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PATENTED JULY 17, 1906.

A. ROMAIN & J. D'AYGUESVIVES.
SUPPORT FOR INCANDESCENT ELECTRIC LAMPS.

APPLICATION FILED SEPT. 6, 1904.

Fig. 1

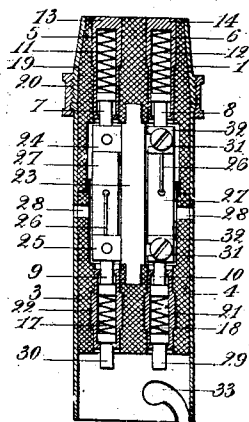


Fig. 3

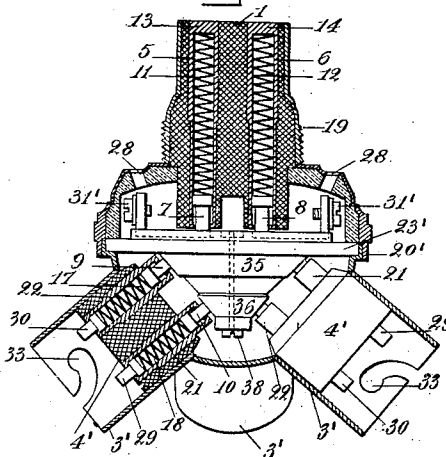


Fig. 2

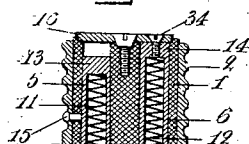


Fig. 4

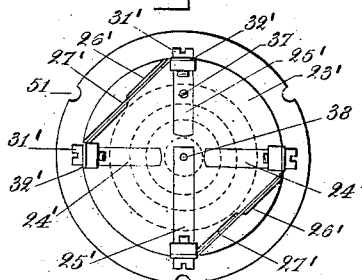


Fig. 5

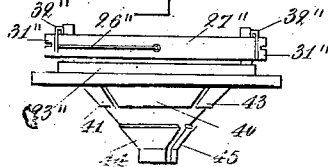


Fig. 7

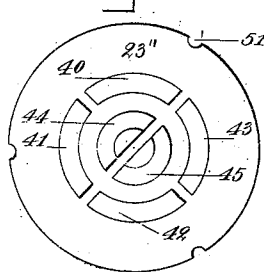
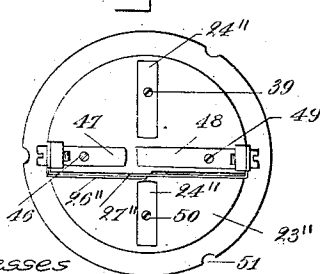


Fig. 6



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SUPPORT FOR INCANDESCENT ELECTRIC LAMPS.

No. 826,359.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ADOLPHE ROMAIN and JEAN D'AYGUESVIVES, citizens of France, residing at Paris, France, have invented new and useful Improvements in Supports for Incandescent Electric Lamps, (for which an application for a patent of addition of French Patent No. 230,048, dated March 29, 1902, has been filed in France on September 17, 1903, which has not yet been delivered,) of which the following is a specification.

In Patent No. 756,412, of April 5, 1904, certain improvements are described and claimed in supports for incandescent electric lamps, said improvements relating, on the one hand, to the special manner in which the connection of the current is effected in the case of a screw-support and, on the other hand, to the general construction of the support whether it be a screw-lamp or one with a bayonet-joint, such construction allowing in particular of a support being arranged for a multiple joint without its being necessary to make splices.

This invention has for its object various modifications in the construction of the said supports with the object of adding to the advantages obtained by the improved supports forming the object of Patent No. 756,412—those of great simplicity of construction, capability of rapid mounting, total suppression of wires placed in the interior of the support, and in the case of a support for a multiple joint the possibility of grouping in series the lamps having this joint.

