G. T. IRWIN.

LAMP SUPPORT.

APPLICATION FILED DEC. 2, 1915.

1,262,802.

Patented Apr. 16, 1918.

2 SHEETS—SHEET 1.

Fig. 2.

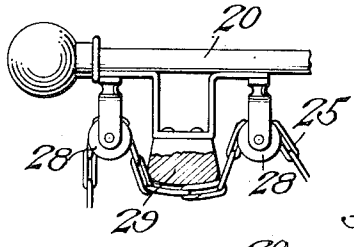


Fig. 4.

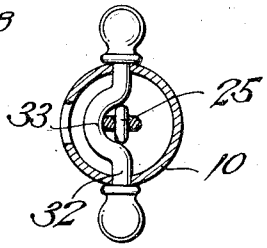


Fig. 1.

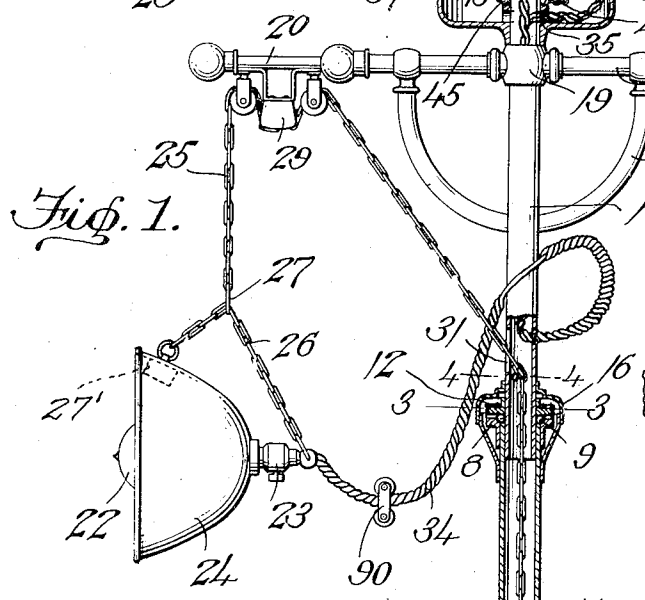


Fig. 5.

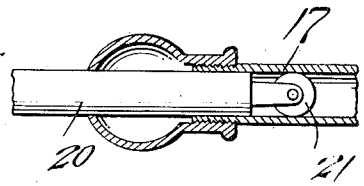


Fig. 6.

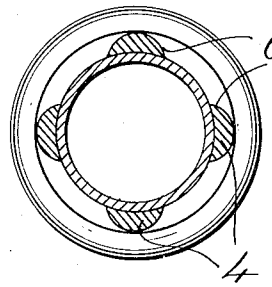
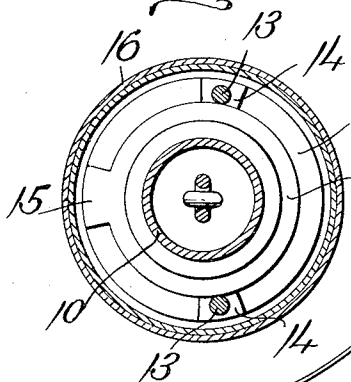


Fig. 3.



