

UNITED STATES PATENT OFFICE

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VARIABLE CONDENSER DIAL CONSTRUCTION

Application filed March 17, 1932. Serial No. 599,533.

My invention relates to improvements in variable condenser dial construction, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a variable condenser dial construction which is particularly adapted for use in indicating the exact angular position of the rotor blades of the condenser.

A further object is to provide a construction of the class described having a dial and two indicating hands or arms operatively associated with the dial, one of the hands being adapted to indicate the approximate position of the rotor blades, the other of the hands serving to indicate more exactly the angular position of the rotor with respect to the stator.

A further object is to provide a dial construction having two indicating hands, one of the hands being operatively geared to the other of the hands in such ratio that one of the hands will move completely around the dial while the other of the hands traverses one major division of the dial.

A further object of my invention is to provide a dial construction which is especially adapted for use in short wave radio devices.

Other objects and advantages will appear in the following specification and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing, forming part of this application, in which

Figure 1 is a front elevational view of a construction embodying my invention,

Figure 2 is a top plan view of this construction, and

Figure 3 is a section taken along the line 3-3 of Figure 1.

In carrying out my invention, I provide a variable condenser 1 having a stator 2 and a rotor 3. The stator is provided with a plurality of stationary plates 4. The rotor includes a plurality of movable plates 5 which are fixedly secured to a condenser shaft 6.

A hand 7 is rigidly secured to the front end portion of the shaft 6 which projects through

an opening in a panel 8. The panel 8 and the stator 2 of the condenser are rigidly secured to a base 9. A dial 10 is concentrically positioned around the shaft 6. The dial may be supported in any suitable manner. In the present instance, it is shown rigidly connected with the panel 8.

Upon the shaft 6 is fixedly secured a pulley wheel 11, which is operatively connected to a pulley wheel 12 by a belt 13. The pulley wheel 12 is rigidly secured to a shaft 14 which is rotatably mounted on a flanged sleeve means 15 which is fixedly secured to the panel 8. The front end of the shaft 14 projects through an opening 15' in the panel 8 and is provided with a dial 16 which is rigidly secured thereto.

A gear wheel 17 which is rigidly secured to the shaft 6 is operatively connected to a pinion and gear wheel means 18 rotatably mounted on a shaft 19. The shaft 19 may be rotatably held in position by having one end supported in a recessed portion 20, and its other end extending through a bracket 21, which may be rigidly secured to the panel 8.

A sleeve 25 is rotatably mounted on the shaft 6 and provided with a pinion 27 which is operatively connected to a gear wheel 24 forming part of a pinion and gear means 18. At the outer end of the sleeve 25, a hand 28 is fixedly secured which may be slightly longer than the hand 7. The dial 10 may, if desired, be circular in shape and may be calibrated near its circumference in any suitable manner. For the purpose of illustration, I have shown a circular scale 30 having ten equally spaced major dividing marks 31. Between each of these major marks, the scale is subdivided into ten equally spaced sections.

From the foregoing description of the various parts of my invention, the operation thereof may be readily understood. The hand 28 and the hand 7 may be operatively geared together in any suitable ratio, such as for instance, a ratio of ten to one.

Now let us assume that a dial setting of 276 is desired. The knob 16 may be rapidly turned in a clockwise direction so as to bring the hand 7 to the major division 2'. The knob

16 is now slowly rotated until the hand 28 passes the major dividing mark 7' and is stopped directly over the sixth subdividing mark in a clockwise direction from the major dividing mark 7'. The hands now indicate the correct dial setting.

The modification embodying my invention is particularly adapted for operative connection to a rotary condenser of any straight line type. If my dial construction be used with condensers not of the straight line type, the divisions may be changed to correspond with the characteristic of the condenser, or any suitable mechanism, not shown, may be operatively connected to the condenser or the dial construction whereby the hands may move so as to read correctly on a straight line dial.

I claim:

1. A variable condenser operating and indicating mechanism comprising a condenser having fixed and movable plates, a rotatable shaft upon which said movable plates are mounted, a graduated dial through which one end of said shaft extends concentrically, a pointer secured to said end of said shaft for movement over the face of said dial for indicating coarse adjustment of said movable plates, a rotatable sleeve positioned concentrically on said shaft, a fine adjustment pointer secured to said sleeve and being movable thereby over said dial, a gear secured to said shaft, a motion multiplying gear train operatively connected to said gear and to said sleeve for rotating the latter on said shaft, and means offset axially of said sleeve and shaft for operating the same.

2. A variable condenser operating and indicating mechanism comprising a condenser having fixed and movable plates, a rotatable shaft upon which said movable plates are mounted, a graduated dial, a pointer operatively connected to said shaft for movement over the face of said dial for indicating the coarse adjustment of said movable plates, a rotatable sleeve positioned coaxially with respect to said coarse adjustment pointer, a fine adjustment pointer secured to said sleeve and being movable thereby over said dial, a member secured to said shaft, motion multiplying means operatively connected to said member and to said sleeve for rotating the latter at a predetermined speed greater than that of the coarse adjustment pointer, and means offset axially of said pointers for operating said shaft.

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