

A. WUNDERLICH.
SUSPENSION DEVICE FOR ELECTRIC ARC LAMPS.
APPLICATION FILED MAY 10, 1906.

935,136.

Patented Sept. 28, 1909.
3 SHEETS—SHEET 1.

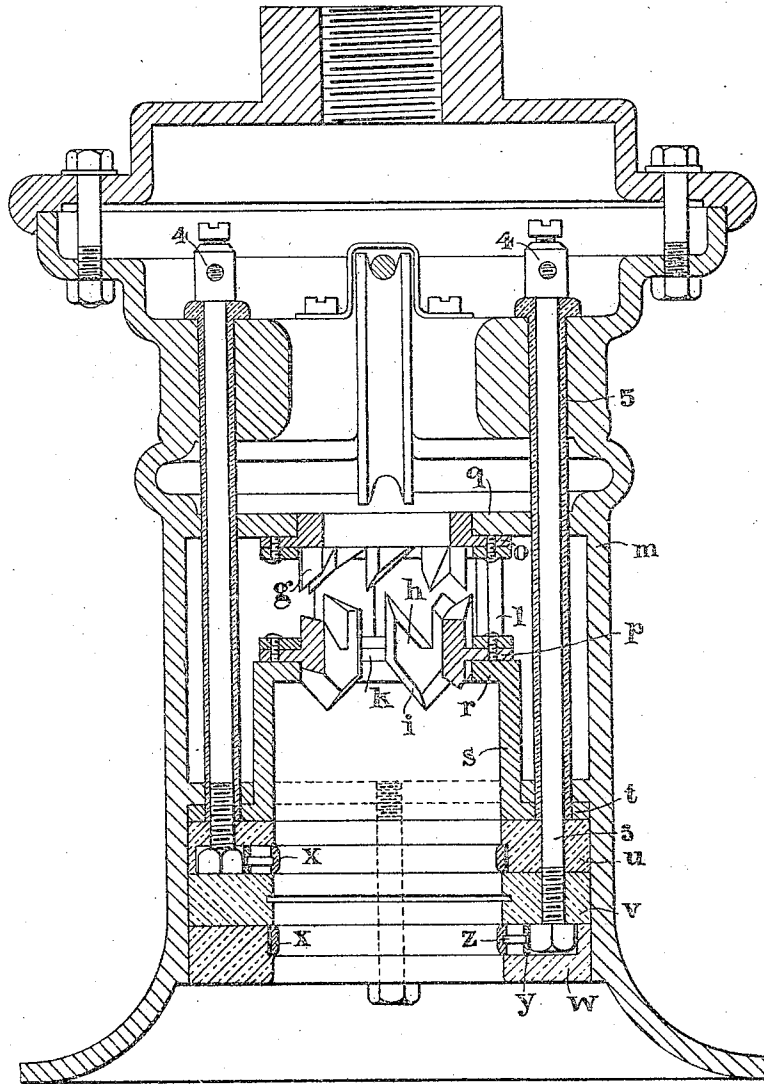


Fig. 1.

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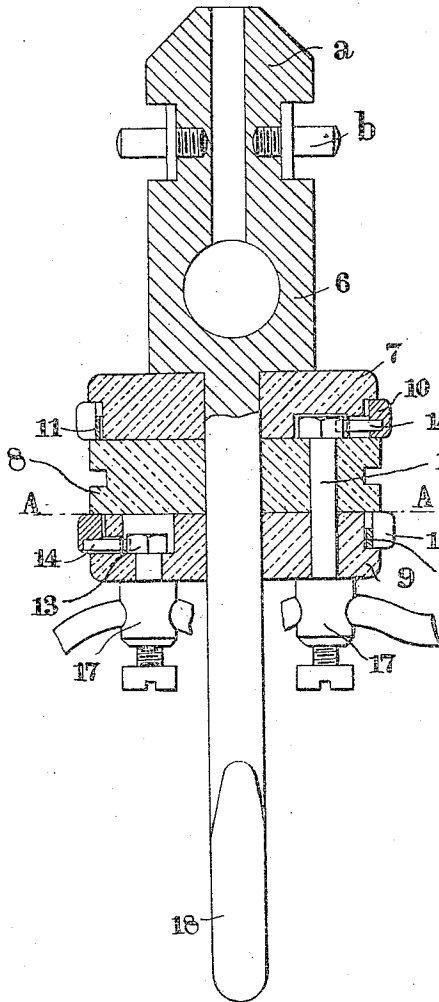


Fig. 3.

