May 3, 1938. H. A. STOCK ET AL 2,116,050

ADJUSTABLE SUPPORT FOR ELECTRIC LAMPS

Filed Feb. 5, 1937

Fig. 1.

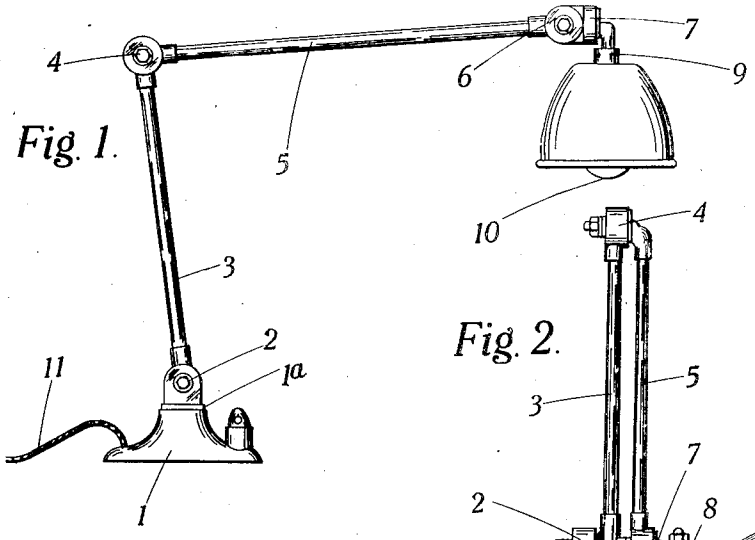
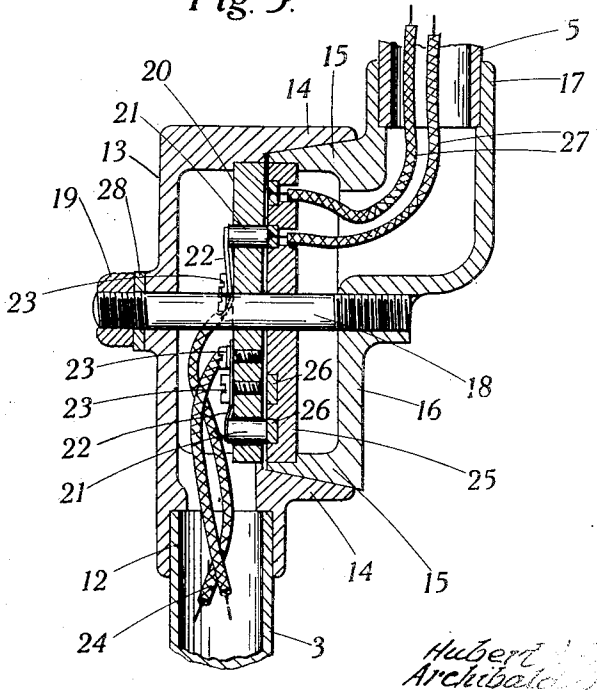


Fig. 2.

Fig. 3.



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Patented May 3, 1938 2,116,050

UNITED STATES PATENT OFFICE

2,116,050

ADJUSTABLE SUPPORT FOR ELECTRIC LAMPS

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Application February 5, 1937, Serial No. 124,318
In Great Britain February 14, 1936

3 Claims. (Cl. 285—1)

This invention relates to adjustable holders or supports for electric lamps and has for its object to provide an improved construction for this purpose which may be readily attached to, or supported on or by, a desk, wall, ceiling, machine or other fixture, in such manner that the lamp may be directed to throw a beam of light in any required direction.

The invention makes use of mechanical swivel joints which were known prior to this invention, incorporating electric contacts which provide for a continuous electrical connection through the joint between electric conductors on opposite sides of the joint.

With the above and other objects and advantages in view, as will appear from the following description an adjustable holder or support for electric lamps according to the invention comprises a plurality of tubular arms connected together, and to a lamp holder and a base member, by hollow swivel joints comprising cylindrical box-like inter-engaging male and female cone joint members permitting 360° relative angular movement, said lamp holder being electrically connected to the base member by discontinuous conductors contained in the hollow arms, and rotary electrical connectors in said hollow swivel joints.

According to a further feature of the invention the rotary electrical connectors comprise an insulating plate carrying concentric contact rings in one joint member, and an insulating plate carrying spring pressed contact members disposed at radii corresponding to said contact rings in the other joint member, said spring pressed contacts pressing on said contact rings when the members of the joint are fastened together in inter-engagement by a pivot pin.

Preferably the adjustable holder is built up from interchangeable tubular members having female cone joint members at one end and corresponding male cone joint members at the other end, whilst it may include a plurality of swivel joints whose respective swivelling axes are disposed in different planes.

Further, in the embodiment of the invention hereinafter described the hollow swivel joint members are provided with tube receiving sockets directed laterally in relation to the swivelling axis of the joint, whilst the pivot pin securing the joint members together passes through, and is screw threaded to receive a nut external to one of the joint members, by adjustment of which the stiffness of the swivel joint may be varied.

In carrying the invention into practice any number of tubular arms may be embodied in the holder, one end of a series of such jointed arms being connected to a suitable base, or to a wall plug, and the other end to the lamp holder proper.

