

(No Model.)

E. WESTON.

ADAPTER OR PLUG FOR INCANDESCENT LAMP CIRCUITS.

No. 480,900.

Patented Aug. 16, 1892.

Fig. 1.

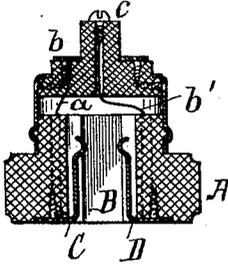


Fig. 2.

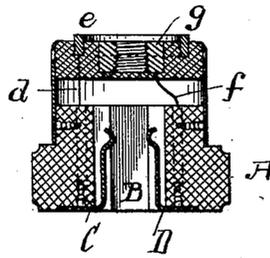


Fig. 3.

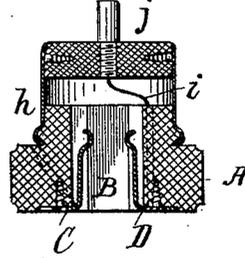


Fig. 4.

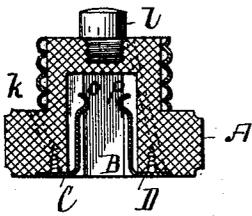


Fig. 6.

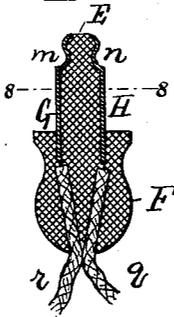


Fig. 5.

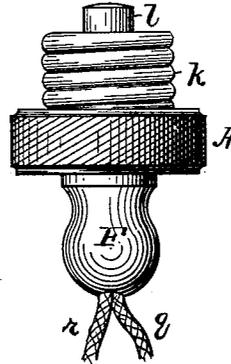


Fig. 7.

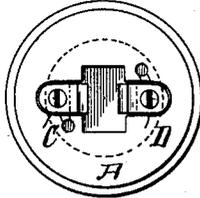


Fig. 8.

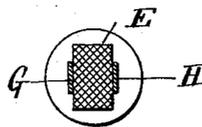
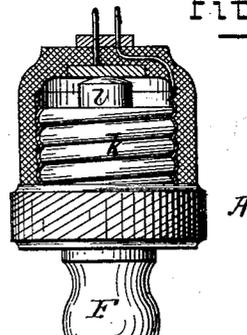
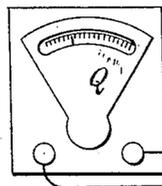


Fig. 9.



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EDWARD WESTON, OF NEWARK, NEW JERSEY.

ADAPTER OR PLUG FOR INCANDESCENT-LAMP CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 480,900, dated August 16, 1892.

Application filed March 21, 1892. Serial No. 425,706. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WESTON, of Newark, Essex county, New Jersey, have invented a new and useful Improvement in Adapters and Plugs for Incandescent-Lamp Circuits, of which the following is a specification.

The object of my invention is to provide a simple and convenient means whereby the terminals of electrical measuring-instruments may be connected in an incandescent or glow lamp circuit at any lamp, so that at any point on the circuit where a lamp is situated current measurements may be made. The great advantage of this plan is that it affords a simple and convenient way of inspecting the electrical condition of a circuit without requiring any artificial interruption of said circuit or rendering it necessary for the inspector to go to special points to find terminals at which to connect his instrument.

The invention consists, first, in a device which I term an "adapter," and which is so constructed that it may be applied to the fixed portion of an incandescent-lamp socket, and hence may be substituted for the lamp after said lamp is removed. The adapter may vary in construction, according to the particular lamp-socket to which it is intended to be applied. Thus, as will hereinafter be explained, I use one form of adapter for a Thomson-Houston socket, another form for an Edison socket, and so on, the adapters differing among themselves in respect to the particular construction which suits each one for a given socket in the same way as the lamps themselves differ. Each adapter is provided with two circuit-conductors having their inner extremities disposed to make electrical connection with the circuit-terminals in the stationary coil of the lamp.

The invention also consists in a plug or holding device which carries the circuit-terminals through which circuit is closed through a measuring-instrument and which is so constructed as to engage with the adapter, so that the terminals in the plug shall make electrical contact with the conductors in the adapter.

In the accompanying drawings, Figures 1, 2, 3, and 4 represent sectional views of different forms of adapters belonging to different types of lamps, as will be hereinafter explained. Fig.

