

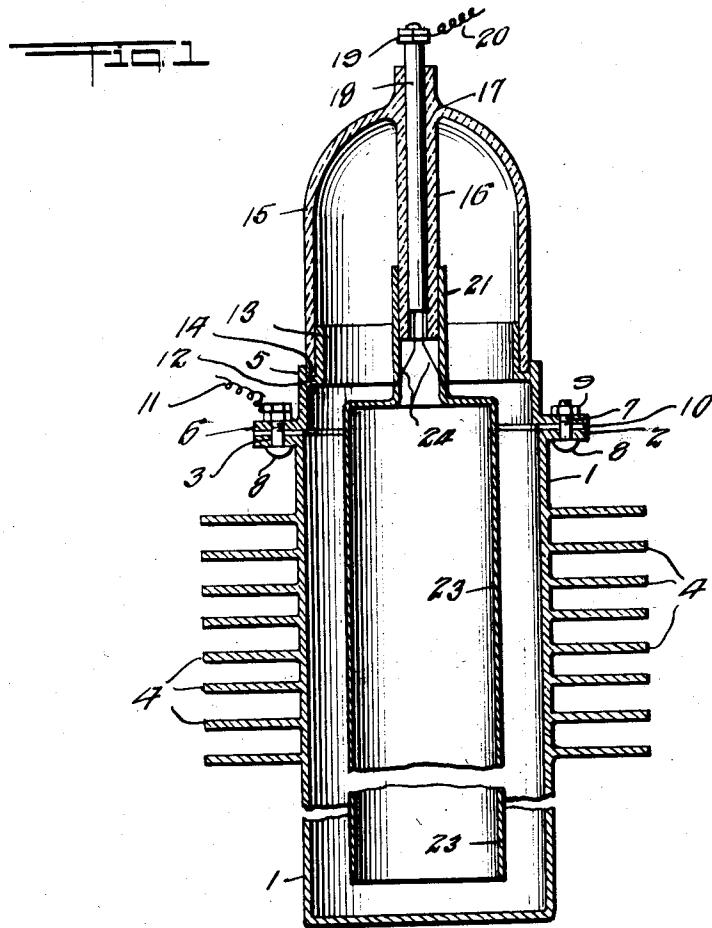
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ELECTRICAL CONDENSER

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## UNITED STATES PATENT OFFICE

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## ELECTRICAL CONDENSER

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This invention relates to electrical devices, and more particularly to condensers in which the dielectric is a vacuum.

The object of this invention is to provide a condenser in which the dielectric losses are eliminated to a great extent, but the proper cooling becomes important, and it is to take care of this feature that I produce a condenser which is extremely simple in construction, durable and efficient.

Another object of this invention is the production of a vacuum condenser consisting of an outer and an inner electrode, the outer electrode being so designed as to produce or offer the maximum cooling surface.

A further object of this invention is the production of a vacuum condenser comprising an outer and an inner electrode, the inner electrode being supported within the outer electrode in a novel yet rigid and durable manner.

A still further object of this invention is the production of a vacuum condenser comprising an outer electrode consisting of a metal container capable of being cooled either by air, water or oil in any suitable or well known manner, and being adapted to support within itself, through the medium of a glass hood, an inner electrode comprising a cylindrical metallic section with a contracted neck or sleeve portion which engages and is secured to a tubular core formed in the center of the hood and integral therewith.

With these objects in view, and such others as may hereinafter appear, it is to be clearly understood that while I have shown certain component and co-operative parts which I deem essential to carry out the fundamental principles involved, I do not limit myself to the exact details of construction so illustrated and described since it is obvious that many and various minor changes may be resorted thereto without sacrificing the spirit or any of the advantages of this invention.

In the drawings forming a part of this specification,

Figure 1 is a vertical sectional view; and

Fig. 2 is a top plan view.

Referring by numerals to the drawings, 1 represents an electrode consisting of a hollow shell or container, preferably cylindrical in form, and constructed of iron or any other suitable metal, having a flange 2 at its open end provided with a series of apertures 3 therein, the object of which will hereinafter appear.

