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2,251,056

DUST EXCLUDING DEVICE

Filed Feb. 21, 1940

FIG. 2

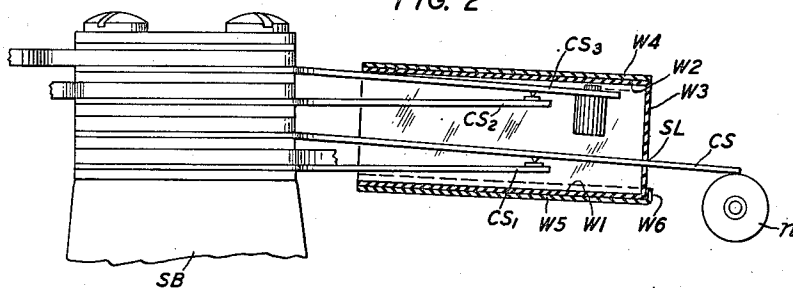


FIG. 3

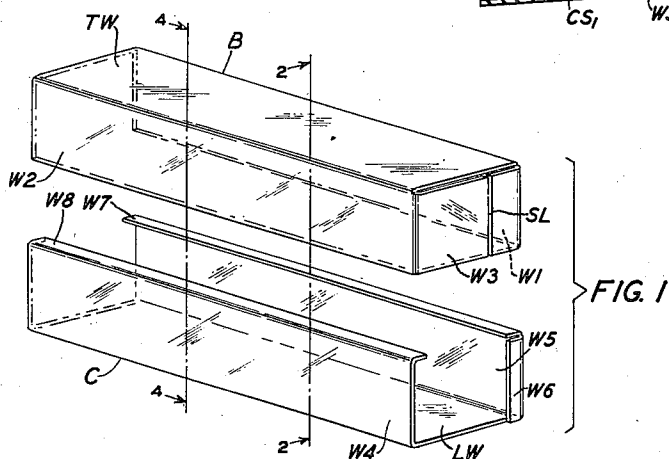
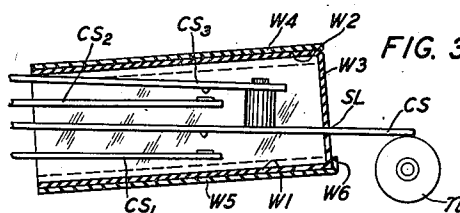


FIG. 1

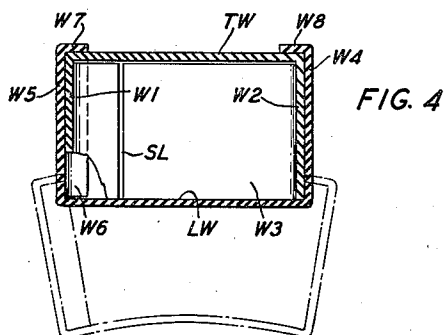


FIG. 4

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DUST EXCLUDING DEVICE

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3 Claims. (Cl. 200—168)

This invention relates to dust excluding devices for use for protecting electrical switches from dust.

In telephone, telegraph and other electrical intelligence transmitting systems, for example, a great number of electrical devices are used embodying switch springs disposed in so-called pile-up arrangements with mechanisms for operating such switch springs for effecting different electrical connections. Some of these devices, however, are used in localities where there is considerable dust in the air, resulting in dust being deposited between the contacts of the springs in the pile-up, thus preventing the closure of such contacts with consequent interference with the proper operation of the electrical apparatus.

The object of the invention is the provision of a dust excluding device which will be simple, cheap to manufacture, and which will exclude dust from the contacts of switch springs in electrical apparatus in an efficient manner.

A feature of the invention is the provision of a two-part casing which may be assembled over the switch spring assemblies without necessitating the removal of such springs or their actuating mechanism from the electrical apparatus.

Another feature of the invention is the provision of a two-part casing formed of transparent material with locking means carried by one of the parts for engaging its cooperating part with a springing action.

Another feature is the provision of means in one of the parts of the casing for receiving the contact spring in the pile-up which extends in operable relation with the actuating element of the electrical apparatus.

