

No. 783,526.

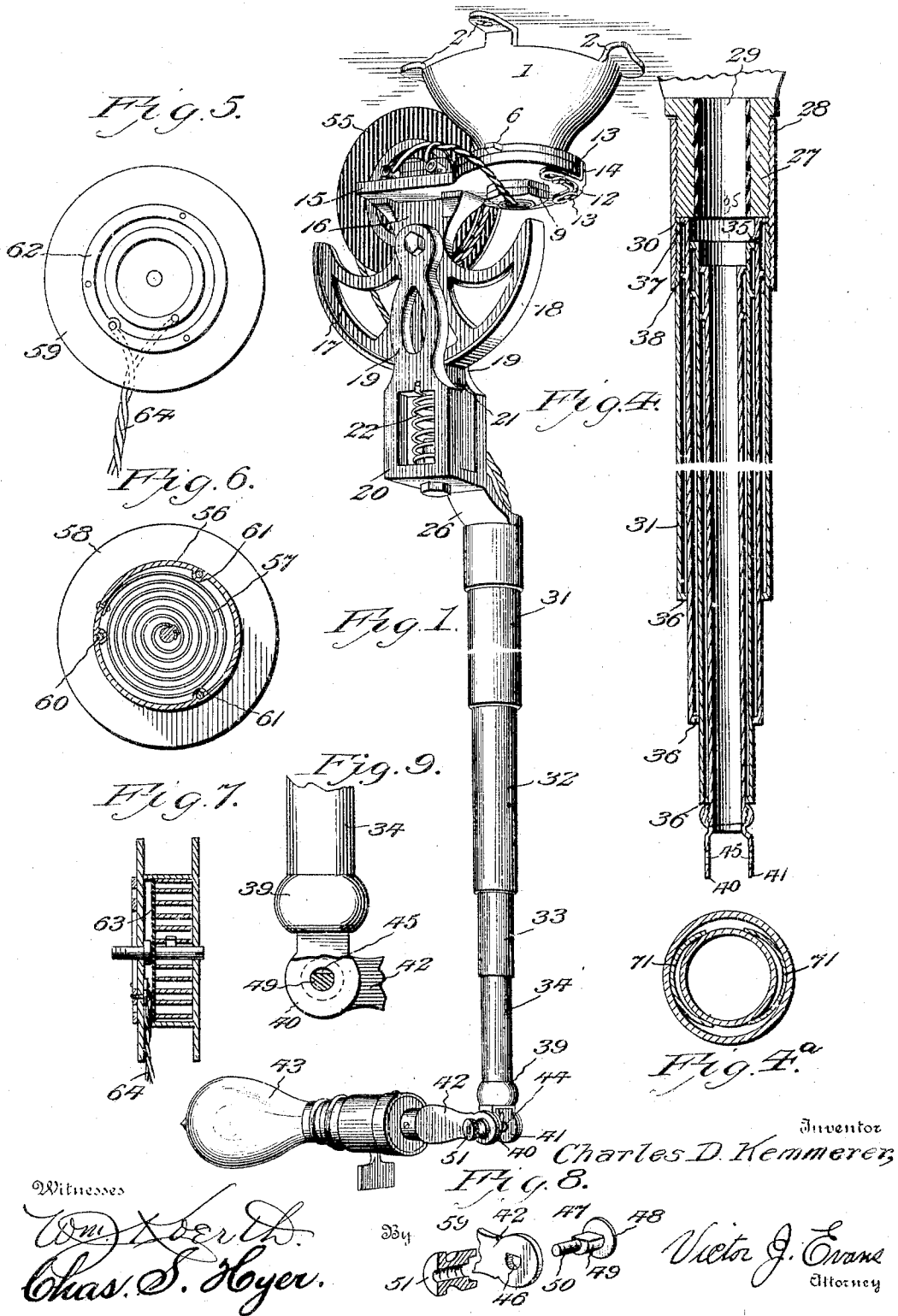
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C. D. KEMMERER.

ADJUSTABLE SUPPORT FOR ELECTRIC LIGHTS OR THE LIKE.

APPLICATION FILED OCT. 25, 1902.