This shell or container, which will be hereinafter referred to as an outer electrode, is provided with a series of heat radiating flanges 4 formed integral with the outer wall of the electrode and extending at right angles therefrom, though it is obvious that they may be otherwise formed and will produce equally as good results. These heat radiating flanges are adaptable for cooling the electrode by means of air, yet it is obvious that water or oil may be employed, and that any cooling means may be used.

Mounted upon the flange 2 of the outer electrode 1 is a cylindrical section 5 having a flange 6, alike in formation to the flange 2, and provided with a series of apertures 7 so placed as to register with the apertures 3, for the reception of bolts 8 provided with nuts 9 by means of which the cylindrical section 5 is secured in place, there being interposed between the flanges 2 and 6 a suitable gasket 10, or the parts may be cemented together. Either or any one of the bolts 8 and nuts 9 may act as a terminal for the outer electrode and provides adequate means for securing or attaching a lead 11, the free end of which may be secured beneath the nut.

The cylindrical section 5 is formed with an offset or flange 12 supporting a smaller cylindrical section 13 formed integral therewith and in such a manner as to produce a channel 14 between the inner wall of the section 5 and the outer wall of the section 13. This channel is adapted to receive a glass hood 15, which fits snugly over the section 13, and rests in the channel 14, and is secured therein by cement or any other effective means of sealing. This glass hood 15, which is substantially semi-globular in

shape so as to produce the greatest degree of strength, is formed with a central tubular core 16 projecting through the wall of the hood, as at 17, so as to lend additional strength in supporting the terminal 18, which is provided on its free end with nuts 19 between which a lead 20 is secured. This terminal which fits snugly in the tubular core 16 effectually seals the same, and at the same time imparts strength and rigidity thereto.

Mounted upon the inner end of the core 16 is a sleeve 21, formed integral with an inner electrode 23, which is cylindrical in form and is supported or suspended by the sleeve centrally within the outer electrode 1 in such a manner that the inner wall of the outer electrode and the outer wall of the inner electrode will be substantially parallel to each other and evenly spaced.

The sleeve 21, which is integral with the inner electrode, is connected by suitable conductors 24 to the terminal 18. The sleeve, which is cemented or shrunk upon the tubular core 16, binds between itself and the terminal 18 a small portion of the tubular core and thereby gives rigidity and strength to the structure.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth, by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

The parts 1, 5 and 23 will of course be of any material suitable for my purpose.

Having thus described the various features of my invention, what I claim as new and desire to secure by Letters Patent is:

1. A condenser having a conductive casting, an insulating hood attached thereto, a vertical tubular core integral with the hood, a terminal mounted in the core, an electrode mounted on the core, and means for connecting the terminal and electrode.

2. A condenser comprising a conductive tubular flanged section, an insulating hood sealed upon said section, a vertical tubular core integral with said hood, a cylindrical electrode mounted upon said core, a terminal mounted in said core, and means for connecting said electrode and terminal.

3. A condenser having a casing, an insulating hood forming parts of said casing, a vertical tubular core integral with the hood, a terminal mounted in the core, a sleeve telescoping a section of the core and terminal therein, an electrode supported by the sleeve, and means for electrically connecting the terminal and electrode.

4. In a condenser casing, a tubular sec-

tion having an external and an internal flange, a smaller tubular section integral with the internal flange whereby a channel is formed by the tubular sections and flange connecting the same, a hood having a curved surface telescoping the smaller tubular section, and resting in the channel.

5. A condenser having an electrode comprising a shell with integral external means for cooling, an insulating hood for said shell, a core in said hood, and an electrode suspended by the core within the shell, said shell and hood being adapted to maintain a vacuum between the electrodes.

6. A condenser having two electrodes, one of which surrounds the other, radiating means for cooling the outer electrode, means for completing an enclosure of said outer electrode, said means supporting the inner electrode, the outer electrode and said means being adapted to maintain a vacuum between the electrodes.

Signed at New York in the county of New York and State of New York, this 13th day of January, A. D. 1925.

WILLIAM DUBILIER.

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