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E. F. WESTON

RADIODIAL

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2 Sheets-Sheet 2

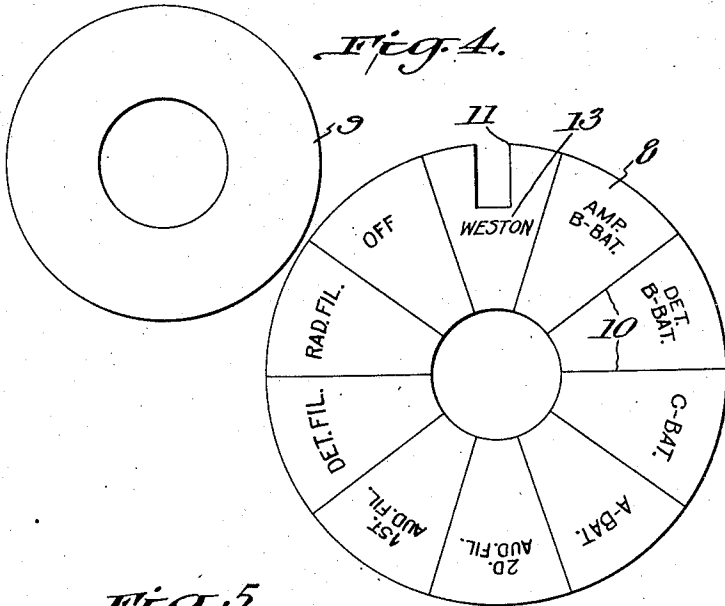


Fig. 3.

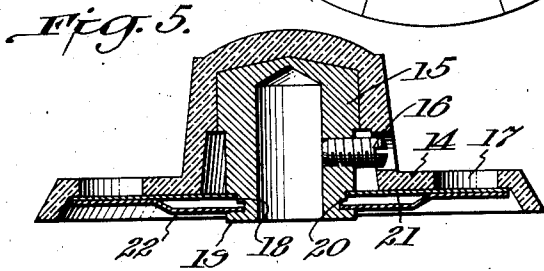


Fig. 6.

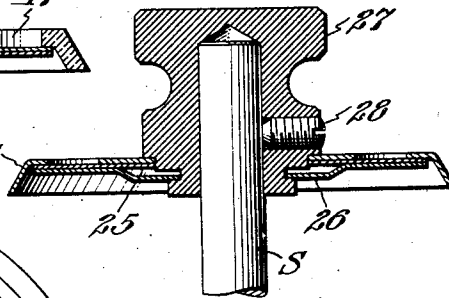


Fig. 7.

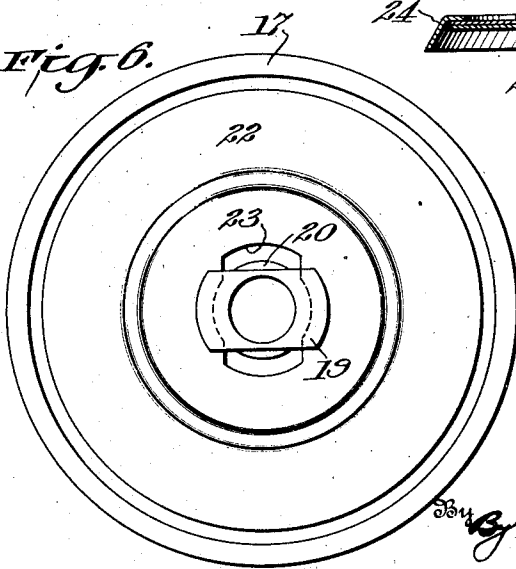
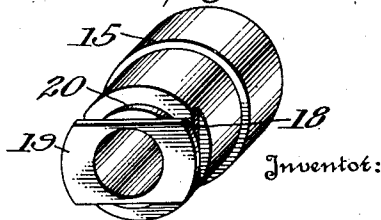


Fig. 8.



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# UNITED STATES PATENT OFFICE.

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## RADIODIAL.

