Dec. 20, 1932. C. E. KILGOUR 1,891,283

RADIO CONDENSER TUNING CONTROL

Filed Jan. 27, 1928

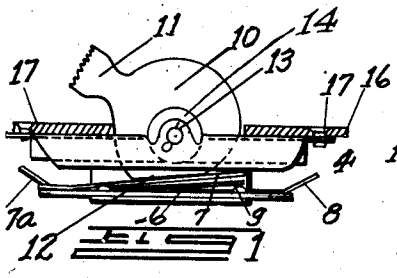


FIG 1

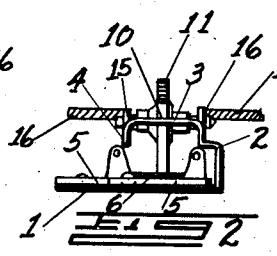


FIG 2

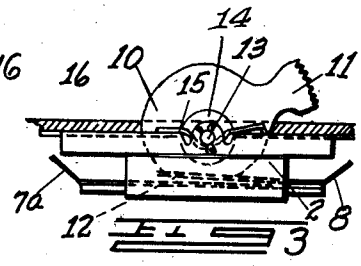


FIG 3

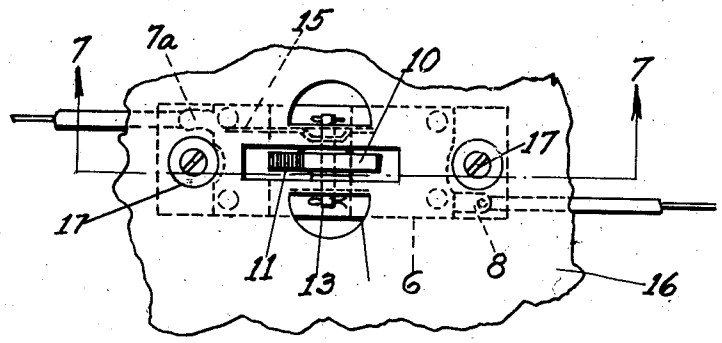


FIG 6

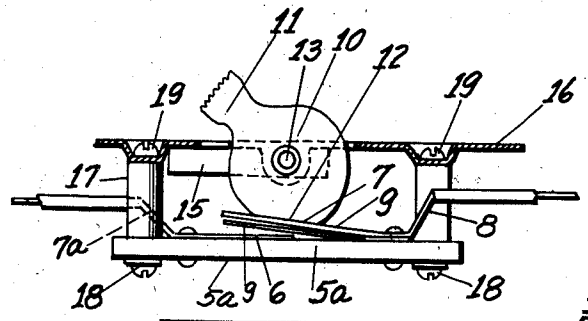


FIG 7

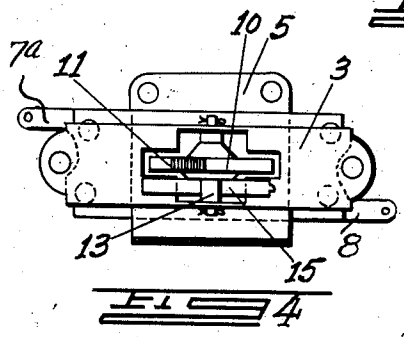


FIG 4

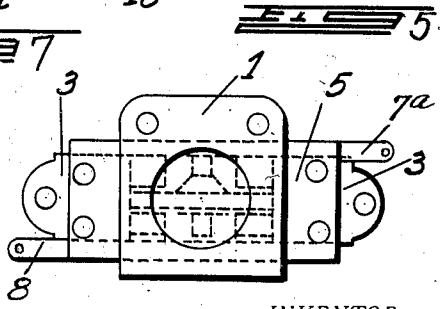


FIG 5

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UNITED STATES PATENT OFFICE

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RADIO CONDENSER TUNING CONTROL

Application filed January 27, 1928. Serial No. 250,024.

My invention relates to controlling devices for radio condensers which will regulate the tuning thereof, and particularly to a novel type of tuning control device particularly adapted for use with a flat plate, hinged or pocketbook type condenser.

