

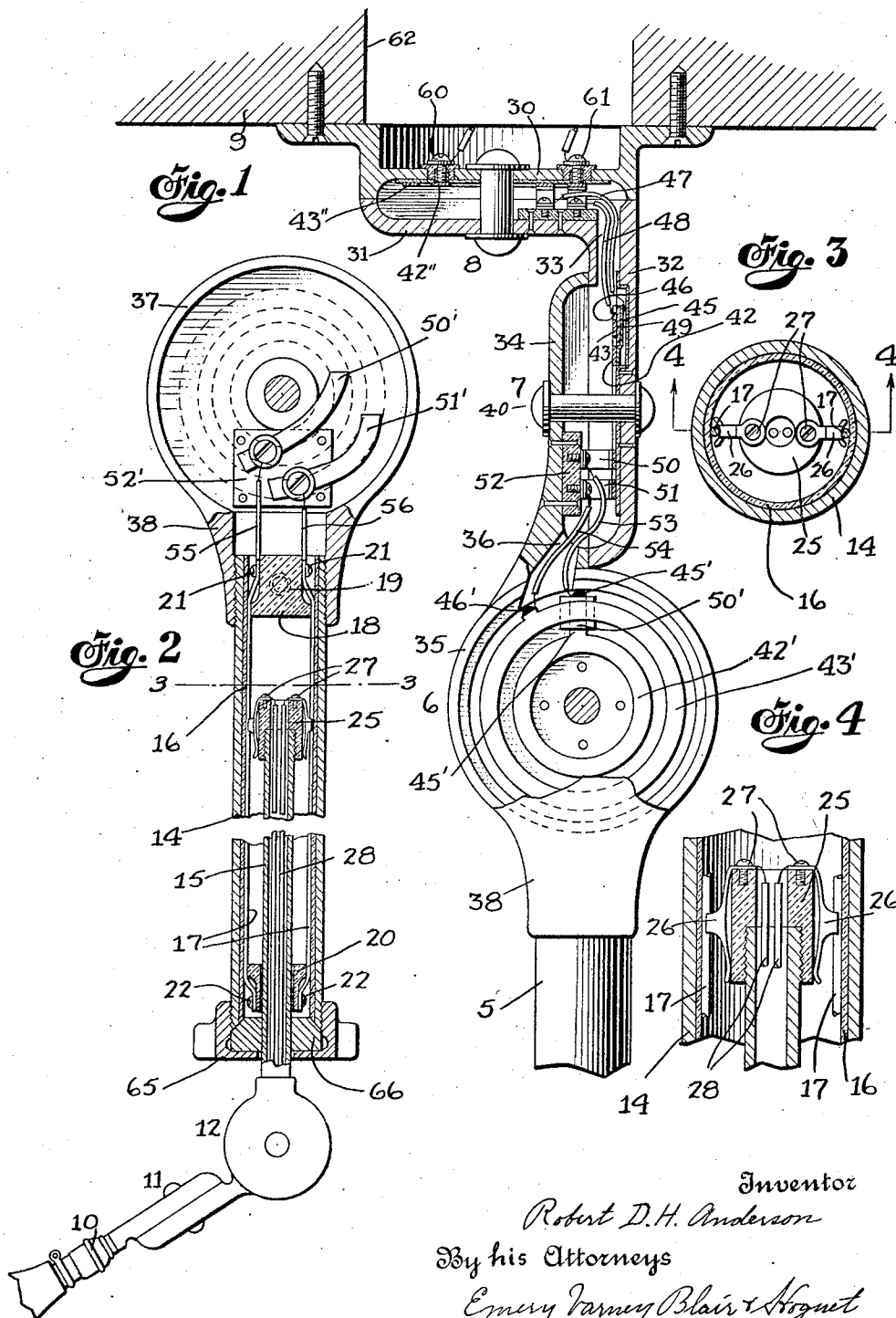
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R. D. H. ANDERSON

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ELECTRICAL FIXTURE

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Inventor

Robert D. H. Anderson

By his Attorneys

Emery Varney Blair & Hignett

UNITED STATES PATENT OFFICE.

