March 27, 1956 L. PHILLIPS 2,740,039

VERTICALLY AND ANGULARLY ADJUSTABLE LAMP

Filed Sept. 5, 1952 3 Sheets-Sheet 1

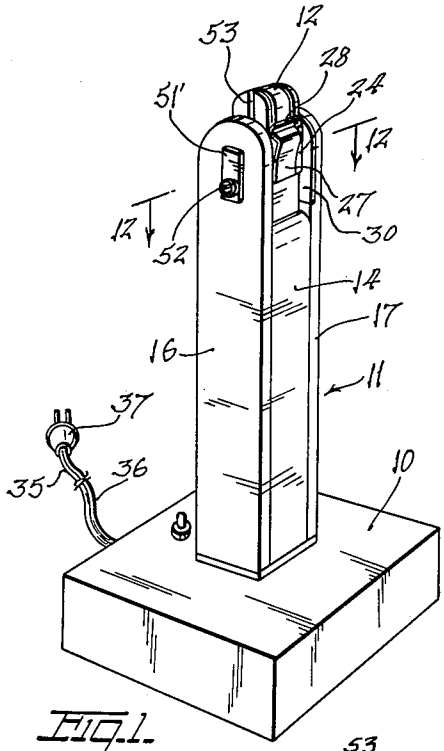


FIG. 1.

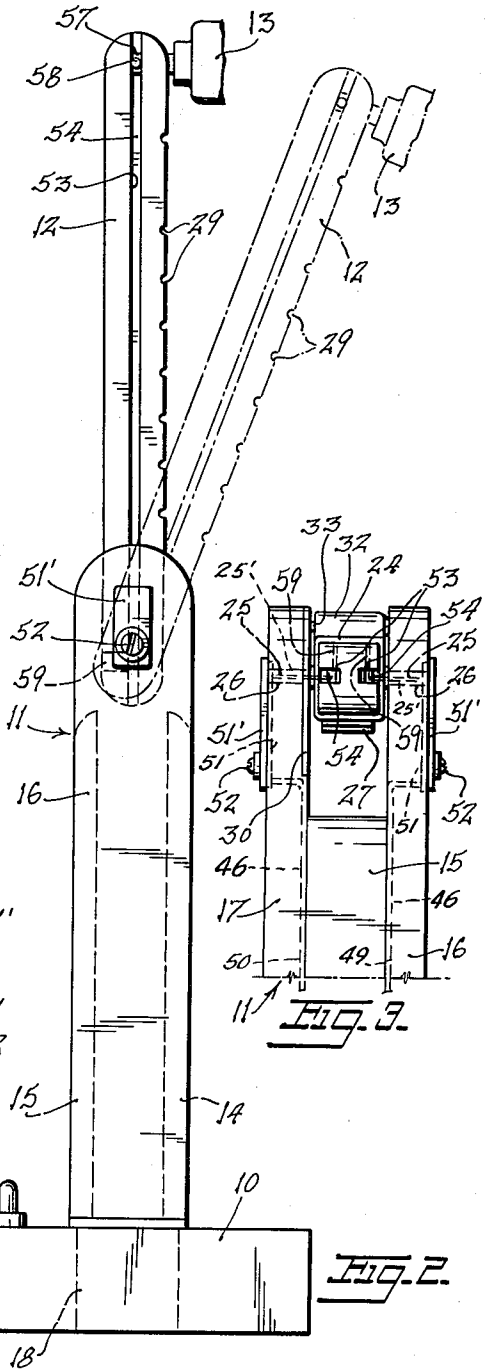


FIG. 2.

FIG. 3.

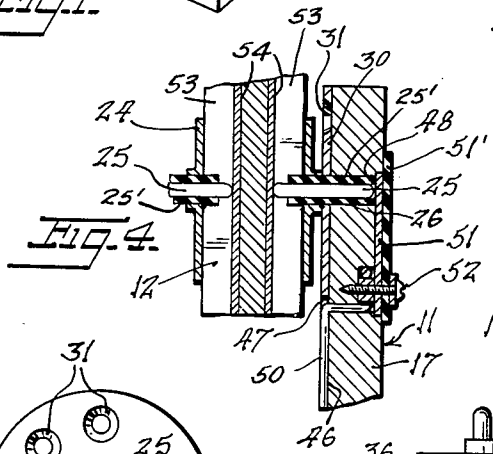


FIG. 4.