5 is an exterior view of an adapter with the movable plug in place. Fig. 6 is a longitudinal section of the movable plug, showing the terminals of wires from the measuring-instrument connected thereto. Fig. 7 is a bottom view of the adapter shown in Fig. 4, and Fig. 8 is a sectional view on the line 8 8 of Fig. 6. Fig. 9 shows the adapter and plug in place in the fixed portion of the lamp-socket.

Similar letters of reference indicate like parts.

The form of adapter shown in Fig. 1 is suited to a lamp-socket of the Weston type, that in Fig. 2 belongs to a socket of the Thomson-Houston type, that in Fig. 3 belongs to a socket of the Westinghouse type, and that in Fig. 4 belongs to a socket of the Edison type.

It is well known that all ordinary incandescent-lamp sockets are made in two parts, one part being permanently connected to the lamp and the other usually to the supporting-fixture, and that when these two parts are put together circuit is closed through the lamp. It is to be understood that my adapter takes the place of that part of the socket which is ordinarily attached to the lamp, so that it fits into the fixed or stationary part of the socket just as the lamp itself fits therein. All that is necessary, therefore, is to remove the lamp and substitute the adapter.

The adapter preferably consists of a plug A of insulating material, such as of hard rubber, having a central opening B, in which are fixed two contact-springs C and D. These contact-springs are connected, respectively, to fixed contact-plates, which are disposed on the exterior of the adapter and so arranged as to make contact with other plates arranged in the fixed socket to which the adapter may be suited. Thus in the adapter belonging to the Weston system, Fig. 1, the contact-spring C connects by wire *a* to plate *b*, and contact-spring D connects by a wire *b'* to the screw-plug *c*. The screw-plug *c* and the plate *b* make contact with the circuit-terminals when the adapter is put in place. In the Thomson-Houston form (shown in Fig. 2) the spring C connects by wire *d* to a plate *e*, and the contact-spring D connects by wire *f* to a threaded nut *g*. The other plate *e* and the nut *g* make contact with the circuit-terminals when the

adapter is in place. In the Westinghouse construction (shown in Fig. 3) the contact-spring C connects by wire (dotted lines) with the cylindrical plate *h*. The spring D connects by wire *i* to the pin *j*. Here the plate *h* and the pin *j* meet the circuit-terminals when the adapter is in place. In the Edison construction (shown in Fig. 4) the spring C connects by a wire (dotted lines) with the screw-threaded plate *k*. The spring D connects by wire (dotted lines) with a pin *l*. Here the plate *k* and the pin *l* meet the circuit-terminals when the adapter is in place. The plug shown in Fig. 6 is made of insulating material and is formed with a body portion E and a knob or handle F. The body portion E is flattened on opposite sides and has applied to said sides two contact-plates G and H. On opposite sides of said body portion are indentations *m* and *n*, and the plates G and H are correspondingly indented to fit therein.

In operation the body portion E of the plug is inserted into the opening D of the adapter, so that the plate G makes contact with the plate C and the plate H makes contact with the plate D. A bent-out portion *o* of the plate C then enters the indentation *m* of the plate G, and a similar bent-out portion *p* of the plate D enters the indentation *n* of the plate H. In this way the plug is held in place after it is inserted. It will be apparent, therefore, that when said plug is introduced into the adapter it closes circuit from one contact, as *l*, Fig. 4, through the contact-plate D to contact-plate H on the plug, and then to the circuit-wire *g*, and so to the measuring-instrument, and then back by circuit-wire *r* to plate G, plate C, and contact-plate *k*. The closing of the circuits in the other adapters will be easily traced without further description.

The way in which I propose to use this device in practice is as follows: The inspector will be provided with a suitable measuring-instrument having connected to its terminals the plug shown in Fig. 6. He will also have with him as many different kinds of adapters as there are different sorts of lamps in use on the circuits which he may be called upon to examine. On reaching a given circuit he notes the kind of lamp in place, takes off one lamp wherever may be most convenient, and in place of the lamp inserts the proper adapter. Thus if it is an Edison lamp he will put in an adapter suited to the Edison form, such as is shown in Fig. 4. If it happens to be a Westinghouse lamp, he will put in an adapter suited to the Westinghouse form, as shown in Fig. 3, and so on. This is the work of a few seconds. He then inserts his plug, so establishing circuit from the line through the instrument Q, Fig. 9, and makes whatever measurement he desires. He then removes his plug and adapter and replaces the lamp.