To allow of the invention being better understood, reference will now be made to the accompanying drawings, in which, as an example, Figure 1 is a view, in partial sectional elevation, of a bayonet-joint support for a single lamp; Fig. 2, a view, in sectional elevation, of the head of a screw-support analogous to the foregoing; Fig. 3, a view, in partial sectional elevation, of a support arranged for a multiple joint comprising four lamps; Fig. 4, a plan view of the part effecting the distribution of the current to the four lamps of the joint mentioned in the foregoing figure, said lamps being mounted in parallel; Figs. 5, 6, and 7 are respectively an elevation, plan view, and view from beneath of the same part arranged for effecting the distribution of the current to four lamps mounted in series.

The same reference-numerals indicate the same parts in the various figures.

The bayonet-joint support shown in Fig. 1 comprises an insulating portion 1, in which two metallic cylinders 5 and 6, the solid ends 13 and 14 of which touch the upper surface of the part 1, are mounted in any suitable manner. Two pistons 7 and 8, constantly pushed outwardly by the action of springs 11 and 12, are mounted in the interior of these cylinders. These pistons bear on the terminals 24 of a bipolar - circuit - breaking arrangement arranged absolutely similarly to the one described in Patent No. 756,412. The lower terminals 25 of this circuit-breaker come in contact with two pistons 9 10, arranged in the interior of two metal cylinders 21 22, mounted in an insulated portion 4 in the same manner as cylinders 5 6. The ends of the cylinders 21 22 allow pistons 29 and 30 to pass, which pistons are subjected, with the pistons 9 and 10, to the action of springs 17 and 18, which push them constantly toward the outside.

The whole of the insulated portions 1 and 4 and of the circuit-breaking arrangement which connects them is firmly held in the following manner: The portion 1 is fitted into a truncated conical socket 19, the base of which is threaded, while the portion 4 is fitted into a shell 3, connected with the socket 19 by means of a threaded ring 20. Finally the support has holes 28, such as are provided in Patent No. 756,412, for allowing the gas to escape which arises from the fusion of a lead plug in case of a short circuit. Under these conditions of arrangement it is evident that the improved support hereinbefore described has the following improvements on the one which is shown in Fig. 4 of the drawings accompanying Patent No. 756,412. The screw-threaded rods 7 and 8 of the support described in Patent No. 756,412 are replaced by the pistons 7 8, the contact of which with the terminals 24 of the circuit-breaker is absolutely insured, owing to the pressure of the springs 11 12. The supply of current to the latter, which in the support described in Patent No. 756,412 was effected by means of wires 17 and 18, mounted on angle pieces or channels 9 and 10, is now effected in a much more certain manner, doing away with all the

wires in the interior of the support by means of the double pistons 9 30 and 10 29. The result is a very great simplicity in the mounting of the apparatus, absolute certainty in its working, and a reduction of almost one-quarter in the length of the apparatus, which is a particularly advantageous result when it is desired to mount the lamps in a multiple joint and provide them with individual circuit-breakers. It is important to point out here that the inventive idea which has caused the threaded rods 7 and 8, the angle-pieces 9 and 10, and the wires 17 and 18 (indicated in Patent No. 756,412) to be replaced by the pistons 7 8 and 9 10 is based on the fact that the contacts are made absolutely certain, as they are made by current-taking blocks which are held constantly pressed against the terminals of the circuit-breaker, and that consequently the arrangement of spring-pistons, represented as an example in the accompanying drawings, might be replaced by any other similar arrangement able to insure pressure-contacts against the terminals 24 and 25 of the circuit-breaker by fixing at the lower extremity of the cylinders 21 22 small metal strips bent back in a U form, and thus forming pressure-contacts against the terminals 24 and 25 of the circuit-breaker. Any way the characteristic feature of this improvement is to place the terminals of the circuit-breaker in communication with the wires of the working circuit and with the wires of the lamp by the intermediary of spring-blocks arranged in any suitable manner (spring-pistons, bent strips, or the like) in order that they may be maintained constantly pressed against the terminals of the circuit-breaker.

