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CONTROL DEVICE FOR ELECTRICAL APPARATUS

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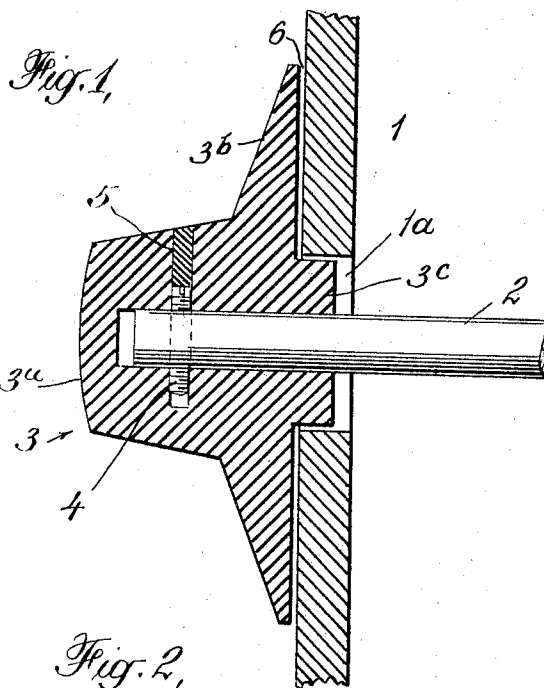
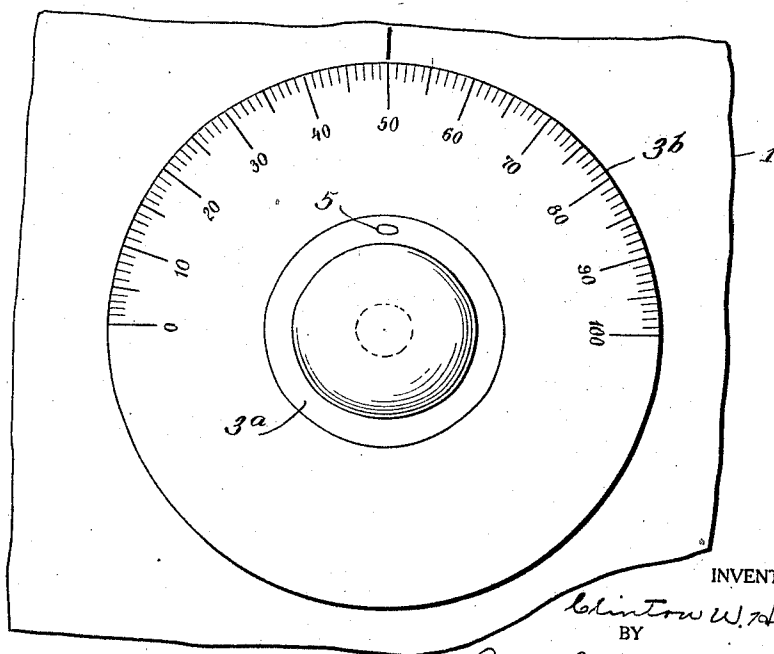


Fig. 2,



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CONTROL DEVICE FOR ELECTRICAL APPARATUS.

Application filed September 26, 1923. Serial No. 664,831.

To all whom it may concern:

Be it known that I, CLINTON W. HOUGH, a citizen of the United States, residing at Boonville, in the county of Oneida, State of New York, have invented certain new and useful Improvements in Control Devices for Electrical Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

This invention relates to control knobs and dials for electrical apparatus, and, more particularly, high frequency signaling apparatus such as radio and wired wireless apparatus.

In systems utilizing power transmission lines for telephonic communication as, for example, so-called "wired wireless" broadcasting systems, it is necessary to exercise great precaution to prevent the operators and listeners-in from coming into electrical contact with parts of the apparatus which may be dangerously charged with current from the power source. Receiving apparatus for such systems is preferably so designed that all the operating elements are enclosed in a sealed container in so far as this is possible, but it is generally necessary to provide at least one control knob on the exterior of the container for tuning the receiving apparatus to the transmitting wavelength. Such knobs are generally mounted on the end portion of a metal shaft forming a part of one of the devices in the container, as, for instance, a condenser, variocoupler or filament control rheostat. These shafts are sometimes charged at the potential of the power line which, under certain conditions, would render them dangerous to human life. As the control knobs are usually spaced a substantial distance from the wall of the container or panel, as the case may be, in order to provide ample running clearance, there is danger, although perhaps remote, of listeners-in getting into contact with the charged shafts by inserting wires or other conductors between the knobs and container walls.