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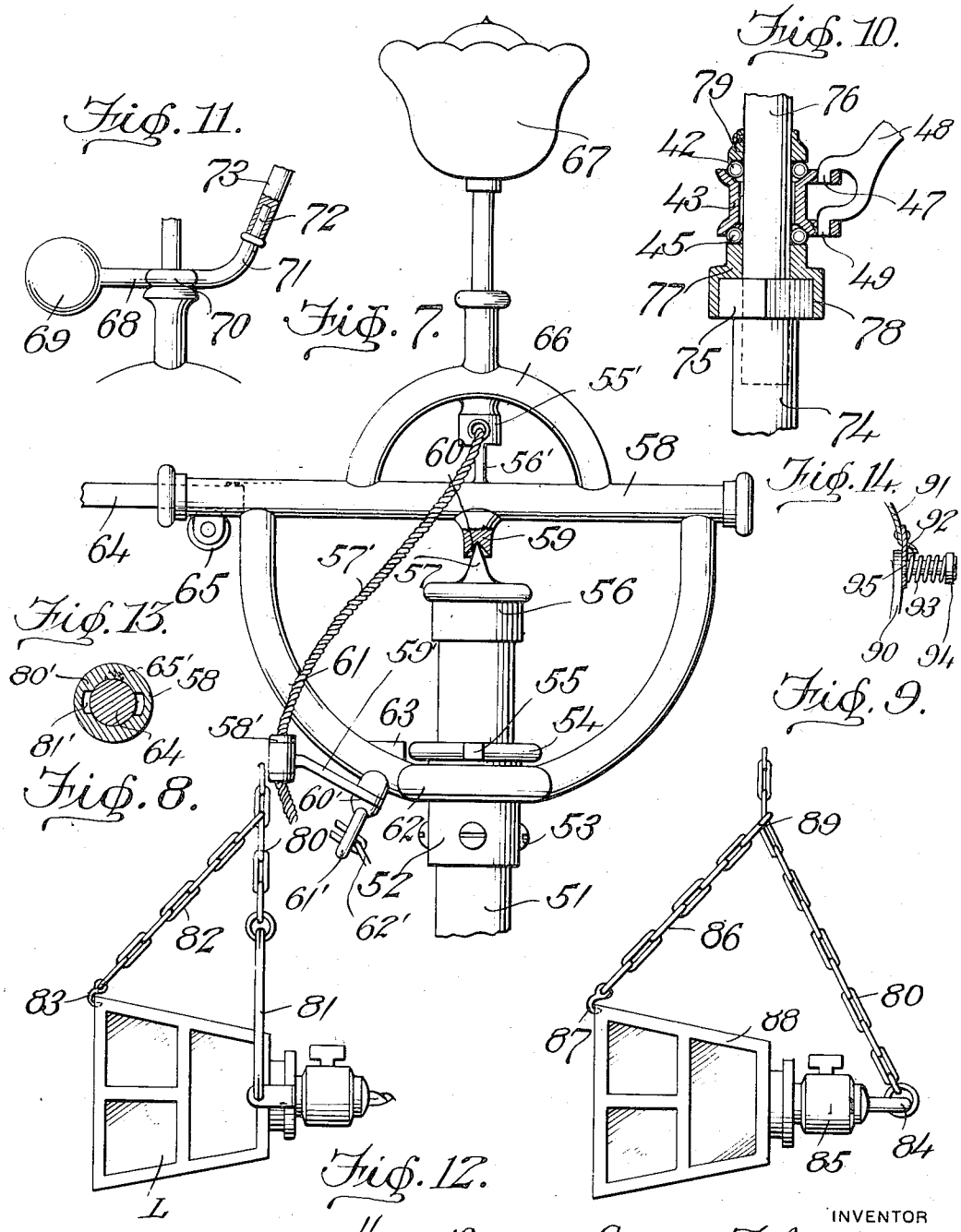

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LAMP-SUPPORT.

1,262,802. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed December 2, 1915. Serial No. 64,740.

To all whom it may concern:

Be it known that I, GEORGE T. IRWIN, a subject of the King of Great Britain, residing at Toronto, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Lamp-Supports, of which the following is a specification.

My invention relates to supports and more particularly to a vertically, horizontally and angularly adjustable support for lamps.

The primary object of my invention is to provide a light support having improved suspending means for a lamp, said suspending means permitting vertical, horizontal and angular adjustment of the lamp, such adjustment being quickly and easily made.

Another object of my invention is to provide means for maintaining the lamp in an adjusted position, and carrying means for the electric conductors when used in connection with an electric lamp.

