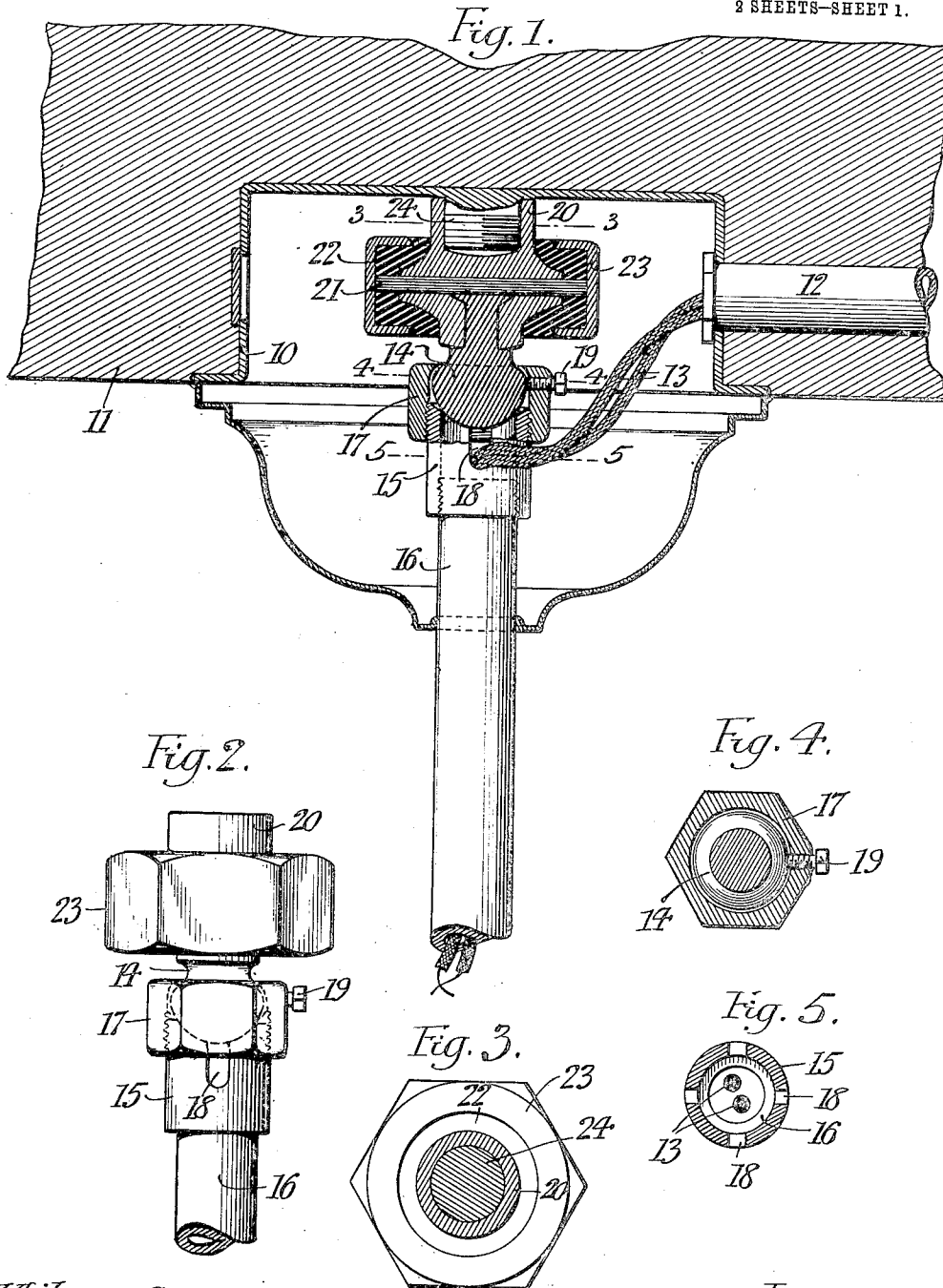


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 FIXTURE SUPPORT.
 APPLICATION FILED SEPT. 20, 1912.

