June 4, 1929. E. C. WHITE 1,716,017

HANGER FOR ELECTRIC LIGHTING UNITS

Filed Oct. 14, 1926

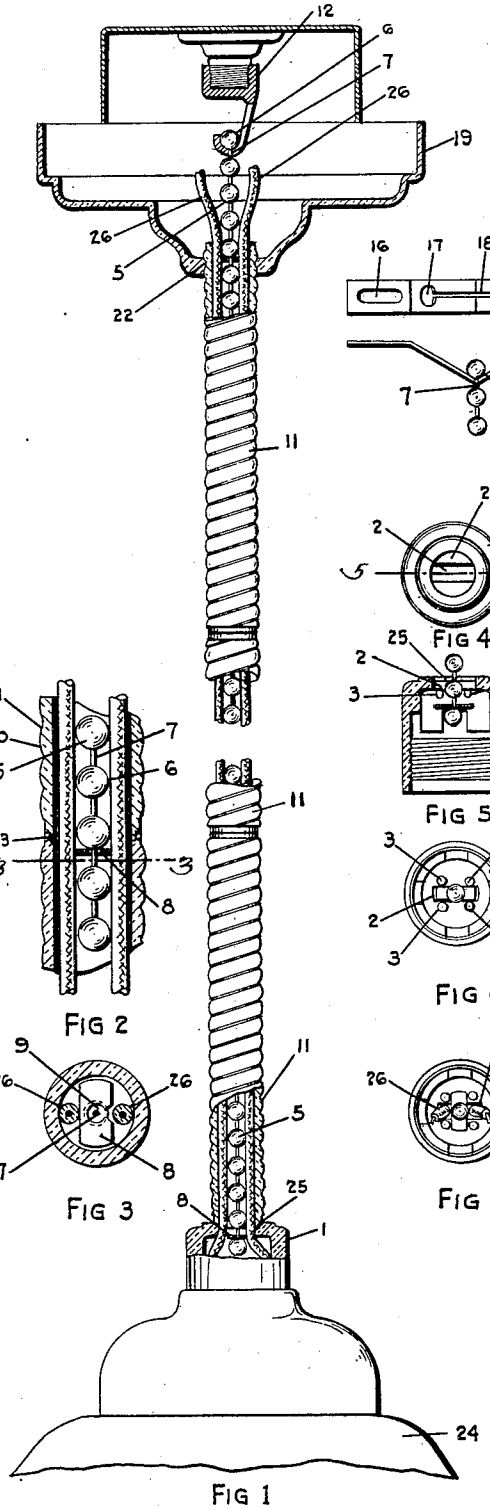


FIG 1

FIG 2

FIG 3

FIG 4

FIG 5

FIG 6

FIG 7

FIG 11

FIG 12

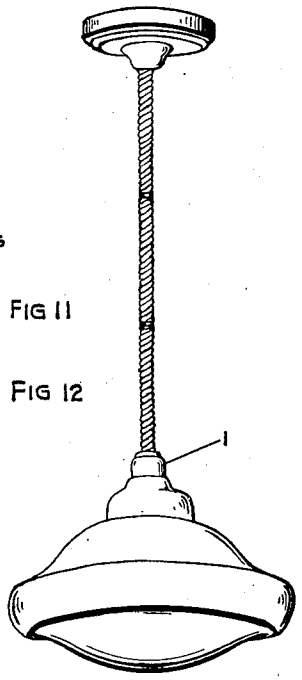


FIG 13



FIG 8

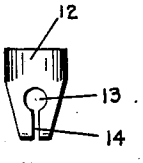


FIG 9

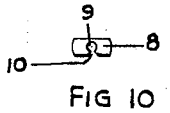


FIG 10

Ernest Cantelo White

INVENTOR

Patented June 4, 1929. 1,716,017

UNITED STATES PATENT OFFICE.

ERNEST CANTELO WHITE, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO GRAYBAR ELECTRIC COMPANY, INC., A CORPORATION OF NEW YORK.

