

Dec. 28, 1943.

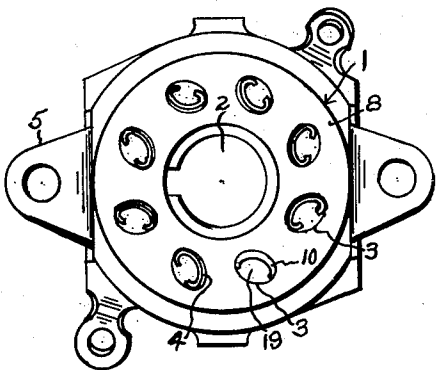
J. TODD

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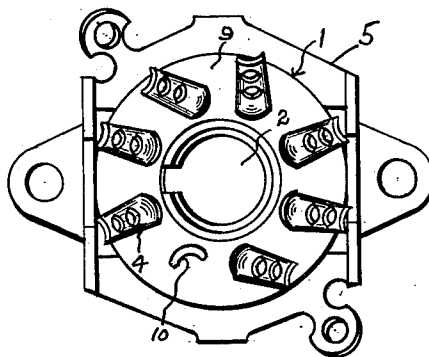
ELECTRICAL SOCKET

Filed July 17, 1941

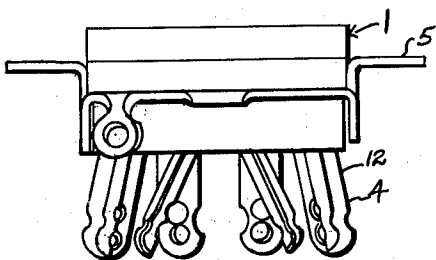
*Fig. 1.*



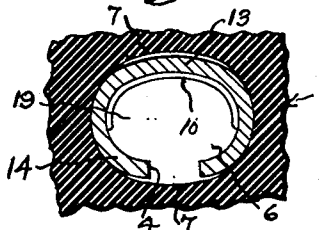
*Fig. 2.*



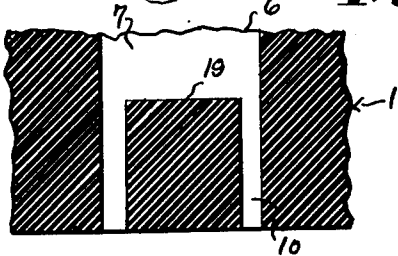
*Fig. 3.*



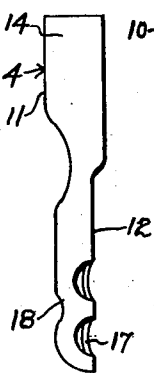
*Fig. 4.*



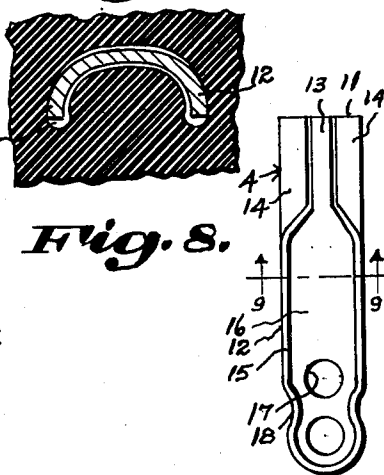
*Fig. 5.*



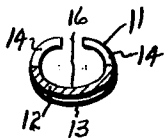
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE

2,337,692

## ELECTRICAL SOCKET

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Application July 17, 1941, Serial No. 402,762

### 1 Claim. (Cl. 173—328)

This invention relates to sockets and particularly to sockets for use in connection with vacuum tubes for radio receiving sets and the like.

The chief object of my invention relates to a socket contact of simple construction which is adapted to be easily assembled with an insulating base.

A further object of my invention relates to a socket contact of unusually rigid construction and providing a receptacle for holding solder to secure lead wires more positively to the contact.

Other objects and uses of my invention will be apparent from inspection of the drawing and specification hereinbelow set forth.

Referring to the drawing in which I have illustrated a preferred embodiment of my invention:

Fig. 1 is a top plan view of a socket assembly embodying my invention with one of the contacts omitted;

Fig. 2 is a bottom plan of the assembly shown in Fig. 1;

Fig. 3 is a side elevation of the assemblies shown in Figs. 1 and 2;

Fig. 4 represents a fragmentary horizontal section through a contact-receiving opening and a pin-engaging element of one of the socket contacts looking toward the bottom of the contact-receiving opening;

Fig. 5 is a fragmentary horizontal section through a contact-receiving opening and the wiring terminal of one of the socket contacts;

Fig. 6 is a vertical fragmentary section through one of the contact-receiving openings to show the form of the opening;

Fig. 7 is a side elevation of one of the socket contacts per se;

Fig. 8 is a front elevation of the socket contact shown in Fig. 7; and

Fig. 9 is a section taken along the line 9—9 of Fig. 8.