2 SHEETS—SHEET 1.

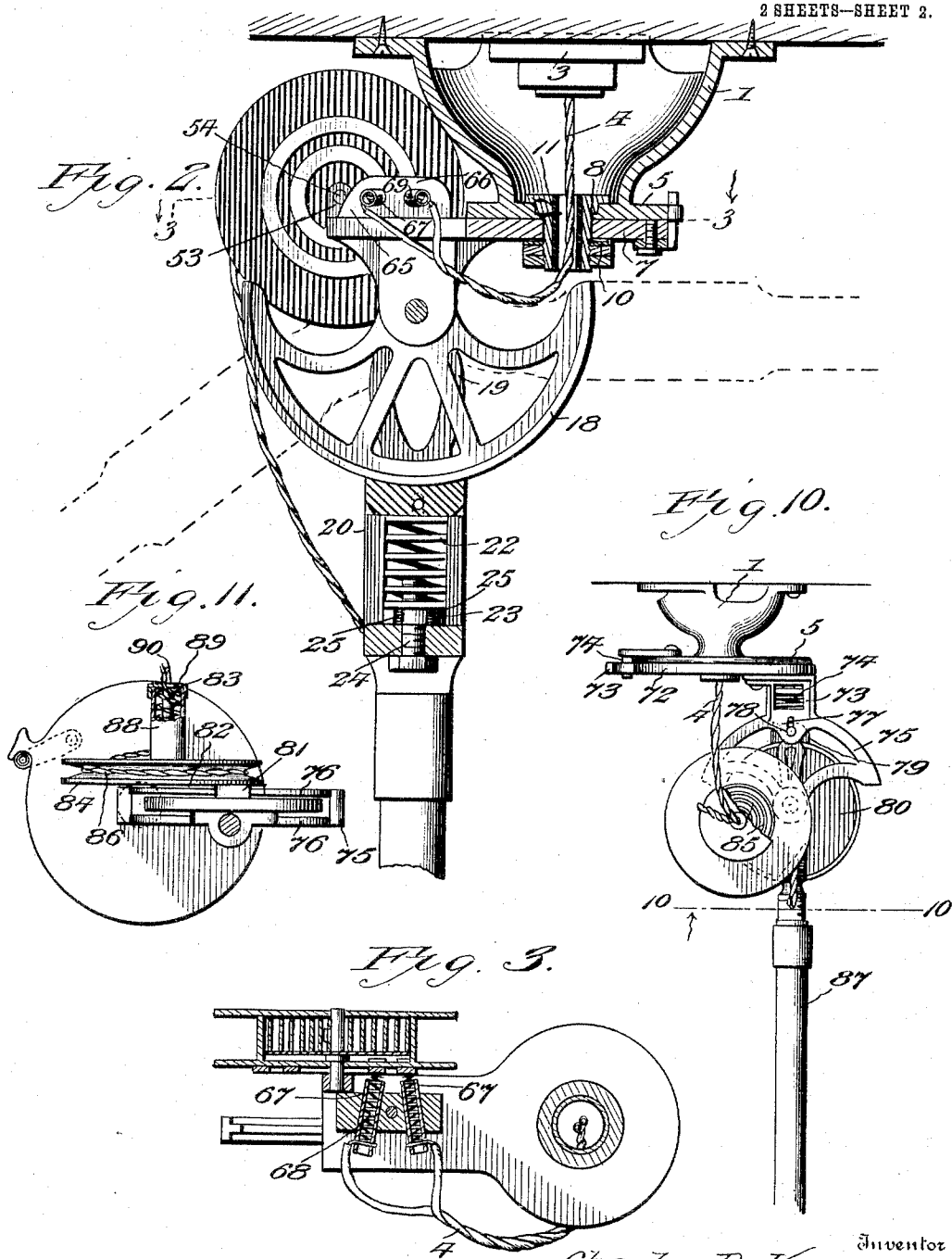


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ADJUSTABLE SUPPORT FOR ELECTRIC LIGHTS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 783,526, dated February 28, 1905.

Application filed October 25, 1902. Serial No. 128,803.

To all whom it may concern:

Be it known that I, CHARLES D. KEMMERER, a citizen of the United States, residing at Weissport, in the county of Carbon and State of Pennsylvania, have invented new and useful Improvements in Adjustable Supports for Electric Lights or the Like, of which the following is a specification.

