G. H. BOLUS.

LOCK HANGER FOR TROLLEY WIRES.

APPLICATION FILED JULY 22, 1911.

1,142,394. Patented June 8, 1915.

Fig. 1.

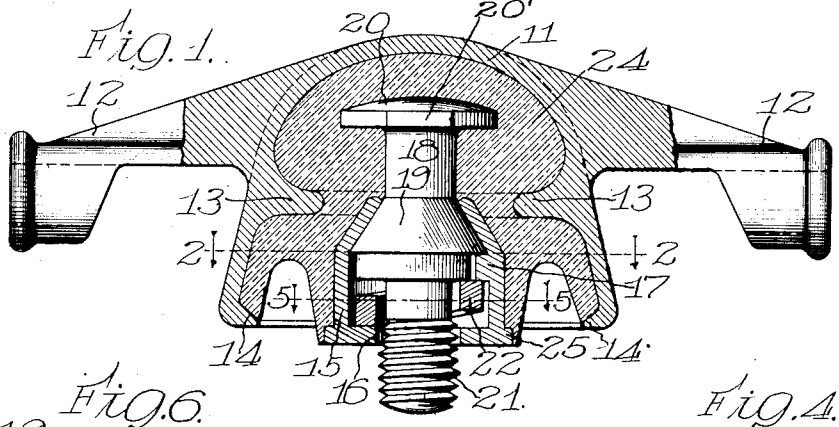


Fig. 6.

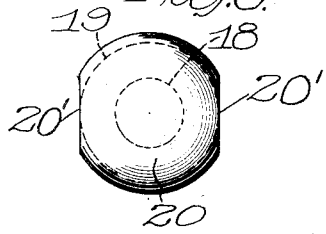


Fig. 2.

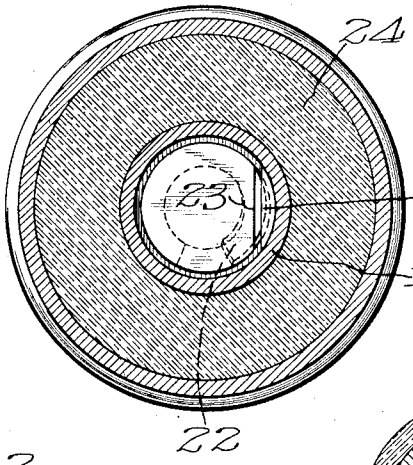


Fig. 4.

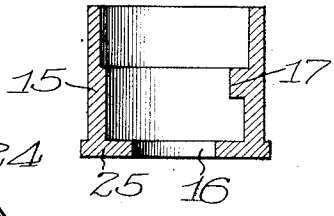


Fig. 5.

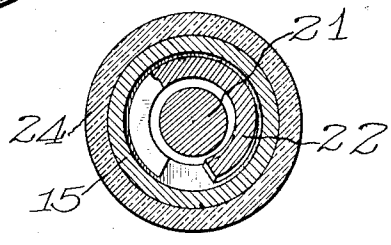
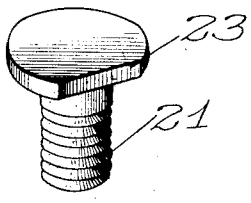


Fig. 3.



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UNITED STATES PATENT OFFICE.

GLENN HENRY BOLUS, OF MANSFIELD, OHIO, ASSIGNOR TO THE OHIO BRASS COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF NEW JERSEY.

LOCK-HANGER FOR TROLLEY-WIRES.

1,142,394. Specification of Letters Patent. Patented June 8, 1915.

Application filed July 22, 1911. Serial No. 639,880.

To all whom it may concern:

Be it known that I, GLENN H. BOLUS, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Lock-Hangers for Trolley-Wires, of which the following is a specification.

This invention relates to insulated supporters for electric or other wires, and the principal object of the invention is to provide a supporter or hanger of simple and improved construction and arrangement, which will be effective and efficient in operation.

Another object of the invention is to provide a tight joint between the hanger and any article to be suspended therefrom, when the article to be suspended is placed in any desired angular position with respect to the hanger.

For the attainment of these ends and the accomplishment of other new and useful objects, as will appear, this invention consists in the features of novelty in the construction, combination and arrangement of the several parts generally shown in the accompanying drawing and described in the specification, but more particularly pointed out in the appended claims.

In the accompanying drawing Figure 1 is a cross sectional view of my improved hanger showing the parts in their assembled positions; Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1; Fig. 3 is a perspective view of the stud; Fig. 4 is a detail cross sectional view of the cup member; Fig. 5 is a cross sectional view on the line 5—5 of Fig. 1; Fig. 6 is a top view showing flattened edges of a member secured in the hanger.