A further object of my invention is to provide means for swinging the lamp through the arc of a circle from one position to another, and movement limiting means therefor.

A still further object of my invention is to provide an improved base and bracing means for said support.

A still further object is to provide an improved swivel bearing for the lamp support, and locking means for maintaining the lamp in an adjusted position.

With the above and other objects in view my invention resides preferably in the construction, combination and arrangement of parts as hereinafter set forth in the specification and illustrated in the accompanying drawings, in which,

Figure 1 is a side elevational view, partly in section, of a light support embodying the improvements of my invention.

Fig. 2 is an enlarged fragmentary elevational view of the locking means for the lamp adjuster.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1, parts of the invention being omitted to illustrate the bearing and movement limiting means.

Fig. 4 is a similar view taken on the line 4—4 of Fig. 1 to show the chain guide.

Fig. 5 is an enlarged sectional view of the lamp supporting arm and horizontal adjusting means.

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 1, looking in the direction of the arrow, parts of the invention being omitted.

Fig. 7 is a side elevational view of a modified form of my invention.

Fig. 8 is a modified form of an adjustable lamp support.

Fig. 9 is a still further modified form of an adjustable lamp support.

Fig. 10 is an enlarged sectional view of the bearing for the conductor carrying arm and a modified form of supporting means for the bearing.

Fig. 11 is a side elevation of a modified form of a conductor carrying arm.

Fig. 12 is a transverse vertical sectional view of the swivel point taken on a line at right angles to the section shown in Fig. 1.

Fig. 13 is a detail sectional view of the joint of the adjustable arm and the support.

Fig. 14 is a detail reduced view of a modified form of shade and supporting arm therefor.

Similar reference characters designate corresponding parts throughout the various views of the drawings.

In the drawings, wherein the preferred embodiment of my invention is illustrated, I provide a standard 1 formed preferably of tubular material and mounted on a base having arms 2 and 3 forming feet. The foot 2 is preferably of greater length than the feet 3 for a purpose which will hereinafter appear. Bracing straps 4 are fastened at the outer extremities of the feet 2 and 3 and extend upwardly and connect to the standard 1 by means of a ring 5 on said standard, said ring having a plurality of recesses 6 on its inner periphery, said recesses being shown arcuate, but may be of any shape desired. The straps 4 abut against the inner extremities of the recesses 6, as indicated at 7 in Fig. 1. In connecting the straps or braces 4 to the standard 1 the ring is slipped down over the upper extremities of said straps and serves to maintain the same firmly into engagement with the standard. The upper extremity of the

standard 1 is provided with a collar 8 having a beveled face to serve as a runway for bearing balls 9. An extension is provided on said standard 1 and comprises a tubular member 10 having a flange or collar 11 carried thereby adjacent the lower extremity thereof and bearing upon the balls 9. The lower extremity of the extension 10 is received within the standard 1 and is snugly but freely engaged thereby. In order to prevent the extension 10 becoming disconnected from the standard 1 in transporting the device from place to place I have provided a washer 12 resting upon said flange 11 and retained in connection with the flange or collar 8 by means of pins 13. In order to limit the rotary movement of the extension 10 in the standard 1, I provide a pair of lugs 14 mounted on the collar 8 and a lug 15 carried by the collar 11, said lug 15 being adapted to engage the lugs 14 to limit the rotating movement of the extension 10. A suitable housing or casing is provided, designated 16, formed in two sections to surround the ball bearing structure above described whereby to protect the same and to present a neat outer appearance.