HANGER FOR ELECTRIC-LIGHTING UNITS.

Application filed October 14, 1926. Serial No. 141,536.

My invention relates to the construction of hangers or means of suspension for all types of pendant electric lighting fixtures and particularly for those in which only one lamp socket is used, which are commonly known in the trade as lighting units. It is the common practice to support such lighting units on open linked chain with the insulated conductors hanging independent of the chain or woven through the links. This and other known constructions of moderate cost have a number of disadvantages which are eliminated by the invention herein described.

One of the objects of my present invention is to provide means for adjusting the length of a lighting unit quickly and as accurately as may be desired. Another object is to conceal the conductors by means adaptable to be quickly assembled and installed. Another object is to provide a construction adaptable to a wide variety of outlet box conditions and to provide space for canopy switches and the necessary connections thereto by constructing a hanger which can be quickly installed without twisting such connections. Still another object is to provide a hanger which may be constructed largely of moulded insulating material so that the number of parts may be reduced to a minimum without risk of short circuits which might otherwise be caused while installing or cleaning so adjustable a device.

In the accompanying drawings Fig. 1 is a side view of the hanger with the portions next to the ceiling and those next to the lamp socket shown in cross section and a portion of the intermediate parts and of the globe cut away; Fig. 2 is an enlarged cross section of that portion of the hanger where two of the covering sleeves meet; Fig. 3 is a cross section of the parts shown in Fig. 2 on the line 3—3; Fig. 4 is a top view of the socket cover; Fig. 5 is a cross sectional view of the socket cover on the line 5—5, showing in side elevation the end of a bead chain and a rotatable clip inserted through the opening in the top of the socket cover; Fig. 6 is a bottom view of the parts shown in Fig. 5; Fig. 7 is a bottom view of the parts shown in Fig. 5 with the clip turned into supporting position and the ends of two insulated conductors passed through the ends of the opening in the socket cover; Fig. 8 is a view of the ceiling clip shown in section in Fig. 1; Fig. 9 is a side view of Fig. 8; Fig. 10 is a top view of one of the rotatable clips; Fig. 11 is a top view of another form of ceiling clip which may be substituted for the one shown in Fig. 8 under some conditions; Fig. 12 is a side view of the attaching clip shown in Fig. 11; Fig. 13 is a perspective view of a complete lighting unit embodying my improved hanger.

In carrying out my invention according to the illustrated embodiment thereof I construct a socket cover 1 of moulded insulating material with an external circular recess 25 and an approximately rectangular opening 2 in the bottom thereof. Inside the socket cover are four small bosses 3 disposed on opposite sides of the said opening as illustrated in Figs. 6 and 7. For the lineal supporting member of my device I utilize any desired length of what is commonly known as bead chain 5 of a size large enough to provide the desired tensile strength. As it is desirable to guard against accidents by providing an actual tensile strength of more than 100 pounds my improved hanger is adapted to accommodate bead chain in which the ball shaped links 6 are approximately ¼″ in diameter and the straight links 7 about $\frac{1}{16}$″ in diameter. The bead chain is fitted with flat metal clips 8 spaced thereon and having a central hole 9 fitting loosely on the straight links 7 and a contracted opening 10 at the side of this hole through which one of the links 7 may be pressed to assemble the clips on the chain. One of the clips 8 is attached next to the lowest bead or ball shaped link of the bead chain as shown in Fig. 1. The opening 2 in the socket cover is designed to receive the end of the bead chain with the clip attached as illustrated in Figs. 5 and 6. The clip is then turned at right angles to the slot and drawn up against the inner surface of the socket cover so that it is seated between the bosses 3 as illustrated in Fig. 7. The ends of the slotted opening 2 are now available to receive the ends of the insulated conductors 26 which are drawn into the socket cover and attached to any lamp socket member designed to be housed therein. One or more sleeves 11 are then slipped over the bead chain and the insulated conductors.

