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M. ALDEN

SUPPORT FOR VACUUM TUBES

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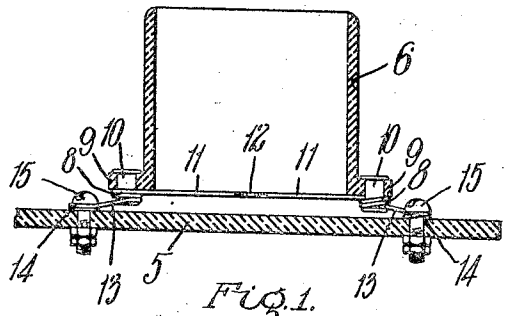

Fig. 1.

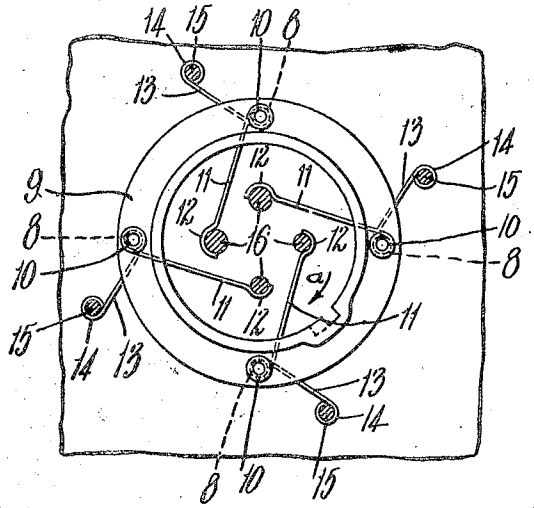

Fig. 2.

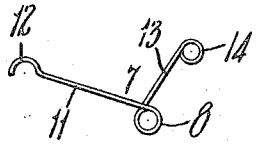

Fig. 3.

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UNITED STATES PATENT OFFICE.

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SUPPORT FOR VACUUM TUBES.

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This invention relates to an improvement in supports for vacuum tubes for use in radio apparatuses, and has for its object to provide a support of simple construction capable of reducing to a minimum the shocks and vibrations that may be transmitted from outside sources through the support to the delicate mechanism of the vacuum tube, said shocks and vibrations often tending to reduce the efficiency of said tube and interfere seriously with its operation.

It is still further an object of the invention to embody in the structure of the support a plurality of springs, each of said springs being formed of a continuous length of wire and having a torsion coil formed integral therewith which is also utilized in securing the spring to the vacuum tube socket and said torsion coil has a contact arm projecting laterally therefrom and adapted to engage a terminal of said vacuum tube, said springs constituting electric circuit connections to the terminals of said vacuum tube.

Still another object of the invention is to embody in the construction of the supporting springs a loop which is utilized in securing the support to its base.

The invention consists in a support for a vacuum tube as set forth in the following specification and particularly as pointed out in the claims thereof.

Referring to the drawings:—

Figure 1 represents a central vertical section through a vacuum tube support embodying my invention.

Fig. 2 is a plan view of said support.

Fig. 3 is a detail plan view of one of the springs.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 represents a panel constituting a base, and constructed of suitable insulating material. Located above the base 5 is a socket 6 also constructed of insulating material and adapted to receive and hold a vacuum tube of well known construction.

The socket 6 is yieldingly supported above the base 5 by a plurality of springs 7, each of which is formed of a continuous length of wire and embodies therein a torsion coil 8, and said spring is fastened to the under surface of a flange 9 of said socket 6 by an eyelet 10, the latter extending through said coil and flange and having the opposite ends thereof turned over in the usual well known manner. The springs 7, furthermore, constitute electric circuit connections to the vacuum tube, there being a resilient contact arm 11 projecting laterally from the upper end of each torsion coil 8, and said arm terminates in a semi-circular portion 12 which is adapted to partially encircle a terminal pin 16 of a vacuum tube and form an electrical contact therewith.