The horizontally adjustable lamp support comprises a bracket 17 braced by an arcuate member 18 and extending transversely of the extension 10 and connected thereto by the collar 19. The bracket 17 carries a bracket arm 20 telescopically engaged therewith, said bracket arm 20 supporting a lamp in the manner hereinafter set forth. The inner extremity of the arm 20 is provided with an antifriction roller 21 which facilitates the movement of the rod when at its outermost position, but does not allow the same to move without manual manipulation. A light source such as an incandescent electric lamp 22 carried by the usual lamp socket 23 and having a reflector 24 associated therewith is suspended from the arm 20 by means of a chain 25 or the like flexible element, said lamp being adjustable angularly on the chain 25 by means of a supplemental chain 26, the chain 25 having a ring 27 connected with its lowermost link through which the chain 26 is slidable. As will be clearly seen from an inspection of Fig. 1, the chain 26 is connected at its opposite extremities to the socket 23 and to the reflector 24 adjacent the rim of the latter. A weighted element 27′ may be carried by the lamp shade 24 in order to balance the same properly when in the position shown in Fig. 1. The chain 25 is trained over a pair of pulleys 28 or the like mounted in spaced relation on the arm 20, the portion of the chain between said pulleys lying in a grooved block 29. The free extremity of the chain 25 carries a counterweight 30, said counterweight being carried within the standard 1 and preferably covered with some soft material to prevent noise. The extension 10 is apertured, as at 31, to permit the passage of the chain 25 therethrough, said chain being trained over a guide 32 mounted in said extension and provided with a U-shaped portion 33 to receive the chain.

Electric current is supplied to the lamp 22 by means of flexible cord conductors of any of the well known type, designated 34, the conductors 34 being led upwardly through the extension 10 and outwardly, at 35, terminating in a detachable connector 36 of any suitable character. A suitable ornamental cup or the like 37 is carried adjacent the upper extremity of the extension 10 in which the connector 36 may be placed when not in use. The conductors 34 are provided with a branch circuit 38 which leads into an ornamental bracket 39 to supply current to additional stationary lamps 40. The lamp bracket 39 is carried by a casting 41 which is receivable on the upper extremity of the extension 10, the lower extremity of said casting serving to retain in position balls 42 acting as bearing means for a collar 43. The extension 10 is enlarged, as at 44, to form a runway for the bottom set of balls 45. The collar 43 is provided with a pair of spaced extensions 46. The uppermost of the extensions is apertured to receive a tongue 47 carried by an arm 48, and the lowermost extension is provided to receive a similar tongue 49. The structure of the collar and extension is shown to advantage in Fig. 10, however, in this figure the modified form of the mounting of the collar is shown which will be hereinafter described. The arm 48 serves as a swinging carrier arm for the flexible conductors 50 which connect with the conductor 34 through the connector 36, said conductors 50 being carried by the upper extremities of the arm 48, as shown to advantage in Fig. 1.

In Fig. 7 I have illustrated a modified form of my invention wherein a standard 51 is provided having a collar 52 thereon below the upper extremity thereof. The collar 52 is secured in position by means of set screws 53 or the like. The upper end of the collar is provided with an annular flange 54 extending from which is a lug 55. A bearing member 56 is carried by the upper extremity of the standard 51 and is provided with a bearing point 57. The lamp supporting element comprises a casting having a tubular portion 58 provided with a lug 59 formed with a recess 60 for receipt of the pivot bearing 57. A U-shaped frame 61 extends from the tubular member 58 and is provided with an eye 62 which embraces the collar 52 at a point below the flange 54. A lug 63 is provided on the U-shaped member 61 for engagement with the lug 55 whereby to limit the swinging move-

