United States Patent

Rasmussen

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[54] TRANSFER SWITCH PACKAGE ASSEMBLY

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[52] **U.S. Cl.** .....**200/168 B,** 339/17 F

[51] **Int. Cl.** **H01h 9/02**

[58] **Field of Search** .....200/168 R, 168 B, 168 C, 168 G; 174/59, 153 G; 339/17 F

[56] **References Cited**

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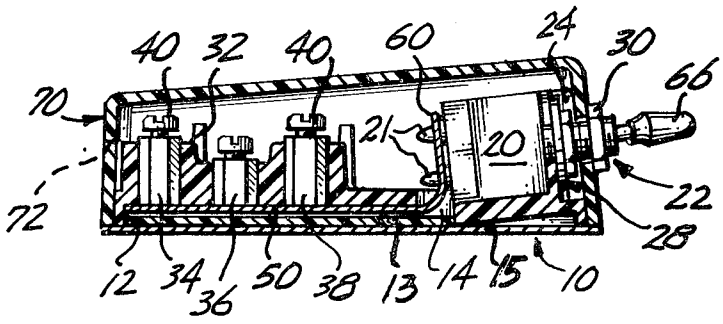
Primary Examiner—H. O. Jones

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[57] **ABSTRACT**

A transfer switch package assembly employs a printed circuit panel support buried in the assembly base and supporting on one end a plurality of binding posts and at the other metal-surrounded holes for quick and accurate connection of conductive paths from said posts to connector taps or pins on a transfer switch body.

4 Claims, 7 Drawing Figures



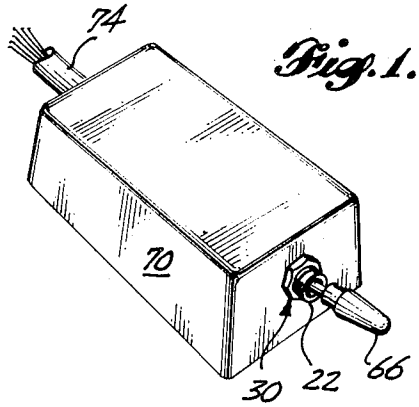


Fig. 1.

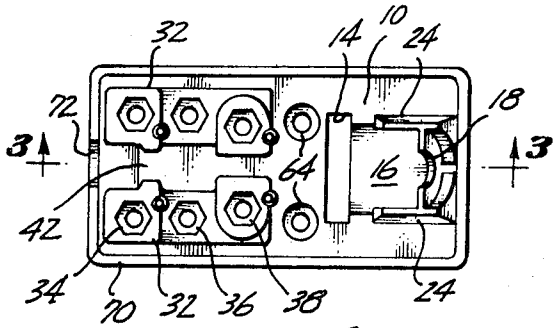


Fig. 2.

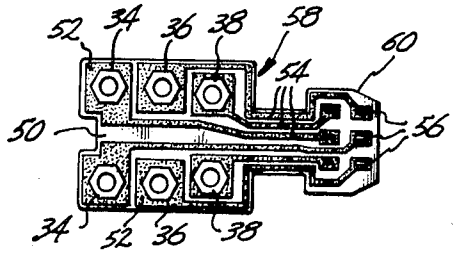


Fig. 4.

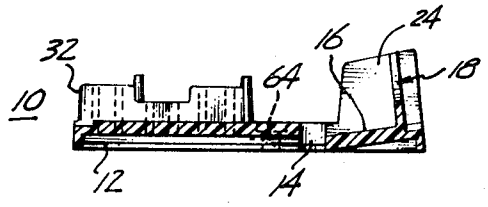


Fig. 3.

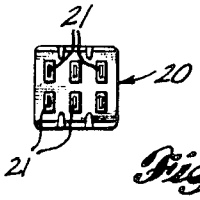


Fig. 5.

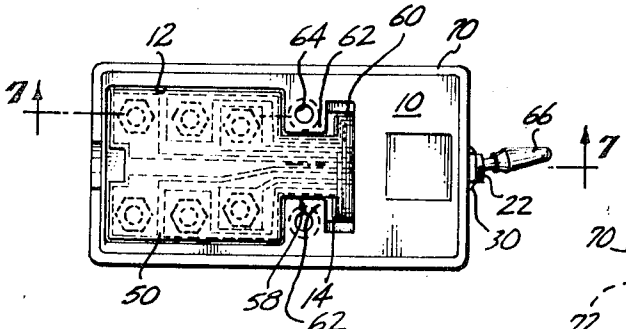
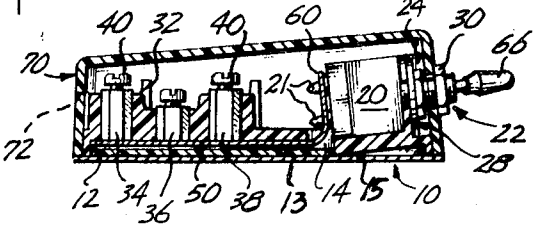


Fig. 6.

Fig. 7.



