Sept. 18, 1928. 1,684,973

S. G. SEARS

CONTACT PROTECTING MEANS FOR VACUUM TUBES

Filed Sept. 12, 1925

Fig. 1.

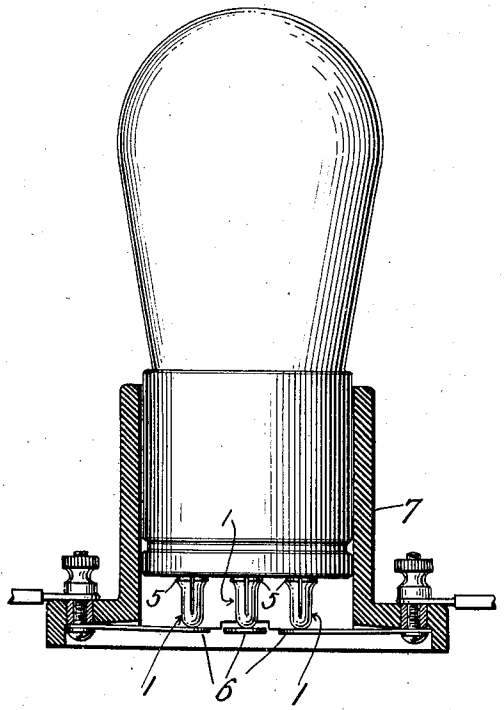


Fig. 2.

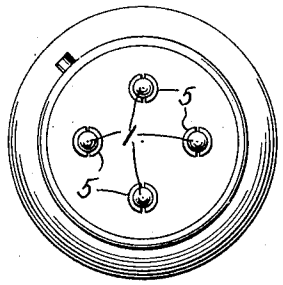
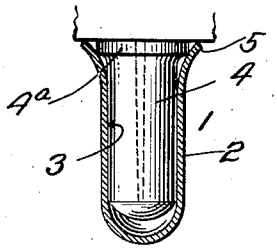


Fig. 3.



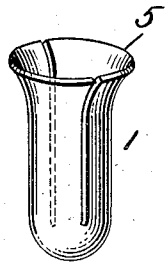


Fig. 4.

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Patented Sept. 18, 1928. 1,684,973

UNITED STATES PATENT OFFICE.

STERLING G. SEARS, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NAYLOR RADIO CORPORATION, OF NEW YORK, N. Y.

CONTACT-PROTECTING MEANS FOR VACUUM TUBES.

Application filed September 12, 1925. Serial No. 55,939.

This invention relates to improvements in contact protecting means for vacuum tubes.

The contact pins of vacuum tubes of all kinds frequently, during use, become coated with the oxides of the metals of which the pins are made, thus creating high resistance and preventing pins from efficiently performing their contacting function, and it is one of the objects of this invention to protect such contact pins of vacuum tubes from such oxides and also to protect the same from grease and dirt which collects on the rough surfaces of such metal pins.

Another object of this invention is to produce a protective cap for such contact pins having its contact surfaces coated with a precious or non-oxidizing metal and preferably to provide a cap which is adapted to fit snugly over such pins and to have a frictional engagement therewith.

Another object of this invention is to produce a metal cap in which the spring for retaining it in place on the pin will be inherent in the material of which the cap is made, and will preferably be provided by forming slits or splitting the cap vertically into resilient sections or prongs which will enable a slight expansion of the cap during attachment but will enable a very snug frictional engagement with the pins to be procured and a clipping in place of the same without injury to the bulb.

Another object of this invention is to provide means for lengthening the contact members slightly and thus causing a greater depression of the contact springs during insertion of a bulb in its socket and producing a more effective contact with the socket springs.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to co-act and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:—

Fig. 1 is a section through a vacuum tube socket showing an elevation of a vacuum tube mounted in said socket and showing my improved contact cap applied to the contact pins of the tube;

Fig. 2 is a plan view of the bottom of a vacuum tube showing contact caps in place upon the pins;

Fig. 3 is a vertical section through one of the contact caps mounted on a contact pin; and

Fig. 4 is a perspective view of a contact cap embodying my invention dismounted from the pin.

Referring now to these drawings which illustrate a preferred embodiment of my invention 1 indicates a contact cap which, as illustrated, is preferably stamped up into cup shape so as to provide a body portion 2 having its interior surface 3 conforming with the shape of the pins 4 which are usually cylindrical and as shown, my improved cap is composed of a cylindrical body portion 2 and a mouth or entrance opening portion 5 flared upwardly from such body portion to permit ready connection with the pin to which it is adapted to be attached. The inner surface of the body portion is preferably adapted to be a snug fit over the end and shank of the pin 4 and the mouth is adapted to engage the base portion 4^a of the pin so as to snugly clip over the pin and to maintain a firm and close connection therewith. My improved contact caps are preferably formed of thin sheet metal and the inner and outer surfaces thereof are preferably plated with gold or other non-oxidizing metal so as to prevent the formation of oxide at the connection between such pins and the caps and between such caps and the contact plates or springs with which they are maintained in contact. Obviously, when the caps of my invention are slipped over contact pins of a tube, the formation of oxides will, because of the plating of the contact caps, be entirely prevented and the resistance due to the formation of such oxides between the contacts will be avoided. The pins will thus be enabled to perform their functions more efficiently and the tubes will likewise operate with greater efficiency on account of the better connection and the avoidance of resistance at such connection. Furthermore, it will be seen that the attachment of my caps to contact pins of a bulb lengthens the bulb contact members slightly thus causing a greater depression of the contact springs 6 in the socket 7 and producing a more effective contact with such socket springs.

Having described my invention, I claim:

1. In a contact protecting means for vacuum tubes having pins of oxidizing metal, contact caps formed of spring metal and hav-

ing contact surfaces coated with a non-oxidizing metal.

2. In a contact protecting means for vacuum tubes having pins of oxidizing metal, contact caps composed of spring metal having cylindrical body portions and flared open ends and provided with contact surfaces plated with a non-oxidizing metal.

3. In a contact protecting means for vacuum tubes having contact pins of oxidizing metal, an outer shell formed of non-oxidizing metal fastened to said pin.

In witness whereof, I have signed my name to the foregoing specification.

STERLING G. SEARS.