1,126,486.

Patented Jan. 26, 1915.

2 SHEETS-SHEET 1.



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1,126,486.

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2 SHEETS—SHEET 2.

Fig. 6.

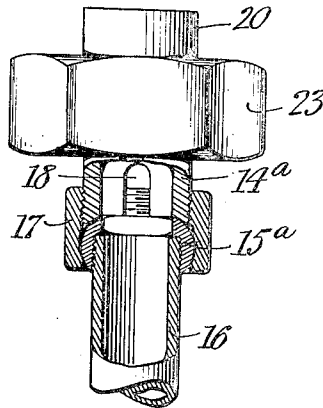
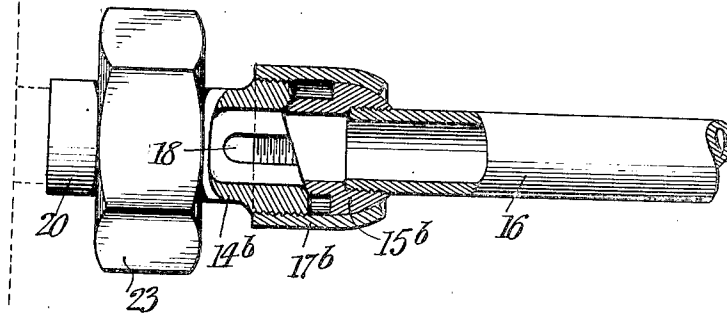


Fig. 7.



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UNITED STATES PATENT OFFICE.

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FIXTURE-SUPPORT.

1,126,486.

Specification of Letters Patent.

Patented Jan. 26, 1915.

Application filed September 20, 1912. Serial No. 721,387.

To all whom it may concern:

Be it known that I, JULIAN GORDON KNIGHT, a subject of the King of Great Britain, and resident of New York city, 5 Morris Park, borough of Queens, in the county of Queens and State of New York, have invented certain new and useful Improvements in Fixture-Supports, of which the following is a specification.

10 This invention relates to certain improvements in electric fixture supports and more particularly to that type in which the fixture may be supported at the desired angle in respect to the plane of the adjacent wall or 15 ceiling and irrespective of slight variations in the proper positioning of the member to which the fixture is attached, and, at the same time, electrically insulated from said member.

20 My invention is especially applicable for use in connection with, or preferably as a part of, an insulating joint or section separating the fixture from the outlet box or other metallic parts embedded in or attached 25 to the wall or ceiling.

One important feature of my invention resides in the forming of a ball, knob or head on or as a part of the rigid section and included in the insulated joint so that this 30 section or insulated joint may be rigidly supported in the outlet box or in any other manner, and present a ball upon its lower or outer side to which the adjustable portion of the fixture support may be attached.

35 Another important feature of my invention is the forming of one of the two members which are relatively angularly adjustable, with one or more slots extending lengthwise thereof from the free end, so that 40 the wires extending through the fixture may be bent laterally out through the slot or slots upon the bringing together of these angularly-adjustable sections; thus it is unnecessary to thread the wires out through a small 45 opening in, a "hickey" or other coupling member, as is necessary in the present constructions with which I am familiar. This slotted member may be either the stationary member carried by a part of the insulating 50 joint or it may be the adjustable member connected to the fixture. By making the slotted member either in the form of a socket or by recessing or otherwise designing it so as to partially receive the other member,

the rigid clamping together of the two members in the desired angular adjustment will, in fact, positively prevent the accidental separation of said members or the cutting of the insulation on the wires by the coming together of the sides of the slots. 55 60

Other objects of my invention and other advantages of my improved construction will be apparent from a consideration of one or more specific embodiments thereof and a consideration of the following more detailed 65 description.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the 70 views, and in which—

Figure 1 is a central longitudinal section through a construction embodying my invention and illustrated in connection with a depending fixture and an outlet box; Fig. 2 75 is a side elevation of a portion of the construction illustrated in Fig. 1; Figs. 3, 4 and 5 are transverse sections on the lines 3—3, 4—4 and 5—5, respectively, of Fig. 1; Fig. 6 is a view similar to Fig. 2 but showing a 80 portion in detail and including a slightly modified construction; and Fig. 7 is a view similar to Fig. 6 but showing a further modification and particularly a means for automatically locking the parts against acci- 85 dental angular displacement.