Referring to the drawing I have shown a preferred socket assembly of the type adapted for electrical cooperation with a vacuum tube of a radio set. The assembly comprises an insulating base 1, having a central opening 2 for receiving a guide-pin of a vacuum tube (not shown), as will be understood by those skilled in the art. The base has a number of contact-receiving openings 3 disposed in an annular series around the aperture 2. A number of socket contacts 4 are carried by the insulating base and seated within the openings 3 thereof. In Figs. 1 and 2 one of the socket contacts is omitted to show more clearly the construction of the contact-re-

ceiving openings 3. A saddle member 5 is provided as part of the assembly for securing the socket to the radio chassis (not shown).

The openings 3 are of novel construction and each provides an enlarged passage 6 which is preferably oval in shape, and has opposed curved wall portions 7 of smooth form. The passages 6 extend from the upper side 8 of the base a predetermined distance toward the lower side 9 of the base to permit the socket contact to be seated beneath the plane of the upper side in final assembly of the parts. A slot 10 extends from the lower end of the passage 6 through the lower side 9 of the base. The slot 10, when viewed from the lower side of the base, is arcuate or non-straight in form, as shown in Fig. 2, and the vertical plane of the slot lies adjacent and generally parallel to the curved wall portion 7 of the passage 6 nearest the center of the base 1 for a purpose to be described.

My preferred socket contact 4 is made from a single piece of sheet metal and provides a hollow pin-engaging element 11 and an integral soldering lug or wiring terminal 12. The element 11 preferably has a back portion 13 which is arcuate in form and wing portions 14 extending inwardly to form with the back portion a channel adapted to receive and grip resiliently a pin terminal (not shown). Although I have chosen to illustrate my socket contact with this type of pin-engaging element, it will be understood that the pin-engaging element may be of other form without departing from the scope and spirit of my invention. The wiring terminal 12 is elongated in form and extends from the lower end from the element 11 normally in substantially parallel relation to the axis of the element 11. The terminal 12 has its free edges 15 bent inwardly so that the terminal has an arcuate sectional profile on a line transverse to the contact axis of substantially the same radius as the slot 11. As a result of this construction, the terminal provides a channel portion 16 (Fig. 8) from a point adjacent the pin-engaging element 11 to the free end of the terminal which acts not only to strengthen substantially the terminal so as to enable it to resist forces tending to bend the same when lead wires (not shown) are soldered thereto, but also to provide a semi-cylindrical receptacle for the solder during attachment of the lead wires so as to insure that the wires will be positively affixed. The terminals may have openings 17 and indentations 18 which aid to secure the lead wires in initial assembly with the terminal prior to the

operation by which they are soldered permanently.

The socket contacts 4 may be easily assembled with the base 1 from the upper side of the base through first holding the contact with the wing portions 14 facing the outer marginal edges of the base and then dropping the wiring terminal into the passage 6. As the wiring terminal passes through the passage, the curve of the inner wall portion 7 of the passage cooperates with the curve of the terminal to guide the terminal into the slot 10, after which it moves through the slot until the pin-engaging element 11 engages the shoulder 19 provided at the junction of the slot 10 and passage 6. The terminal 12 now projects substantially beneath the lower side 9 of the base and it is then bent at an angle (Figs. 2 and 3) beneath the slot 10 in a preferred method of locking the contact in assembly with the base 1.

As a result of my invention I have provided a contact of simple construction which is unusually rigid. The construction of the contact aiding to effect this rigidity also operates as a means for holding solder and the like during attachment of a lead wire thereto and, finally, the shape of the contact cooperates excellently with a contact-opening of special form in the insulating base to permit quick assembly of the contact with the base.

Although I have illustrated and described a preferred embodiment of my invention I do not

wish to be limited thereby as the scope of my invention is best defined by the following claim.  
I claim:

5 An electrical socket comprising an insulating base having an opening therethrough and a contact assembled therewith, said contact having a pin-engaging element and a wiring terminal extending from said pin-engaging element, said pin-engaging element comprising a back portion and wing portions bent toward each other and forming with the back portion a channel adapted to receive and grip a pin terminal, at least a portion of said wiring terminal having an arcuate sectional profile of substantial length in a direction transverse to the axis of said contact for the purpose described, the opening in said base comprising an arcuate passage receiving said pin-engaging element, the curved sides of 10 tion of the area of said arcuate passage being continued through said base providing an arcuate slot for the reception of the arcuate portion of said terminal, the remaining area of said passage terminating short of said arcuate slot and presenting a shoulder adapted for engagement by 15 said pin-engaging element for limiting the distance of insertion of said pin-engaging element and said wiring terminal being bent at an angle to the axis of the contact to prevent the contact from falling out of engagement with the said base.

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