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This invention relates to a dial, and particularly to a dial for use on a shaft having a plurality of angularly spaced operating positions. While not limited thereto, the invention will be described as embodied in a dial for use on radio equipment.

Tap switches for inductances or other reactances and switches for voltmeter circuits are usually furnished with a dial or pointer having a numerical scale, which scale requires the use of a chart for ascertaining the particular circuit established when the shaft occupies a given position. In view of the great variety of circuits in which a tap switch or voltmeter switch might be incorporated, it has been considered impractical to furnish a dial with legends which make the use of a reference chart unnecessary.

An object of this invention is to provide a dial having a legend-bearing sheet or plate upon which may be placed legends appropriate for the particular use to which the dial is put. A further object is to provide a dial which conforms in a general way to the usual radio dials and which has a removable legend-bearing sheet. More specifically, an object of the invention is to provide a dial having a plurality of circumferentially arranged sight openings behind which the legend-bearing portions of a removable sheet are fixed.

These and other objects of the invention will be apparent from the following specification when taken with the accompanying drawings in which,

Fig. 1 is a fragmentary central section illustrating one embodiment of my invention and the shaft and panel with which the same is associated;

Fig. 2 is a front elevation of the dial and a portion of the panel;

Fig. 3 is a plan view of a typical indicating sheet;

Fig. 4 is a plan view of a spring washer which holds the indicating sheet in place;

Figs. 5 and 6 are a central section and a rear elevation, respectively, of a modification;

Fig. 7 is a perspective view of the bushing shown in Figs. 5 and 6; and

Fig. 8 is a central section of a further modification of the invention.

In the drawings, the reference character P indicates the panel in front of which the

dial D is mounted upon the shaft S, which shaft forms a portion of a radio instrument I. As illustrated in Fig. 1, the instrument comprises a voltmeter switch, but the particular instrument with which the dial is to be associated is not an essential element of the invention.

As shown in Fig. 1, the dial D comprises a bushing 1 and set screw 2 for attaching the dial to the shaft S. The bushing is embedded in a molded knob 3 and is threaded at its inner end 4 to receive the clamping nut 5 which holds the dial member 6 against the inner face of the knob 3.

As shown in Fig. 2, the dial member 6 is provided with a plurality of circumferentially arranged sight openings 7 which are angularly spaced around the dial to correspond to the angular spacing of the several operative positions of the shaft S with which the dial is to be used. As illustrated, the dial member 6 is formed of a molding composition and the sight openings are formed as apertures extending through the dial member. If desired, the dial member 6 may be formed of opaque material having transparent portions providing the several sight openings. The indicating sheet or legend-bearing chart 8 may be a sheet of paper, celluloid or the like, which is held against the rear face of the dial member 6 by a spring washer 9 and the flanged shoulder of the nut 5. The indicating sheet 8 is preferably marked off in zones by radial lines 10 and is notched as at 11 for cooperation with the lug 12 which is formed on the rear of the dial. The various sectors of the indicating sheet 8 carry legends which, in the particular sheet illustrated, indicate the particular circuits across which the volt-meter is connected when the shaft S of the switch I is adjusted by the dial D. The panel P is provided with a fiducial mark F and the dial is adjusted on the shaft S to establish the particular circuit which is indicated when a given legend is adjacent the mark F. The portion of the indicating sheet adjacent the notch 13 is not exposed through the dial and this portion may carry the name of the manufacturer, directions for use or other appropriate legends 13.

As furnished by the manufacturer, the dial may have a plurality of indicating

5 sheets 8 which carry legends appropriate for use in various standard types of sets. If the user does not find a sheet carrying the particular legends which are suitable for the use to which the dial is to be put, he may  
 10 prepare a sheet for his special use by marking the appropriate legends upon the rear face of one of the stock sheets. In some instances the sheet furnished will carry the particular legends which the user wishes, but these legends will not appear in the order which he desires. In this case the indicating sheet may be cut along the radial lines 10 and reassembled with the several  
 15 sectors in their proper relationship.

