

April 14, 1931.

B. M. LEECE

1,801,203

CONDENSER

Filed Feb. 23, 1924

Fig. 2.

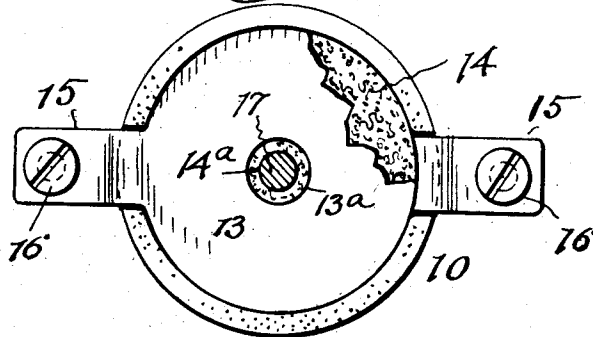


Fig. 1.

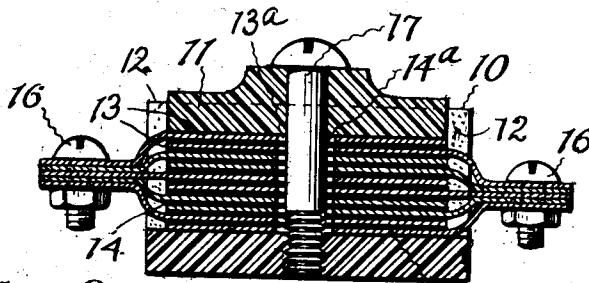


Fig. 3.

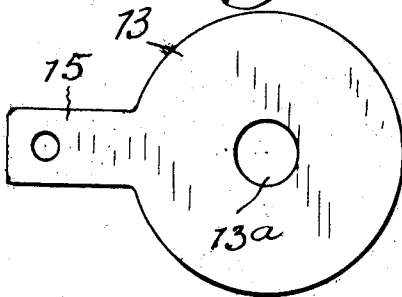


Fig. 4.

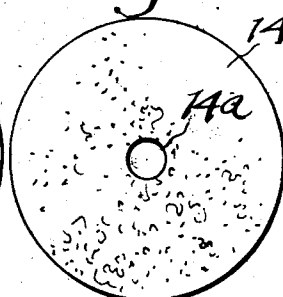


Fig. 5.

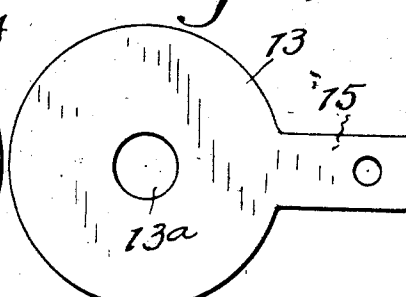


Fig. 6.

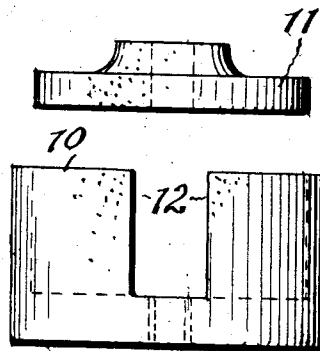
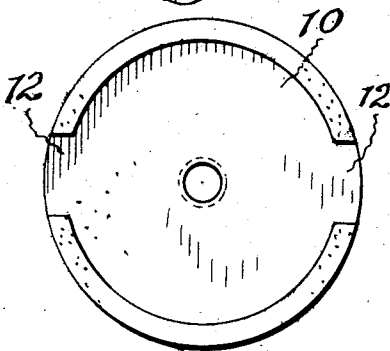


Fig. 7.

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UNITED STATES PATENT OFFICE

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CONDENSER

Application filed February 23, 1924. Serial No. 694,508.

This invention relates to condensers adapted particularly for radio apparatus.

The principal object of the invention is to provide a condenser which can be manufactured conveniently and cheaply and whose capacity can be readily adjusted.

The invention may be briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

In the accompanying sheet of drawings, wherein I have shown a preferred embodiment of my invention; Fig. 1 is a vertical sectional view through the condenser; Fig. 2 is a top plan view of the same with the cover of the casing removed; Figs. 3, 4, and 5 are face views of two adjacent metal plates or disks and intervening disk of insulating material; Fig. 6 is a plan view of the body of the casing, and Fig. 7 is a side elevation of the cover and body of the casing showing the same separated.

My improved condenser includes a casing which is preferably cylindrical in form, and which is composed of a cup-shaped body portion 10 and a cover 11 both formed of insulating material, and the cover being adapted to fit slidably or telescopically into the top of the cup. The upright walls of the cup have two portions cut away from the rim of the cup downwardly, forming two slots 12, open at their upper or outer ends to accommodate the terminal portions or extensions of the condenser plates, and these slots are preferably diametrically opposite each other.

