

H. J. VAN DER BIJL & A. McL. NICOLSON.

HIGH CURRENT OUTPUT AUDION.

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1,130,042.

Patented Mar. 2, 1915.

Fig. 2.

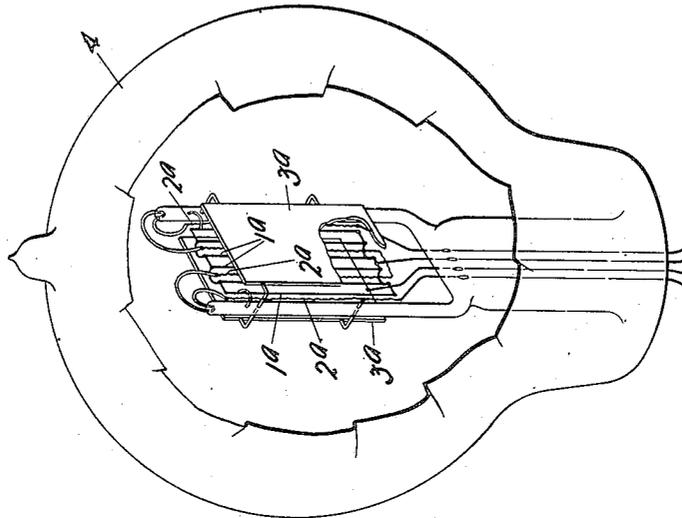
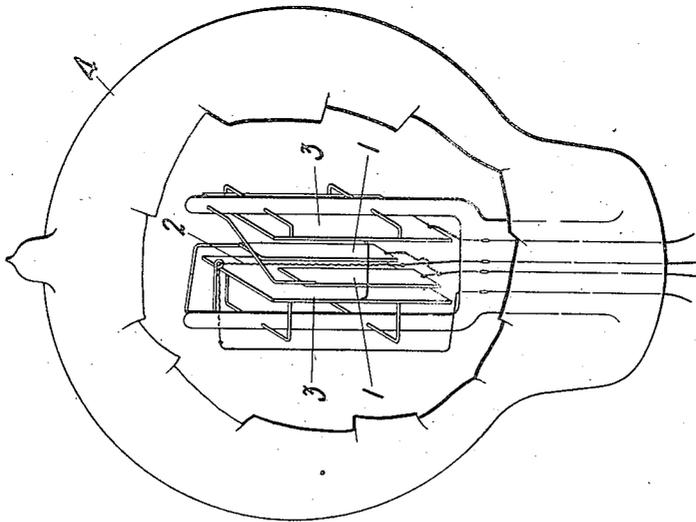


Fig. 1.



Witnesses:
O. M. Guthe
John Waldheim

Inventor:
Hendrik J. van der Bijl,
Alexander McLean Nicolson.
by *A. C. Sennel* Atty

UNITED STATES PATENT OFFICE.

HENDRIK JOHANNES VAN DER BIJL, OF NEW YORK, AND ALEXANDER McLEAN NICOLSON, OF TARRYTOWN, NEW YORK, ASSIGNORS TO WESTERN ELECTRIC COMPANY, OF NEW YORK, N. Y., A CORPORATION OF ILLINOIS.

HIGH-CURRENT-OUTPUT AUDION.

1,130,042.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HENDRIK JOHANNES VAN DER BIJL and ALEXANDER McLEAN NICOLSON, subjects of the King of Great Britain, residing at New York, in the county of New York and State of New York, and at Tarrytown, in the county of Westchester and State of New York, respectively, have invented certain new and useful Improvements in High-Current-Output Audions, of which the following is a full, clear, concise, and exact description.

This invention relates to audions having a high current output and its object is to increase the efficiency of such audions.

In audions the closeness of the input electrode and filament to each other is conducive to efficiency of operation. Furthermore, the distance of the output electrode from the filament and the amount of obstruction the input electrode offers between the filament and output electrode, are factors having a bearing on the current output of the audion.

The present invention is concerned more particularly with the construction and relative arrangement of the input electrode, filament and output electrode for the purpose of securing the maximum efficiency. In accordance with this invention the input electrode and filament are placed side by side facing the output electrode, said input electrode and filament preferably being arranged in a common plane parallel to the plane of the output electrode.