Each spring 7 also embodies therein an arm 13 which projects laterally and downwardly from the lower end of the torsion coil 8, and said arm terminates in a loop 14, which is utilized in securing said spring 7 to the base 5, a binding post 15 preferably being employed as a fastening member. The median lines of the loop 14 and torsion coil 8 are parallel to each other and perpendicular to the upper surface of the base 5 and the contact arm 11 is preferably parallel to the upper surface of said base. Between the torsion coil 8 and loop 14 there is sufficient inclination to the arm 13 to cause the spring 7 tc yieldingly support the socket 6 above the upper surface of the base 5, and said springs 7 will absorb the shocks and vibrations transmitted thereto and prevent injury to the delicate mechanism of the vacuum tube.

In inserting a vacuum tube in the socket 6, said tube is given a short rotating movement in the direction of the arrow *a* in Fig. 2 and during this rotating movement, the terminal pins 16 of said tube will engage the semi-circular extremities 12 of the contact arms 11 and the latter will thereafter have a yielding engagement with said pins.

It is evident that if it is so desired any suitable form of fastening member may be utilized in securing the support for the vacuum tube to the base 5, said fastening member being inserted through the loops 14 and base, and a connecting wire may be attached to said fastening member in any of the usual well known manners.

I claim:—

1. A support for a vacuum tube or the like comprising, in combination, a socket and a plurality of yielding supports for said socket, each of said supports being formed in a single piece and embodying therein a torsion coil fast to said socket, said supports also embodying therein a contact arm projecting laterally from said coil and adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto.

2. A support for a vacuum tube or the like comprising, in combination, a socket and a plurality of yielding supports for said socket, each of said supports being formed of a continuous length of wire and embodying therein a torsion coil fast to said socket, said supports also embodying therein a resilient contact arm projecting laterally from said coil and adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto.

3. A support for a vacuum tube or the like comprising, in combination, a socket and a plurality of springs adapted to yieldingly support said socket, each of said springs being formed of a continuous length of wire and embodying therein a loop adapted to encircle a fastening member, each of said springs also embodying therein a torsion coil fast to said socket, and a contact arm also embodied in said spring and projecting laterally from said torsion coil and adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto.

4. A support for a vacuum tube or the like comprising, in combination, a socket and a plurality of springs adapted to yieldingly support said socket, each of said springs being formed of a continuous length of wire and embodying therein a loop adapted to encircle a fastening member, each of said springs also emodying therein a torsion coil fast to said socket, the median lines of said loop and torsion coil being parallel to each other, and a contact arm also embodied in said spring and projecting laterally from said torsion coil and adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto.

5. A support for a vacuum tube or the like comprising, in combination, a base, a socket, a plurality of springs yieldingly supporting said socket upon said base, each of said springs embodying therein a torsion coil fast to said socket and a contact arm projecting laterally from said torsion coil, said arm being adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto, and means to fasten each of said springs to said base.

6. A support for a vacuum tube or the like comprising, in combination, a base, a socket, a plurality of springs yieldingly supporting said socket upon said base, each of said springs embodying therein a torsion coil fast to said socket and a contact arm projecting laterally from said torsion coil, said arm being adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto, each of said springs also embodying therein a loop, and means extending through each of said loops and securing each of said springs to said base.

7. A support for a vacuum tube or the like comprising, in combination, a base, a socket, a plurality of springs yieldingly supporting said socket upon said base, each of said springs embodying therein a torsion coil fast to said socket and a contact arm projecting laterally from said torsion coil, said arm being adapted to engage a terminal of a vacuum tube, said spring constituting an electric circuit connection thereto, each of said springs also embodying therein a loop, the median line of said loop being perpendicular to said base, and means extending through each of said loops and securing each of said springs to said base.

8. A support for a vacuum tube or the like comprising, in combination, a base, a socket, a plurality of springs yieldingly supporting said socket upon said base, each of said springs embodying therein a torsion coil fast to said socket and a contact arm projecting laterally from said torsion coil, said arm being adapted to engage a terminal of a vacuum tube, said spring constituting an electric connection thereto, each of said springs also embodying therein a loop, the median lines of said loop and torsion coil being parallel to each other and perpendicular to said base, and means extending through each of said loops and securing each of said springs to said base.

In testimony whereof I have hereunto set my hand.

MILTON ALDEN.