United States Patent [19]

Leppek

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[54] **SLIDE POTENTIOMETER**

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[52] **U.S. Cl.** **338/183;** 338/184; 338/202

[51] **Int. Cl.**[2] **H01C 5/02**

[58] **Field of Search** 338/174, 176, 182, 183, 338/184, 188, 202

[56] **References Cited**

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3,493,914	2/1970	Campbell	338/183
3,510,821	5/1970	Eberwein et al.	338/183
3,676,826	7/1972	Howitt	338/183
3,732,521	5/1973	Haverstine et al.	338/202
3,735,327	5/1973	Rozema et al.	338/183

Primary Examiner—Volodymyr Y. Mayewsky
Attorney, Agent, or Firm—James L. Kirschnik; John Phillip Ryan

[57] **ABSTRACT**

A slide potentiometer having a housing and a slot formed therein for receiving a movable slider. A rigid partition is located within the housing adjacent the slot opening to define a circuitous path between the slide and the interior of the housing to impede the entry of dust and other objects into the housing through the slot.

2 Claims, 4 Drawing Figures

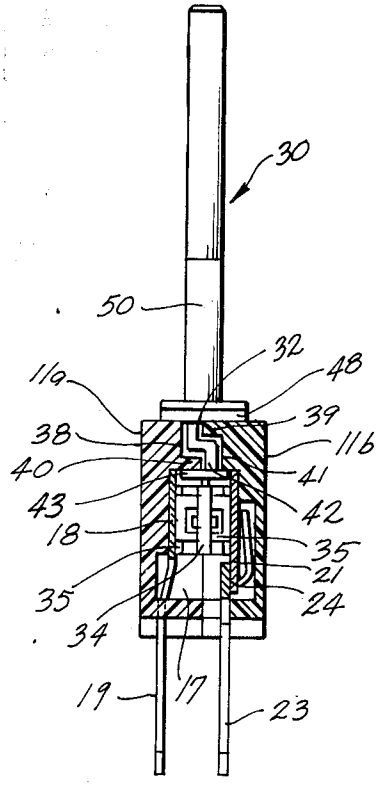


Fig. 1

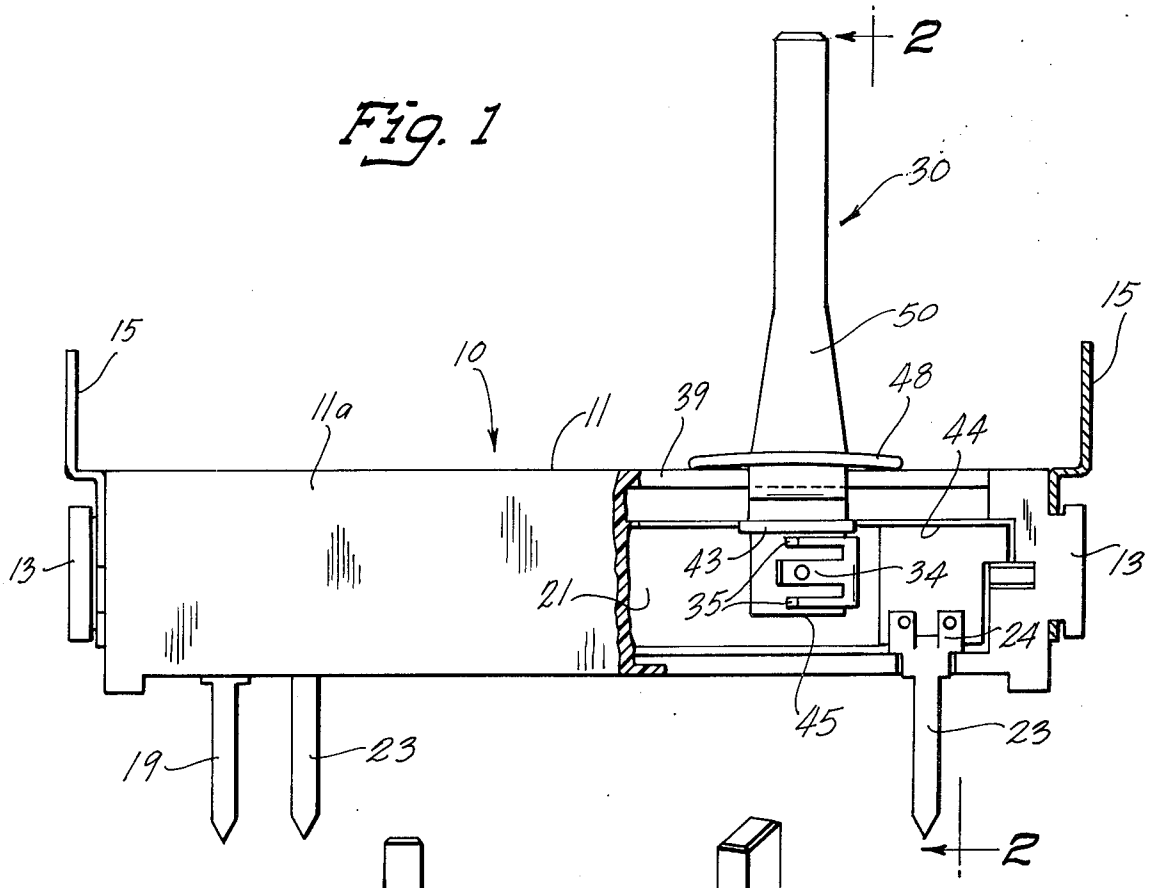


Fig. 2

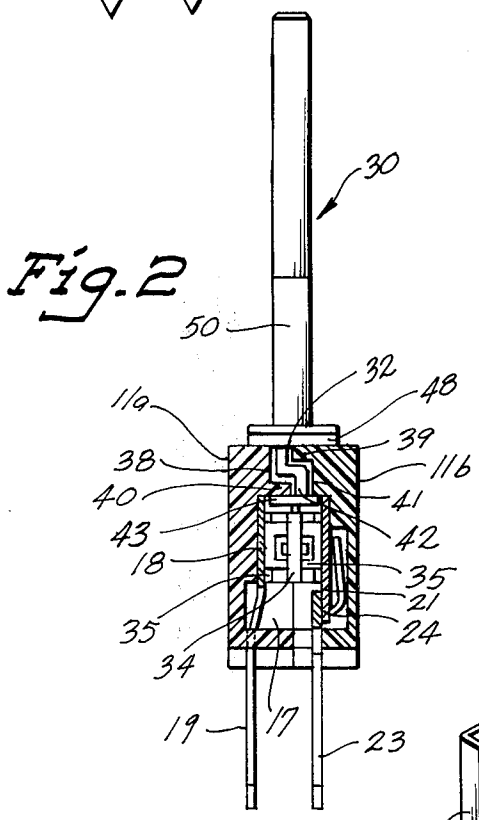


Fig. 3

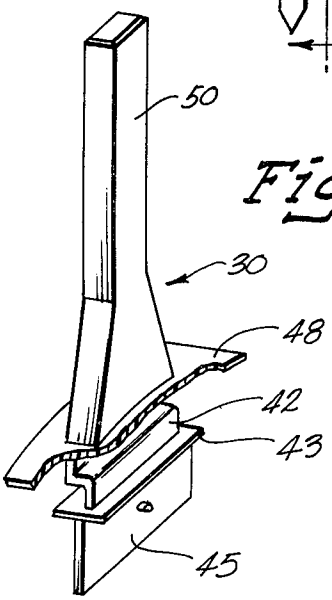
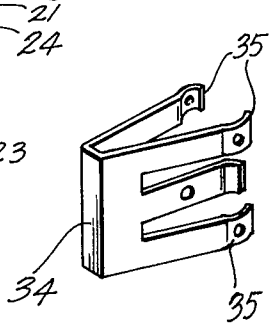


Fig. 4



SLIDE POTENTIOMETER

BACKGROUND OF THE INVENTION

This invention relates to improvements in slide or linear motion potentiometers which include a slider having a sliding contact between a resistive track and a collector track. One disadvantage of potentiometers of this type is that the movable slider does not occupy the full length of the slot in the housing. Thus dust and other particles or objects may freely enter into the interior of the housing. Various attempts have been made to provide dust shields for such potentiometers as shown in U.S. Pat. Nos. 3,510,831; 3,676,826; and 2,785,262. All such prior art attempts to provide a means of sealing the potentiometer slot while still providing for motion of the slider, however, have involved the use of additional dust shield elements in the nature of flexible or movable bands.

SUMMARY OF THE INVENTION

It is an object of the invention to provide a dust shield for a slide or linear motion potentiometer without the addition of parts to the basic potentiometer assembly.

A further object of the invention is to provide a slide or linear motion potentiometer having means for preventing the entry of dust and other foreign objects which is easily and quickly assembled.

The invention basically comprises a slide potentiometer having a slot and a partition or wall member adjacent the slot to provide a circuitous opening into the interior of the housing. The partition may be integrally cast as a part of the housing. The slider element has a curved configuration for conforming to the circuitous path of the slot formed by the juncture of two housing halves.