For attaching the other end of the bead chain to a ceiling electric outlet box I provide a ceiling clip 12 having an internal thread adapted to be screwed onto a fixture stud. The lower end of the ceiling clip 12 is preferably formed as a flat hook provided with a

hole 13 through which the bead chain may be freely passed and a downwardly extending slot 14 connected with the hole, this slot being wide enough to slip the straight links 7 of the bead chain and narrow enough to provide a proper support for the adjacent ball shaped link 6. The slot 14 is closed at the lower end and extends far enough down to permit the ball shaped link to rest in the bottom portion of the hook as shown. If it is desired to shorten the lighting unit by one or more links it is only necessary to raise the bead chain up and draw the required number of links through the hole 13 and then drop the corresponding link 7 into the slot. If it is desired to attach the lighting unit to the threaded lugs of an outlet box or to any supporting surface adjacent to an electric outlet, I substitute for the ceiling clip 12 a different form of ceiling clip 15 which is preferably a flat metal bar with horizontal ends provided with slots 16 spaced apart to accommodate various standard spacings of threaded lugs on outlet boxes and adapted to receive ordinary supporting screws for attachment. The center portion of the ceiling clip 15 is preferably bent downward in a V shape as illustrated and provided with holes 17 about the same size as holes 13 and a slot 18 of about the same width as slot 14 and connecting the two holes 17. After the ceiling clip 15 is attached to an outlet box the upper end of the bead chain is then passed through one of the holes 17 and one of the straight links 7 is dropped into the slot 18 so that it is supported at the bottom of the slot as illustrated in Fig. 12. The upper ends of the conductors 26 are then properly prepared and connected to the supply wires in the outlet box.

The sleeves 11 are preferably formed of moulded insulating material with a coarse external double thread extending almost the entire length of the sleeves. The outside of this thread 20 is preferably formed round and smooth in section for the sake of appearance and easy cleaning. The bottom of the thread 21 is formed flat and relatively narrow. As a finishing cover for the outlet box I provide a canopy 19 having an internally threaded opening 22 adapted to screw onto the outside of one of the sleeves 11. The internal threads in the opening 22 are so formed as to bear only in the bottom 21 of the threads on the sleeve. By forming the canopy also of moulded insulating material and constructing the threads as described it is possible for the canopy to be supported on one of the sleeves and screwed up and down thereon without scratching the outer surface 20 of the threads on the sleeve. The canopy is simply screwed onto the upper sleeve to be used before the sleeve is slipped over the bead chain and conductors and after the bead chain has been hooked into the ceiling clip the canopy is then screwed up to the ceiling.

The sleeves 11 are preferably duplicates of each other, each one being formed with an external shoulder on one end and an internal shoulder on the other so that they fit together to form a loose rotatable joint 23 as illustrated in Fig. 2. This affords a particular convenience in installation when canopy switches are used or when for any reason it is desired to avoid turning the canopy, as the canopy may then be held against rotation with one hand and the sleeve supporting it turned with the other hand until the canopy is tightened against the ceiling or lowered therefrom as may be desired. In order to provide for this the sleeves 11 are made cylindrical inside and large enough to accommodate the bead chain and an insulated conductor on either side thereof with sufficient clearance to permit turning one of the sleeves without turning the bead chain or the conductors.

