March 22, 1932. B. C. BOOTH 1,850,656

CONTROL DEVICE FOR VARIABLE INSTRUMENTS

Filed Feb. 16, 1931

Fig 1

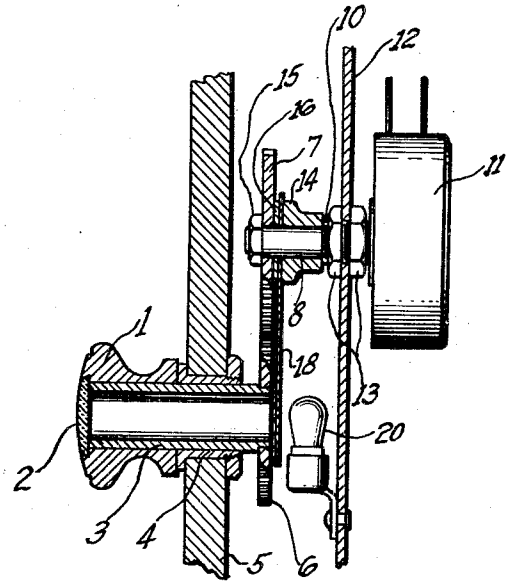
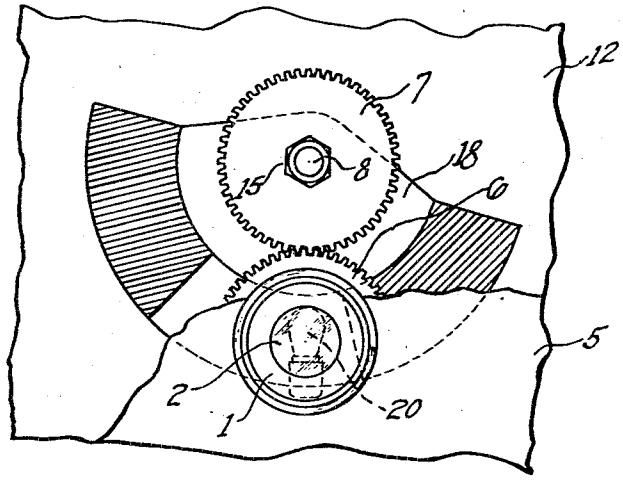


Fig 2



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UNITED STATES PATENT OFFICE

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CONTROL DEVICE FOR VARIABLE INSTRUMENTS

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My invention relates to a device for manually controlling electrical apparatus and has especial relation to a tone control for a radio receiving set.

One object of my invention is to provide a manual control device for a variable electrical instrument in which the condition of adjustment of the device will be indicated in a manual control handle and which will be especially attractive in appearance because of the simple nature of the exposed control elements.

Another object of my invention is to provide a manual control device for a variable electrical instrument in which the condition of adjustment of the device is indicated by a light emitting element in a control handle and which is therefore especially attractive in appearance.

Other objects and advantages will appear as the description proceeds.

Referring to the accompanying drawings, Fig. 1 is a central sectional view through a control device embodying my invention, a panel and a portion of a radio chassis being broken away, and Fig. 2 is a front view of the device shown in Fig. 1, the panel being further broken away to show parts mounted therebehind.

Referring more particularly to the drawings, a hollow handle 1, having therein a window 2, is frictionally mounted on a hollow shaft 3 which is journalled in a bearing 4 extending through a panel 5. A gear 6 fixed on the inner end of the shaft 3 meshes with a gear 7 on a shaft 8. The shaft 8 extends through a threaded sleeve 10 connected to a variable unit 11 and secured to a portion of a radio chassis 12 by means of nuts 13.

The unit 11 may be a resistance or rheostat for what is styled a tone control or device by which the tone of a radio receiver is varied to determine the balance or relative values of various reproduced audio frequencies or bands of frequencies. The unit 11 may, however, be a condenser, variometer or other variable unit of a radio receiving or transmitting device.

The gear 7 is secured to the shaft 8 by means of a collar 14, which may have a tight fit on the shaft, and a nut 15 which holds the gear in compressed relation to the collar, there being interposed between the gear and the collar a washer 16 and a translucent sheet 18 which may be of celluloid, paper or other material.

The sheet has sufficient area to overlie the inner end of the hollow shaft 3, in registry with which the radio power indicator lamp 20 is positioned and has areas of different colors so that as the handle 1 is turned and its motion communicated by the gears to the shaft 8 and the variable unit 11, different colored areas of the sheet are moved in front of the lamp, the light of which is transmitted through the window 2.

The window is made of a transparent or translucent substance and may be frosted or opalescent so that the color of light directed upon it will be made conspicuous. In thus varying the light communicated to the window 2 the sheet 18 constitutes an indicator of the condition of adjustment of the shaft 8 and the unit 11.

It will be apparent that the described manual control device is especially simple and inexpensive to manufacture and that it is especially attractive in appearance, since the handle is the only control member exposed and the colored luminosity of the window 2 is very pleasing to the eye.

My invention is not limited to the details of the construction illustrated and described, which it is contemplated may be extensively modified without departing from the spirit of the invention. For instance, the shafts may be coupled in driving relationship otherwise than by gears and the sheet 18 need not necessarily be colored, provided that its different areas may be distinguishable. When the window is transparent the sheet will be directly visible. A substantial range of equivalents is contemplated within the scope of the appended claims.

I claim as my invention:

1. The combination of a hollow handle movable into a plurality of graduated positions of adjustment and means operable on the movement of said handle into different positions of adjustment to direct different

qualities of light rays through said handle to indicate the condition of adjustment of said handle.

2. The combination of a hollow rotatable handle and means automatically operable when said handle is in one position to direct light rays of one character through said handle and, when said handle is turned, to direct light rays of a different color character therethrough to indicate the position of said handle.

3. In a control device for variable instruments, the combination of a hollow rotatable handle, a translucent window therein and means operable on the rotation of said handle to direct light of different colors on said window, the color of the light corresponding to the degree of adjustment.

4. In a control device for variable instruments, the combination of a hollow rotatable handle, an indicator member, and means operable on the turning of said handle for moving said member across the opening in said handle.

5. In a control device for variable instruments, the combination of a hollow rotatable handle, a translucent indicator member, means operable on the turning of said handle for moving said member across the opening therein and means for directing light through said member and said opening.

6. In a control device for adjustable instruments, the combination of a hollow rotatable handle, a driven shaft, means operable on the turning of said handle to turn said shaft, a translucent indicator member rotatable with said driven shaft to bring different areas thereof into alinement with the opening in said handle and means for directing light through said member and said opening.

7. In a radio system, a control handle having a tubular passage therethrough, a light source cooperating therewith for directing light therethrough, a circuit element cooperating with said handle member, and means comprising a variable colored member interposed between said light source and said tubular handle, and means for adjusting said colored member in accordance with the adjustment of said circuit member, to control the color of light passing through said handle, and to indicate thereby the position of said circuit member.

8. In a radio system, an indicator lamp member adapted to be turned on or off according to the energization of the radio set, and means cooperating therewith comprising a color disc and a hollow handle member aligned with said lamp to indicate by a change of light color the condition of adjustment of a circuit member.

9. In a radio system, an indicator lamp, a tone quality control member, a hollow handle cooperating therewith, and a color member illuminated by said light and visible through said hollow handle for indicating the condition of adjustment of the tone control member.

BYRON C. BOOTH.