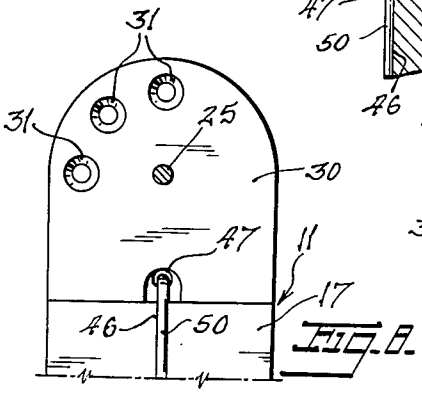


FIG. 8.

INVENTOR.
LOUIS PHILLIPS
BY Golton & Holcheb
ATTORNEY

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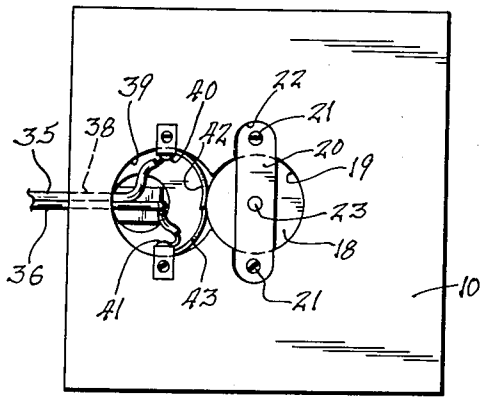


Fig. 5.

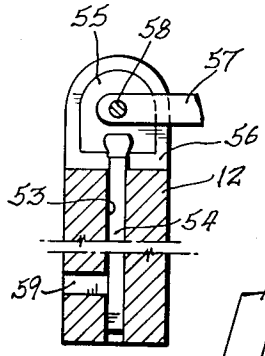


Fig. 9.

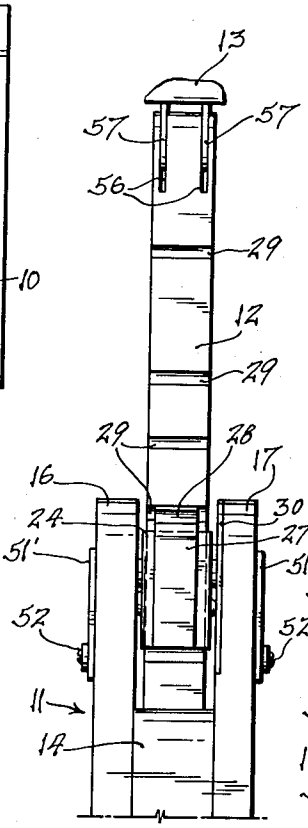


Fig. 6.

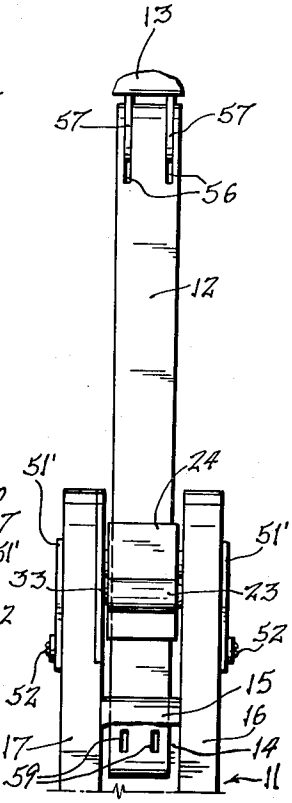


Fig. 7.

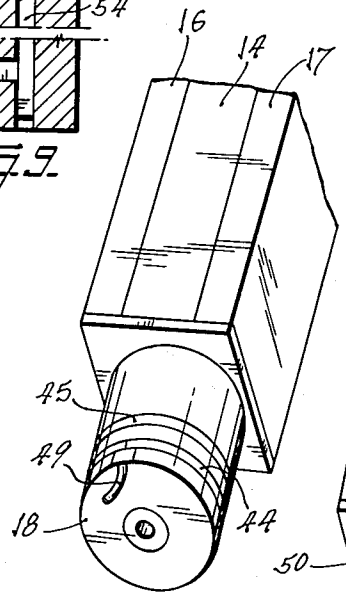


Fig. 10.

