April 8, 1924.

1,489,283

H. C. SMYTH, JR., ET AL

ADAPTER FOR ELECTRIC SOCKETS

Filed Sept. 8. 1922

Fig. 1

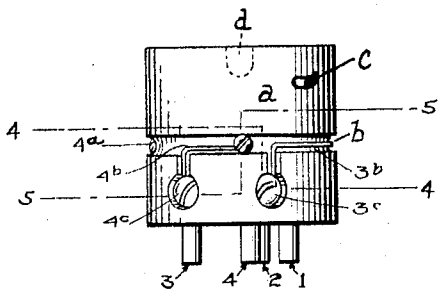


Fig. 2

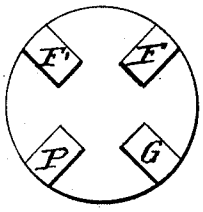


Fig. 5

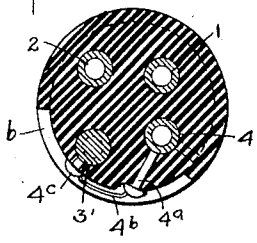


Fig. 3

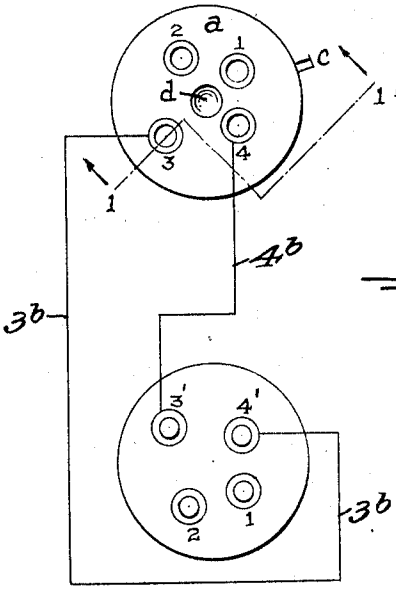


Fig. 4

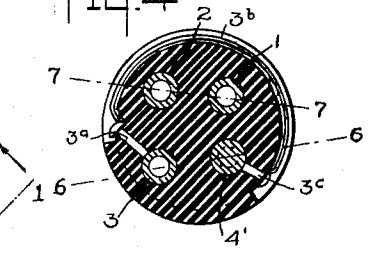


Fig. 6

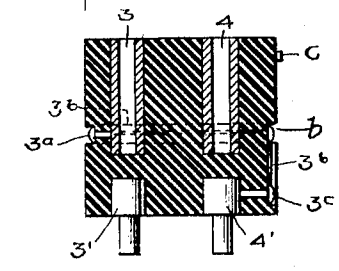
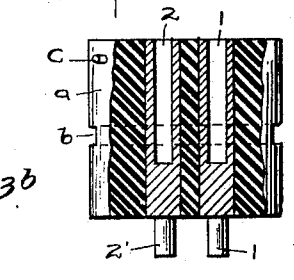


Fig. 7



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UNITED STATES PATENT OFFICE.

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ADAPTER FOR ELECTRIC SOCKETS.

Application filed September 8, 1922. Serial No. 587,013.

To all whom it may concern:

Be it known that we, HERBERT C. SMYTH, JR., and E. HOBART MOLSON, citizens of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Adapters for Electric Sockets, of which the following is a specification.

Our invention relates to adapters to be inserted in Marconi-type sockets whereby "Aeriotron" bulbs may be used in connection with wireless telephone sets without disturbing or changing the wiring, and which, when removed, will leave the Marconi socket ready to receive the regular audion bulb.

In the drawings—

Figure 1 is an elevation of the adapter.

Figure 2 is a diagrammatic illustration of the contacts in a Marconi socket.

Figure 3 is a diagram including top and bottom views of the adapter and illustrating the wiring connections between the contacts.

Figure 4 is a horizontal sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a horizontal sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a vertical sectional view taken on the line 6—6 of Figure 4.

Figure 7 is a vertical sectional view taken on the line 7—7 of Figure 4.

The "Aeriotron" bulb as is well known has a filament, a plate and a grid but differs from the regular audion bulb in its connections which are in the form of four pins, rather irregularly spaced on the base, two for the filament, one for the grid and one for the plate. The ordinary Marconi socket has a bayonet joint and four spring contacts in the base, two for the filament (F and F′ Fig. 2), one for the plate (P) and one for the grid (G), but will not receive the "Aeriotron" bulb which has no bayonet joint connection but depends on frictional contact of the pins with co-operating members to make the electrical connections. Also the plate and filament connections on the "Aeriotron" bulb are transposed from the corresponding contacts in the Marconi socket used with audion bulbs.