My improved construction may be employed for the support of a fixture depending from the ceiling or projecting at any desired angle from the wall, although it is primarily adapted for the former purpose. It may be secured in place in any suitable manner and may or may not be used in connection with an outlet box. 90

In Fig. 1 I have shown one embodiment 95 of my invention used in connection with an outlet box 10 embedded within a ceiling 11. A conduit 12 is similarly embedded and leads through the wall of the outlet box so that insulated wires 13 within the conduit 100 may be connected within the outlet box to wires leading through the fixture to the lamp, electric fan, or other devices in which the current is to be used.

One of the main features of my invention 105 resides in the means employed for permitting an angular adjustment of the fixture, and, at the same time, facilitating the wir-

ing and installation of the parts. In the specific form illustrated in Figs. 1 to 5, inclusive, this angular adjustable connection includes two sections or members 14 and 15, the former of which is in the form of a knob, ball or head, and the latter of which may be considered as a socket abutting against or partially receiving the said head. The member 15 is illustrated as an open-ended pipe section interiorly threaded at one end to receive the main body or tube 16 of the fixture, and exteriorly threaded at the opposite end to receive a collar 17 for holding the members 14 and 15 together. This collar is contracted or otherwise formed at its upper end of a diameter less than the maximum diameter of the head 14, so that the collar cannot be removed after the head is once secured in place, but the said collar may be freely rotated. By rotating this collar it may be screwed on to the socket member 15, and the latter may have its upper open end rigidly secured against the head. The head is ordinarily supported from some member embedded within the wall or ceiling during the construction of the latter, or driven into place or otherwise secured, and this member is often accidentally disposed at a slight angle to the proper or desired position. The fixture 16 may be adjusted to an exactly vertical position and then rigidly secured irrespective of slight angular irregularity in the positioning of the head 14 or the part to which it is attached.

The socket member 15 of my improved construction is provided with one or more slots 18 extending lengthwise thereof from the upper end of the member and terminating below the lower limiting position of the lower end of the nut or collar 17. This is an important feature and greatly facilitates the rapid installation of the fixture and support. The wires projecting through the tube 16 of the fixture may be bent laterally out through the desired slot or slots before the fixture is attached to the support, and upon the attachment and tightening of the nut or collar 17, the wires will be properly confined within the lower end of the slot and will not in any way interfere with the adjusting of the parts or the tightening of the universal joint. The outer projecting ends of the wires may then be readily connected to the wires leading through the conduit. The socket member 15 serves as one of the elements in the series which sustains the weight of the fixture, but as the head 14 projects slightly into the open end of the socket member 15, it is evident that said socket member cannot collapse at the upper slotted end, and thus fall out of the collar 17. Furthermore, the projecting of the head into the socket member positively prevents the wires from being cut or

pinched, and the insulation broken at the point where the wires emerge, due to any squeezing together of the edges along the opposite sides of the slot. The lateral bending of the wires out into the slot is very quickly and easily accomplished and is accompanied by less liability of breaking the wires or cutting or breaking the insulation than is the case where the wires have to be threaded out through an opening or looped and drawn through by a hook or other instrument. Where the fixture is to be suspended in a vertical position, it is not essential that any locking means be employed in addition to the gripping of the ball or head between the upper end of the collar 17 and the open end of the socket member 15, although if desired, I may employ a set screw 19 which may be tightened after the parts are properly adjusted and secured. The set screw is more important where it is desired to support the fixture in any other position than a vertical one.