This invention relates to adjustable supports for electric and other lights; and the primary object of the same is to provide a simple and effective hanging means that may be readily turned in any direction and held at any desired angle between that of the axial line with its base and a substantially right angle to its base, thus providing a support particularly adapted for use in workshops, barber-shops, dentists' offices, and other places where it may be applicable.

A further object of the invention is to include in an adjustable support for an electric light or other device an organization of elements of a strong and durable character having a positive operation in relation to each other and comparatively inexpensive in the cost of manufacture.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed and subject to a wide range of modification in the dimensions, proportions, and minor details of construction without departing from the spirit of the invention.

In the drawings, Figure 1 is an adjustable support embodying the features of the invention and shown applied in operative position or as suspended from a ceiling or other overhead device. Fig. 2 is a longitudinal vertical section through the upper portion of the support on an enlarged scale and showing the hanger embodied in the device as broken away. Fig. 3 is a horizontal section taken in the plane of the line 3-3, Fig. 2. Fig. 4 is an enlarged transverse vertical section of the hanger, showing the telescopic arrangement of the parts thereof. Fig. 4^a is a transverse vertical section through a portion of the

hanger. Fig. 5 is a detail side elevation of a revoluble spool, forming a part of the improved support and having contact-rings thereon. Fig. 6 is a longitudinal vertical section through the spool, showing the spring for operating the same. Fig. 7 is a transverse vertical section of the spool. Fig. 8 shows detail views of the fulcrum devices carried at the lower end of the hanger for engagement with the lamp-arm or attaching device. Fig. 9 is a transverse vertical section through a part of the fulcrum devices at the lower extremity of the hanger. Fig. 10 is an elevation of a modified form of the device, shown partially broken away. Fig. 11 is a section taken in the plane of the line 10-10, Fig. 9, and looking in the direction of the arrow.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a cup-shaped supporting-base, having angularly-projecting ears 2 for the reception of screws or other fastenings to apply said base to a ceiling, side wall, or other holding means. Inclosed within the base 1 is the ordinary rosette 3 for electrical-wire connections, and therefrom depends electrical insulated wires 4 of usual form and which will be more fully hereinafter referred to. The lower extremity of the base 1, or that opposite to the side, secured to a ceiling, side wall, or other device, has a plate 5, forming a part thereof or fixed thereto and formed with an outwardly-projecting stop 6. Closely arranged against the plate 5 is a swivel-plate 7, and through the centers of both plates a tubular bolt 8 is passed to receive nuts 9, between one of which and the swivel-plate 7 a spring 10 is interposed and primarily in the form of a cup-shaped washer, which is pressed closely against the said plate 7 when the nuts 9 are fully applied to the projecting end of the bolt 8 to set up sufficient frictional binding on the said swivel-plate 7 to prevent the latter from having too free movement. Within the bolt 8 is secured an insulating-sleeve 11, and therethrough are passed the electrical wires 4, which will be extended away from the end of the bolt 8 and permitted to

have sufficient slack to accommodate the operation of the swivel-plate and parts carried thereby during horizontal movement or rotation of said swivel-plate on the plate 5.

5 On the swivel-plate 7 is a segmental slotted slide 12, held thereagainst by adjusting-screws 13, and extending from the said slide is a finger 14 to contact with the stop 6, and thereby limit the rotation of the swivel-plate 7 on the
10 plate 5. This slide can be adjusted to limit the movement of the swivel-plate 7 to less than a full revolution or to permit said plate to revolve a distance greater than a complete revolution.

15 Projecting from the swivel-plate 7 is a projecting arm 15, having a depending hanger 16, continuing into a segmental shoe 17, having a smooth curved edge 18, and embracing the said shoe and fulcrumed thereto are a pair of
20 arms 19, continuing into a lower cage 20, in which a clamping-block 21 is held and normally pressed against the edge 18 of the shoe by a spring 22, bearing at one extremity on and connected to the said block and at the
25 opposite extremity engaging an adjusting-disk 23, disposed on a screw 24, the said disk having a series of slots 25 therein for the reception of the point or end of an adjusting implement for rotating the said disk to
30 regulate the tension of the spring and pressure of the block 21 against the edge 18 of the shoe. When the block 21, spring 22, and adjusting-disk 23 are initially assembled, a primal tension will be given to said spring
35 of sufficient stress to cause the block to firmly bind against the edge 18 of the shoe 17; but in the event of wear the disk 23 will be rotated to bring the block in close bearing relation to the edge 18 of the shoe to take up
40 such wear. The arms 19 are fulcrumed on the shoe in eccentric relation to the edge 18 thereof, so that when the cage and other parts carried thereby, which will be hereinafter set forth, are moved toward either terminal of
45 the shoe the frictional bind between the block 21 and the edge 18 of the shoe will gradually increase proportionate to the increase of weight brought to bear on the cage when located to one side of the axial line of the shoe,
50 and thereby obstruct any tendency of the said cage and parts held thereby to slip back to a vertical position. A lateral projection 26 extends from the bottom of the cage and has a depending collar 27 at its outer extremity
55 formed with an exteriorly-screw-threaded surface 28. Extending through the collar is an insulating-sleeve 29, and connected to the exterior of said collar is an attaching-sleeve 30.

