Oct. 12, 1926. 1,603,041

R. GAUDIO

VARIABLE CONDENSER

Filed Feb. 18, 1926

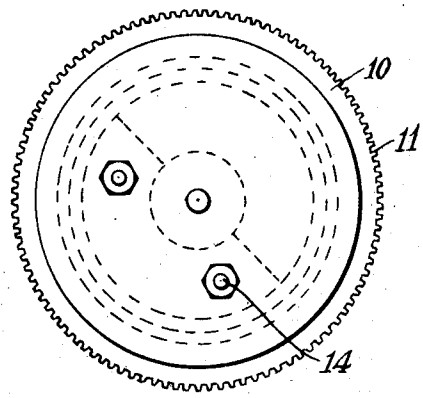


FIG. 1

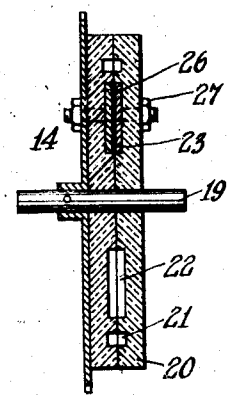


FIG. 2

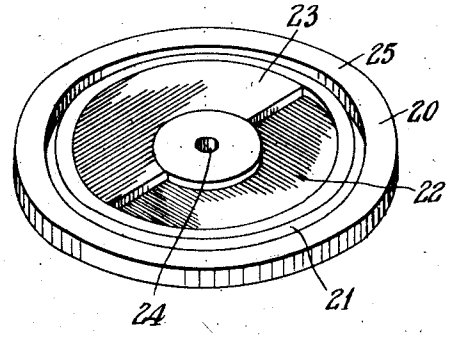


FIG. 3

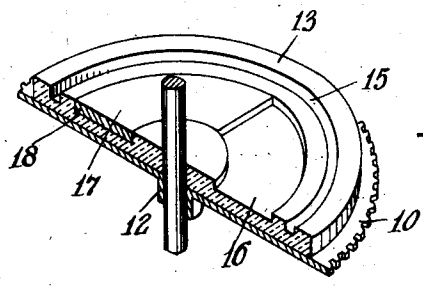


FIG. 4

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VARIABLE CONDENSER.

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The main object of this invention is to provide an improved type of condenser having for its main characteristic its complete simplicity of design which permits the elimination of a number of parts heretofore required for successful operating condensers, without impairing the efficiency of the instrument to any extent.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawing.

Referring briefly to the drawing, Figure 1 is a front elevational view of the condenser.

Figure 2 is a sectional side elevational view of the same.

Figure 3 is a perspective view of the stationary condenser unit.

Figure 4 is a sectional perspective view of the rotating condenser unit.

Referring in detail to the drawing, the numeral 10 indicates a circular plate having teeth 11 encircling its periphery. The plate constitutes one of the elements which are secured to other elements of a movable unit. The teeth 11 are engaged by a pinion which is mounted on a shaft or spindle to which shaft, a knob is attached for manipulating the pinion to rotate the plate 10, the shaft, knob and pinion not being shown on the drawing, as they constitute the usual construction in radio sets. The plate 10 has an axial opening and a sleeve 12 encircling said opening which extends from one face of the plate. The opposite surface of the plate 10 has a circular disk 13 secured thereto by relatively small bolts 14. This disk has an encircling channel 15 near its marginal edge and a relatively wider circular channel 16 within the outer channel 15. In the inner channel, an additional semi-annular metallic disk is embedded in said channel and said disk is integral with one end of the bolts 14. The upper face of the first-named disk 13 lies on a plane above the surface 18 of the semi-annular disk, that is, the height of the channel 16 is greater than the thickness of the semi-annular disk 17. The entire elements mentioned, which are coupled together as a single unit by the bolts 14 are supported upon a shaft 19. This shaft is adapted to be passed thru an opening in a panel and a stationary unit completes the structure of the condenser. This stationary unit comprises a circular disk wheel 20, similar in all respects to the first-named disk 13, having a narrow circular channel 21 and a relatively wider channel 22 of the same dimensions as and in all respects identical to the channel 16 in the disk 13. This disk has an axial opening 24 into which the shaft 19 slips and is retained stationary by securing brackets to the outer face of the wheel 20 which anchors and retains the stationary unit rigid. Within the channel 22, a semi-annular disk 23 is positioned. This disk is of lesser thickness than the depth of the channel and when the surfaces 25 of the wheel 20 and 18 of the semi-annular disk 17 lie facing each other, a narrow gap 26 separates these semi-annular disks. The disk 23 is fixed within the circular channel 22 by threaded bolts 27 which are rigid with the disk 23 and receive nuts 28 which fix the disk 23 in place on the stationary wheel 20.

This invention aims to reduce the multiplication of parts which were heretofore essentially required in the construction of a condenser and to still retain maximum efficiency. The uses of the condenser are well known to those skilled in the art and a description is therefore thought unnecessary. By substituting a pair of semi-annular disks, one upon a movable unit and one upon a stationary unit, efficiency may be had by varying the relation between the semi-annular disks on the stationary and movable units of the condenser.

I claim:—

1. In a condenser, a shaft, a movable unit supported and rigid with said shaft, said movable unit comprising a toothed plate, an insulating disk thereon having a relatively wide circular channel and a second semi-annular disk embedded in said channel, and a stationary unit similar to the second-named disk and disks supported on said shaft adjacent the first-named disks.

2. In a condenser, a shaft, a movable unit supported and rigid with said shaft, said movable unit comprising a toothed plate, an insulating disk thereon having a relatively wide circular channel and a semi-annular disk embedded in said channel, the thickness of said semi-annular disk being less than the depth of the channel in which it is em-

bedded, and an additional stationary unit mounted on said shaft and identical to the disks on the movable unit.

3. In a condenser, a shaft, a movable unit supported and rigid with said shaft, said movable unit comprising a toothed plate, an insulating disk thereon having a relatively wide circular channel and a semi-annular disk embedded in said channel, the thickness of said semi-annular disk being less than the depth of the channel in which it is embedded, said disks having a gap between them, and bolts securing said disks to their respective opposing disks.

In testimony whereof I affix my signature.

RICHARD GAUDIO.