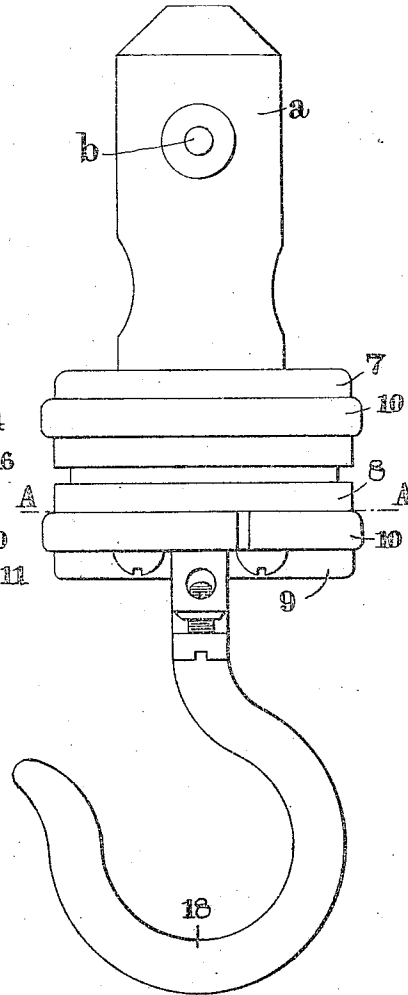


Fig. 2.

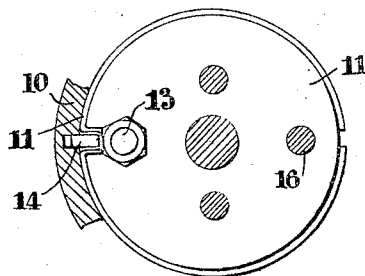


Fig. 4.

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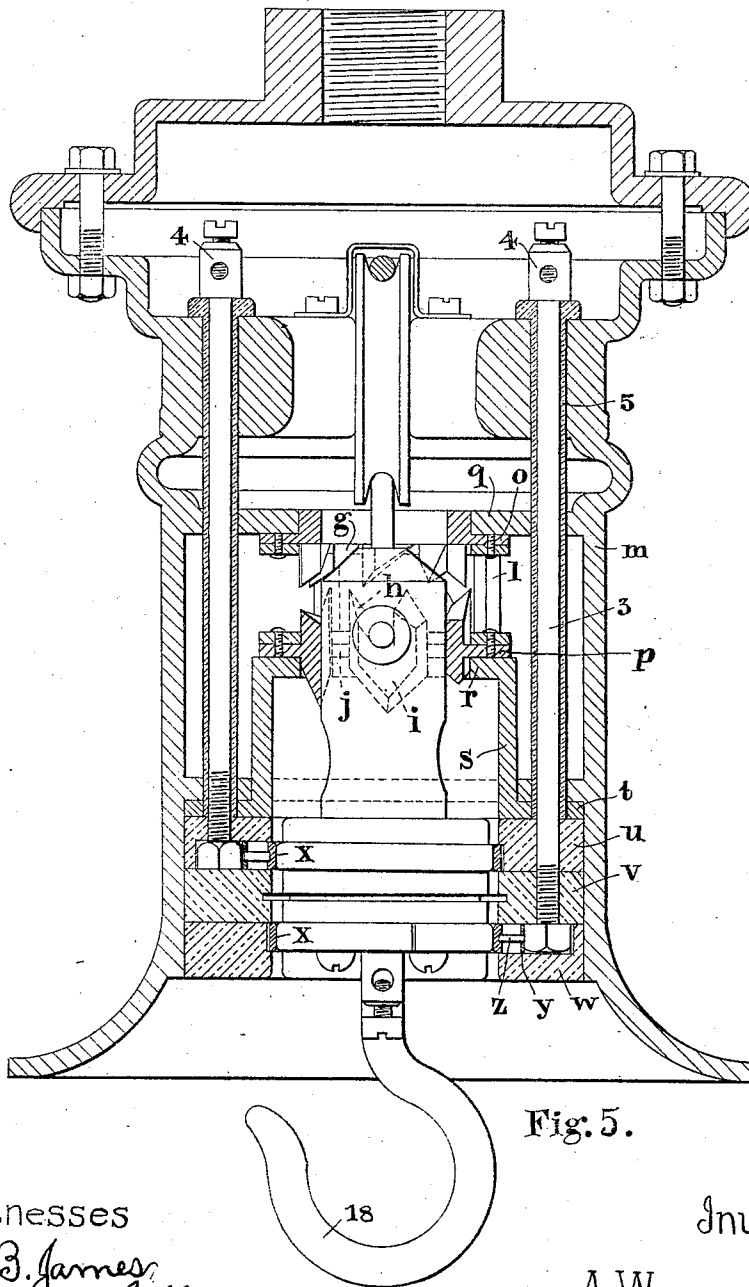