ment of the lamp support. It is to be understood, of course, that there are a pair of lugs 55 provided arranged at diametrically opposite points on the flange 54. The lamp supporting arm is designated 64 and is slidably movable in the tubular member 58, a roller 65 serving to reduce friction. A U-shaped bracket 66 is mounted on the tubular member 58 and serves to carry a stationary light 67. The current supply may be had in any manner desired but I have shown an extension 55′ projecting downwardly from the portion 66 of the frame, legs 56′ serving to strengthen the portion 66 and the extension 55′. The conductors are indicated at 57′ and pass down on both sides of the portion 61 of the frame through bushings 58′ carried by a supporting arm 59′ detachably mounted at 60′. A squared shoulder (not shown) is provided on the portion 61 adjacent the point 60′ to prevent swinging of the arm 59′. An eye bolt 61′ serves to maintain the arm 59′ rigid. The eye bolt 61′ also serves to receive the supporting chain of the lamp, designated 62′. The modified form of conductor holder is illustrated in Fig. 11 and comprises a rod 68 having a counterweight 69 on one extremity thereof and an eye 70 formed intermediate its length. The free extremity of the rod 68 is turned upwardly, as indicated at 71, and has detachable connection, as at 72, with a rod 73 which supports the conductor.

In Fig. 10 I have illustrated a modified form of bearing for the collar 43. In this instance the collar 43 is adapted for use in connection with the modified form of my invention described and illustrated in Fig. 7. The U-shaped member 66 is provided in this instance with an extension 74, said extension 74 being tubular and provided with a squared head 75. A second tubular member 76 having a collar 77 is carried on said squared head, the collar 77 having a recess 78 conforming to the contour of the head 75. The collar 77 forms a bottom runway for the set of balls 45, and an adjustable collar 79 serves as the upper runway or ball retainer and is carried by the tubular member 76.

In Fig. 8 a modified form of suspending means for adjusting the angle of inclination of the lamp is illustrated. The lamp is designated L, and the suspending chain is designated 80, said chain being connected to the lamp by means of a bail 81. A supplemental chain 82 carried by the chain 80 is provided with a hook 83 on its free extremity for engagement with the rim of a lamp shade or reflector, so that, when in the position shown in Fig. 8 and the hook is engaged with the rim, the lamp will direct its rays horizontally instead of vertically.

In Fig. 9 a still further modified form of suspending and adjusting means is shown. In this form of my invention the chain 80 is connected at 84 to the lamp socket 85. A supplemental chain 86 is provided having connection, at 87, with the rim of the lamp shade 88. A ring 89 is carried by the inner extremity of the chain 86 and embraces the chain 80. To adjust the lamp the ring is moved along the links of the chain 80 causing the angle of inclination of the lamp to be changed.

In order to balance the lamp in use, a weight carrier 90 readily movable on the conductors 34 may be provided so as to maintain the lamp in a desired position. Of course, it is to be understood that the weight carrier 90 may be made of some insulating material so as to prevent short circuit of the conductors in case the insulation thereof should become worn.

It will be seen that I have provided an improved lamp support in which a vertical, horizontal and angular adjustment of the lamp may be had. To adjust the lamp horizontally the arm 20 is moved inwardly or outwardly as the case may be in the tubular member 17. To adjust the lamp vertically a downward or upward pull or push may be directed on the lamp 22 and the frictional block 29 will maintain the lamp in the desired position. To angularly adjust the lamp the chain 26 in Fig. 1 is moved through the ring 27 causing the lamp shade and lamp to be tilted at a greater or less angle. Normally the ring 27 engages the last link of the chain 26 adjacent the socket 23 to maintain the lamp in vertical position. It will be readily apparent that the lamp may be swung through the arc of a circle by virtue of a bearing provided between the standard 1 and the extension 10. Of course when the lamp is swung or when the device is moved from place to place is is necessary that some means be provided for taking up and guiding the conductors, and for this reason the arm 48 in Fig. 1 and in the modified forms of my invention has been provided. Wherever the source of electric current may be the conductors 50 will be connected and of course the arm 48 will swing on the bearings into the most convenient position for supporting the conductors.

In the modified form of my invention illustrated in Fig. 7, the operation is substantially similar to that form shown in Fig. 1, the suspending chain, lamp and conductors being provided in the manner hereinbefore described. To swing the lamp through the arc of a circle the arm 64 is moved causing the tubular member 58 to swing on the pivot 57. The eye 62 bearing upon the collar 52 serves to prevent wabbling of the lamp support, and the stops 55 limit the swinging movement of the arm 64.