It will be noted that by simply turning the adapter in its socket or placing it therein so that the plate H comes in contact with the

plate C and the plate G with the plate D, I can reverse the poles, and thus change the direction of the current through the instrument, as may be desired.

It is to be understood that I do not limit myself to the precise arrangement of contact-springs C D as shown in the several forms of adapters here illustrated; nor, in fact, to any particular arrangement of contacts between the plug and the adapter. Obviously these may be varied in a great many ways. Thus I may use springs in the adapter and fixed plates on the plug, or fixed plates in the adapter and springs on the plug, or fixed plates on the adapter and one spring and one fixed plate on the plug, and so on through a variety of possible arrangements, which will readily suggest themselves to any electrical workman. It is also, of course, to be understood that I do not limit myself to the four forms of adapters here introduced simply for purposes of illustration, because my invention is of course applicable to any form of incandescent-lamp socket, the circuit connections in the adapter being modified to the same extent as the circuit connections in the lamp.

By the term "adapter" as herein used I mean a device in the form of a block or plug, preferably made of insulating material and carrying two circuit-conductors, and also so constructed as to be applied to the stationary portion of an incandescent-lamp socket.

By the term "plug" or "holding device" as hereinafter used I mean a body, preferably of insulating material, carrying circuit-terminals communicating with a measuring-instrument and constructed to engage with an adapter.

By the term "incandescent lamp" I mean any form of electric lamp in which the light is produced by the incandescence of a conducting-body, and by the term "incandescent-lamp circuit" I mean a circuit including such lamps.

I claim—

1. An adapter constructed detachably to engage with the fixed or stationary portion of an electric-lamp socket and provided with two circuit-conductors having their inner extremities disposed to make electrical connection with the circuit-terminals in said stationary socket, in combination with a plug or holding device also provided with circuit-terminals and constructed to engage detachably with said adapter, so that the terminals in said holding device shall make electrical contact with the conductors in said adapter.

2. An adapter constructed detachably to engage the stationary or fixed portion of an electric-lamp socket and provided with two circuit-conductors having their inner extremities disposed to make electrical connection with circuit-terminals in said stationary socket and their outer extremities arranged in an opening or recess, in combination with a plug or holding device provided with cir-

cuit-terminals and adapted to enter said recess, the circuit-terminals on said plug then making electric contact with the circuit-terminals in said recess.

5 3. An adapter constructed detachably to engage the stationary or fixed portion of an electric-lamp socket and provided with two circuit-conductors having their inner extremities disposed to make electrical connection
10 with the circuit-terminals in said socket and their outer extremities in the form of springs placed in proximity one to the other, in combination with a plug or holding device provided with circuit-terminals and adapted to
15 enter between said springs, the circuit-terminals on said plug then making electrical contact with said springs.

4. An adapter constructed detachably to engage the stationary or fixed portion of an electric-lamp socket and provided with two circuit-conductors having their inner extremities disposed to make electrical connection
20 with the circuit-terminals in said stationary socket and their outer extremities, in the form of leaf-springs, placed in proximity one to the
25 other, in combination with a plug or holding device provided with circuit-terminals and adapted to enter between said springs, the circuit-terminals on said plug then making
30 electrical contact with said springs, in combi-

nation with a means of detachably connecting said plug and said springs.

5. As a new article of manufacture, an adapter of insulating material containing two circuit-conductors with exposed terminals, 35 one pair of said terminals being disposed in a recess in said adapter, and a plug of insulating material carrying exposed circuit-terminals and adapted to enter said recess.

6. As a new article of manufacture, the 40 adapter A, of insulating material, having a recess B and containing two circuit-conductors having terminals CD arranged in said recess B, in combination with the plug F, having the fixed circuit-terminals G H and adapted to 45 enter said recess B.

7. As a new article of manufacture, the adapter A, of insulating material, having the recess B and containing two circuit-conductors having the terminals C D in said recess 50 B and provided with projecting ribs or corrugations *o p*, in combination with the plug F, of insulating material, adapted to enter said recess B and provided with circuit-terminals G H, having the indentations *m n*, adapted to receive 55 said corrugations or projections *o p*.

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Witnesses:

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