ROBERT D. H. ANDERSON, OF NEW YORK, N. Y.

ELECTRICAL FIXTURE.

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The present invention relates to electrical fixtures and more particularly to adjustable hangers designed for supporting electric lights or other electric devices.

5 The object of the invention is to provide an improved adjustable hanger and more especially an extensible adjustable hanger having concealed electrical conductors.

10 The invention will be best understood from a description of a particular illustrative embodiment thereof, reference being had to the accompanying drawings for the purposes of disclosure, in which drawings—

15 Figure 1 is a view mainly in section of a hanger constructed in accordance with the principles of the invention;

Figure 2 is a sectional view of the extensible arm showing at the top the disc and the contact fingers carried thereby;

20 Figure 3 is a sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a sectional detail view showing the head secured to the upper end of the end telescoping member.

25 The hanger shown for the purposes of illustration comprises an extensible arm 5 and a plurality of hinge joints 6, 7, 8 connecting the same with a support 9, said hinge joints being so related to each other as to constitute a universal joint permitting universal swinging movement of the arm. At the lower end of the arm 5 a suitable connection is provided for an electric light or other current-using apparatus. The socket 30 10 may be made adjustable by providing between it and the lower end of the arm a plurality of hinge joints 11, 12, which joints are generally similar to the joints connecting the arm to the support.

40 As shown, the arm 5 comprises telescoping tubes 14, 15 to the lower end of the inner of which the lamp socket 10 is connected. The arm is shown as consisting of only two telescoping tubes, but obviously the number of tubes may be increased to provide a greater extensibility if desired. The outer tube 14 is provided with an insulating lining 16 within which longitudinal conductors 17, 17 are provided extending substantially the full length of the outer tube. As shown, the conductors 17, 17 consist of wires held taut between a fibre insulation block 18 or other suitable device secured in place in the upper end of the tube 14 as by screws 19, and a similar block 20 at the 65 lower end of the tube. The taut wires are

conventionally shown as secured to the respective devices by screws 21, 22. The inner sliding tube 15 is conveniently provided with a head 25 which supports spring contact conductors 26, 26 arranged to slidably engage the longitudinal conductors 17, 17. Binding screws 27, 27 engaging the spring contacts secure them in place and afford attachment for conductors, such as insulated fixture wires 28, 28, which extend from the upper end of the inner tube longitudinally therethrough to the lower end to carry current to the lamp socket 10.

As shown, three hinge joints 6, 7, 8 are 70 interposed between the support and the upper end of the extensible arm. Each joint comprises a pair of relatively rotatable discs having concave faces presented towards each other and engaging at their edges. The 75 discs may be of relatively thin cast metal or of pressed metal, preferably of such quality that the natural spring of the material will cause a desired yieldable friction at the edges of the disks when the pivot pins are headed 80 over as shown. The pivot pins are made tight enough to hold the joints in adjusted relation. The pin of joint 8 may be less tight than the others when the fixture is to be secured to a horizontal support because 85 of the vertical position of the hinge axis. One disc 30 of the first joint is formed to provide for attachment to the supporting ceiling wall or the like, which attachment may be made over a suitable outlet box 62 whence 90 conductors may lead to the fixture. The axes of the joints are preferably arranged at right angles to each other, and conveniently one disc of one joint is formed integrally with a disc of the next joint, the 95 integral member thus formed having a passageway therein for electric lead wires. As shown, the disc 31 of the joint 8 and the disc 32 of the joint 7 are integrally connected, a passage 33 being formed for lead 100 wires. The disc 34 of the joint 7 and the disc 35 of the joint 6 are similarly connected and formed with a passageway 36 for lead wires. The second disc 37 of the third joint is formed integrally with a coupling 105 member 38 which is adapted to receive the outer tube 14 of the arm.