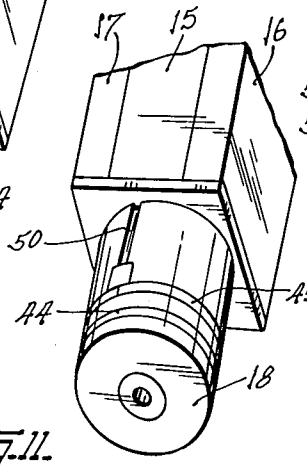


Fig. 11.

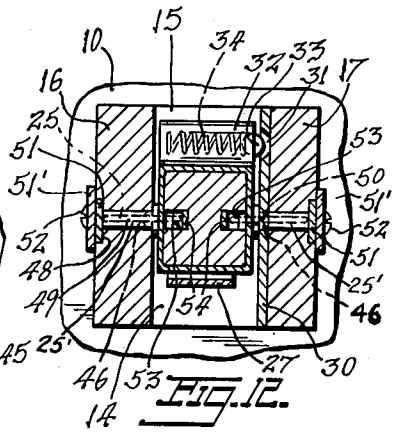


Fig. 12.

INVENTOR.
LOUIS PHILLIPS
BY
ATTORNEY

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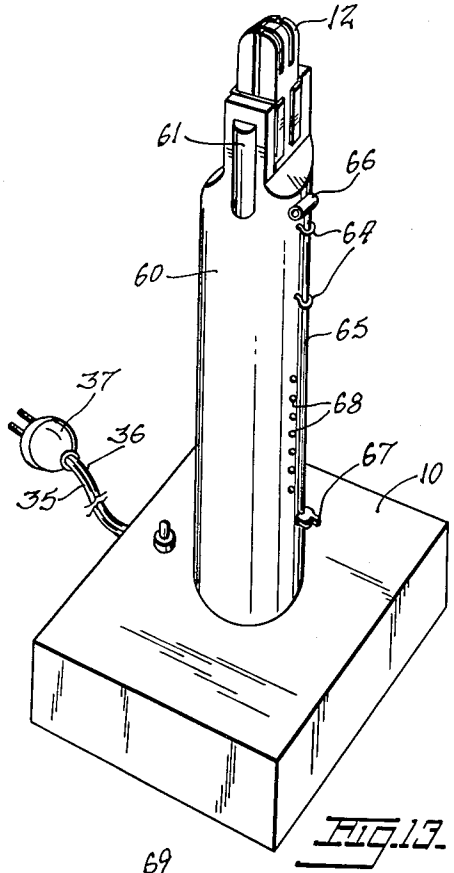


Fig. 13.

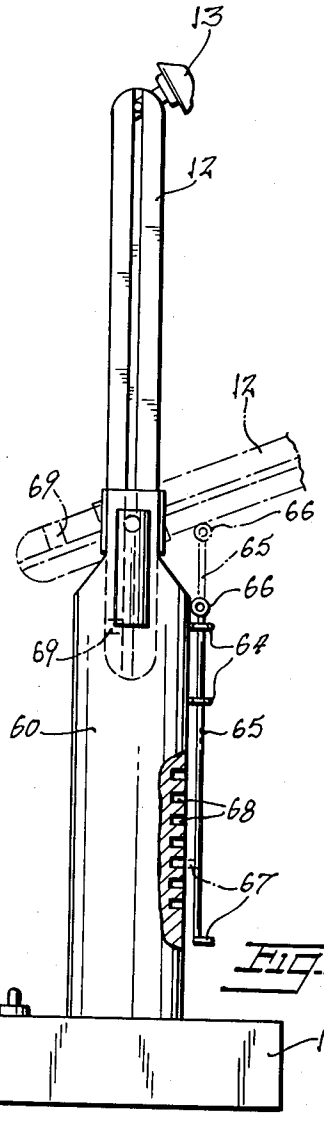


Fig. 14.

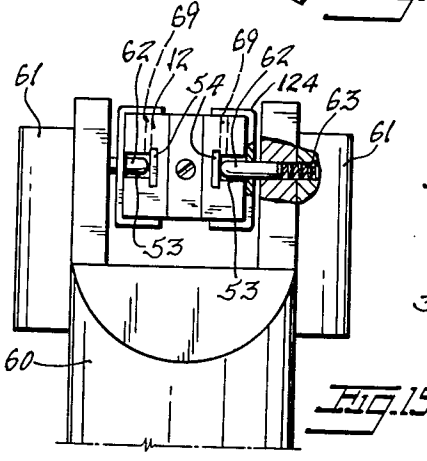


Fig. 15.