The hanger proper is held by the sleeve 30
60 and comprises a series of telescopic sections 31, 32, 33, and 34, proportionately decreasing in diameter toward the lower section 34. The upper section 31 has its upper extremity exteriorly screw-threaded and snugly fitted in
65 the lower extremity of the sleeve 30, and the

upper end of the said section 32 is formed with an indentation 35 to serve as a stop to prevent the upper end of the next section 33 from forcefully abutting against the lower end of the collar 27 when said section 32 is
70 pushed into the section 31. The lower end of the section 31, as well as the lower ends of the sections 32 and 33, are formed with an inwardly-projecting annular flange 36, the several flanges closely embracing and bearing
75 against the contiguous sections with which they cooperate, and at their upper ends the sections each have outwardly-projecting flanges 37 and 38, the flange 37 of each section being at the upper end of each section. The flanges
80 38 strike against the flanges 36 and prevent the several sections from being drawn outwardly from each other beyond a predetermined distance.

Through the use of the telescopic hanger
85 just described the electric lamp or other light carried by the same may be projected any suitable distance or placed in a position where a strong light is desired.

On the lower end of the section 34 a head
90 39 is secured and has a pair of depending ears 40 and 41, which unitedly form a yoke. Pivotaly cooperating with the ears 40 and 41 and movably bearing against the opposite sides thereof are the terminals of a lamp-connecting
95 arm 42 in the form of a yoke and immovably secured at its outer extremity to an incandescent lamp 43, having the construction of devices of this class whereby it may be extinguished or illuminated at will. One of
100 the extremities of the arm 42 is pivoted to the ear 41 by an independent rivet or analogous device 44, and in the opposite ear 40 a smooth circular opening 45 is formed, as shown by
105 Fig. 9. In the terminal of the yoke which rests against the opposite side of the ear 40 a segmental opening 46 is constructed, as clearly shown by Fig. 8, and passed through the opening 45 and opening 46 is a fulcrum-screw 47,
110 having an inner disk-head 48 to bear against the inner side of the ear 40, and a segmental enlargement 49 of such length as to just equal the combined thickness of the ear 40 and the adjacent extremity of the yoke 42, having the
115 segmental opening 46 therein. Extending centrally from the enlargement 49 of the clamping-screw is a screw-threaded shank 50, which projects outwardly a suitable distance from the extremity of the yoke to receive a
120 clamping-nut 51, which may be adjusted as tightly as desired to hold the lamp 43 at any angle relatively to the lower end of the hanger required to obtain the best light effect, or the said clamping-nut may be loosened to allow the lamp to swing freely from the lower
125 end of the hanger. It has been found that when the lamp is loose or free to move on the end of the handle the weight of the same, combined with the usual form of shade, will
130 always tend to cause the lamp to assume a de-

pending or vertical position no matter what the angle of adjustment of the hanger may be. Though the preferred proportions of the segmental enlargement 49 of the fulcrum-screw 47 and the ear 40 and extremity of the yoke 42, with which it engages, have been stated as being equal or so that the length of the said enlargement will just correspond to the combined thickness of the ear 40 and the yoke extremity bearing thereon it will be understood that in some constructions to provide a nice finish the enlargement 49 will be longer than the combined thickness of the said parts and project outside of the extremity of the yoke resting on the ear 40, and to accommodate such construction the inner end of the clamping-screw 51 is formed with a recess 52 to extend over the exteriorly-projecting portion of the said enlargement 49.