The present invention provides a control knob which ensures against accidental shocks arising from the above noted condition.

According to the preferred embodiment

of the invention, the control knob is provided with a raised portion or hub which encircles that part of the shaft which would otherwise be dangerously exposed, and extends into a recess or aperture in the wall of the container or panel, as the case may be, whereby it is rendered practically impossible to make accidental contact with the shaft by means of a wire or other conducting medium which might be inserted between the knob and wall of the container.

Nothing in this specification shall be taken as a representation that it is impossible to make electrical contact with an electrically charged shaft on which such a knob is mounted or that the use of a control knob in accordance with this invention carries with it a warranty against accidents arising incidental to its use.

The invention in its preferred embodiment will now be described in conjunction with the accompanying drawing, in which—

Fig. 1 is a cross sectional view of a control knob mounted on a shaft, and a cross section of a panel or wall of a container through which the shaft projects, and

Fig. 2 is a front elevational view of the control knob.

The panel or container wall 1 is provided with an aperture 1^a through which shaft 2 projects from the interior of the container to the exterior thereof.

The control knob 3 is preferably moulded of a suitable dielectric material and consists of a knob portion 3^a, a flange-like dial portion 3^b, and a raised portion or hub 3^c. The control knob is secured to the shaft by means of a headless screw 4 which passes through the shaft and the aperture 5 provided for inserting the screw is preferably filled with a suitable insulating compound to prevent contact being made with screw 4.

The control knob is spaced away from the face of the panel sufficiently to provide ample running clearance, there being a space 6 therebetween of sufficient width to permit insertion of a small wire or other conductor. With the ordinary type of control knob having a flush back surface, a wire thus inserted could make contact with shaft 2 with consequent danger to human life if the shaft happens to be connected to a high voltage power source as, for instance, a 110 or 220 volt line. But the hub 3^c, extending as it

does into aperture 1^a, prevents contact being made with the shaft and thereby safeguards the operator.

5 The panel 1, instead of being of the usual flat type, may be the panel of a cylindrical container in which the space 6 would be considerably wider at the lateral sides of the dial than at the top and bottom.

10 It should be understood that the term "panel" as employed in the claims hereinafter is not to be construed as limited to a flat panel, but to include walls of containers and the like whether flat, curved or of any formation.

15 I claim:

1. In signaling apparatus, the combination with a receptacle of variable electrical apparatus contained in said receptacle, said apparatus comprising a rotatable shaft, said shaft projecting through a wall of said receptacle to the exterior thereof, and a control knob made of dielectric material, said knob being adapted to be secured to said shaft adjacently to said wall but spaced therefrom, and a hub secured to said knob, said hub overlying the portion of said shaft which would otherwise be exposed between said knob and said wall, said hub being adapted to function as an insulating medium to prevent contact between said shaft and any conductor which might be inserted between said knob and said wall.

2. The combination with a panel and a shaft extending through an aperture in said panel, of a control knob made of dielectric

material and secured to the end portion of said shaft adjacently to said panel, and an insulating member secured to said knob and projecting into the said aperture in said panel, said member being adapted to function as a shield for said shaft for preventing contact therewith by wires or other conducting media which may be inadvertently inserted between said knob and said panel.

3. A control knob made of dielectric material and having a hub, said knob being provided with an aperture extending through said hub and adapted to receive the end portion of a shaft, said hub being adapted to project into a recess in a panel or the like adjacent to which the knob is mounted, and means for securing said knob to said shaft.

4. In combination, a panel, a rotatable shaft extending through an aperture in said panel, and a control knob mounted on the end portion of said shaft and spaced from said panel, said knob having an integral raised portion encircling said shaft and extending into said aperture.

5. A control knob adapted to be mounted on the end portion of a shaft, said knob having an integral raised portion adapted to extend into a recess in a wall or panel adjacent to which the knob is mounted, said raised portion being arranged to encircle said shaft.

In testimony whereof I affix my signature.

CLINTON WALLACE HOUGH.