INVENTOR.
LOUIS PHILLIPS
BY
ATTORNEY

United States Patent Office 2,740,039 Patented Mar. 27, 1956

2,740,039

VERTICALLY AND ANGULARLY ADJUSTABLE LAMP

Louis Phillips, Seneca Falls, N. Y.

Application September 5, 1952, Serial No. 308,010

6 Claims. (Cl. 240—81)

This invention relates to adjustable supporting mechanism for lamps of the electric portable desk type for use in offices and the like.

The invention relates particularly to a lamp supporting structure having a base, a standard or upright post rotatably mounted on the base and an elongated arm supported on the post, said arm being swingable and longitudinally slidable relative to the post so as to bring the lamp into or closely adjacent a region wherein a high degree of illumination is desired.

An object of the invention is to provide means for adjusting the lamp-carrying slidable arm to any desired vertical, horizontal or angular position relative to the post.

Another object is to provide means for yieldingly holding the lamp-carrying arm in adjusted position.

Another object is to provide means for concealing the conducting elements of the lamp.

Other objects and advantages of the invention are to provide adjusting mechanism of this kind that is compact, simple and durable and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of an adjustable support for a lamp embodying one embodiment of my invention, with the lamp supporting arm in retracted position.

Fig. 2 is a side view of the same showing the supporting arm in extended position and showing in dotted lines the supporting arm in angular supporting position.

Fig. 3 is a fragmentary side view of the top of the post showing the rear end of the supporting arm when swung to horizontal position.

Fig. 4 is an enlarged sectional view through the top end of the supporting arm and one of the side walls of the post.

Fig. 5 is a reduced bottom plan view.

Fig. 6 is a fragmentary front view showing the lamp supporting arm in vertically extended position.

Fig. 7 is a similar view showing the rear of the parts.

Fig. 8 is an enlarged side view showing the inner surface of the top of one of the side walls of the post.

Fig. 9 is a fragmentary side view showing the top of the supporting arm, with parts being broken away.

Figs. 10 and 11 are perspective views of opposite sides of the bottom end of the post.

Fig. 12 is a cross sectional view taken on the plane of the line 12—12 of Fig. 1.

Fig. 13 is a perspective view of an adjustable lamp support embodying a modified form of my invention, with the lamp supporting arm in retracted position.

Fig. 14 is a side elevational view thereof showing the lamp supporting arm in extended position and showing said arm in dotted lines in angular position.

Fig. 15 is a fragmentary side view showing the top of the post and illustrating the rear of the supporting arm when swung to horizontal position.

Referring particularly to Figs. 1 to 12, the lamp herein shown comprises broadly a square base 10, a tubular post 11, preferably square in cross-section and extending upwardly from the center of the base and rotatably mounted thereon, and a slide or runner in the form of an elongated arm 12 slidable inside and outside the post for adjustably positioning a lamp 13 carried by the arm at its outer end. The base, post and runner may be made of any suitable insulating material such as plastic and are suitably grooved for the electrical conductors and connections for illuminating the lamp.

The tubular post 11 is formed with a front wall 14, rear wall 15 and opposed side walls 16 and 17. The side walls extend above the top of the front and rear walls. At its lower end the post 11 is formed with a solid reduced cylindrical portion 18 which is journalled in a circular opening or bearing 19 in the center of the base and extends therethrough. A strap 20 is secured by screws 21 in counter-sunk recesses 22 in the lower surface of the base and spans the opening 19. A pivot pin 23 extends through an opening in the strap and rotatably fastens the cylindrical portion of the post to the strap whereby the post is adapted to freely turn 360° in either direction.

The runner or arm 12 is square in cross-section, similar to the cross-section of the opening in the post, and is substantially the length of the post. The elongated arm is telescopically mounted in the post and is adapted to be moved outside of the post and subsequently slid relative to the post at different angles thereto. The mounting of the arm includes a metal sleeve or tubular bearing 24 rotatably mounted on fixed pivot pins 25 extending through aligned openings 26 in the side walls 16 and 17 of the post adjacent the top end thereof.

The arm extends through the bearing or sleeve 24 and is slidably supported thereby. The arm can be manually withdrawn from the post and extended outwardly to form a vertical extension of the post as shown in Fig. 2, or it can be slid inwardly or telescoped into the post and becomes substantially hidden from view as shown in Fig. 1.