Rising from the upper surface of the arm 15, adjacent to one side edge of the latter, is a bearing-ear 53, having one end of a stationary shaft 54 secured therein, preferably by means of screw-threads, for convenience in assembly of the parts. On this stationary shaft 54 a spool 55 is rotatably mounted and comprises an inner inclosing hollow drum 56, having a spring 57 therein, one terminal of the spring being secured to the drum and the opposite terminal to the shaft 54. Secured to opposite sides of the drum are disks 58 and 59 of greater diameter, and immovably attached to said drum by screws 60, passing through said disks and lugs 61 on the inner side of said drum, as clearly shown by Fig. 6. The disk 59 is provided with a pair of concentric contact-rings 62 on the outer side thereof, and all the parts of the spool, including the drum and disks, are formed of insulating material, and between the disk 59 and the spring 57 an insulating-disk 63 is inserted, as shown by Fig. 7. The two terminals of an electrical wire 64 are secured to the disk 59 and held between the latter and the disk 63 at a suitable distance inwardly from the outer surface of the drum 56 to thereby securely hold the electrical wires 64 in operative relation to the spool. The terminals of the wires 64 connect with the contact-rings 62, and the latter are adjacent to the edge of the arm 15, having the ear 53 rising therefrom. On the arm 15, close to the ear 53, an insulating electrode-block 65 is secured and includes a separable member 66 for holding electrode-supporting tubes 67 in operative relation to the contact-rings 62 on the disk 59 of the spool. The ends of the tubes 67 adjacent to the disk 59 are converged toward each other and held in immovable positions, and therein springs 68 are loosely mounted, one spring being disposed in each tube. The ends of the springs 68 are projected from the ends of the tubes adjacent to the contact-rings 62 and are held in continual yielding engagement with the latter. The ends of the electrical wires

4 are inserted through openings 69 in the opposite ends of the tubes 67, the springs being first pressed forwardly and afterward released to exert a binding tension against the terminals of the wires 4 to prevent disengagement thereof from the tubes, and thereby always maintain a reliable electrical connection without the use of binding-screws or analogous devices. The diverged ends of the tubes 67, engaged by the terminals of the wires 4, prevent loose strands of the latter engaging or contacting with each other, or, in other words, the ends or terminals of the said wires 4 are held far enough apart to prevent the formation of a short circuit. The wires 64, which are secured to the spools, are continued downwardly through the sections 31, 32, 33, and 34 of the hanger and connected to the lamp 43 in the ordinary manner, and in the said wires at a point close to the head 39 of the hanger proper a knot 70 is formed to provide enough slack of the wires between the head 39 and the point of securement thereof to the lamp 43 to avoid interference with the adjustment of the said lamp at any angle relatively to the said hanger proper and also to prevent pulling strain being exerted on the terminals of the wires 4, secured to the lamp 43. The wires 64 between the knot 70 and the point of attachment thereof to the spool will be long enough to compensate for the maximum adjustment or projection of the several sections 32, 33, and 34 of the hanger proper, and as the said sections are drawn outwardly the wires 64 will unwind from the spool and simultaneously wind the spring 67, and when the projection of the sections of the hanger is reduced to any extent or the said sections fully collapsed the slack portion of the wires 64 is immediately or correspondingly wound on the spool 55 by the automatic action of the spring 57 tending to unwind itself.

The improved support may be swung around a vertical axis taken through the center of the base 1 through the medium of the swivel-plate 7, and the wires 4 will be slack enough to compensate for the maximum rotation of the said swivel-plate to avoid exerting a straining tension on the said wires. The hanger proper may also be swung either to the right or left or in opposite lateral directions and held at any angle desired between a vertical line and an approximately horizontal line through the medium of the clamping-block 19 and the shoe 17, and, aside from this, the lamp 43 may be turned at any angle, and thereby the said lamp may be given a universal adjustment to dispose the same in any position to obtain the best illuminating results in carrying on different kinds of work whether professional or mechanical.

The flanges 37 and 38 also serve to form seats for the reception of friction-springs 71, that exert their spring tension on contiguous

sections to cause the same to have a comparatively stiff movement in relation to each other and avoid looseness of the same, particularly in the event of wear, so that when the several sections are projected the desired distance they will be maintained in such adjustment without liability of accidental variation.

