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E. G. DANIELSON ET AL

INDICATING DIAL

Filed Dec. 3, 1924

FIG. 1.

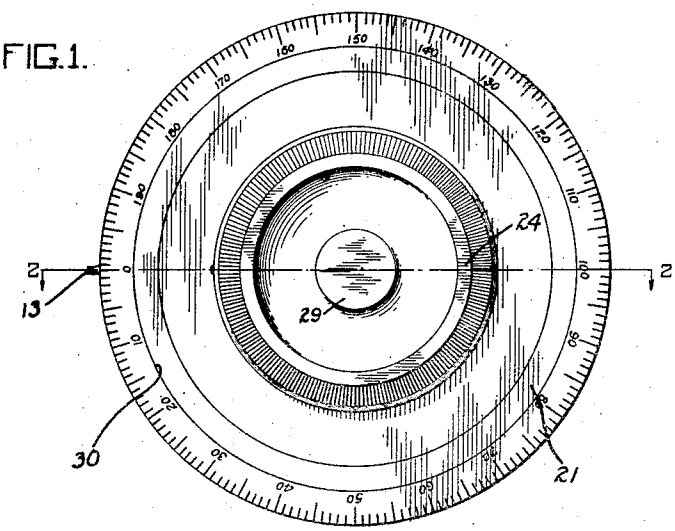
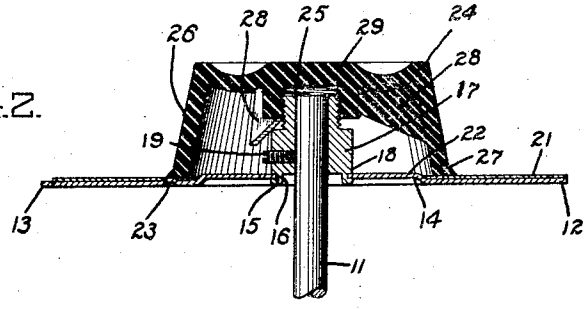


FIG. 2.



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UNITED STATES PATENT OFFICE.

ERNEST G. DANIELSON, OF SAN FRANCISCO, AND ROGER M. WISE, OF OAKLAND, CALIFORNIA, ASSIGNORS TO E. T. CUNNINGHAM, OF SAN FRANCISCO, CALIFORNIA.

INDICATING DIAL.

Application filed December 3, 1924. Serial No. 753,649.

To all whom it may concern:

Be it known that we, ERNEST G. DANIELSON and ROGER M. WISE, citizens of the United States, and residents, respectively, of the city and county of San Francisco, in the State of California, and of the city of Oakland, in the county of Alameda and State of California, have invented a new and useful Indicating Dial, of which the following is a specification.

This invention relates to a control dial, and more particularly to such as are used for varying an electrical characteristic of a circuit, such as radio circuits. Such dials are usually made a part of the knob or other manually operated element, by the aid of which the control is effected. For example such dials may be attached to the shafts of condensers or variable inductances or resistances, and may cooperate with a stationary index to show the condition of the circuit that is controlled, or to indicate the wave length or station to which the circuit is tuned.

It is one of the objects of our invention to improve in general the construction of such indicating dials.

It is another object of our invention to make it possible to renew or replace the indicating portion of the device by providing a separable indicating dial.

Our invention possesses other advantageous features, some of which with the foregoing, will be set forth at length in the following description, where we shall outline in full that form of the invention which we have selected for illustration in the drawings accompanying and forming part of the present specification. Although in the drawings we have shown but one embodiment of the invention, we do not desire to be limited thereto, since the invention as defined in the claims may be embodied in other forms also.

Referring to the drawings:

Figure 1 is a plan view of an indicating dial embodying our invention; and

Fig. 2 is a section of the device illustrated in Fig. 1.