As the principal weight of the lighting unit usually consists of the globe 24 carried thereon and the lengths of the lineal parts are so arranged that this weight is carried entirely by the bead chain it will be obvious that the bead chain will hang in a straight line and that in order for the sleeves to present a neat and finished appearance it is only necessary to keep them centered with the bead chain in order for them to hang straight. I, therefore, make the rotatable clips 8 with curved ends and of the necessary length to fit loosely inside of the sleeves 11 as illustrated in Fig. 3. By attaching these clips to the bead chain at intervals approximately equal to the length of the sleeves 11 beginning from the bottom end of the bead chain, one of these clips is located adjacent to each of the joints between the sleeves and as the ends of the sleeves are formed so as to center one with the other this centers both sleeves at the joint in the direction of the length of the clip. By assembling the parts with one of the insulated conductors on each side of these clips the sleeves are centered on the bead chain in the direction cross-wise of the clips. The sleeves are used with the ends having the external shoulders downward so that the lower end of the lowest sleeve checks into the circular recess 25 of the socket cover which centers the sleeves with the socket cover. One of the rotatable clips is also provided where it will engage the top of the uppermost sleeve. By these very simple means all of the sleeves are centered with the bead chain, with the practical result that the sleeves hang as straight as if they were being used for support. As they are merely carried by the socket cover and by each other and have no hard mechanical duty to perform, they may, therefore, be made of material having more permanent finish and insulating qualities than any materials which could be used for actual support of commercial lighting units.

Many variations in the construction of the various parts may be made without sacrificing all of the essential improvements herein described.

What I claim as new is:

1. In combination with an electric lighting fixture, a hook member, a support, conductors, a plurality of sleeves encasing the supporting member and the conductors, a canopy, and threaded means to support the canopy on one of the sleeves, said support comprising sections for engagement with said hook member to change the effective length of said support.

2. In combination with an electric lighting fixture, a bead chain supporting member, a hook member capable of engagement with each bead for adjustment of said chain, conductors, a plurality of sleeves encasing the supporting member and the conductors and spaced means carried by the supporting member to center the sleeves with the supporting member.

3. In combination with an electric lighting fixture, a bead chain supporting member, conductors, a plurality of sleeves encasing the supporting member and the conductors and a plurality of clips adapted to be carried by the bead chain supporting member and to fit loosely inside of the sleeves to center the sleeves with the supporting member.

4. In combination with an electric lighting fixture, a supporting member consisting of alternate straight and ball shaped links, a ceiling clip adapted to be attached to an electric outlet, the ceiling clip being formed with an opening and a slot connected therewith, the said opening being adapted to pass the ball shaped links and the slot being adapted to receive one of the connecting links and provide supporting engagement for the adjacent ball shaped link, conductors and a sleeve encasing the supporting member and the conductors.

5. In combination with an electric lighting fixture, a bead chain supporting member, conductors, a sleeve encasing the supporting member and the conductors, a clip rotatably carried on the lower end of the supporting member and projecting beyond the diameter thereof on opposite sides, a socket cover having a slot adapted to receive the lower end of the supporting member with the clip and to receive the conductors after the clip has been inserted and turned at right angles to the slot and means for preventing the withdrawal of the clip through the slot while the conductors are in place therein.

6. In combination with an electric lighting fixture, a bead chain supporting member, conductors disposed on opposite sides of the supporting member, a sleeve encasing the supporting member and the conductors and a plurality of clips carried by the supporting member and adapted to prevent the bunching of conductors on one side of the supporting member after they are encased by the sleeve.

7. A hanger for electric lighting fixtures comprising a bead chain supporting member, conductors, a socket housing member formed of moulded insulating material and having an external recess, a plurality of externally threaded sleeves adapted to encase the supporting member and the conductors, a canopy formed of moulded insulating material and having an internal thread adapted to screw over one of the sleeves, a clip carried by the supporting member for supporting engagement with the socket housing member, other clips carried by the supporting member and adapted to co-operate with the conductors to center the sleeves with the supporting member and a ceiling clip adapted to be attached to an electric outlet and formed with a hole and a connecting slot adapted to receive and support the upper end of the supporting member as described.

8. In combination with an electric lighting fixture, a hook member, a flexible supporting member, means comprising portions for separately engaging said hook member for varying the effective length of said supporting member, conductors, a plurality of centering clips carried by said supporting member; a plurality of sleeves encasing said member, conductors and clips; an end member adapted to receive the lower end of the supporting member, and means for locking said end member to said supporting member.

Signed at New York, N. Y., on this 13th day of October, 1926.

ERNEST CANTELO WHITE.