It is the object of my invention to provide for a flat plate hinged type condenser of simple construction comprising two conductive plates having a sheet of mica or other suitable material having dielectric properties between them, a control element preferably made from an integral piece of dielectric material which will have a handle portion exposed for manual operation and a cam face adapted to bear against one of the conductive plates and so regulate the condenser. It is my object further to so shape the cam face that a slight movement of the handle will bring the plates to approximately tuned position and to then have portions of the cam face curved almost on equal radial lines from the axis of the control element which will allow a greater movement of the handle to bring the parts into accurately tuned position.

A further object is to so construct the case that the parts may be readily and easily assembled in a case made from a single blank of sheet metal, bent and curved to hold the parts.

In the drawing:

Figure 1 is a front elevation of the new construction.

Figure 2 is an end view of the same.

Figure 3 is a side elevation of the opposite side as that shown in Figure 1.

Figure 4 is a top plan view.

Figure 5 is a bottom plan view.

Figure 6 is a plan view showing a modified form for mounting.

Figure 7 is a cross section taken on the lines 7—7 of Figure 6.

As a preferable method of construction, the operating parts are mounted in a casing made from a blank of integral sheet metal, cut and bent into a base member 1, a side wall 2, a top member 3, which is slotted to allow for passage of the operating cam and with an overhanging flange 4, which serves as a support in connection with the opposite side wall 2 for the operating cam member. Mounted on the base 1, preferably riveted thereto, is a plate 5 of suitable dielectric material and riveted on this plate are the conductive plates 6 and 7. The lower plate 6 has a wire connection at 7 and the upper plate, a wire connection at 8.

Between the plates is a sheet of mica 9, which during all positions of the plates, forms a dielectric barrier separating them. The upper plate is preferably made of spring metal so that it will normally tend to move toward open position.

The control element which forms the basis of my invention is composed of a dielectric element 10 and having a projecting handle portion 11 and a cam shaped engaging face 12, which in use bears against the upper condenser plate. This operating element is mounted on a central pivot pin 13 which extends through ears 14 formed in the side walls 2 and 4 of the casing and has cotter pins which extend through holes in the ends of the pivot pin. A spring clip 15 mounted on the top wall 3 also preferably bears on the pivot so as to prevent any movement without manual adjustment. One particular feature of my cam control element is that it enables a slight movement of the handle to bring the conductive plates almost to tuned position while the balance of the cam surface is only slightly curved from a true circular shape which enables a given movement of the handle to only increase slightly the relative position of the conductive plates. The device is secured on the inside of the panel 16 by screws 17 extending in from the outer face of the panel which is slotted to allow the cam and its handle to project forwardly therethrough.

A modified mounting for the device shown in Figures 6 and 7 consists in a somewhat thicker dielectric plate 5*a* than that employed in the other form and dielectric posts 17, secured to the four corners of the plate 5*a* by screws 18; the posts 17 being secured in place by screws 19 in suitable depressions in the panel 16.

Theoretically, I have provided a tuning

control device having a fine degree of accuracy where it is needed.

Practically I have also provided a control which is very inexpensive to make and which may be assembled with unskilled labor. The feature of forming the casing of an integral blank of sheet metal and having the handle and cam shaped operating member made from one piece, eliminates much of the possibility of the parts getting out of adjustment, a criticism which may be applied to many of the more complex tuning control devices now in use.

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

1. A radio condenser comprising a casing having a face plate portion and a back plate portion interspaced therefrom, a condenser structure of the hinge type mounted within said casing upon said back plate portion, said face-plate portion being slotted above said condenser structure, ears on said face-plate portion adjacent said slot, an operating cam pivoted for rotation upon said ears, and having a portion to contact said condenser structure, and a portion extending through said slot and shaped to form an operating handle for said cam, said contacting portion having a face of eccentric curvature.

2. In combination with a variable flat plate hinged type radio condenser, a casing formed of an integral blank of sheet metal bent into a C-shaped cross section, the part of said casing corresponding to the top of the C having an aperture therein, and the part of said casing corresponding to the bottom of the C supporting said condenser, and a control for said condenser extending through said aperture and having a manually operative portion and a cam shaped portion, said cam shaped portion adapted to bear against a plate of said condenser and vary the distance between said plates, and integral means extended from said top of said casing in which said control member is pivotally mounted.

CHARLES E. KILGOUR.