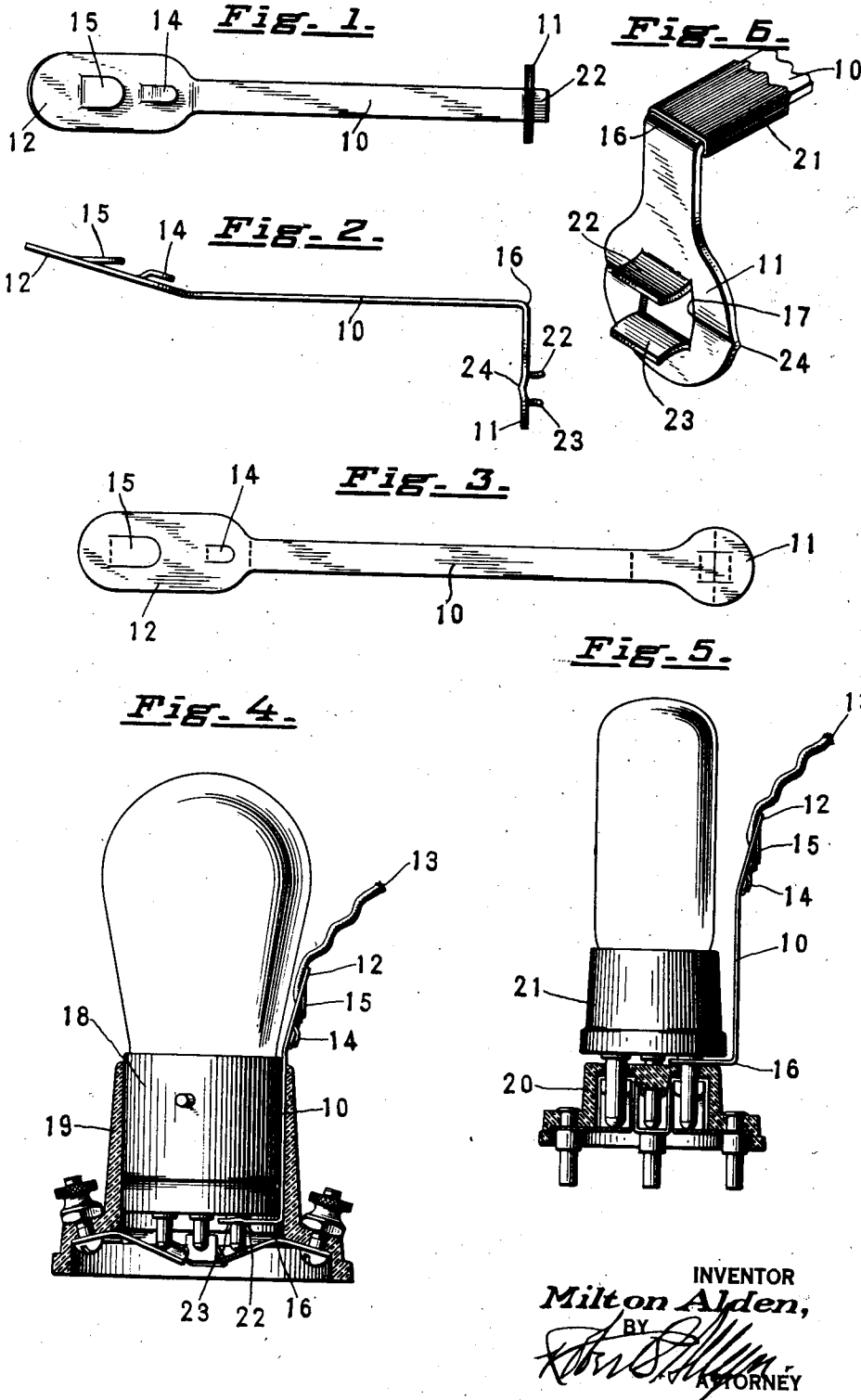


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VACUUM TUBE CONNECTER

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VACUUM-TUBE CONNECTER.

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My invention relates to means for readily attaching additional apparatus to radio receivers equipped with vacuum tubes.

There are many thousands of broadcast receivers in the hands of users today which are in the main satisfactory but of late certain important improvements have been made notably in the design of the coupling devices and the development of new vacuum tubes both of which greatly improve the quality of the audio frequency amplification.

A unit containing the necessary apparatus to bring these receivers practically up to date may be manufactured to sell for a small fraction of the cost of a complete receiver, and if a unit of this type is so constructed that it can be quickly and easily attached without the use of tools and by a person lacking electrical knowledge it has considerable commercial value as the purchaser may bring his old receiver practically up to date at a comparatively small expenditure.