It is found in practice that in securing trolley wires and the like to hangers, the member secured to the hanger is frequently brought up tight when secured thereto by a threaded connection at an angle other than the desired angle. In other words, the angle at which the joint between the two members actually becomes tight is very different than the desired angle, and to turn the member secured to the hanger to the desired position it must either be "backed off" or screwed tighter, the latter operation frequently resulting in stripping the threads of one or both of the members. If the member is backed off a space remains between the two, and the connection is neither close fitting nor are the members tightly secured in such position.

This invention has for one of its objects to provide a construction in which the member secured to the hanger may be adjusted about the hanger at any desired angular position with respect to the axis of the stud, at the same time drawing the member tightly against the hanger and holding it securely in the adjusted position.

Referring now more particularly to the accompanying drawing, a hanger shell 11 is formed with projecting ears 12, by means of which the hanger is secured in any desired or suitable position. The hanger shell is preferably circular in form, and may be made of any suitable material, and is usually of metal. Inside of the shell, and at a distance from the open edge thereof, is an annular projection 13, which leaves an internal opening and forms a partially closed chamber therein. The inside of the edge is also formed with a projection 14. This projection 14 and the annular projection 13 are adapted to assist in retaining the insulation within the hanger shell.

A cup member 15 is formed with an opening 16 in the bottom thereof, and with straight cylindrical sides. Intermediate of the ends thereof and on the inside of said member is a projection 17 in the form of a segment of a circle, which presents a flat face portion. A second member 18 is formed at one end, with a beveled or cone-shaped portion 19, the base of the cone being presented outwardly. The other end is formed with an enlarged head portion 20, one or more sides of which are flattened as at 20′ to form an engaging surface for the insulation within the hanger shell. This cone shaped portion 19 is adapted to be inserted within the cup member 15 until it strikes the projection 17. The sides of the cup member 15 are then swaged about the cone-shaped portion, and the two members are secured rigidly together. Before the member 18 is inserted in the member 15, a stud 21 and a spring or spring washer 22 is inserted in the cup member. The threaded end of the stud protrudes from the end of the cup member and the head is formed with a

flat portion 23, which is adapted to engage the projection 17 in the cup member. The spring washer 22 is inserted between the cup member and the stud and under the head of the stud, so that it tends to press the stud inwardly from the opening 16. It is evident from this description that the stud is not rotatable with respect to the cup member 15, but that it may be moved through a limited distance in a direction longitudinally of its axis, being pressed, however, by the spring washer 22 which maintains a yielding pressure on the stud when articles are threaded upon it and brought to bear against the cup member 15. From this it is evident also that a member threaded upon the stud may be adjusted at any angular position thereupon in a plane transverse to the stud, and held firmly but releasably in the position by means of the spring washer 22.

The members 15 and 18 are positioned within the hanger shell and secured therein by means of some suitable insulating material 24, which holds them firmly in place and spaces them from the shell. The lower end of the cup member 15 preferably projects slightly below the lower edge of the hanger shell, and is provided adjacent the outer edge with projecting rim 25, which is adapted to hold the insulating material more securely in place. The head 20 of member 18 is inserted through the opening formed by the annular projection 13, and after the insulating material has hardened the annular projection 13 holds the member 18 firmly in position by means of the insulation, even though all of the insulation outside of the projecting annular ring has broken away. It will be noticed that the flattened edges of the head 20 are formed so that the rotation of the member 18 is prevented.

While I have thus particularly described the preferred construction, combination and arrangement of the several parts which constitute my invention, it is evident that those skilled in the arts to which this relates may make various changes without departing from the spirit and scope of the invention.

What I claim is:

1. In a hanger for trolley wires, the combination with fixed means within the hanger shell having a stop portion, a stud with its head adapted to engage the stop portion of said fixed means to prevent rotation of the stud, and resilient means interposed between the stud and the said fixed means and beneath the head of the stud to press the latter inwardly in the hanger.

2. In a hanger for trolley wires, the combination with a fixed member insulated from the hanger shell and formed with a projecting portion, a stud having its head formed with a lateral flattened portion to engage the said projecting portion to prevent the stud from rotating with respect thereto, and a spring bearing against the under side of the said head and the fixed member operative to press the stud yieldingly within the hanger.

3. In a hanger for trolley wires, the combination with a cup member fixed in the hanger shell and having an inner lateral flattened projection, a stud having a flattened surface on its head adapted to engage the said projection and to stop any rotative movement of the stud with respect thereto, the threaded end of the stud extending outwardly through the end of the cup member, and a spring bearing against the under side of the said head and the outer end of said cup member to press the stud yieldingly within the hanger.

4. In a hanger for trolley wires, the combination with a fixed cup member, of means to secure the member in the hanger shell, a stud movable longitudinally in the said member, and yielding means interposed between the cup member and the under side of the stud head to press the stud inwardly, the cup member being provided with means to limit the inward movement of the stud.