When the base-support 1 is secured to a side wall or an analogous holding means, a lateral adjustment in opposite directions could not be maintained if the swivel-plate 7 were not held in close frictional binding relation to the plate 5. The spring 10 establishes such frictional bind between the plates 7 and 5 and provides for positive lateral adjustment of the entire support when the base 1 is secured to a side wall or other upright holding means. The portion of the shank of the bolt 8 which passes through the swivel-plate 7 is unthreaded, and the extremity engaged by the nuts 9 is threaded. Hence the spring 10 is permitted to hold the said swivel-plate in close relation to the plate 5 and establish a frictional bind heretofore set forth.

In the modified form of device shown by Figs. 10 and 11 the base-support 1 is practically similar to that heretofore described and has a plate 5 with a central opening there-through to permit the wires 4 to be carried down to the spool. In this modified construction a swivel-plate 72 is held against the plate 5 and has a peripheral hook or catch 73 to engage a depending stud or pin 74, held by the plate 5 to limit the rotary movement of the said plate 72. Eccentrically depending from the plate 72 is a cage 73, in which a spring 74 is mounted and adjusted by means similar to those described in connection with the spring 22 in the cage 20 of the first form of the device, with the exception that said means engage the upper extremity of the spring. The cage 73 continues into or forms a part of a depending segmental bracket 75, comprising opposite members 76 in parallel relation and spaced apart from each other. In each of the members 76, directly below the cage 73 and in central vertical alinement relatively to the said cage, a slot 77 is formed, and in the two slots trunnions 78 of a clamping or friction block 79 are movably mounted. The lower end of the spring 74 bears upon the clamping or friction block 79 and holds the latter down in normal position and in tight engagement with a friction-disk 80, eccentrically mounted between the lower extremities of the members 76 to have a free adjustment or movement. The block 79 at all times firmly impinges against the periphery of the disk 80, and owing to the eccentric mounting or application of said disk the adjustment of the same and the parts carried thereby in opposite directions will be reliably maintained in view of the increase of pressure instituted by the said block on the disk by reason of the increase of distance between the fulcrum

device of the disk and the block, as will be readily understood. As clearly shown by Fig. 11, the disk 80 has an offset 81, from which projects an arm 82; having a shaft or spindle 83 immovably secured thereto, and on the shaft a spool 84 is rotatably mounted and contains a spring 85 for automatically actuating the spool to rewind wires 86, terminally secured thereto, after said wires have been unwound or drawn from the spool. The action of the spring 85 is similar to the spring 57 in the spool 55, hereinbefore referred to, and the wires 86 extend away from the spool and pass longitudinally through a hanger 87, similar in construction and operation to the hanger heretofore described and comprising the sections 31, 32, 33, and 34, the said hanger 87 being rigidly attached at its upper extremity to the disk 80 and adjustable in lateral directions with the latter to position a lamp which will be applied to the lower end of the said hanger 87 at any angle desired. Projecting from one side of the spool 84 at the center and rotatable therewith is a winding tube or cylinder 88, and through the center of said tube or cylinder the shaft 83 projects and has a cap 89 fixed to its outer end and movably embracing the outer end of the said tube or cylinder. Through the center of the cap 89 is an opening 90, in which the wires 4 are inserted and secured in the center of the spool to the terminals of the wires 86 to set up an electrical transmission between the two sets of wires. The wires 4 and 86 in this modified construction are continued and are individually distinguished by the portion thereof engaging the spool and extending through the hanger 87, and the remaining portion is run upwardly through the base-support 1 to any preferred form of rosette. Sufficient slack is given to the portions of the wires which connect with the rosette and extend into the tube or cylinder 88 to allow said slack portion of the wires to be wound or coiled within said cylinder or tube when the spool 84 is rotated to avoid torsionally twisting the wires leading to the rosette, and thereby avoid injury to the same. The extent of winding of the upper portion 4 of the wires will depend upon the location of the spool relatively to the base-support 1, and when the spool rotates in one direction and similarly actuates the tube or cylinder 88 said portion of the wires are wound within the cylinder, as stated, and an opposite movement of the spool causes the wires within the tube or cylinder to unwind. As the shaft 83 is secured to the disk 80 and the spool 84 and cylinder 88 are disposed on the said shaft, it will be seen that said spool will be adjusted or shifted equally with the movement of the disk 80 when the hanger 87 is moved to opposite angular positions, and the adjustment of the parts will be maintained by the frictional binding pressure of the block 79 on the periphery of the disk 80. In this

modified construction, as in the preferred form of the construction as heretofore disclosed, the upper portion 4 of the wires will also have enough slack to compensate for the rotary movement of the swivel-plate 72, the slack in the said portion of the wire being sufficient to accommodate a maximum rotation of the swivel-plate without exerting a drawing tension or strain on the said portion of the wires.