The invention may be more readily understood by reference to the accompanying drawings, in which—

Figures 1 and 2 are perspective views of two different embodiments of the invention. Like reference characters refer to like parts in both figures of the drawings.

Referring first to Fig. 1, the input electrode is shown as consisting of one or more rectangular plates or strips 1, 1, two of such plates being shown in the drawings, electrically connected together and having their adjacent side edges slightly spaced apart and parallel to each other. Lying between said parallel side edges is the filament 2. The filament and the input electrode are preferably thus located in the same plane. The output electrode preferably consists, as

shown, of a pair of electrically connected rectangular plates 3, 3 located upon opposite sides of the plane of said filament and input electrode and parallel thereto. With such structure and arrangement of the parts, the input electrode is near to the filament, said input electrode presents minimum obstruction between the filament and the output electrode, and the output electrode presents a large surface facing the filament.

In Fig. 2 the input electrode is in the form of a plurality of parallel wires 1^a electrically connected together at their ends. The filament is composed of a plurality of strands or threads 2^a, the several wires 1^a of the input electrode lying between the several strands 2^a of the filament. This provides a large filament area which, it has been discovered, is conducive to efficiency in this high current output type of audion. Moreover, with such structure and arrangement, the several parts of the input electrode are brought into close relation with the filament. The output electrode preferably, as shown, consists of a pair of electrically connected rectangular plates 3^a, 3^a, located upon opposite sides of the plane of said input electrode and filament and parallel thereto.

Both in Figs. 1 and 2 the plates constituting the output electrode are but slightly spaced from the filament, the closeness of the filament and output electrode being a factor bearing on the current output.

As usual the several elements of the audion are inclosed in an evacuated bulb 4, and the several leading-in wires are sealed in said bulb.

The two audion structures hereinbefore described both give a high current output. The modification shown in Fig. 1 tends to the higher degree of amplification and hence the greater efficiency. However, if a high current output be especially desirable, the modification shown in Fig. 2 is preferable.

What is claimed is:

1. An audion having an input electrode and a filament side by side and facing an output electrode at approximately equal distances from said input electrode and filament.

2. An audion having an input electrode and a filament in a common plane, and an

output electrode spaced at approximately the same distance from said input electrode and filament.

5 3. An audion having an input electrode and a filament in a common plane and an output electrode in a plane parallel thereto.

10 4. An audion having an input electrode and a filament located in close relation to each other in a common plane and an output electrode facing said input electrode and filament and slightly spaced at approximately the same distance from said input electrode and filament.

15 5. An audion having an input electrode in the form of a wire, a filament parallel to said input electrode and in the same plane therewith, and an output electrode in the form of a plate spaced apart from the plane of the said input electrode and filament.

20 6. An audion having an input electrode in the form of a wire, a filament parallel to said input electrode and in the same plane therewith, and an output electrode in a plane parallel to the plane of said input electrode and filament.

25 7. An audion having an input electrode consisting of a plurality of parallel wires, and a filament consisting of threads parallel to and in the same plane with said wires.

30 8. An audion having an input electrode consisting of a plurality of parallel wires,

and a filament consisting of threads parallel with said wires and in the same plane therewith.

9. An audion having an input electrode 35 consisting of a plurality of parallel wires, a filament having strands in close relation to said wires, said electrode wires and filament strands being parallel to one another in a common plane, and a plate parallel to 40 said plane.

10. An audion having an input electrode and a filament in a common plane, and an output electrode comprising a pair of plates upon opposite sides of said plane in parallel 45 relation thereto.

11. An audion having an input electrode consisting of a plurality of parallel wires, a filament having strands in close relation to said wires, said electrode wires and filament 50 strands being parallel to one another in a common plane, and an output electrode comprising a pair of plates upon opposite sides of said plane in parallel relation thereto.

In witness whereof, we hereunto subscribe 55 our names this 3 day of June A. D., 1914.

HENDRIK JOHANNES VAN DER BIJL.
ALEXANDER McLEAN NICOLSON.

Witnesses:

E. EDLER,
K. L. STAHL.