In the present instance, the dial is shown as supported on a shaft 11, which may be the shaft of a tuning element such as a variable condenser or a variable inductance. The dial comprises a thin circular support 12, preferably made of some metal such as aluminum, which may readily be stamped to the required form. A projection 13 may be provided at one point of this support in order to serve as a stop with respect to some stationary element on a flat surface contiguous to the bottom surface of the support 12. The support 12 has a slight central depression 14, as well as an aperture 15 therein, extending centrally thereof.

The aperture 15 serves to accommodate an extension 16 of a stud 17. This stud has a shoulder 18 which abuts against the edges of the aperture 15. Beyond the shoulder 18 the stud 17 has an extension 16 which may be upset over the outer edge of the aperture 15 so as to hold the stud 17 firmly in place on the flat support 12. It is to be noted that depression 14 is deep enough so that there is no interference from the extending portion of the stud 17 when the support 12 is placed near to a cooperating flat surface, such as the outer surface of a panel.

A set screw 19 passes radially of the stud and is arranged to fasten the shaft 11 securely thereto.

On one surface of the support 12 there is a dial 21, which may be formed either integrally or separably with respect to the support. In this instance, we show the dial 21 as separable, and made of paper or of other light material. It has a central aperture large enough to pass over the projecting central portion 22 of the support 12. This dial is marked in any appropriate manner, in the present instance being marked in 200 equal divisions, whereby the position of the shaft 11 with respect to a stationary index point may readily be determined by the aid of these markings. In order to insure that the dial 21 will be properly positioned angularly with respect to the support 12, we provide a small circular projection 23, upset from the support 12, which fits into a corresponding aperture in the dial 21. In this way it is certain that the zero point of the dial 21 may always be made to fall immediately in line with the stop 13.

In order to clamp the dial 21 detachably although securely in place, as well as to provide some manually controlling means for rotating the shaft 11, we provide a knob 24 which is preferably made of insulating material such as bakelite. This knob has a central aperture 25 which is threaded to engage over the threads of the stud 17. The knob 24 may be knurled externally as indi-

cated in Fig. 1, and is provided furthermore with the depending flange 26, forming an annular clamping surface 27 for the dial 21. This depending wall 26 serves also to conceal the bushing 17 as well as the set screw 19, with the result that the entire dial structure presents a pleasing appearance. In order to strengthen the knob 24, several ribs or vanes 28 may be provided, connecting the flange 26 with the hub 29.

When using the dial in connection with radio tuning apparatus such as variable condensers or inductances, it is advantageous to be able to mark on the dial the various stations or their call letters opposte the division point where the electrical circuit would be in tune to receive from the station. In the present instance a sufficiently large space is provided for this purpose immediately inside of the ring 30 that carries the division mark.

The advantages of the construction as described are quite evident from the foregoing description. Comparatively few parts are necessary to construct the completed dial. It presents a neat appearance, and provides sufficient room for marking the dial with various stations or their call letters. In case it be required to replace or remove the dial 21, this may be done by removing the knob 24 from the stud 17.

We claim:

1. In combination, a circular support, a dial disposed on one side of the support, a stud clamped to the support, and a thumb nut having an annular clamping surface for cooperating with the dial, and threaded on said stud.

2. In combination, a circular dial having a depressed central portion in which there is an aperture, a member having an extremity with a shoulder abutting against the edge of the aperture in the dial, and with an extension passing through the aperture and upset so as to hold the member on the dial, the depression in the dial being sufficient so that said extension does not extend beyond the depression, whereby the dial on the depression side may be held close to a flat surface, and a knob supported on the member.

3. In combination, a circular support having a depressed central portion in which there is an aperture, a hollow stud having threads at one extremity, the other extremity having a shoulder abutting against the edge of the aperture in the support, as well as an extension passing through the aperture and upset so as to hold the stud on the support, the depression in the support being sufficient so that said extension does not reach beyond the depression, whereby the support on the depression side may be held close to a flat surface, a separable dial disposed on said support on the side opposite from the depression, and a knob threaded on the stud having an annular clamping surface for holding the dial to the support.

In testimony whereof we have hereunto set our hands.

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