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SUPPORT FOR MICROPHONES AND THE LIKE

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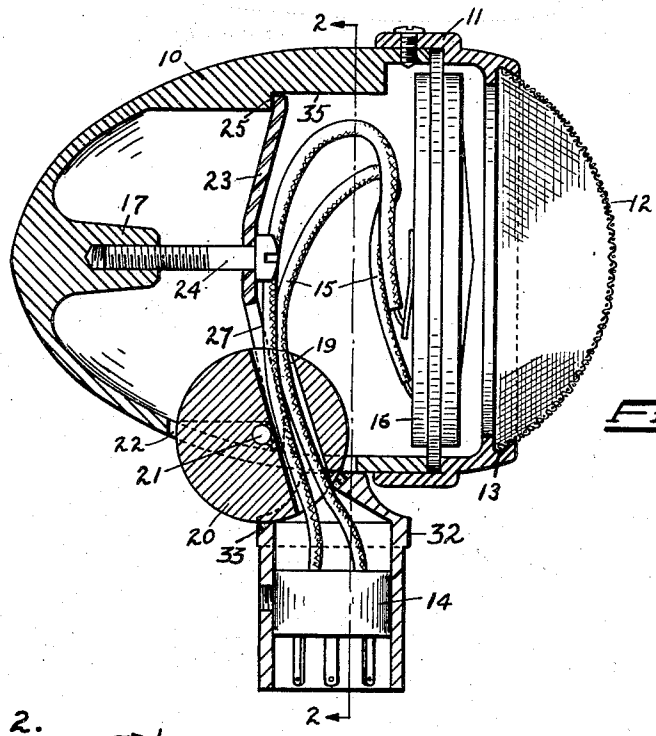


FIG 1.

FIG 2.

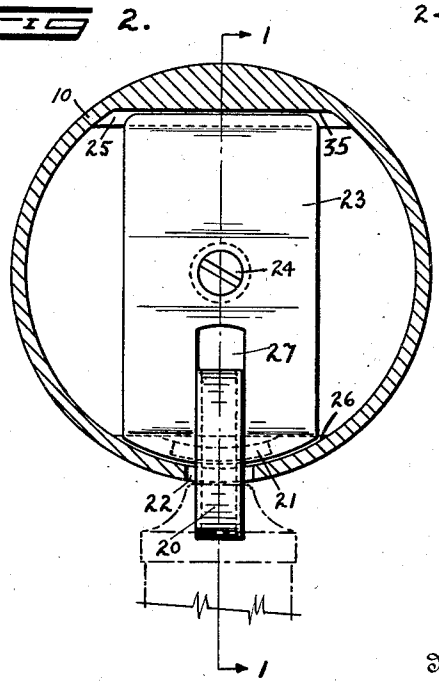
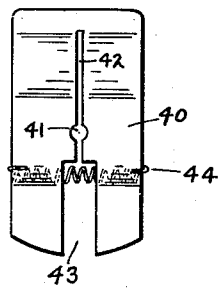


FIG 3.



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SUPPORT FOR MICROPHONES AND THE LIKE

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11 Claims. (Cl. 248—291)

This invention relates to a support for electrical apparatus and more particularly to a hinge joint for pivotally supporting a casing on a standard or other fixed support. The primary object of the invention is to provide a hinge joint which is simple in construction, capable of economical manufacture and assembly and which has certain meritorious features to be hereinafter fully described.

Another object of the invention is to provide novel means for the passage of the electrical conductors through the joint whereby the conductors are protected from injury during the swinging of said casing.

A further object of the invention is to provide a hinge joint for the purpose described which presents an attractive appearance in all positions of the casing, with no pins or screws showing.

A still further object of the invention is to provide means in a joint of the kind described whereby no part of the highly finished surfaces exposed to view is subjected to rubbing or other actions which detract from the appearance of the assembly.

Yet another object of the invention is to provide a construction wherein but a single unitary element of simple design is effective to maintain the pivotal axis, to provide friction to hold the casing in selected position, and to prevent axial shifting of the parts whereby objectional rubbing or abrading action between certain parts is prevented.