10 The several parts of the improved device in either of its forms are so constructed that they may be easily assembled in operative relation, and they are of such strong and durable nature that the several adjustments may be made with considerable force without liability of breaking or injuring any of the said parts. It is also proposed to plate or otherwise treat the several parts of the improved device to give them a neat and pleasing appearance and also to prevent injury thereto by corrosion.

While the improved support as an entirety is particularly adapted for holding an incandescent electric light, it may be used equally well for other purposes, such as a means for holding certain tools operative by electrical means and desired to be used at different points within a workshop or other place.

Having thus fully described the invention, 30 what is claimed as new is—

1. In an adjustable support of the class set forth, the combination of an attaching device having a rotatable supporting means and a projecting arm disposed in horizontal position and movable in a circular path about the attaching device, a frictional member depending from said arm and located to one side of the center of said supporting means, a clamping-block held in continual engagement with the periphery of said frictional member and movable in relation to the latter, and a hanger depending from the said parts.

2. In an adjustable support of the class set forth, a rotatable holding means having a projecting arm movable in a circular path about the said means, a frictional member extending from the said holding means, a clamping device movably held in engagement with the periphery of said frictional member, winding mechanism held by the said arm and movable simultaneously with the latter, an extensible hanger connected to and depending from said frictional member, and electrical wires extending through and connected to the hanger and adapted to be wound on and be unwound from the winding mechanism.

3. In an adjustable support of the class set forth, the combination of supporting means including a rotatable arm projecting outwardly in a horizontal plane and movable in a circular path about the said supporting means, a segmental shoe immovably depending from said arm, embracing devices pivotally connected to said shoe, and carrying a clamping-block yieldingly held in continual engagement

with the periphery of the shoe, and a depending telescopic hanger connected to and movable with the said embracing means.

4. In an adjustable support of the class set forth, the combination of rotatable supporting means, a frictional member rigidly projecting from said means and movable in a circular path about the latter, a clamping-block movably held in operative relation to and continually engaging the periphery of said frictional member, a hanger extending from said clamping-block and comprising a series of telescopic sections, and a connecting-arm pivotally held by the free end of the hanger and having clamping means.

5. In an adjustable support of the class set forth, the combination of a supporting-base adapted to be rigidly secured in applied position, a swivel-plate connected to said base and provided with a projecting arm, said swivel-plate being limited in its rotation, a segmental shoe depending from the arm, a clamping-block held in movable engagement with the periphery of the segmental shoe, a hanger extending from the said clamping-block and comprising a series of telescopic sections, the free extremity of the hanger being provided with an electrical device, an automatically-operating spool carried by the projection of the swivel-plate, and electrically-connected wires extending through the hanger and engaging the spool.

6. In an adjustable support of the class set forth, the combination of a fixed base, a rotatable supporting means held by said base and provided with a projecting arm movable in a circular path about the base, a segmental shoe extending from said arm, said shoe being immovable in relation to the arm, arms movably embracing the shoe and connected to a cage, a clamping-block yieldingly held in the said cage and continually engaging the periphery of the shoe, and an adjustable hanger connected to the said cage.

7. In an adjustable support of the class set forth, the combination of a fixed base, a swivel-plate connected to said base and having a projecting arm, an automatically-operating winding-spool carried by said arm, a shoe rigidly extending from the arm, clamping means movably held in relation to and continually engaging the periphery of said shoe, an adjustable hanger connected to the clamping means and projecting from the latter at one side of the center, the hanger carrying an electrical device, and electrically-connected wires engaging said spool and extending downwardly through the hanger to the electrical device.

8. In an adjustable support of the class set forth, the combination of a fixed base, a swivel-plate held on the base, an automatically-operating winding-spool carried by the swivel-plate at one side of the center of the latter and movable in a circular path about the base, an adjustable hanger having an electrical device

at its free end, holding means between the hanger and swivel-plate, and electrically-connected wires extending through the hanger and engaging the said spool.