Attention is directed to the foot 2, this foot extending in a position which will lie

parallel to the normal position of the arm 20 so as to prevent tipping of the standard by the weight of the lamp.

In Fig. 13 I have illustrated a sectional view of the preferred slidable joint between the rod 64 and the tubular member 58. The tubular member 58 is preferably cast with enlargements 80′ on the interior thereof, said enlargements affording recess 81′, the enlargements receiving therebetween the supporting rod 64. The rod 64 is provided with a screw 65′ which prevents the rod from being withdrawn entirely from the tubular member 58. In order to withdraw the rod for packing or the like, a quarter turn is imparted to said rod and the same may thereby be withdrawn.

In Fig. 14 I have illustrated a modified form of joint between a supporting member and a shade 91. This joint comprises an ear 92 riveted or otherwise secured to the shade 91 and provided with an aperture through which a bolt or the like 93 is adapted to pass, said bolt being carried by the support 90. The bolt carries on its outer extremity a movable collar 94, and a coil spring 95 is interposed between said collar and the ear serving as a frictional holding means for the shade when adjusted angularly to this position.

From the above description taken in connection with the accompanying drawings it is thought that a clear and comprehensive understanding of the construction, operation and advantages of my invention may be readily gathered, and while I have shown and described the same as embodying a specific structure I desire that it be understood that I may make such changes therein as do not depart from the spirit and scope of the invention as claimed.

I claim:

1. A lamp support, including a standard, a light supporting arm adjustable on said standard, a flexible suspending element, a lamp carried thereby, means on said arm for locking said suspending element in a predetermined position, and means carried by said suspending element for adjusting the lamp at a desired angle of inclination.

2. A lamp support, including a standard formed in a plurality of independently rotatable sections, antifriction bearing means between said sections, means for limiting the movement of one section relative to the other, light supporting means carried by one of the sections, a flexible light suspending element adjustable on the supporting means, frictional holding means for the suspending element, a lamp carried by the flexible element, and frictionally held adjusting means carried by the lamp and adjustable on the flexible element.

3. A light support, including a standard formed of a plurality of sections independently rotatable, means for limiting the rotary movement of one within the other, a light supporting arm laterally movable in one of said sections, a flexible suspending element carried by said arm and having a lamp on one extremity and a counterweight on the opposite extremity, guiding means for said flexible element, and friction locking means therefor.

4. The combination with a light support having an adjustable arm and a suspending element associated therewith, of adjusting means for a lamp including a flexible element connectible to said suspending element at predetermined points whereby to change the angle of inclination of the lamp.

5. A lamp support, a supporting standard, a supporting section rotatably mounted thereon, a light supporting arm laterally movable in the section, a lamp, a flexible support for the lamp comprising a chain having one end projected into the standard, a counter-weight on the chain, and a guide for the chain including a U-shaped portion to receive the chain.

6. A lamp support, the combination with a section having a horizontal guide, an arm laterally movable in said guide, a flexible counter-weighted lamp support mounted on the arm, rollers for the flexible lamp support, and a frictional block for sustaining the flexible element at its adjustments.

7. In a lamp support, the combination with a horizontal tubular guide, a lamp supporting arm slidable therein, and a roller on the end of the arm movable in the guide to hold the arm at its lateral adjustments.

8. In a lamp support, the combination with a tubular standard including a laterally adjustable arm, a lamp, a chain bale on the lamp, a supporting chain having a counter-weight at one end movable in the tubular support and a ring on the other end for engaging certain ones of the links of the chain lamp bale, and a frictional supporting means on the arm for holding the chain.

9. In an electric lamp, a main standard, an arm extending at right angles to the axis of the main standard and turnable in a horizontal plane, flexible lamp suspension means depending freely from the outer end of the arm and adapted to carry a lamp at one end and a counterweight secured to the opposite end, and means carried by the arm for binding on the suspension means so as to hold the lamp in any position to which it is adjusted.