The condenser also includes two sets of metal plates 13 preferably of disk form and separated by disks or plates 14 of suitable insulating material. Each of the disks or plates 13 has a terminal extension or neck 15. The two sets of metal disks 13 are similar in construction, but those of one set are turned 180° with respect to the other and the terminal extensions 15 of one set project out through one of the slots 12, and those of the other set project out through the other of the slots 12.

Terminal screws 16 pass through the ter-

minal extensions on the two sets of plates and clamp them together as shown. These screws constitute the terminals of the condenser, and the means by which the condenser may be connected to the desired circuit, which may be a radio circuit, as already stated.

The condenser is completed by a clamping screw 17 which is disposed axially of the condenser and arranged at the center thereof, this screw passing loosely through the cover and engaging in a threaded opening in the bottom of the body or cup 10 of the casing. By means of this screw the cover 11 is held in the upper part of the cup and the metal and insulating disks are clamped between the cover and the base of the cup. The screw does not touch the metal disks 13 as the latter have openings 13a to accommodate the screw, these openings being considerably larger than the shank of the screw and larger than the similar openings 14a in the insulating disks 14. Further it is to be noted that the metal and insulating disks are cut to fit closely within the cup so that there can be no relative movement capable of producing a short circuit.

It will be apparent that with this construction the degree of pressure between the metal and insulating disks can be very readily varied by adjusting the screw 17, and this affords a very convenient means of varying the capacity of the condenser, the capacity being decreased as the screw is loosened and, as the compression is decreased, and the capacity being increased as the pressure is increased by tightening the screw. Additionally, the construction admits of ready variation in the number of metal and insulating disks. This forms another means of varying the capacity of the condenser. The cup and cover of the casing can be molded from insulating materials, such as bakelite or hard rubber, and as the plates and insulating disks are formed by a punch press operation, the condenser can be formed rapidly and in quantities.

Having described my invention, I claim:—

1. A condenser comprising a case having parallel top and bottom walls one adjustable

toward and from the other and an edge wall extending between the edge portions of said top and bottom walls, said edge wall being provided with openings, two sets of plates each set being alternated with those of the other and separated therefrom by insulating material, said plates being formed to fit within the edge wall of the case and having terminal extensions projecting through said openings and fastened together exteriorly thereof, and means for adjusting one of the said top and bottom walls of the case toward and from the other to clamp the plates between them and to vary the pressure on the plates.

2. A condenser composed of a case having two telescopic members, one fitting within the other and adjustable therein, the outer member having openings, metal plates and insulating material between the plates, said plates fitting within the outer member, the plates being arranged in two sets, each set having terminal extensions projecting through the openings and fastened together.

3. A condenser comprising two interfitting sets of metal plates with insulating material therebetween, each set having a terminal extension, and a casing comprising sidewalls having portions cut away and open at their outer ends for respectively receiving said terminal extensions as the plates are received within said sidewalls, without thereby necessitating bending of the extensions.

4. A condenser comprising two interfitting sets of metal plates with insulating material therebetween, each set of plates having terminal extensions, and a casing for said plates comprising sidewalls having slots formed therein and extending through the rim thereof for receiving said terminal extensions.

5. A condenser comprising a casing, two sets of interfitting metal plates with insulating material therebetween, the plates of each set having terminal extensions fastened together outside of said casing, said casing comprising sidewalls having slots therein open at their outer ends for respectively receiving said assembled extensions as the plates are received within said sidewalls.

6. A condenser comprising two interfitting sets of metal plates with insulating material therebetween, and a casing for said plates comprising a base, sidewalls associated with said base and a cover associated with said sidewalls, one of said casing portions being constructed of insulating material, and a metal screw for relatively moving said cover with respect to said base to impose and vary pressure upon said plates to vary the capacity of the condenser, said plates having openings therethrough to receive and clear said screw, and said casing being adapted to guide and hold the plates from contact with said screw.

7. A condenser comprising two sets of

metal plates, at least one plate of each set being interposed between adjacent plates of the other set, insulating material between the plates, and a casing for said plates comprising a base, sidewalls associated with said base forming guides for said plates, a cover telescopically arranged with respect to said sidewalls and metallic means passing through said plates for moving said cover relative to said base to impose a pressure upon said plates, to vary the same and thereby adjust the capacity of the condenser, said plates having central openings large enough to clear said metallic clamping means.

8. A condenser comprising a base, a metallic clamping screw mounted therein and extending outwardly therefrom, metallic plates having openings therein to receive and clear said screw, means on said base to hold said plates against lateral movement, insulation between said metallic plates, and an insulating disc surrounding said screw above said plates.

In testimony whereof, I hereunto affix my signature.

BENNETT M. LEECE.