5. In a hanger of the class described, the combination with a cup member, of a second member fixed in the hanger shell and secured to the cup member having a lateral stop portion, a stud positioned in the cup against the stop portion to prevent rotation therein, and yielding means to permit the longitudinal movement of the stud in the cup member.

6. In an insulating hanger for trolley wires, the combination with the hanger shell, of insulating material therein, a cup member formed with a lateral inner projection, and a second member to which the cup member is fixed formed with a flattened portion to assist in securing the said members firmly in the insulating material; a stud with its head disposed in the cup member and having a flat side in contact with the projection to prevent rotation and to permit longitudinal movement of the stud with respect to the cup member, and yielding means in the cup member to press the stud inwardly to make a tight connection between the hanger and any member threaded on the stud.

7. In a lock hanger for trolley wires, the combination with a trolley hanger shell having an annular inside projecting ridge, of a cup member and a second member secured together and positioned within the shell, insulating material filling the shell and spacing the said members from it, the said second member being formed with an inwardly beveled portion at one end and a head with a flattened portion at the other end to secure it against rotation, the edges of the cup member fitting over the beveled portion and being swaged about it to secure the members together, a headed stud positioned in

the cup member with a threaded end protruding therefrom, said stud having a flattened portion on the head, there being a projection in the cup member to engage the flat portion of the stud head and to define the position of the beveled end of the second member therein, and a spring washer interposed between the underside of the stud head and the cup member whereby a member threaded on the stud may be adjusted and held against the cup member at any desired angle.

8. In a lock hanger for trolley wires, the combination with a hanger shell formed with an inner annular projection, of a cup member formed with an opening in the bottom, straight, cylindrical sides and an inner projection intermediate of the ends with a flat surface, a second member formed with one cone shaped end about which the sides of the cup member are swaged, the base of the cone being at the end, and with a head at the other end having a flat portion, insulation in the shell to space the said members therefrom, the said annular projection forming an opening of a size to admit the head of the said second member therethrough, forming an inner chamber of a shape to retain the insulation and the said member securely therein, a spring washer, and a threaded stud placed in the cup member before the edges thereof are swaged, the threaded end of the stud projecting through the opening in the bottom, the stud being formed with a flattened head to engage the projection in the cup member to hold it in fixed rotative position, the said washer being operative to permit the yielding of the stud in a longitudinal direction, so that a member threaded thereon may be adjusted at any desired angle in a plane transverse of the stud at the bottom of the hanger and held in such position by the tension of the spring washer.

9. In a hanger for trolley wires, the combination with a member having a stop portion, of a threaded stud loosely mounted in the member having a portion to engage the stop portion and to prevent rotation, and yielding means disposed in the hanger and bearing against the stud operative to permit the yielding of the stud in a longitudinal direction, so that a member threaded therein may be adjusted at any desired angle in a plane transverse of the stud and held in position by said yielding means.

10. In a trolley wire hanger, a fixed hanger shell, a recessed member having an internal projection secured to and insulated from the hanger shell, a hanger stud with a lateral flattened portion to engage the projection of the recessed member for preventing rotation of the stud but permitting its longitudinal movement, the threaded end of the stud projecting from the recessed member, and a spring tending to press the stud inwardly in the recessed member.

11. In a trolley wire hanger, the combination with a hanger shell, of a recessed member secured thereto but insulated therefrom having a lateral projection within the recess, a stud with its head disposed within the recessed member and its threaded end projecting therefrom having a lateral portion to engage the projection of the recessed member to prevent the rotation of the stud but permitting its longitudinal movement in the recess, and a spring tending to press the stud inwardly in the recessed member whereby a member threaded on the stud will be drawn up against the outer side of the recessed member compressing the spring so that the member may be disposed at any angle in a plane transverse to the axis of the stud.

12. In a trolley wire hanger, the combination with a hanger shell, of a recessed member secured thereto but insulated therefrom having a lateral projection within the recess, a stud with its head disposed within the recessed member and its threaded end projecting therefrom having a lateral portion to engage the projection of the recessed member to prevent the rotation of the stud but permitting its longitudinal movement in the recess, and means to limit the longitudinal movement of the stud.

13. In a trolley wire hanger, the combination with a hanger shell, of a recessed member having an inner projection and fixed to but insulated from the hanger shell, a stud with its threaded end projecting from the recessed member and with a head in engagement with the projection of the recessed member whereby the stud is non-rotatable but longitudinally movable, and a spring interposed between the outer end of the recessed member and the inner side of the head tending to press it inwardly in the recessed member.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 17th day of July A. D. 1911.

GLENN HENRY BOLUS.

Witnesses:
J. ROWLAND BROWN,
W. C. STARKEY.