June 1, 1943. E. LÖPP ET AL 2,320,623

ULTRA-SHORT WAVE TUBE SOCKET

Filed Jan. 16, 1941

Fig.1

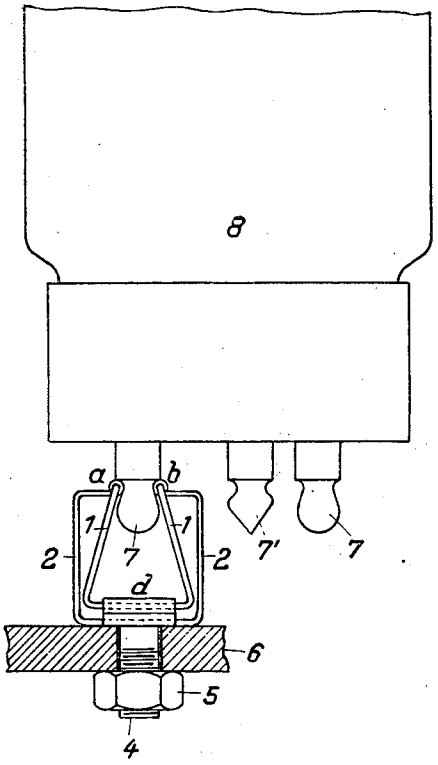



Fig.2

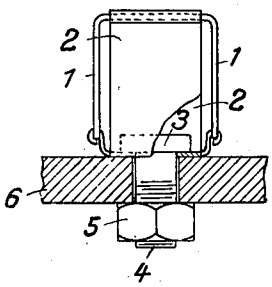



Fig.3

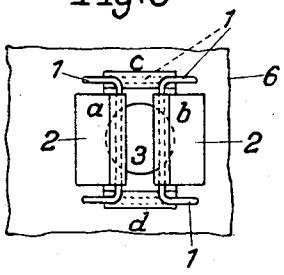
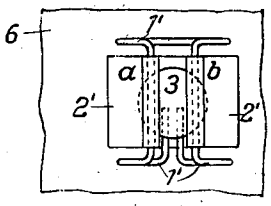



Fig.4




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# UNITED STATES PATENT OFFICE

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## ULTRA-SHORT WAVE TUBE SOCKET

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Application January 16, 1941, Serial No. 374,650
In Germany January 20, 1940

2 Claims. (Cl. 173—328)

This invention relates to the contact means forming part of the socket for electron tubes and also refers to the lead-in pins with which the electron tubes are provided to engage with such contact means. The invention aims to overcome certain disadvantages peculiar to the customary devices of this kind, namely, disadvantages which especially arise in the case of ultra-short wave tubes, and to such end does away with the usual construction of the contact springs of the socket.

According to the present invention the contact members which engage the lead-in pins in the base of ultra-short wave tubes are of a composite character, comprising a strap of high conductive metal but lacking in substantial resiliency and therefore must be reinforced or supplemented by spring members capable of furnishing the lack of resiliency of the strap so that when the lead-in pins are in engagement with the contact members substantial spring pressure in exerted by the contact members, thus insuring good electrical contact between the lead-in pins and the contact members.

In the drawing, Fig. 1 is a fragmentary sectional elevation showing an electron tube and a form of the novel contact means therefor, Fig. 2 is a sectional side elevation of this contact means, Fig. 3 a plan view thereof, Fig. 4 is a plan view of a slightly modified form of the contact means illustrated in Figs. 1, 2, 3.

The socket for the electron tube **8** is for simplicity represented by a portion of a plate **6** thereof. The contact members **2** are secured to the base of a socket, the latter being conventionally represented as a plate member **6** provided with an aperture through which extends a bolt having a head **3**, shank **4**, and nut **5**. The contact members **2** are preferably a U-shaped strap of relatively non-resilient but highly conductive material, and may be made from a sheet metal punching, the bight of which is fastened on the bolt head **3**. The member **2** carries the wire **1** and to such end has edge portions *a, b, c, d* bent to enclose portions of the wire **1**. Wire **1** acts as a spring to press the free ends or edges *a, b* of member **2** against a lead-in pin **7** of the electron tube **8**.

Instead of the sheet metal member **2** a similar member **2'**, Fig. 4, may be employed, which has only two edge portions *a, b* bent to engage with a steel wire spring **1'**. The ends of wire **1'** need not be welded together since they may be inserted in holes provided in head **3** of screw **4**, as will appear from Fig. 4.

The contact lead-in pins **7, 7'**, Fig. 1, are globular or conical, for instance, thus ensuring that always the same zone thereof shall engage with the contact means **2, 1** or **2', 1'**, as the case may be.

The novel arrangement has the following advantages.

Short wave apparatus may be standardized or calibrated to perfection. The calibration will not be affected in the case of interchanging the tubes, since the lead-in pins **7, 7'** will be engaged by the contact means of the socket always at the same zone and in this way prevent the inductance of an oscillatory circuit, in which a tube is thus connected, from varying. In addition the globular or conical shape of the lead-in pins **7, 7'** affords a reliable connection between tube and socket. Furthermore, the contact means **2, 1** or **2', 1'** can be made to produce a good contact pressure and the member **2** or **2'**, not being required to be resilient itself, may be of copper, for instance, whereas the usual contact springs should be made of bronze. Also, the manufacture of the novel devices is advantageous from a commercial point of view since only a simple punched part and a steel wire spring are needed for composing the contact means of the socket, the expenditure of material thus being kept as low as possible.

What is claimed is:

1. A contact assembly for receiving lead-in pins of ultra-short wave tubes as herein described, comprising a U-shaped strap of high conductive metal and having each end thereof formed into a hollow bead, the bight of the strap being fastened on a bolt, a highly resilient spring part having a portion thereof extending through each hollow bead and having another portion fastened on the bolt, so as to form a tight junction to receive lead-in pins from the ultra-short wave tubes.

2. A contact assembly according to claim 1 wherein a bolt is arranged to hold said contact strap and resilient wire in position on a base member, the bolt having a bead into which the ends of said resilient wire are inserted.

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