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TRANSFER SWITCH PACKAGE ASSEMBLY

SUMMARY OF THE INVENTION

Transfer switch assemblies of the prior art have been cumbersome and bulky and have required running by wire the numerous circuits from switch taps, an operation requiring skill and care to insure connection of the properly related posts and taps. It has been a prime object of this invention to provide a compact, miniaturized, easily manufactured and simply installed transfer switch package assembly. The employment of a printed circuit panel between the binding posts and the switch taps and the manner in which such panel is incorporated is the principal feature of this invention.

In the drawings

FIG. 1 is a perspective vie of the switch assembled;

FIG. 2 is a plan view of the base block of the switch;

FIG. 3 is a longitudinal sectional view of the base block on line 3—3 of FIG. 2;

FIG. 4 is a plan view of the printed circuit panel;

FIG. 5 is an end view of the switch unit;

FIG. 6 is a bottom plan view of the base block and circuit panel; and

FIG. 7, is a longitudinal sectional view of an assembled switch, parts being omitted for convenience of illustration.

DETAILED DESCRIPTION

The dielectric base block **10** has a shallow underside cavity or chamber **12** which, at its forward end, is associated with the upright slot aperture **14**. On the upper side of block **10** forward of slot **14** is a canted or sloped base **16** having notch **18** therein to receive and mount switch unit **20** with its stem **22** being disposed in said notch. The body or case of switch unit **20** rests on base **16** and against the rear of notch **18** between sidewalls **24, 24**. Stem **22** is threaded and receives washer **28** and, ultimately, nut **30** when the assembly is completed.

Base block **10** to the rear of slot **14** has two groups of hollow bosses **32, 32** which receive and encase insulatively threaded binding posts **34, 36** and **38**. Posts **34–38** are introduced into the bosses and their cavities from beneath. Posts **34, 36** and **38** are threaded to receive connector screws **40**. The bosses **32, 32** are separated by channel **42** in which wires are threaded in making connections to the posts **34–38**.

Referring to FIG. **4**, circuit diagram support **50** has six broad metallic areas **52** printed thereon, each to receive and have soldered thereto one of the posts **34–38** of the two groups. Suitable printed metal conductor paths **54** extend from each of the areas **52** to a metal-encircled port **56**. Support **50** is formed of a thin plastic material such as Mylar. At its rear it is quite broad (as shown in FIG. **4**) and forwardly is necked at **58** and terminates in tab **60**.

As may be seen in FIGS. **6** and **7**, support **50** has its main body disposed in cavity **12**, its neck **58** lies between the protuberances **62, 62** and in slot **14** with the tab end **60** bent up and pressed against the rear of switch body **20**. The latter has rearstanding taps or pins **21** which enter holes **56** and with solder connections therearound being formed, complete circuits between bosses **34–38** along paths **54**.

When assembly has reached the pint described a thin nonconductive filler plate **13** is inserted into cavity **12** to conceal the underside of support **50** and slot **14**. Such a plate may be

supplied with protected pressure-sensitive adhesive **15** for ready mounting of the switch body, as on the side of a telephone instrument for example. Base **10** is, however, also provided with holes **64, 64** to receive screws whereby mounting may be nonadhesively accomplished.

Switch **20** is of the double-pole, double-throw type and includes toggle lever **66** protruding from stem **22**.

Cover **70** has a forward hole to fit over stem **22** and is internally sized and shaped to fit over the periphery of base **10**. It is held in place by nut **30**. At its rear cover **70** has a notch **72** whereby a cable **74** may be let into the housing.

From the foregoing it will be appreciated that in an assembly approximately 2⅝ ⅝inch long by 1⅝ inch wide and 3/4 inch high the present invention avoids the cumbersomeness and bulkiness of the prior conventional transfer switches, that it eliminates the complicated, difficult and skill-required operations of the past in both assembly and installation, and that highly useful and practical switch assembly in miniature is supplied.

Having thus described the preferred embodiment of the invention for illustrative purposes, it is to be understood that the inventive concept may be employed in other forms. All such as will occur to those skilled in this art are intended to be covered by this patent, construing the same with a reasonably appropriate application of the doctrine of equivalents.

What is claimed is:

1. A transfer switch package assembly, comprising:

a dielectric base block having a manually operable switch unit mounted at one end on its upper surface and at least a pair of binding posts remote from said switch unit mounted upon the same surface of said base block and extending downward therethrough;

said base block having an upright slot aperture disposed transversely therethrough and located between said switch unit and said binding posts;

said switch unit having connector prongs directed toward said slot;

a flexible interconnection mounting panel having at least a pair of conductive connecting paths disposed on a predetermined surface of said panel board, said paths terminating at both ends in flat, solderable lands;

said panel having the lands at one en of said paths disposed against the lower ends of said binding posts and its other end flexed and passed upwardly through said slot to dispose matched lands thereon proximal to prongs of said switch unit; and

solder bonding means joining (a) said binding posts to the related lands at one end of said panel and (b) said proximate prongs to the matched lands at the other end of said panel.

2. The assembly according to claim 1 in which the base block is provided with a notched wall an said switch unit is disposed and clamped in the wall notch.

3. The assembly according to claim 1 in which there are at least three pairs of binding posts mounted upon said base block and said switch unit is a double-pole, double-throw device having a matching number of said prongs thereon.

4. The assembly according to claim 1 in which there is a cavity in said base block beneath said binding posts to receive said panel and said slot communicate forwardly with said panel.

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