My improved construction whereby a universal joint is formed, is particularly advantageous when used in connection with an insulating joint and such use permits an important saving in cost of manufacture, time and trouble in installation and in space occupied. By forming the insulating joint with two sections, one of which comprises the head or knob 14 of the universal joint, the parts may be closely associated and the universal joint may come below the insulating joint and thus in a position where it may be readily adjusted. I have illustrated an insulating joint having two oppositely-projecting sections or members, one of which comprises the head 14 and the other of which comprises an interiorly-threaded socket 20. The two may be electrically insulated and rigidly secured together in any suitable manner, as I do not claim any details of the insulation or attaching means as a part of my invention. I have illustrated the two sections separated by a plurality of sheets 21 of mica, and the sheets and the enlarged inner ends of the sections embedded in an insulating composition 22 within and protected by a casing 23. The insulating joint may thus be threaded on to a downwardly-projecting stud 24 in an outlet box or in any other suitable position and will of course take the angle of the said stud. The fixture will depend vertically from the head 14 irrespective of any slight angular displacement of the latter and the collar 17 coming below the insulating joint will be in a position where it may be readily tightened or loosened as desired. The collar 17 may be attached to the head 14 before the parts of the insulating joint are assembled and may be retained by a bending, swaging or beading of the upper end of the collar, or the head 14 may have a shank projecting

through a flange section so that the collar may be slipped over the shank before the latter is projected through the flange section, and the shank may then be swaged, riveted or countersunk as illustrated in Fig. 1.

It is of course evident that the socket member and head or ball member may be reversed and the socket made a part of the universal joint. In Fig. 6, I have illustrated such a modification and it is thought that the construction and operation will be apparent without a detailed description. It will be noted that the insulating joint has a depending, hollow, open-ended socket 14^a constituting a part thereof and that the tubular body 16 of the fixture is threaded into the head 15^a, presenting an outer curved or substantially spherical surface. This head projects slightly into the socket and is rigidly secured against the latter by the collar 17 threaded on to the socket. The socket has one or more slots 18 extending from the lower open end thereof upwardly to a point above the upper limiting position of the upper edge of the collar. The wires may be bent out through the slot 18 before the collar is screwed up on to the socket. Substantially the same collar is employed as that illustrated in Fig. 1, the only difference being that it is reversed and has its inwardly-projecting flange below the ball instead of above it.

Various other changes in the details of construction of the universal joint may be readily designed, it only being important that the slot be so formed that the wires may be readily bent out through it and at the same time that the slot be prevented from collapsing and cutting or injuring the insulation on said wires.

In Fig. 7 I have illustrated a construction especially designed for use with a horizontally-disposed fixture as it more positively prevents accidental slipping of the parts at the joint. In this case the socket 14^b is somewhat similar to the socket 14^a illustrated in Fig. 6, except that its outer or free end is cut and countersunk at an angle to the general direction of the length of said socket. The fixture 16 has a head 15^b also beveled at its outer end and formed slightly conical, so as to fit into the beveled countersunk end of the socket 14^b. With the longest side of the collar 15^b opposite the shortest side of the socket 14^b, as illustrated, the parts will be in axial alinement, but by slightly rotating the collar or head 15^b in respect to the socket 14^b, the angular adjustment may be readily varied. When the parts are in the desired position, the outer collar 17^b may be tightened to lock the parts in the same manner as the collar 17 previously referred to. Due to the fact that a rotation of the collar or head 15^b is necessary to secure an angular adjustment,

it is evident that there is less liability of accidental shifting in the position of the parts after they are once secured than there is where substantially spherical surfaces are in contact as in Fig. 6. The form shown in Fig. 7 has the same advantage as that shown in Fig. 6 in respect to the slot 18 and the preventing of this slot from collapsing.

Various other changes may be made in the details of construction and various other modifications may be devised within the spirit of my invention and without departing from the scope of the appended claims.