As illustrated in Figs. 5-8, inclusive, the knob and dial may be combined. In Fig. 5, the knob and dial member 14 is molded upon the bushing 15, which bushing is provided with the usual set screw 16. The dial 20 14 is provided with a plurality of sight openings 17 as in the other embodiment of the invention. The inner end of the bushing 15 is provided with sections 18, 19, of non-circular cross-section, which sections are spaced apart by the section 20 of circular cross-section. The indicating sheet 21 has a central aperture of the same shape as the bushing section 18, and the sheet is held  
 25 against the rear face of the dial member by a spring washer 22 which is provided with a non-circular aperture 23 which permits the washer to pass over the non-circular section 19 of the bushing. The washer is secured to the dial by passing it over the end of the bushing and then rotating it through 90°.

As shown in Fig. 8, the apertured dial member 24 comprises a metal stamping against the rear face of which the indicating sheet 25 is positioned by the spring washer 26. The washer and the knob 27 are provided with a bayonet slot construction similar to that illustrated in Figs. 5-7. The knob 27 is provided with a set screw 28 for  
 40 securing the same to the shaft S.

In each of the embodiments described the peripheral edge of the dial member carries a rearwardly extending flange which provides a recess within which the indicating sheet and associated parts are located.  
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It will be apparent that the invention is not limited to dials for use with radio instruments, and that it is not limited to the particular embodiments herein illustrated and described. Many changes which may be made in the various parts, their relative size, shape and location fall within the scope of my invention as set forth in the following claims.  
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60 I claim:

63 1. In a device for rotating a shaft and indicating the angular adjustment thereof, a dial member for cooperation with a fixed fiducial mark, said member having circumferentially arranged sight openings there-

through, an indicating sheet at the rear of said dial member and with indication-bearing portions visible through said sight openings, means securing said sheet to said dial member, and means for securing said dial member to a shaft. 70

2. A combined knob and dial comprising a dial member having circumferentially arranged apertures therethrough, an indicating sheet, means for removably securing said sheet to said member with portions thereof extending across said apertures, and means for securing said dial member to a shaft. 75

3. A dial comprising a dial member having circumferentially arranged apertures therethrough and having a peripheral flange defining a recess at the rear of said member, an indicating sheet, means for removably securing said sheet in said recess with portions thereof extending across said apertures, and means for attaching said dial to a shaft. 80

4. An indicating device for use with a shaft having angularly spaced operating positions, said device comprising a dial having circumferentially arranged apertures therethrough, the angular spacing of adjacent openings corresponding to the angular spacing of the respective operating positions of the shaft, a sheet removably secured to said dial and adapted to display indications through the several apertures, and means for connecting said dial to the shaft. 85

5. A device for rotating a shaft and for indicating the angular adjustment thereof, said device comprising an opaque dial adapted to be secured to the shaft, a plurality of circumferentially disposed sight openings through said dial, an indicating sheet having legends visible through said sight openings, and means removably securing said sheet to said dial. 90

6. A combined knob and dial comprising an apertured dial, a legend-bearing sheet, cooperating means on said dial and sheet for positioning the legend-bearing portions of said sheet in alinement with the apertures of the dial, and means for securing said sheet to said dial. 95

7. An indicating device comprising an apertured dial, a sheet having legend-bearing portions thereof in alinement with the apertures of said dial, means preventing relative angular movement of said sheet and dial and means including a flexible member for holding said sheet against the rear face of the dial. 100

8. The invention as claimed in claim 7, wherein said means comprises a spring plate having a bayonet slot connection with said dial. 105

9. An indicating dial comprising a bushing adapted to be secured to a shaft, a dial member carried by said bushing and having sight openings therethrough, a legend-bearing sheet at the rear face of said dial mem- 110

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ber, and means carried by said bushing for holding said sheet against angular movement with respect to said dial member.

10. An indicating device comprising a bushing for attachment to a shaft, an apertured member carried by said bushing, said member having a rearwardly directed pe-

ripheral flange, a legend-bearing sheet seated against the rear face of said member, and means preventing relative angular movement of said sheet and member. 10

In testimony whereof, I affix my signature.

EDWARD F. WESTON.