These and other objects and advantages of the invention will become apparent from a consideration of the drawing and the following detailed specification. In the drawing identical reference numerals identify corresponding parts throughout the various views, and

Figure 1 is a cross-sectional view of the assembled casing, hinge joint, and upper part of the supporting standard;

Figure 2 is a transverse sectional view taken along the line 2—2 of Figure 1; and

Figure 3 is a plan view of a modified clamping member.

The invention is shown as applied to a microphone having a bullet-shaped casing 10, an end ferrule 11 and a forward screen 12 secured in an annular recess 13 of the ferrule by soldering or otherwise. A translating unit 16 for converting the sound waves into electrical impulses is clamped between the open end of casing 10 and the ferrule 11 and has attached thereto suitable conductors 15 which pass downwardly through the hinge joint and supporting standard.

The inner surface of the casing 10 is provided with diametrically opposed shoulders 25 and 26, and the material of the casing is heavied outwardly from the shoulder 25 to provide a plane surface 35 having substantial chordal width. Shoulder 26 is provided with an arcuately shaped groove on its outer surface for the partial reception of a hinge pin 21 which forms the pivotal axis of the joint.

A disk 20 provided with the bore 19, as shown, is suitably secured to an upper edge of the capped standard member 32 as by soldering at 33, for example. Disk 30 is partially received within the casing 10, a slot 22 being provided in the side wall of the casing to allow for passage of the disk. Pin 21 is passed through the central aperture in disk 20 and is held in position in the groove of shoulder 26 by the resilient spring plate 23 which in turn is secured to the casing by means of the head screw 24 screw threaded into a threaded bore in the boss 17.

As shown, the plate 23 is slotted at 27 a substantial distance from one end, the slot being of a width slightly less than the thickness of the disk 20 whereby the separated ends of the member 23 will frictionally grip the disk 20 held therebetween. Plate 23 is made of resilient steel to give the proper resilient pressure and, if desired, it may be cupped slightly to reduce the pressure exerted on the disk. The bifurcated end of member 23 is arcuately shaped so as to reach and cover the protruding ends of the pin 21 to securely clamp the same in position. The other end of the plate 23 overlies the shoulder 25 and is provided with a squared edge to abut the plane surface 35 whereby the pivotal movement of the member 23 about the screw 24 is prevented. Inasmuch as the member 23 is of sufficient length to fit snugly within the casing and one end thereof is arcuately shaped, lateral displacement thereof cannot take place and consequently the slot 27 and disk 20 is securely held against lateral movement. This construction prevents the sides of the disk 20 from contacting the edges of the slot 22 and in actual practice the clearance between the two may be made quite small.

The exterior surfaces of the casing 10, disk 20 and cap 32 are provided with a nickel plated or other finish to enhance the appearance of the assembly and since the disk 20 is prevented from moving laterally into contact with edges of the casing 10, no surface which may be exposed will be damaged by rubbing with other surfaces. It should be noted that the arrangement of the parts is such that that portion of the disk which

is engageable by the friction member 23 is entirely within the casing at all possible positions thereof.

Conductors 15, which may lead upwardly from a connector 14 in the standard member 32, pass through the bore 19 of disk 20 and are looped before being connected with the electrical device 16. Since disk 20 is fixed in relation to the standard and excess conductor length is allowed in the casing, the conductors will not be subjected to sharp bends or abrasion upon tilting movement of the casing. Consequently the likelihood of their being damaged is remote.

Figure 3 illustrates a modified form of clamping plate which may be substituted for the plate 23 of Figures 1 and 2. This modified plate, designated 40 is provided with a large end slot 43 to accommodate the disk and a smaller slot 43 in general continuation of the first mentioned slot. Since the member is bifurcated for substantially its entire length, the two arms thereof may be readily moved toward and away from each other. A coil spring 44 having hooked ends to engage the opposite side edges of the arms is provided to resiliently press the arms toward each other and into frictional contact with the side surfaces of the disk 20. A central aperture 41 is provided for the passage of the screw 24.

The ease with which the parts of the hinge joint may be manufactured and assembled should be apparent. In assembling it is only necessary to pass the disk 20 through slot 22, insert the pin 22 and insert and clamp the member 23 or 40 in position. The only tool required is a screw driver and since the head of screw 24 is centrally located and easily reached, the tightening of the parts is readily accomplished.