The electrical connections of the three joints are similar. A description of one set will suffice for a complete understanding of all. Referring more particularly to the second joint 7, corresponding parts in 110

the other joints being similarly numbered but with primed reference characters, the discs are rotatably connected by a pivot pin 40 extending centrally therethrough. An insulating lining is placed within the disc 32 and on the inner face of this lining are supported a plurality of conductors 42, 43 concentric with the hinge pivot, only two being necessary in the particular device illustrated. The conductors are shown as complete rings having lateral projections 45, 46 to afford attachment for the leads 47, 48 through which current is supplied. Conveniently, the rings may be partially embedded in a phenol condensation product which will serve as insulation and will hold the rings in place. The projection 45 of the inner ring extends under the outer ring and is insulated therefrom by an interposed fibre 49 to facilitate convenient attachment of the lead 47 thereto. The opposing disc 34 carries a corresponding number of contact finger conductors 50, 51 insulated from each other and from the disc by an insulating support 52 and slidably engaging with spring pressure against the conductors 42, 43. The spring finger conductors 50, 51 of the joint 7 are shown as connected by leads 53, 54 to the conductors 42', 43' carried by the disc 35. In the joint 6 leads 55, 56 connect the spring fingers 50', 51' to the respective longitudinal conductors 17 of the tubular arm.

In the joint 8, in order to facilitate connections with the source of current, binding screws 60, 61 are provided on the upper face of the disc 30, which binding screws are suitably connected to the conductors 42'', 43'' of the joint 8. By this arrangement the hanger may be connected over an outlet box 62 and entirely concealed connection between the leads and the concealed conductors may be made.

Suitable means is provided for holding the telescoping tubes of the arm 5 in adjusted relation. A friction device is illustrated. A cap 65 is threaded on to the lower end of the outer tube 14, said cap having a central opening for the passage of the inner tube 15. In order to afford adjustable friction to support the inner tube in its adjusted position a split cone bushing 66 is arranged between the end of the outer tube and the adjustment cap, the bushing being of such material as to sufficiently grip the inner tube but designed to wear or abrade the same as little as possible. It will be noted that the conical surface of the bushing engages the corresponding conical end of the tube. The joints 11, 12 between the arm and the socket 10 are similar in construction to the joints 6, 7, 8 hereinabove described and therefore need not be further described nor shown in detail in the drawing.

Various possible embodiments may be made of the invention and various changes in the embodiment described may be made, all within the scope of the subjoined claims.

What I claim is:

1. An adjustable electrical fixture comprising a tubular member; a pair of pivotally connected concentric yieldable discs having adjacent concave faces; insulated conductors concentric with the pivot carried by one disc; insulated yieldable contact finger conductors carried by the other disc and contacting with the first mentioned conductors; a tubular member connected to one of said discs having therein longitudinally extending insulated conductors; a rod within said tube; insulated contact finger conductors carried thereby and having sliding contact with the longitudinally extending conductors.

2. An adjustable electrical fixture comprising pairs of pivotally connected discs of springy material, the discs of each pair presenting concave faces toward each other and meeting at the edges with yieldable pressure; insulated conductors concentric with the respective pivots carried by one disc of each pair; and insulated contact finger conductors carried by the other disc of each pair and having sliding contact with the respective concentric conductors, the discs of adjacent pairs lying in planes substantially at right angles to each other whereby in combination they form a universal joint, one disc of one pair being formed integral with one disc of an adjacent pair, the integral member so formed having a hollow connection with the lead wires carried therein and connecting the conductors of the respective discs.

3. An adjustable electrical fixture comprising a plurality of hinged joints having their pivots positioned at right angles to each other, each joint comprising spring discs having their circular edges in yieldable contact, one disc having a thin insulation lining one face thereof and a pair of annular conductors secured thereagainst, the other disc carrying a pair of spring fingers respectively engaging said annular discs with a yieldable contact, the pressure between the edges of the discs being relatively great and the pressure between the spring fingers and annular conductors being relatively light, whereby the frictional engagement of the discs may be sufficient to hold the parts in adjusted position and whereby the pressure of the electrical contact elements will not interfere with such action of the discs.

In testimony whereof, I have signed my name to this specification this 23rd day of March, 1922.

ROBERT D. H. ANDERSON.