When the arm is drawn outwardly so that its inner end clears the tops of the front and rear walls of the post, the bearing 24 with the arm 12 can be swung around the pivot 25, thus swinging the arm forwardly or rearwardly in an arc for more than 180° and carrying the lamp 13 along with it as shown in dotted lines in Fig. 2.

When the arm is thus moved outwardly so that its inner end is above and clear of the front and rear walls, it can be slid longitudinally through the sleeve 24 so as to bring the lamp nearer or further from the post.

Means are provided for yieldingly holding the arm 12 in any of its longitudinally adjusted positions. The holding means includes a spring detent plate 27 fastened at one end to the bearing 24 with its free end 28 projecting inwardly toward the surface of the arm 12 and adapted to engage in any one of a number of spaced transverse grooves 29 formed in the adjacent surface of the arm. The plate coacts with the grooves to yieldingly hold the arm in any longitudinally adjusted position.

I have also provided means for yieldingly holding the arm 12 in adjusted swingable positions. This holding means includes a plate 30 suitably fastened on the inner surface of the side wall 17 at its top end. A series of spaced holes 31 is formed in the plate in arcuate formation.

On the bearing 24 is a housing or casing 32 closed at the end adjacent side wall 16 and open at the other end adjacent plate 30. A ball 33 is mounted in the open end of the housing and partially protrudes therethrough, which

ball is urged outwardly by a spring 34 in the housing having one end seated against the closed end of the housing and its other end impinging against the ball and urging it outwardly against the plate 30. When the housing is carried around by the bearing 24 in its pivotal movements, the path of movement of the ball is in line with the holes so that it is adapted to engage in one of said said holes and yieldingly hold the arm 12 in angular adjusted position.

The lamp 13 may be supplied with electrical current in any suitable manner. As shown, conductor cords 35 and 36 are connected at one end to a plug 37 for connection to a house supply. The cords pass inwardly through a horizontally extending opening 38 in the base 10 into a recess 39 formed in the lower face of the base adjacent the central opening therein. In the recess, conductor 35 is connected to one arm of an L-shaped terminal or contact 40 secured to one side of the wall of the recess, and conductor 36 is connected to a similarly shaped contact 41 secured to the opposite side of the wall of the recess. A wiper or brush 42 is connected to the other arm of contact 40, and a similar wiper or brush 43 is connected to the other arm of contact 41.

Around the outer surface of the cylindrical end portion 18 of the post is a lower conducting ring 44 and spaced therefrom is an upper conducting ring 45. Brush 42 is in line with and in continuous contact with the ring 44 and is adapted to wipe thereover upon the turning of the post. Brush 43 is similarly arranged with respect to ring 45 so as to continuously contact the same.

Each of the side walls 16 and 17 of the post is formed on its inner surface with a central groove 46 extending from the lower end of the wall to its top end. The upper end of each groove communicates through an opening 47, extending laterally through the wall, with a recess 48 formed in the outer surface of the side wall. A conductor or bus bar 49 is mounted in groove 46 of side wall 16 for its entire length, which conductor at its lower end is connected to the adjacent contact ring 44. A similar conductor or bus bar 50 is mounted in groove 46 of side wall 17 and is connected at its lower end to contact ring 45. The upper end of each conductor 49 and 50 extends through the lateral opening 47 in the adjacent side wall and is connected to a spring conductor plate 51 secured in the recess 48 on the outer surface of the side wall by a screw 52. The conductors 51 engage the pins 25 and each may be covered by an insulating strip 51'. The pins 25 are covered by insulating sleeves 25'.

On the opposed surfaces of the arm 12 which are adjacent to the side walls of the post, each surface is formed with a central groove 53. A bus bar 54 is mounted in each of the grooves 53 and said bus bars contact the pins 25. At its outer end, each bus bar is connected to a plate 55 which is secured to the surface of the arm 12, in a slotted portion 56 provided in the top of the arm, in line with each groove 53.

A lamp socket adapter is pivotally mounted at the top end of the arm 12 for supporting the lamp 13. This adapter includes a pair of spaced contact blades 57 pivotally connected to a pivot pin 58 of insulating material which extends across the top of the arm and extends through the slots 56. The blades 57 are in sliding contact with the conducting plates 55 in the slotted portions 56 at the top of the arm and are connected to the terminals (not shown) of the lamp 13 for illuminating the same.