I claim:

1. In combination, an insulating joint including two sections and means for electrically insulating them from each other, one of said sections including a threaded portion for supporting the joint and the other of said sections including a depending head, an open-ended fixture tube, a tubular member secured to the upper end of said tube and having slots extending downwardly from its upper end and out through which electrical conductors may extend from the interior of said fixture tube, and a fastening member for securing said slotted end to said head and permitting of the angular adjustment of said fixture tube.

2. In combination, a fixture member, a supporting member, one of said members presenting a tubular section provided with slots extending longitudinally thereof from the outer end and the other of said members engaging with said end and serving to prevent the collapsing or flattening of said tubular section at said end, and a clamping member for securing said first-mentioned members and permitting of the angular adjustment of said fixture member.

3. In combination, a fixture member, a supporting member, one of said members presenting a tubular section provided with slots extending longitudinally thereof from the outer end and the other of said members engaging with said end and serving to prevent the collapsing or flattening of said tubular section at said end, and a clamping member for securing said first-mentioned members and permitting of the angular adjustment of said fixture member, said slots extending beyond said clamping member and serving as the outlets for electrical conductors within said fixture member.

4. In combination, a fixture member, a supporting member, one of said members presenting a ball section and the other of said members presenting a tubular section abutting or seating against said ball and slotted lengthwise from its seat, and a collar encircling both of said sections and securing them together, the slots in said tubular member extending beyond said collar and serving as outlets for electrical con-

ductors within said fixture, said ball serving to prevent the collapsing of said tubular member at said slot.

10 5. In combination, a depending support, a fixture including a tubular member abutting against said support and having a slot
10 extending lengthwise thereof downwardly from said abutting end, and a collar encircling said member for clamping said member to said support and preventing the
15 collapsing of said member at its slots.

15 6. In combination, a ball or knob, a support for holding said ball in a depending position, electrical insulating means rigidly connecting said ball and support, a fixture
20 presenting a tubular member seating against the lower side of said ball and having slots extending downwardly from its seat and through which electrical conductors may extend, and means for clamping said seat
25 against said ball and preventing the collapsing of the member at its slots.

25 7. In combination, a rigidly supported depending ball, a fixture seating against the lower side of said ball and a collar threaded to said fixture and seating upon the upper
30 side of said ball, said fixture having openings in the side thereof below said collar and through which wires may extend.

30 8. In combination, a depending ball, a fixture including a collar seating against the lower side of said ball, and a second collar threaded to said first-mentioned collar and
35 seating upon the upper side of said ball, said first-mentioned collar having a slot extending lengthwise thereof from the upper end to a point below said second-mentioned collar and through which electrical conductors may extend.

40 9. In combination, a depending ball, a fixture including a collar seating against the

lower side of said ball, and a second collar threaded to said fixture and seating upon the upper side of said ball, said first-mentioned collar having slots extending downwardly from its seat and through which
45 electrical conductors may extend, and the engagement of said seat with said ball serving to prevent the collapsing of said first-mentioned collar at said slots.

50 10. An insulating coupling including two sections rigidly connected together and electrically insulated, one of said sections presenting an internally-threaded socket and the other of said sections presenting a ball
55 or knob adapted to form part of a universal joint.

11. An insulating coupling having a ball or knob adapted to form part of a universal joint, a support therefor, and means for
60 electrically insulating said ball or knob from said support, said means serving to rigidly and permanently connect said support and said ball or knob.

12. In combination, a support presenting
65 a threaded stud, a fixture presenting a socket and a connecting member including two sections rigidly connected together and electrically insulated from each other, one of said sections presenting an internally
70 threaded socket adapted to receive said stud and the other of said sections presenting a ball rigid with said second mentioned socket and adapted to be held within said first mentioned socket.

75 Signed at New York city, in the county of New York and State of New York, this 17th day of September A. D. 1912.

JULIAN GORDON KNIGHT.

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