Other features and advantages of the invention will appear from the following description and by the claims appended thereto, reference being had to the accompanying drawing in which:

Fig. 1 is a view of the dust excluding device showing that part which forms the cover-like element of the casing removed from the part which forms the box-like element;

Fig. 2 is an assembly view in section taken on line 2—2 of Fig. 1 shown in position on the contact spring pile-up, the contact springs being shown in the closed position;

Fig. 3 is an assembly view shown in section with the springs in the open position; and

Fig. 4 is an assembly view in cross-section taken on line 4—4 of Fig. 1.

Referring to the drawing, the dust excluding device consists of a two-part casing in the form of a box-like element B and a cover-like element

C constructed, preferably, of transparent resilient insulating material such as Vynalite, Lucite or Celluloid. The box-like element B is formed with a top wall TW, two side walls W₁ and W₂ and an end wall W₃. This end wall is provided with a slot SL for receiving the contact spring CS mounted with contact springs CS₁, CS₂ and CS₃ in a pile-up arrangement on a support SB while a member N is provided for moving the contact springs CS, CS₁, CS₂ and CS₃ from the closed position shown in Fig. 2 to the open position shown in Fig. 3.

The cover element C is formed with a wall LW, oppositely disposed side walls W₄ and W₅, an end wall portion W₆ and the wall portions W₇ and W₈ serving for retaining this cover element in adjusted position on its associated box-like element B, as shown in Fig. 4. The end wall portion W₆ serves as a stop for assisting in locating the cover element C on the box element B in centered relation to each other.

The cover element C may be mounted on the box-like element B without necessitating the removal of the switch springs or their actuating elements from the electrical apparatus by flexing the wall LW of the cover element C to the position substantially as shown in dotted line in Fig. 4 so as to increase the gap or distance between the longitudinal edges of side wall portions W₇ and W₈ to a distance corresponding to the width of box element B, the cover element C when released being returned to its normal position as shown in full lines in Fig. 4 in engagement with the box element B through the medium of its own resiliency.

It has been found that the closing of the dust protector on its four sides and at one of its ends prevents air currents from passing from one end to the other end of the enclosure thus formed, with the result that the liability of dust depositing on the contacts is materially reduced, thus assuring positive protection and therefore positive operation of the electrical apparatus from this source of failure for a relatively great length of time.

What is claimed is:

1. A dust excluding device for a plurality of switch springs disposed in a pile-up assembly, one of the switch springs projecting beyond the ends of the other switch springs, for operation by an actuating member, said device comprising an elongated resilient element of channel-shaped cross-section having an end wall provided with a slot for receiving the operable contact springs when placed over the pile-up, and the second

element being of channel-shaped cross-section and having means for engaging the first-mentioned element by the medium of its own resiliency to form an enclosure for the switch springs.

2. A dust excluding device for a switch spring pile-up, one spring of which extends beyond the ends of the other springs into engageable relation with an operating element, said device comprising interfitting box and cover members of resilient transparent insulating material, the member forming the box element having three longitudinal walls and one end wall, said end wall being provided with means for receiving the operating spring of the pile-up, the member forming the cover element having three longitudinal walls, two of the last-mentioned walls having securing portions and the other wall being flexed for interengaging said wall portions with said box element, said cover element being held in assembled relation on said box element by the springing action of said other wall on said box element.

3. A dust excluding device for a switch spring pile-up, one of which extends beyond the ends of the other springs into engageable relation with an operating element, said device comprising a box-shaped member and a cover-shaped member of resilient material, the member forming the box-shaped element having three side walls and one end wall, said end wall being provided with means for receiving the operating spring of the pile-up, the member forming the cover element having three side walls, two of the last-mentioned walls having securing portions and one of said two walls having a portion of an end wall, the other wall of said cover portion being flexed for interengaging said wall portions with said box element, said cover element being held in assembled relation on said box element by the springing action of said other wall on said box element, the end wall of said cover element serving as a stop for locating the cover member on said box member.

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