend of each of said members being disposed adjacent one end of said body and the other or free end thereof being pivotally connected with the cap at the other end of said body whereby said body portion will be subjected to compression when in use.

3. In an insulator of the class described, a body portion substantially cylindrical in form and made of insulating material, two hollow metallic caps located one at each end of said body portion and into which the ends thereof extend, two oppositely arranged grooves provided in said caps and the ends of which grooves are closed, and two U-shaped strain members the curve or bend of each of which is disposed adjacent one end of said body portion, and the free ends of which members lie within the grooves aforesaid provided in said caps, whereby said body portion will be subjected to compression when in use.

4. In an insulator of the class described, a body portion of insulating material the form of which is substantially cylindrical, two hollow metallic caps located one at each end of said body portion and into which the said ends extend, two oppositely located grooves provided in each of said caps the ends of which are shaped to provide spherical bearing seats, and two U-shaped strain

members disposed in planes at right angles one to the other, the curve or bend of each of said members being disposed adjacent one end of said body and the free ends thereof being spherical in form and resting within the spherical seats provided in the grooves in said caps, whereby said body portion will be subjected to compression when in use.

5. In an insulator of the class described, a body portion of insulating material, two U-shaped strain members disposed in planes at right angles to one another, the curve or bend of each of said members being disposed adjacent one end of said body and the free ends of said members being pivotally connected at the other end of said body portion in an open pivotal connection, whereby said body portion will be subjected to compression when in use and said strain members may be disconnected from said ends by moving them in directions opposite to the direction of application of strains.

6. An insulator of the type described which comprises, a body portion of insulating material, caps at opposite ends of said body of insulating material and connecting strain members mounted on said caps in open pivotal connections whereby said body portion will be subjected to compression when in use and said strain members may be disconnected from said caps by movement in a direction opposite to that of the bearing strains, said pivotal connections permitting said strain members to swing at right angles to each other.

In witness whereof, I have hereunto set my hand at the borough of Manhattan, city and State of New York, this 7th day of February, 1919.

LOUIS STEINBERGER.

In presence of—

C. C. BILLINGS.