5 9. In an adjustable support of the class set forth, the combination of a fixed base, a swivel-plate held on the base and carrying an automatically-operating winding-spool at one side of the center of the said plate and movable in a circular path about the base, one end of the spool having contact-rings thereon, contact-springs held on the swivel-plate in engagement with the said rings, wire connections between the said springs and an electrical feeding source, a hanger adjustably extending from the swivel-plate, and electrical wires engaging the spool and attached to the contact devices of the latter, the said wires extending through the hanger.

20 10. In an adjustable support of the class set forth, the combination of a fixed base, a swivel-plate held on the base, a spool rotatably supported by the swivel-plate and having concentric contact devices on one side, yielding electrodes spaced apart from each other and held in continual engagement with said contact devices, electrical wires connected to said electrodes and to a source of electrical supply, a hanger adjustably connected to the swivel-plate and comprising a series of telescopic sections, an electrical device attached to the end of the hanger, and electrical wires engaging the spool and connected to the contact devices on the latter and also fastened to the hanger through the electrical device on the end of said hanger.

35 11. In an adjustable support of the class set forth, the combination of a fixed base, a swivel-plate held in contact with the base, a tubular bolt having a flanged head engaging the inner portion of the base, and a fastening means bearing against the plate, and a hanger for supporting an electrical device attached to the plate at one side of the position of the tubular bolt.

45 12. In an adjustable support of the class set forth, the combination of a fixed base of hollow form, a swivel-plate movably held against the base and provided with a lateral projection, a tubular bolt extending through and connecting the contiguous portions of the base and plate, said bolt having a flanged head engaging the inner part of the base and fastening means adjacent to the plate, a friction-creating device surrounding the bolt and interposed between the fastening means and the plate, and a hanger adjustably secured to the lateral projection of the plate.

50 13. In an adjustable support of the class set forth, the combination with supporting means, a hanger adjustably connected to said means and having a head on the free extremity thereof with ears projecting therefrom and spaced apart from each other, an arm in the form of 65 a yoke having the extremities movably held

against the outer sides of the ears, one yoke extremity and ear being connected by an independent pivot and the other ear and yoke extremity respectively having a circular and a segmental opening therein, a fulcrum-screw 70 having an inner disk-head, a segmental enlargement, and a screw-threaded shank, the said enlargement engaging the segmental opening in one yoke extremity and the screw-shank projecting outwardly from the latter, 75 and a clamping-nut to engage the said screw-threaded shank and bear against the outer surface of the adjacent yoke extremity.

14. In an adjustable support of the class set forth, the combination of a fixed base having a plate rigidly connected thereto and provided with an outwardly-projecting stop, a swivel-plate movably held against the plate of the base, a tubular bolt connecting the swivel-plate and the plate of the base and having 85 means engaging the same for creating a friction between the two plates, an insulating-sleeve in the tubular bolt, means on the swivel-plate to engage the said stop and limit the rotation of the said swivel-plate, electrical wires 90 passing through the base and the said bolt and connected to the swivel-plate, an adjustable hanger secured to the swivel-plate to one side of the position of the bolt, and electrical connections extending through the hanger and 95 arranged to be thrown into contact with the said electrical wires.

15. In an adjustable support of the class set forth, the combination of a fixed base having an immovable plate with a projecting stop, a 100 swivel-plate applied against the said immovable plate, a segmental slotted slide adjustably held against the swivel-plate and provided with a finger to engage said stop to limit the rotation of the said swivel-plate, and a 105 hanger adjustably extending from a portion of the said swivel-plate.

16. In an adjustable support of the class set forth, the combination of a fixed base, a swivel-plate held against the base and having a supporting device thereon, electrode-supporting 110 tubes in the said device having springs loosely mounted therein and projectible from the said tubes, a spring-actuated winding-spool carried by the swivel-plate and provided with 115 contacts for engagement with the said springs, electrical wires passing through the base and swivel-plate and attached to said tubes in contact with the springs in the latter, a hanger adjustably extending from the swivel-plate 120 and arranged to carry an electrical device, and electrical connections extending through the hanger and attached to the contacts of the spool.

In testimony whereof I affix my signature in 125 presence of two witnesses.

CHARLES D. KEMMERER.

Witnesses:

CHAS. S. HYER,

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