Fig. 5.

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UNITED STATES PATENT OFFICE.

ADOLPH WUNDERLICH, OF CROYDON, ENGLAND, ASSIGNOR TO THE LONDON ELECTRIC FIRM, OF CROYDON, ENGLAND.

SUSPENSION DEVICE FOR ELECTRIC-ARC LAMPS.

935,136.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed May 10, 1906. Serial No. 316,225.

To all whom it may concern:

Be it known that I, ADOLPH WUNDERLICH, a citizen of the United States of America, and residing at George Street, Croydon, in the county of Surrey, England, have invented certain new and useful Improvements in Suspension Devices for Electric-Arc Lamps, of which the following is a specification.

This invention relates to arc lamp suspension devices of the type by which when the lamp is simply raised by a winch an automatic electric contact is effected and the lamp is automatically suspended in such a manner as to relieve the winch cable or cord from the weight of the lamp, when in position; contact being automatically broken and the lamp automatically disconnected from the positive support when the cord or cable is slightly raised again and lowered.

This invention relates more particularly to arc lamp suspension devices of this type having a housing containing the contacts and also a rotatable member provided with supporting cams or slotted supports and an additional set of cams, the latter being adapted to be struck by projections on the lamp carrier, so that the rotatable member is rotated in order to bring the supporting cams in a position to receive the projections on the lamp carrier when the latter is again lowered slightly, the additional cams also being adapted to be again struck by the projections on the carrier when the latter is again raised slightly, so that the rotatable member is again rotated to move away the supporting cams from the path of the projections when the lamp is next lowered.

The object of the present invention is to so improve on the above mentioned type of arc lamp suspension device that not only is a positive direction of the projections in the lamp or carrier into or out of the supporting cams insured in whatever position the lamp may be when raised but also a sure and effective electric contact is obtained in a very simple manner, the arrangement comprising but few simply constructed parts capable of easy removal for repairs or substitution.

Referring to the accompanying drawings; Figure 1 is a sectional elevation of an arc lamp suspension hood or housing fitted according to the invention. Figs. 2 and 3 are exterior and sectional elevation of a contact piston and suspension hook employed ac-

cording to the invention. Fig. 4 is a sectional plan on A—A Fig. 5. Fig. 5 is a sectional elevation similar to Fig. 1 but with the contact piston in position.

In carrying out the invention the shank *a* of the lamp carrier is provided with projections such as pins *b*. The carrier is suspended on a wire or other cable *d* passed over a pulley *f* mounted in the hood or housing *m* and led to any suitable form of winding gear. A rotatable member is mounted on the housing so that it is free to rotate. This member comprises two superimposed flanged rings *o* and *p*, connected by a cage *l* screwed or otherwise secured to them. The flange of the upper ring *o* beds against a ledge *g* while the flange of the lower ring *p* rests on a ledge *r*, forming part of a bush *s* secured to another ledge *t*.