We have produced an adapter, the upper face of which has socketed contacts to receive the pins of the "Aeriotron" bulb and the lower face of which has pins to engage with the contacts in the Marconi base and at the same time have transposed the filament and plate connections in the adapter so that the "Aeriotron" filament pin will be in electrical connection with the Marconi socket filament connection F′ and the "Aeriotron" plate pin will be in electrical connection with the Marconi socket plate connection P, one filament connection F and the grid connection G remaining the same.

The adapter consists of a cylinder *a* of non-conducting material with a groove *b* in the side wall. The filament connection 2 and grid connection 1, socketed at their upper ends and pin-formed at their lower ends extend right through the adapter, said lower ends being designated as 1′ and 2′.

The tubular top connector 3 for the plate and the tubular top connector 4 for the filament each extends part way through the adapter and the two pin connections in the bottom 3′ and 4′ aline with them and extend beyond the bottom but each pair of alined connections is insulated so far as the upper and lower parts is concerned. In order that the circuits may be transposed the top connector 3 is connected electrically with the bottom connector 4′ by screw 3^a, wire 3^b and screw 3^c and the top connector 4 with the bottom connector 3′ by screw 4^a, wire 4^b and screw 4^c, the wires 3^b and 4^b lying in the groove *b*. A pin *c* extends from the side wall of the adapter to engage the bayonet slot in the Marconi socket in order that the adapter will be properly inserted in the socket. A depression *d* in the top of the adapter receives the button in the bottom of the "Aeriotron" bulb.

The through contacts in the adapter contact with the filament contact and grid contact in the "Aeriotron" bulb and the filament contact F and grid contact G in the Marconi socket. Plate contact 3 in the top of the adapter is connected by wire 3^b with contact 4′ in its bottom and electrically contacts with Marconi socket plate contact P while the filament contact 4 on the top of the connector is connected with contact 3′ by wire 4^b in its bottom and electrically contacts with Marconi socket filament contact F′.

Also by cross-connecting 1 and 4 in the

adapter and allowing 2 and 3 to go straight through we arrive at the same electrical circuit, and by moving the pin *c* to the proper position the adapter will make the correct contacts in the Marconi socket.

By inserting our adapter in the Marconi socket and then pushing the "Aeriotron" bulb pins into the top connectors the "Aeriotron" bulb is automatically and properly connected into the existing circuits and by removing the adapter the Marconi socket is ready to receive a regular audion bulb.

It is apparent that by transposing the wires leading to connections P and G in the Marconi socket and making all the connectors in the adapter straight through like 1 and 2 the "Aeriotron" bulb can be used in the Marconi socket instead of the audion bulb but we prefer the transposed connections as it involves no change in the wiring of the circuits.

While we have shown and described the adapter body as composed of a block of non-conducting material we do not limit ourselves to this particular construction as any structure which will receive an "Aeriotron" bulb at one end and fit a Marconi socket at the other end and is provided with suitable conductors therethrough is within the scope of our invention.

We claim:—

1. A tube adapter for wireless apparatus comprising a body presenting at one side thereof a set of socket contacts and at the other side presenting a separate set of tube contacts, and electrical cross connections between the tube plate contact and the socket plate contact, and also between the tube filament contact and the socket filament contact thereby to adapt the circuit of the tube to the circuit of the socket.

2. A tube adapter for wireless apparatus comprising an insulating body, a set of socket contacts at one side of the body and a set of tube contacts at the other side of the body, one pair of contacts of the tube set and one pair of contacts of the socket set being in direct electrical contact, and another pair of the contacts of the tube set and the socket set being electrically cross connected to thereby adapt the tube circuit to the socket circuit.

3. A tube adapter for wireless apparatus comprising an insulating body, a pair of socketed contact members extending entirely through said body, a pair of socketed tube contact members extending partly through said body, a pair of socket contacts, and electrical cross connections between said tube contact members and the said socket contacts.

4. A tube adapter for wireless apparatus comprising an insulating body having an annular groove, a socketed contact extending longitudinally through the body to the opposite side thereof, a pair of socketed tube contact members terminating within the insulating body, a separate pair of socket contacts carried by the end of the body opposite the tube contact members and cross wiring connections arranged in said groove and cross connecting the tube contact members and socket contacts.

In testimony whereof we have affixed our signatures.

HERBERT C. SMYTH, JR.
E. HOBART MOLSON.