10. In an electric lamp, a main standard, an arm extending at right angles to the axis of the main standard and turnable in a horizontal plane, flexible lamp suspension means supported freely from the outer end of the arm and adapted to carry a lamp at one end and a counterweight secured to the opposite end, and a pair of pulleys carried

by the lamp supporting arm and a bearing member also carried by the arm and located between the pulleys and with which the flexible lamp support is drawn into engagement by the weight of the lamp and counterweight.

11. In an electric lamp, a main standard, an arm extending at right angles to the axis of the main standard and turnable in a horizontal plane around a center on a line with such main axis, flexible lamp suspension means, a counterweight on said means, carriers for the lamp, suspension means extending from the lamp supporting arm and spaced at suitable distances apart, and a bearing member interposed between the carriers and against which the flexible lamp support is held by the weight of the lamp and counterweight.

12. In an electric lamp, a main standard, an arm extending at right angles to the axis of the main standard and turnable in a horizontal plane around a center on a line with such main axis, flexible lamp suspension means, a counterweight on said means, carriers for the lamp suspension means extending from the lamp supporting arm and spaced at suitable distances apart, and a shoe member suitably supported and interposed between the carriers out of a line with such carriers and against which the flexible lamp support is held by the weight of the lamp and counterweight.

13. In an electric lamp, a main standard, an arm extending at right angles to the axis of the main standard and turnable in a horizontal plane around a center on a line with such main axis, flexible lamp suspension means, carriers for the lamp suspension means extending from the lamp supporting arm and spaced at suitable distances apart, and a shoe member having an arc-shaped longitudinally grooved lower edge around which the flexible lamp suspension means passes.

14. In an electric lamp, a main standard, a lamp supporting arm extending diametrically of the main standard and turnable on a center in alinement with the axis of the main standard, lamp suspension means carried by the lamp supporting arm, and means for adjusting the lamp suspension means longitudinally of the lamp supporting arm.

15. In an electric lamp, a main standard, an arm extending diametrically of the main standard and supported to turn in a horizontal plane on a center in a line with the axis of the main standard, a telescopic member carried by the arm, and lamp suspension means carried by such telescopic member.

16. In an electric lamp, the combination with the flexible suspension means having an eye at its lower end, of a chain extending through such eye and adapted to be connected at one end to the upper end of a lamp socket and to support at its opposite end a lamp shade carried by the socket in proximity to the lower edge of the shade.

17. In an electric lamp, a suspending support for the lamp provided with the usual lamp shade and socket, a chain connected at one end to the upper end of the socket and supporting at the opposite end a lamp shade in proximity to its edge, and an eye carried by the lamp suspending support having its lower interior peripheral portion so formed as to have a biting grip upon the links of the chain.

18. In an electric lamp, the combination with the horizontal supporting arm and a flexible lamp suspending means, of a pair of carriers for the lamp suspending means carried by the horizontal arm and spaced at suitable distances apart, and a suitably carried bearing member interposed between such carriers against which that part of the flexible lamp support extending between the carriers is drawn.

19. In an electric lamp, a main standard, an arm extending at right angles to the axis of the main standard and turnable in a plane around a center on a line with such main axis, flexible lamp suspension means supported freely from the outer end of the arm and adapted to carry a lamp at one end and a counterweight secured at the opposite end of the suspension means and located concentrically to the main axis and movable parallel therewith.

20. In an electric lamp, the combination with the lamp socket and shade connected to the socket of a flexible connector secured at one end to the socket and supporting the shade in proximity to its edge at its opposite end, a flexible depending lamp support, and a member carried by such depending lamp support on which the flexible connector is freely supported so as to be adjustable thereon longitudinally of the length of the connector.

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

GEORGE T. IRWIN.

Witnesses:
M. E. JONES,
B. J. McLAIN.