The lower ring *p* is provided on its under side with a set of directing cams *i* and on its upper side with a set of supporting cams *h*. The upper ring *o* is provided on its under side with a set of directing cams *g*.

Below the bush *s*, are three insulating rings *u*, *v*, *w*. In two of these contact rings *x*, *x*, are let in. Behind the rings *x*, are copper springs *y*, held in position by pins *z*, secured to nuts 2, into which rods 3, are screwed, the rods terminating in terminals 4, to which the usual leads are connected. The rods 3, are inclosed in sleeves 5, of insulating material.

The shank of the lamp carrier *a*, has a piston 6 (Figs. 2 to 4) made up of disks 7, 8, 9, of insulating material. In two of these, contact rings 10 are let in and behind them are copper strips 11, held by pins 14, connected to nuts 13, into which the screw 16 of terminals 17, are screwed, the terminals receiving the leads for the lamp which is suspended on the hook 18. The contact rings 10, are split spring rings, so that when the lamp carrier *a*, is pulled up into the housing and the projections *b*, are suspended on the supporting cams *h*, as hereinafter described, the rings 10 fit tightly in contact with the rings *x*, and good electrical contact is effected. It is obvious that more than two pairs of contact rings may be used if desired, the piston being suitably lengthened.

In operation, when the lamp is raised the pins *b* on the shank *a* of the carrier, first strike the directing cams *i* on the underside

of the lower ring *p*, slightly rotating the latter so that the pins *b* are thereby directed into grooves or intervals *h* between the cams *i*, and passing up said grooves strike the slant sides of the directing cams *g* on the underside of the upper ring *o*. The composite rotatable member is thereby again partially rotated with the result that when the cable *d* is slightly slackened the pins *b* drop onto the slant sides of the receiving cams *h* on the upper side of the lower ring *p* and after again slightly rotating the composite member, pass down the slant sides of the cams *h* until supported by the latter.

15 When the lamp is to be lowered, the cable *d* is first pulled so as to raise the pins *b* off the supporting cams *h* until they again strike the slant sides of the directing cams *g*, which in the last rotational movement of the rotatable member were brought above them. The rotatable composite member is thus once more caused to partially rotate, with the result that the next pair of intervals *h* are brought below the pins and when the cable is slackened the pins *b* pass down through the said intervals *h* and the lamp can be freely lowered.

Having thus described my invention what I claim as new and desire to secure as Letters Patent is:—

1. The combination with a lamp housing, of a cable, a lamp carrier carried thereby and having lateral projections, a composite rotatable member, means for supporting said member within said housing, said member comprising two superimposed rings, directing cams on the underside of the lower ring, supporting cams on the upper side of said ring, and directing cams on the underside of the upper ring, the lateral projections on the aforesaid lamp carrier being adapted to be guided by the said directing cams onto and clear of the said supporting cams, upon

manipulations of the cable, substantially as and for the purpose hereinbefore set forth. 45

2. The combination of a lamp housing, a composite rotatable member freely mounted therein comprising two superimposed flanged rings, directing cams on the underside and supporting cams on the upper side of the lower ring, directing cams on underside of the upper ring, a cage connecting said rings, bushings supporting them, contact rings within said bushings, and a lamp carrier having projections adapted to be guided by the aforesaid directing cams onto and clear of the aforesaid supporting cams, and a piston on said carrier provided with contact rings, corresponding to and adapted to engage with the contact rings in the aforesaid bushings when the aforesaid projections are on the aforesaid supporting cams. 50 55 60

3. The combination of a lamp housing, an oppositely rotatable member freely mounted therein and comprising two superimposed flanged rings, directing cams on the underside and supporting cams on the upper side of the lower ring, directing cams on the upper side of the upper ring, bushings for supporting said rings, a cage connecting said rings with said bushings, contact rings within said bushings, a lamp carrier having projections adapted to be guided by said directing cams or to put clear of the supporting cams, and a piston on said carrier provided with contact rings corresponding to and adapted to engage with the contact rings in said bushings when the projections are on the supporting cams. 65 70 75

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 80

ADOLPH WUNDERLICH.

Witnesses:

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