Heretofore one of the greatest difficulties encountered in a device of this type has been to find some simple and easy method of effecting connection with the plate of the detector tube so that the output of this tube may be led to the input of the outside amplifier. In many constructions the socket terminals of the receiver are below a sub-panel or are otherwise inaccessible and it is difficult to design a clip or other device which is sure of contact and easy to attach in inaccessible places of this nature.

My invention however affords a sure and simple means for effecting this connection or connections of a like nature for various purposes such as testing or experimentation.

The main object of my invention is to produce a simple means for rapidly and surely effecting electrical connection with any one of the terminals of any vacuum tube of a receiver and at the same time in no way altering the internal wiring of the receiver. A specific object is to provide a very small device which can be used with practically any type of tube or socket.

Referring to the drawings:

Fig. 1 shows a rear elevation of one embodiment of my invention.

Fig. 2 shows a side elevation of the same structure.

Fig. 3 shows the blank or punching before being operated upon by the bending dies.

Fig. 4 shows my invention applied to a short prong tube inserted in a "Navy" type socket.

Fig. 5 shows my invention applied to a long prong tube inserted in a "push-pull" type of socket.

Fig. 6 is an enlarged perspective fragmentary view of the contacting end of the device.

The device may be constructed of any thin non-corrosive spring metal such as phosphor bronze and may be punched in the form shown in Fig. 3, and consists of the shank 10 and the enlargements 11 and 12 and bent into the form shown in the remaining figures.

The enlargement 12 serves as an anchor to the flexible lead 13. The end of this lead may be passed through the shank and stripped and soldered or otherwise secured under the tab 14, and the tab 15 may be bent down upon the insulation of the lead 13 so as to prevent its slipping back upon the conductor and from fraying.

The lower end or foot 11 is bent at a right angle at 16 at such a distance from the aperture 17 that when a prong of a standard large base vacuum tube is inserted in this aperture the shank 11 lies against the wall of the tube base 18, as shown in Fig. 4. The shank is made thin so that it can be inserted with the tube base in a socket 19. The foot is also preferably thin so that it will take up but little space between a socket 20 of the push-pull type and the tube base 21.

Integral with the foot 11 are the fingers 22 and 23 which will yieldingly grip the sides of a vacuum tube prong as shown in Fig. 4. The arched bend 24 may be formed in the foot 11 so as to permit a yielding lateral enlargement of the aperture 17 thus insuring a firm grip upon and good contact with the vacuum tube prong.

The shank 11 may be covered with a thin insulating covering such as 21, in Fig. 6, which may be of silk impregnated with phenolic varnish and serves to prevent short circuits in the case of metal walled sockets.

The device can be readily applied to the prong with which connection is desired and the construction is such that the same device will fit on different sizes of prongs. Both the spring fingers and the arched bend 24 contribute to this effect. If the contact sticks on the prong when it is desired to remove it, a knife blade or other thin implement can be inserted

between the arch 24 and the adjacent base of the tube so as to compress the arch and spread the jaws to release them.

I claim:

5 1. A vacuum tube connector comprising a thin metallic strip having a foot at one end bent at an angle and provided with an opening and means adapted to receive and hold a prong of a vacuum tube, said strip having a
10 shank adapted to fit between the side of a tube base and the inner wall of a socket and said foot being adapted to lie between the end of the tube base and a contact of the socket.

2. A vacuum tube connector comprising a
15 thin metallic strip having a foot at one end bent at an angle and provided with an opening and means adapted to receive and hold a prong of a vacuum tube, said strip having a shank adapted to fit between the side of a tube
20 base and the inner wall of a socket and said foot being adapted to lie between the end of the tube base and a contact of the socket, said means comprising jaws for engaging the prong of a tube and a bent portion for releasing said jaws.

3. A connector for a vacuum tube prong comprising a thin insulated shank adapted to

lie between the base of a tube and the inner wall of a socket and an angularly bent foot having a perforation with resilient gripping
30 jaws.

4. A connector having a thin spring strip having an arched foot with an opening and means on opposite sides of the opening for gripping and holding the prong of a tube. 35

5. A connector for a prong of a vacuum tube comprising a thin metallic strip having an arched foot with an opening and means for gripping and holding the prong of a vacuum
40 tube.

6. A vacuum tube connector comprising a metallic strip having a shank and an end bent to form a foot provided with a perforation with short jaws at the sides of the perforation adapted to engage the sides of a prong of a
45 tube with a toggle-like gripping action, the perforation in said foot being located far enough from the bend in the shank to enable the shank to extend up around the edge of the tube base when the tube prong is in the
50 perforation, said foot being adapted to be released from the prong by prying between said foot and the base of the tube.

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