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J. L. BONANNO
ELECTRICAL CONTROL
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2,291,944

Fig. 1

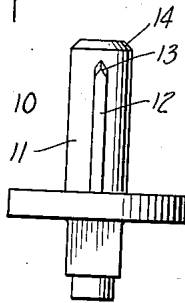


Fig. 2

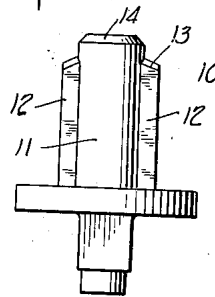


Fig. 3

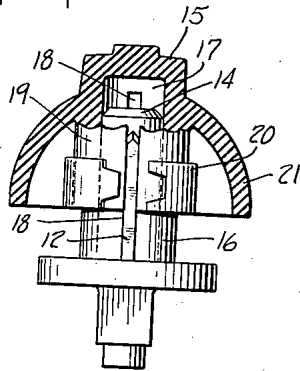


Fig. 4

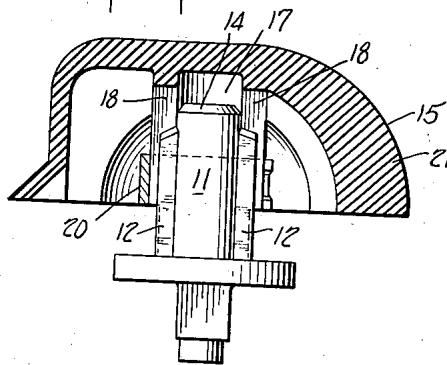
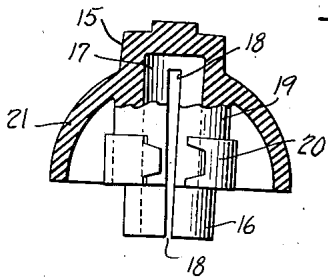


Fig. 5



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ELECTRICAL CONTROL

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4 Claims. (Cl. 287—53)

The present invention relates to electrical controls, and is more particularly directed toward the provision of shafts with shaft turning knobs made of molded material.

Many forms of electrical apparatus employ revolvably mounted shafts for effecting operation of some part and this shaft is actuated by an accessible knob, this being preferably made of molded material to provide the desired contour, appearance and design and in some instances to provide insulation about the end of the shaft.

The present invention contemplates an improved form of knob and shaft designed for inexpensive manufacture and ease of assembly and disassembly.

According to the present invention the shaft is provided with splines to make it non-circular and the knob is provided with a hub having a bore to fit the shaft and slits to fit the splines and the hub is provided with a spring acting to insure that the knob fits the hub very tightly when in place.

The accompanying drawing shows, for purposes of illustrating the present invention, one of the many embodiments in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In the drawing:

Figures 1 and 2 are side elevational views of a control shaft;

Figures 3 and 4 are views illustrating the knob in place on the shaft, portions of the knob being shown in section; and

Figure 5 is a view similar to Figure 3 showing the knob alone.

A shaft 10 shown in Figures 1 and 2 has a configuration suitable for holding a switch contact, and is provided with an upper cylindrical portion 11 and two splines indicated at 12, 12. The upper ends of these splines are bevelled as indicated at 13, and preferably slope downwardly and outwardly as will be apparent in Figure 2. The upper end of the shaft is bevelled as indicated at 14.

The knob 15 is made of molded insulating material. It has a hub portion 16 with a central bore 17 of such diameter as to receive the body of the shaft 11. It has two slots 18, 18 which extend from the bottom of the hub 16 up nearly to the top of the knob.

As shown in the drawing the hub has an upper portion 19 of slightly larger diameter than the lower portion, and this portion receives a spring 20 tensioned to squeeze the hub inwardly. This spring is pressed on to the insulating material after it has been molded and acts to narrow the

slot 18 as will be apparent from Figure 5. The knob can be readily pressed onto the shaft by bringing the slots in alignment with the splines and, owing to the bevelled surfaces provided, the splines may readily enter the slots and spread the hub against the tension of the spring. With this arrangement the knob can be made inexpensively and placed on the shaft easily and in a manner that insures its remaining in position until such time as it is necessary to remove it. The removal of the knob is not difficult and does not impair its structure or efficiency.

As shown in the drawing the knob has a skirt portion 21 of suitable ornamental shape, and this skirt portion covers the spring and the hub. While the drawing shows the spring 20 as having a gap opposite one of the slots in the hub of the knob this is of no importance for the spring can be forced into a position without regard to its angular position about the hub.

It is obvious that the invention may be embodied in many forms and constructions within the scope of the claims and I wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. In combination, a splined metal shaft, a molded insulating knob having a hub provided with a bore to fit the shaft and longitudinal slots to fit the splines, and a contractile spring embracing the hub and tending to close the slots.

2. In combination, a metal shaft having splines whose ends are spaced from the end of the shaft, an insulating knob of molded material having a hub provided with a bore to fit the body of the shaft, and longitudinal slots to fit the splines, and a hub embracing spring which squeezes the slots laterally to facilitate gripping the splines and the shaft.

3. In combination, a knob made of molded insulating material and having a hub provided with a cylindrical bore and two longitudinally extending slots extending through the walls of the bore, a spring substantially encircling the hub and tending to close the slots and constrict the dimension of the bore, and a splined shaft onto which the knob may be pressed, the spring yielding to allow the slots to open up to receive the splines and squeezing the parts into frictional engagement.

4. The combination such as claimed in claim 3, wherein the end of the shaft and the ends of the splines are bevelled to facilitate spreading the hub.

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