The end of the arm 12, opposite the lamp is provided with slots 59 for connecting an electric socket or plug to the bus bars 54.

By reason of the construction and arrangement of the parts and conductors are hereinbefore described, the lamp can be rotated 360° around its base or can be extended or retracted or swung to any angular position thereby rendering it universally adjustable without disturbing the

electrical connections and it can be yieldingly held in any moved position.

In the modification of the invention shown in Figs. 13 to 15, the outer circumference of the post 60 is circular. In this form, the conductor plates 51 (see Fig. 4) connected to the top ends of the conductors or bus bars 49 and 50 are enclosed in housings 61 secured to the sides of the post at its top. The conductor plates are in electrical connection with plunger pins 62 extending through the sides of the post by means of springs 63 which urge the pins inwardly through aligned holes in opposed electrically separated channel members 124 which embrace the arm 12 and form a bearing therefor, said pins 62 pivotally supporting said bearing with its arm 12. The inner ends of the pins extend into the grooves 53 of the arm and contact the bus bars 54 therein.

Modified means are also shown for yieldingly holding the arm 12 in adjusted position. This holding means includes a number of eyelets 64 screwed into the outer surface of the post in spaced vertical alignment. The eyelets are positioned in alignment with the center of the arm 12 and slidably guided in the eyelets is a supporting rod 65. At its top end, the rod is formed with a cross head 66 and at its bottom with a laterally extending lug 67. The lug projects inwardly and is adapted to be inserted into any one of a series of vertically spaced holes 68 formed in the post in alignment with the eyelets. The lug 67 is removed from one hole 68 and is inserted in another by springing the rod 65 sufficiently to clear the lug from whatever hole it is engaged in. The rod is then moved vertically as desired and the lug engaged in another hole.

The rod 65 is adapted to be slid along the post through the eyelets to bring its crosshead into supporting engagement with any of the grooves in the adjacent surface of the arm 12, whereby the arm is supported on the top of the crosshead. The lug 67 coacting with the holes 68 holds the rod in adjusted position. The end of the arm 12, opposite the lamp is provided with slots 69 for connecting an electric socket or plug to the bus bars 54.

The electrical circuit connections for the lamp 13 are the same as in the form of Fig 1.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. An adjustable lamp comprising a base, a vertically disposed rotatable post on the base, a tubular bearing pivotally supported at the top of the post, an elongated supporting arm slidably carried by said bearing, a lamp carried by said arm, said arm being provided with spaced transverse grooves along one surface thereof, a spring detent mounted on said bearing and adapted to coact with one of said grooves for yieldingly holding the arm in adjusted sliding position, a plate mounted on the post adjacent its top end, said plate having a series of spaced holes disposed in arcuate formation, a spring-pressed ball mounted on the pivoted bearing and adapted to engage in one of said holes for yieldingly holding the arm in adjusted swung position, and an electrical circuit for said lamp including a pair of spaced conductive rings mounted on the lower end of said upright post, a pair of brush contacts mounted in said base to engage said rings for supplying electrical energy thereto, two conductors longitudinally mounted along opposing sides of said arm for connection to said lamp carried thereon, a pair of conductive pins each extending through said post into said tubular bearing to engage one of said conductors, said pins comprising the pivotal support for said bearing, and means connecting each of said pins to a respective ring.

2. An adjustable lamp comprising a base, an upright tubular post rotatably mounted on the base, said post having upwardly projecting spaced extensions, a pivoted sleeve bearing member in the space between said extensions, an elongated arm slidably supported by said sleeve bearing member, said arm being adapted to be moved outwardly of the post for substantially its entire length to form an extension of the post and being adapted to be moved inwardly of the post for substantially its entire length whereby said arm is substantially concealed, a lamp carried by said arm, and an electrical circuit for said lamp including a pair of spaced conductive rings mounted on the lower end of said upright post, a pair of brush contacts mounted in said base to engage said rings for supplying electrical energy thereto, two conductors longitudinally mounted along opposing sides of said arm for connection to said lamp carried thereon, a pair of conductive pins each extending through one extension on said post into said sleeve bearing member to engage one of said conductors, said pins constituting the pivotal support for said sleeve bearing member and means connecting each of said pins to a respective ring.