DESCRIPTION OF THE DRAWING

FIG. 1 is an elevational view of a potentiometer constructed according to the invention with portions of the housing broken away;

FIG. 2 is a view taken along line 2—2 of FIG. 1;

FIG. 3 is a perspective view of a slider for the potentiometer; and

FIG. 4 is a perspective view of a slider contact which may be used with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. 1 and 2, a slide potentiometer 10 is shown which embodies the present invention. The potentiometer 10 comprises a hollow nonconductive housing 11 made up of a front section 11*a* and back section 11*b*. The ends of each of the housing halves 11*a* and 11*b* may have lugs 13 formed thereon and clips 15 may be provided for engaging the lugs 13 for holding the housing sections 11*a* and 11*b* together after assembly. The adjoining interior portions of housing sections 11*a* and 11*b* are hollow forming a longitudinally extending cavity 17 within housing 11. The side wall of the cavity 17 formed within the housing section 11*a* has a collector strip 18 mounted therein which may have terminals 19 extending through the bottom of housing section 11*a* in a conventional manner. Similarly, the housing section 11*b* has a resistive strip 21 mounted therein and terminals 23 may extend through the housing section 11*b* and be attached to the resistive strip 21 by conventional spring clip means 24. The collector strip 18 and resistive strip 21 are thus held in a spaced parallel relationship within cavity 17.

As seen in FIGS. 1–4, a nonconductive slider 30 is provided which extends through a slot 32 formed in the upper portion of the housing 11. The lower portion of the slider 30 extends between the collector strip 18 and resistive strip 21 within the housing and carries a spring contact 34 which has laterally diverging contact fingers 35 for electrically coupling the collector 18 and resistor element 21. Slot 32 is defined by a longitudinal extending notch 38 formed in the upper corner of housing section 11*a*. Adjacent notch 38, a longitudinal lip 39 is formed in the upper corner of the housing section 11*b* and extends generally parallel to notch 38. As seen in FIG. 2, the notch 38 is formed with a longitudinally extending rigid wall 40 between the slot 32 and the interior of cavity 17. The adjoining notch 38 and lip 39 thus form a roughly S-shaped passageway 41 between the exterior of the housing and the cavity 17. The slider 30 has an S-shaped portion 42 which conforms to the passageway 41 and slides therein. The bottom portion of the S-shaped portion 42 has a flange 43 which has its upper surface slidably engaging the bottom of the wall 40 and a shoulder 44 formed in housing half 12. A contact carrier 45 extends downwardly from the flange 44 to which the spring contact 34 is attached. The upper portion of the S 42 terminates in a second parallel flange 48 which is spaced from flange 45 and slides along the upper surface of housing 11. A handle 50 may be attached to the flange 48 for ease in moving the slider assembly 30 along the slot 32.

OPERATION OF THE INVENTION

Potentiometer 10 is functionally similar to prior art potentiometers and need not be described in detail other than to say that the slider 30 may be moved along the slot 32 to position the contact 34 at various positions between collector 19 and resistive element 21 to vary the output voltage or current depending upon circuit design. The advantages of the invention reside in the S-shaped passageway 41 between slot 32 and cavity 17 which prevents dust and other objects from entering the interior cavity 17. The partition 40 is also effective as a safety device in that such potentiometers are often used, for example, as electrical controls on T.V. sets, radios and other consumer products, and the present design effectively acts to prevent a small child, for example, from inserting objects such as paperclips or hairpins into the slot 32 far enough to contact one of the current carrying members within cavity 17. It will also be apparent to those skilled in the art, that the present invention provides a simple, easily assembled slide potentiometer having the aforementioned advantages without any additional parts.

While one preferred embodiment of the invention has thus been described, the invention is not intended to be limited thereby and is to be taken solely by an interpretation of the claims which follow.

I claim:

1. In a slide potentiometer comprising an electrically non-conductive hollow housing containing a resistive strip and a collector strip and a moveable electrically non-conductive slider having a contact for electrically coupling said collector and said resistor strips, said slider being selectively positionable along a slot formed in said housing through which a portion of said slider extends, and including terminal means coupled to said resistive and collective strips, the improvement com-

prising:

ridged partition means formed in said housing adjacent to said slot and spaced therefrom for forming a circuitous path from the outside of said housing through said slot to the interior of said housing, said path comprising spaced parallel passageways interconnected by a generally transverse passageway, and

said slider having a portion thereof conforming to said circuitous path for being guided during movement along said slot.

2. The invention set forth in claim **1** wherein:

said housing comprising two separate sections and

said partition means being integrally formed with at least one of said housing sections.

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