The screw-support described in Patent No. 756,412 comprises naturally the same improvements as those which have been described in connection with a bayonet-support. It retains, as in the case of Patent No. 756,412, the current-taker at the side; but this current-taker has been further simplified, as is shown in Fig. 2 of the drawings accompanying the present application. The metallic side piece 15 for taking current in the case of Patent No. 756,412 is here replaced by a screw with a countersunk head 15, buried in the threaded socket 2 and conveying current to the internal cylinder 5. As regards the second cylinder 6 the communication with the other current-taking terminal is insured by a screw 34, buried in the upper conducting-plate 16 and engaging in the end 14 of the said cylinder. The simplicity of mounting and the security of working of a screw-support arranged under these conditions is sufficiently evident without its being further insisted on.

The multiple connection shown in Fig. 3 of the accompanying drawings comprises an upper part arranged absolutely in the same manner as in the case of a support for a single lamp. This upper part is connected with the lower part, carrying the lamp-sockets by means of a peculiar piece. (Shown in elevation in Fig. 3 and in plan view in Fig. 4.) This piece is arranged in the following manner: In a portion of insulating material 23' of conical form and provided with a large circular base two metallic strips 24', constituting two of the poles of a bipolar circuit-breaker arranged as in the case of Fig. 1, are placed, the other two poles of said circuit-breaker being constituted by metallic strips 25', similar to the foregoing. The strips 24' when once the support is completely mounted come in contact with the pistons 7 and 8, while the strips 25' communicate, respectively, one of them with a metallic ring 35 by means of a screw 37, passing through the insulating material of the portion 23', the other with a ring 36, similar to the foregoing, by means of a screw 38. The intermediate piece 23' thus arranged is fixed in any suitable manner on the lower part, carrying the lamp-sockets, for instance, by means of a pressure-screw arranged on the ring 20' of the said part and engaging in lateral notches 51 in the part 23'. Under these conditions all the pistons 9 of the sockets receiving the lamps of the joint rest on the ring 35, and all the pistons 10 of these same sockets rest on the ring 36. It follows from this that the lamps of this multiple joint are grouped in parallel, the current arriving, for instance, by the piston 7 passing by the terminal 24', circuit-breaker 26', terminal 25', and screw 37 to the ring 35, circulating through the lamps, which return it to the ring 36, from whence it returns to the discharge-piston 8' by the screw 38, terminal 25', circuit-breaker 26', and terminal 24'. Consequently if each of the lamps of such a joint be provided with a support having a circuit-breaker similar to the one which is shown in Fig. 1 one of the lamps might be extinguished without the other three ceasing to give light.

It is immediately evident that the improved arrangement distributing the current to the lamps of a joint has all the advantages which have been hereinbefore enumerated with regard to the support for a single lamp; and, further, it enables the lamps of the said joint to be grouped in series by modifying slightly the arrangement of the part carrying the circuit-breaker, as shown in Figs. 5, 6, and 7 of the accompanying drawings.

The pistons 7 and 8 in this case come in contact with the two insulated metallic strips 24'', communicating, respectively, by the screws 39 and 50 with two insulated me-

tallic segments 40 and 42, cut out in a ring similar to the ring 35 of the previously-described support. This ring comprises two other similar segments 41 and 43, communicating, respectively, by means of screws 46 and 49 with two insulated metallic strips 47 and 48, interconnected by a circuit-breaker 26" identical with those already described. Each of the pistons 9 of the sockets receiving the lamps of the joint comes in contact with one of the segments 40 41 42 43, while the pistons 10" of two adjacent lamps come in contact two by two with one of the two insulated metallic segments 44 45, arranged at the lower extremity of the part 23". Under these conditions of arrangement the four lamps of the joint are grouped in series. In fact, the current arriving, for instance, by the strip 24" passes by the screw 39 to the segment 40, passes through the first lamp and into the segment 44, which introduces it to the second lamp, whence it passes by the segment 44, which conveys it to the circuit-breaker 26" by the screw 46 and the strip 47. The circuit-breaker then conducts it to the strip 48, whence it passes to the segment 43 by the screw 49 and so into the third lamp. It emerges therefrom by the segment 45, which introduces it to the fourth lamp, from whence it returns finally to the exit-strip 24" by the intermediary of the segments 42 and the screw 50.