Further, by including swivel joints where respective swivelling axes are disposed in different planes, the invention renders possible the construction of an extensible electric lamp holder or arm that can be readily adjusted in any desired position to throw a beam of light wherever required within the range of the arm.

In order that the invention may be clearly understood and readily carried into practice, it will now be more particularly described with reference to the accompanying drawing illustrating how it may be carried into practice. In the drawing:—

Figure 1 is an elevation of one construction of table or bench lamp according to the invention;

Figure 2 shows a modified construction of table or bench lamp with the lamp itself swivelled for movement in a plane at right angles to that permitted by the other swivel joints, and

Figure 3 is a sectional view to an enlarged scale of a swivel connecting joint according to the invention.

Referring to Figures 1 and 2, the lamp comprises a supporting base member 1 within which is mounted a rotatable member 1a adapted to rotate in a plane parallel to the bottom of the base and to which is articulated at 2 a tubular arm 3 which is in turn articulated at 4 to another tubular arm 5. The opposite end of the tubular arm 5 is articulated at 6 to a bracket 7 carrying the socket 9 of an electric lamp 10.

In the case of Figure 1 the lamp socket 9 is in fixed relation to the bracket 7, but in the case of Figure 2 the lamp socket 9 is articulated at 8 to the bracket 7. The axes of articulation at 2, 4 and 6 are parallel to one another, so that the bracket 7 (and lamp 10 in the case of Figure 1) is angularly adjustable only in a plane at right angles to the said axes of articulation. In the case of Figure 2, however, the axis of articulation at 8 is at right angles to the axis of articulation at 2, 4 and 6, which permits the lamp 10 to be angularly adjusted, at 8, in a plane at right angles to the adjustment permitted by the articulations 2, 4 and 6.

The electric leads 11 enter the base member 1, and are connected to the lamp socket 9 through the articulations 2, 4, 6 (and 8) in such manner that electrical continuity is obtained nothwithstanding movement of the articulations and with-

out twisting the electrical conductors between the base member 1 and the lamp socket 9.

This result is obtained by constructing the swivel joints 2, 4, 6 (and 8) in the manner illustrated in principle by Figure 3, which is a sectional view of the swivel joint at 4, between the arms 3 and 5 of the lamp.

Referring now to Figure 3, the swivel connecting joint comprises a pair of interengaged coaxial socket members 13, 16, which are each of substantially cylindrical box like form. The wall of the socket member 13 is extended to form a conically recessed female portion 14 which receives therein the male portion 15 formed by the coned outer wall of the socket member 16. The two socket members are held together by an axial pivot pin 18 screwed into the socket member 16, and a nut 19 bearing against the outside wall of the socket member 13.

The engaging male and female portions 14, 15 of the socket members 13 and 16 are offset from the axes of the tubular arms 3 and 5 to which they are respectively connected by the laterally projecting sockets 12 and 17, so that the two arms 3 and 5 can move angularly in relation to one another in parallel spaced planes.

In the socket member 13 is mounted an insulating disc 20 having holes in which slide radially spaced contact plungers 21, on the inner ends of which bear leaf springs 22 fastened to the disc 20 by screws 23 to which the electrical conductors 24 are connected.

In the mouth of the spigot 15 of socket member 16 is mounted another insulating disc 25 in the surface of which are inset a pair of concentric metal contact rings 26 which are located to make contact with the two radially spaced plungers 21. The contact rings 26 are connected to the electrical conductors 27 which pass through the tube 5.

A spring or other non-rotatable washer 28 may be provided under the nut 19 to enable the nut 19 to be tightened up to give any desired degree of stiffness of the swivel joint.

By the above construction it will be appreciated that a swivel joint is established, which not only functions mechanically, as such, to permit any desired angular adjustment of the members connected to the joint from 0° to 360°, but also functions in an equivalent manner as regards the electrical conductors carried by the connecting members, to the extent that the said conductors are electrically connected through the swivel joint in all positions of adjustment of the joint.

It will be obvious that although Figure 3 illustrates a specific construction for the articulation 4, suitably modified constructions operating on the same principle may be employed for the articulations at 2, 6 and 8, the supply leads 11 being connected to the conductors 24 through the ring and plunger contacts of the swivel joint 2, and the conductors 27 being connected to the conductors in the bracket 7 through the ring and plunger contacts of the swivel joint 6.

What we claim is:—

1. An extensible bracket for electric lamps and like appliances, including tubular arms connected for relative swiveling movement, a lamp socket bracket connected for swiveling movement to the free terminal of one of said arms, electric conductors wholly concealed within the arms, and means at the swiveling connection of each arm to provide uninterrupted electrical connections for the conductors throughout the length of the bracket, said means preventing any strain or twisting on the electrical conductors during any possible relative swiveling movement of the arms or lamp socket bracket.

2. A construction as defined in claim 1, wherein said means includes contacting members each connected to one end of the meeting arms to maintain electrical continuity of the conductors in all relative positions of the arms.

3. A construction as defined in claim 1, wherein the swiveling connections between the arms and the contacting members are supported on a common pivot.

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