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A. N. LUCIAN
CATHODE CONSTRUCTION

Filed Feb. 6. 1926

Fig.1

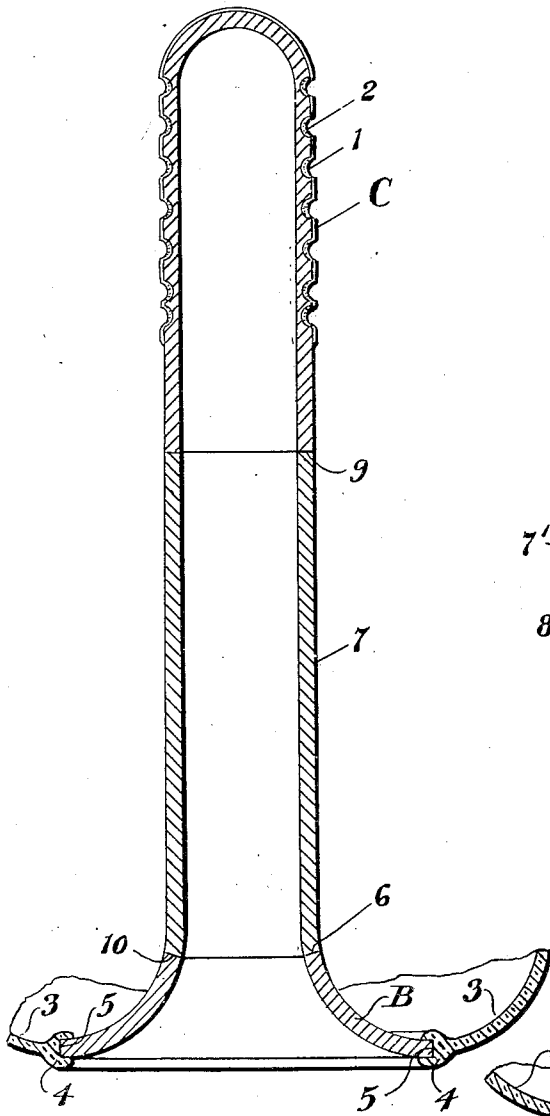
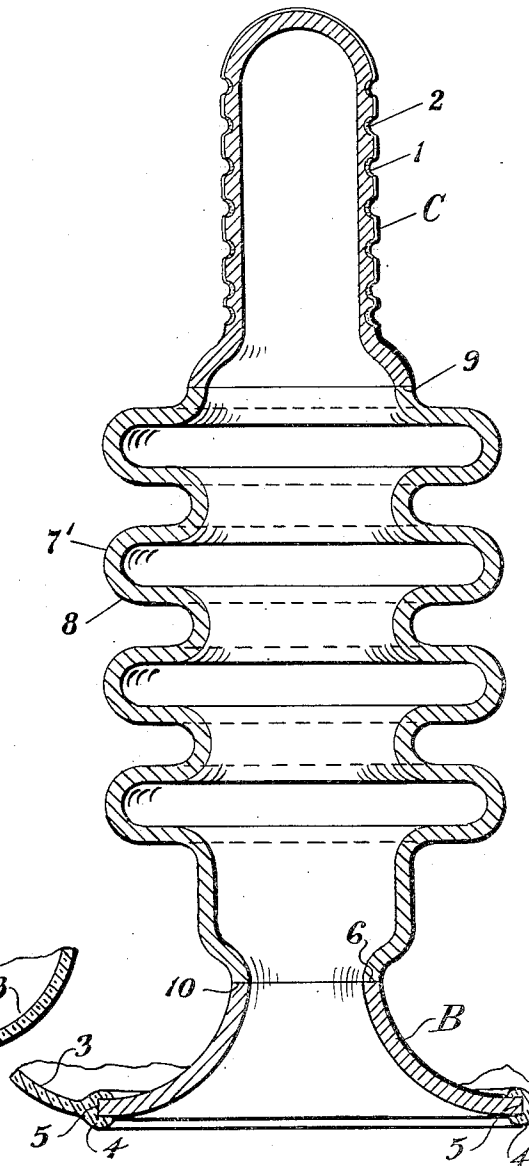


Fig.2



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CATHODE CONSTRUCTION.

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This invention relates to cathodes for use in triodes and the like. The object of the invention is to provide a hollow thimble shaped cathode capable of cooperating with the glass seals of a bulb or tube to complete a vacuous enclosure without unduly heating the glass seal.

The above and further objects of the invention will better be understood by reference to the illustrative embodiments of the invention described in the following specification in connection with the accompanying drawings which form a part hereof. These illustrative embodiments should be referred to however solely for purposes of illustration and not limitation.

In the drawings,

Fig. 1 is a vertical cross-section of a preferred embodiment of the invention; and

Fig. 2 is a similar view of a modification.

The thermionically functioning portion of cathode proper C is formed preferably of suitable metal, such as Monel metal in the shape of a hollow thimble, externally provided with a series of grooves 1 in which may be embedded electron emitting material 2. A glass sealing portion B is provided which terminates in a uniform flange 4 occupying a plane substantially at right angles to the axis of the portion C and is particularly well adapted both as to metal and physical formation for the fabrication of the

glass seal or pit 5 between the sealing portion B and glass envelope 3. The preferred metal for the construction of this hollow portion B is a suitable alloy of nickel steel such as nickel 60% steel 40%, and its edge or terminus rim 6 opposite to the sealing edge 4 is preferably as indicated in the drawings and is substantially the same in cross-section as the main portion C. Interposed between the main portion C and its portion B is an intermediate heat resisting or insulating portion 7 which may be cylindrical as shown in Fig. 1, if it is fabricated of metal, low in its heat conductivity, such as nichrome or nickel steel, or which may preferably be fluted or corrugated with the formation 8 shown for this similar portion 7' in Fig. 2. The preferred means of attaching this intermediate portion to the end portion C and B is by means of welds 9 and 10, or by simply soldering with a high temperature solder.

The inventive thought may have a variety of expressions as is contemplated in what I claim and desire to secure by United States Letters Patent as follows:

A cathode for vacuum tubes comprising a thimble shaped tip of metal having a substantially cylindrical portion; an outwardly flared glass-sealing flange; and an intermediate portion of low heat conductivity.

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