The grouping in series of the lamps of a multiple joint enables a very appreciable industrial result to be obtained. In fact, it is well known that lamps grouped in parallel work individually under the voltage of the working circuit, say, generally at a voltage of from one hundred and ten to one hundred and fifteen volts. With lamps grouped in series, on the contrary, each of them works at a voltage equal to the voltage of the working circuit divided by the number of lamps of the joint—say about twenty-eight volts in the case of four lamps—and this method of working enables very great economy in the expenditure in electricity to be obtained. Of course in the case of supports for multiple joints, similarly to what may be done in the case of such a support for a single lamp, the pistons 7 8 and 9 10 may be replaced by the bent-back metallic strips which have been hereinbefore specified in the description of the support for a single lamp. Supports for multiple joints may also be made with screwed sockets taking the current from the side, such as has been hereinbefore specified and shown in Fig. 2 of the accompanying drawings. It is also evident that this method of grouping in series the lamps of a joint by means of segments 40, 41, 43, and 44 45 is applicable not only where the said segments are arranged in two concentric circles, but

also where these segments are arranged in a straight line, which application is particularly interesting in the case of lines of lamps, such as the foot-lights in a theater, for instance.

We declare that what we claim is—

1. A support for incandescent electric lamps comprising an upper portion adapted to be connected with the wires of the working circuit, a lower portion, means thereon for supporting a lamp, a middle portion, means carried by said middle portion for connecting electrically and in a removable manner the upper and lower portions, said means comprising a circuit-breaker and an external coupling-ring joining together the three portions, substantially as described.

2. A support for incandescent electric lamps comprising an upper insulated portion, two resilient contacts in said portion, said contacts each consisting of a metallic cylinder, a metallic piston in said cylinder and a spring in said cylinder for normally pressing the piston outwardly; a lower insulated portion, a plurality of shells carried thereby, two resilient contacts in each shell each contact comprising a metallic cylinder, a piston in each end thereof and a spring in the cylinder for pressing the pistons outwardly, a middle portion including two insulated contact-plates coacting respectively with the two pistons of the resilient contacts in the upper portion, two insulated contact-rings coacting respectively with one of the two upper pistons of the resilient contacts in each shell, and two insulated contact-plates respectively connected electrically with one of said rings, circuit-breakers joining the two last-named contact-plates with the first-mentioned contact-plates and an external coupling-ring joining together the three portions substantially as described.

3. A support for incandescent electric lamps comprising an upper insulated portion, two resilient contacts in said portion, each contact comprising a metallic cylinder, a piston therein, and a spring in the cylinder pushing said piston outwardly; a lower insulated portion, a plurality of shells carried thereby, two resilient contacts in each shell, each contact comprising a metallic cylinder, a piston in each end thereof and a spring in the cylinder forcing the pistons outwardly from the cylinder, a middle portion including two insulated contact-plates coacting respectively with the two pistons of the resilient contacts in the upper portion; two parallel sets of segments of rings forming a plurality of insulated contacts, the segments of the first set coacting respectively with one of the two upper pistons of the resilient contacts in each shell, and two of said segments being

electrically connected to the two aforesaid
contact-plates, while the segments of the sec-
ond set connect two by two the other of the
said pistons; insulated contact-plates, con-
5 nected respectively to the remaining seg-
ments of the first set, circuit-breakers joining
the last-named contact-plates together two
by two and an external coupling-ring joining
together the three portions, substantially as
10 described.

In testimony whereof we have signed our

names to this specification in the presence of
the subscribing witnesses.

ADOLPHE ROMAIN.
JEAN D'AYGUESVIVES.

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