3. An adjustable lamp comprising a base, an upright tubular post rotatably mounted on the base, said post having upwardly projecting spaced extensions, a pivoted sleeve bearing member in the space and between said extensions, an elongated arm slidably supported by said sleeve bearing member, said arm in one position of the sleeve bearing being adapted to be moved either outwardly in prolongation of the post or inwardly in nested relation with the post, said arm in another position of the sleeve bearing member being adapted to be slid longitudinally at an angle to the post, means for yieldingly holding the arm in moved position, a lamp carried by said arm, and an electrical circuit for said lamp including a pair of spaced conductive rings mounted on the lower end of said upright post, a pair of brush contacts mounted in said base to engage said rings for supplying electrical energy thereto, two conductors longitudinally mounted along opposing sides of said arm for connection to said lamp carried thereon, a pair of conductive pins each extending through one extension on said post into said sleeve bearing member to engage one of said conductors, said pins constituting the pivotal support for said sleeve bearing member, and means connecting each of said pins to a respective ring.

4. An adjustable lamp comprising a base, an upright tubular post rotatably mounted on the base, said post having upwardly projecting spaced extensions, a pivoted sleeve bearing member in the space between said extensions, an elongated arm slidably supported by said sleeve bearing member, said arm in one position of the sleeve bearing member being adapted to be moved either outwardly in prolongation of the post or inwardly in nested relation to the post, said arm in another position of the sleeve bearing member being adapted to be slid longitudinally at an angle to the post, a spring detent carried by the sleeve bearing member and cooperating with the arm for holding said arm yieldingly in adjusted sliding position, a spring-pressed detent carried by the sleeve bearing member and cooperating with the post for yieldingly holding the arm in adjusted swung position, a lamp carried by said arm, and an electrical circuit for said lamp including a pair of spaced conductive rings mounted on the lower end of said upright post, a pair of brush contacts mounted in said base to engage said rings for supplying electrical energy thereto, two conductors longitudinally mounted along opposing sides of said arm for connection to said lamp carried thereon, a pair of conductive pins each extending through one extension on said post into said sleeve bearing member to engage one of said conductors, said pins constituting the pivotal support for said sleeve bearing member, and means connecting each of said pins to a respective ring.

5. An adjustable lamp comprising a base, an upright tubular post rotatably mounted on the base, said post having upwardly projecting spaced extensions, a pivoted sleeve bearing member in the space between said extensions, an elongated arm slidably supported by said sleeve bearing member, said arm in one position of the sleeve bearing being adapted to be moved either outwardly in prolongation of the post or inwardly in nested relation to the post, said arm in another position of the sleeve bearing member being adapted to be slid longitudinally at an angle to the post, a rod supported by the post for sliding movement therealong, a crosshead on one end of said rod for supporting the arm in adjusted inclined position, means for holding the rod in moved position, a lamp carried by said arm, and an electrical circuit for said lamp including a pair of spaced conductive rings mounted on the lower end of said upright post, a pair of brush contacts mounted in said base to engage said rings for supplying electrical energy thereto, two conductors longitudinally mounted along opposing sides of said arm for connection to said lamp carried thereon, a pair of conductive pins each extending through one extension on said post into said sleeve bearing member to engage one of said conductors, said pins constituting the pivotal support for said sleeve bearing member, and means connecting each of said pins to a respective ring.

6. An adjustable lamp comprising a base, an upright tubular post rotatably mounted on the base, said post having upwardly projecting spaced extensions, a pivoted sleeve bearing member in the space between said extensions, an elongated arm slidably supported by said sleeve bearing member, said arm in one position of the sleeve bearing member being adapted to be moved either outwardly or inwardly of the post, said arm in another position of the sleeve bearing member being adapted to be slid longitudinally at an angle to the post, a lamp carried by said arm, said post having a series of vertically spaced holes in its outer surface, a rod supported by the post for sliding movement therealong, a crosshead on one end of said rod for supporting the arm in adjusted inclined position, a lug extending laterally of the rod at its other end adapted to coact with one of said holes for holding the rod in adjusted position, and an electrical circuit for said lamp including a pair of spaced conductive rings mounted on the lower end of said upright post, a pair of brush contacts mounted in said base to engage said rings for supplying electrical energy thereto, two conductors longitudinally mounted along opposing sides of said arm for connection to said lamp carried thereon, a pair of conductive pins each extending through one extension on said post into said sleeve bearing member to engage one of said conductors, said pins constituting the pivotal support for said sleeve bearing member, and means connecting each of said pins to a respective ring.

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