While I have shown and described the invention in connection with a microphone, it is obvious that it may be used with a great number of other instrumentalities and therefore the above described embodiment should be considered as illustrative only. Also, many changes in the specific form of the members constituting the support may be made without departing from the spirit or scope of the invention.

What I claim is:

1. A support for electrical apparatus comprising a casing, a slot in a wall of said casing, a fixed member, a disk secured to said fixed member and extending through said slot into said casing, shoulders in said casing adjacent the side edges of said slot, a pin passing centrally through said disk and having its ends seated on said shoulders, a bifurcated resilient member within said casing having its forked ends on either side of said disk and engaging the ends of said pin to provide frictional resistance to rotative movement of said disk and to secure said pin in position, means to prevent movement of said bifurcated member relative to said casing, and a chordal bore through said disk extending from outside to within said casing for the passage of conductors.

2. A support for electrical apparatus comprising a casing, an opening in a side wall of said casing, a fixed member extending through said opening and partially received within said casing, said member being trunnioned within said casing, a resilient bifurcated member in said casing having its forked ends in spring pressed engagement with either side of said first mentioned member whereby said first mentioned member is retained in position and frictionally restrained from rotative movement, means to prevent movement of said resilient member relative to said casing, and a bore through said first mentioned member passing from outside to within said casing.

3. A support for electrical apparatus comprising a fixed standard member, a rounded member secured to the upper end of said standard member, a casing having an opening for the free passage of said rounded member into and out of said casing, means pivotally mounting said casing on said rounded member, means wholly within said casing preventing axial movement of said rounded member relative to said casing, said means being operative to frictionally restrain relative rotational movement between said rounded member and said casing, and a bore extending through said rounded member connecting said standard member with said casing whereby conductors extending upwardly through said standard may be extended into said casing.

4. A support for electrical apparatus comprising a fixed member, a casing having an opening in its side wall for the reception of said member, diametrically opposed shoulders on the inner surface of said casing, means pivotally mounting said casing on said fixed member comprising a hinge pin passing through said member and having its ends resting on one of said shoulders, a unitary resilient member having one end positioned on the other of said shoulders, the other end of said resilient member being bifurcated for the reception of a portion of said fixed member, the bifurcated end of said resilient member overlying the ends of said hinge pin and frictionally engaging said fixed member to restrain the rotational movement of said casing relative to said fixed member, and a bore through said fixed member for the passage of electrical conductors.

5. A hinge joint comprising a fixed member, a swingable member, a portion of said fixed member being received in said swingable member, a hinge pin passing through said fixed member, a support for said pin in said swingable member, and a bifurcated resilient member in said swingable member having its arms overlying said pin on said support, said arms engaging a portion of said fixed member to frictionally resist rotational movement between the fixed member and the swingable member.

6. Means pivotally supporting a casing comprising a fixed disk supported adjacent its periphery, a slot in said casing for the reception of a portion of said disk, a hinge pin passing centrally through said disk, a support in said casing for said pin, and a resilient bifurcated member secured within said casing and having its arms frictionally engaging either side of said disk, said arms clamping said pin to said support and being operative to prevent lateral movement of said disk.

7. Means pivotally supporting a casing comprising a fixed disk supported adjacent its periphery, a slot in said casing for the reception of a portion of said disk, a hinge pin passing centrally through said disk, a shoulder in said casing to support said pin, a second shoulder in said casing diametrically spaced from said first mentioned shoulder, a resilient plate slotted on the second of said shoulders, the slotted end of said plate overlying portions of said pin and resiliently fitting about said disk, and means to adjustably clamp said plate to said shoulders.

8. A device according to claim 7 including

means to prevent any relative movement between said plate and said casing.

9. A device according to claim 7 in which a plane surface is provided immediately above said second mentioned shoulder, the end of said plate opposite the slotted end being squared to fit against said plane surface whereby rotational movement of said plate is prevented.

10. Means pivotally supporting a casing comprising a fixed member, a slot in said casing for the free passage of a portion of said member into and out of said casing, means within said casing to pivotally engage said portion when the same is inserted through said slot to pivotally mount said casing on said member, and means within said casing to resiliently engage said member, said last mentioned means being operative to frictionally resist rotational movement between the casing and the fixed member.

11. Apparatus according to claim 10 further including a bore in said fixed member extending from outside of to within said casing for the passage of a conductor cord.

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