

[54] **ELECTRICAL CONTACT ATTACHMENT**

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[58] Field of Search **335/197, 132; 200/280, 200/303**

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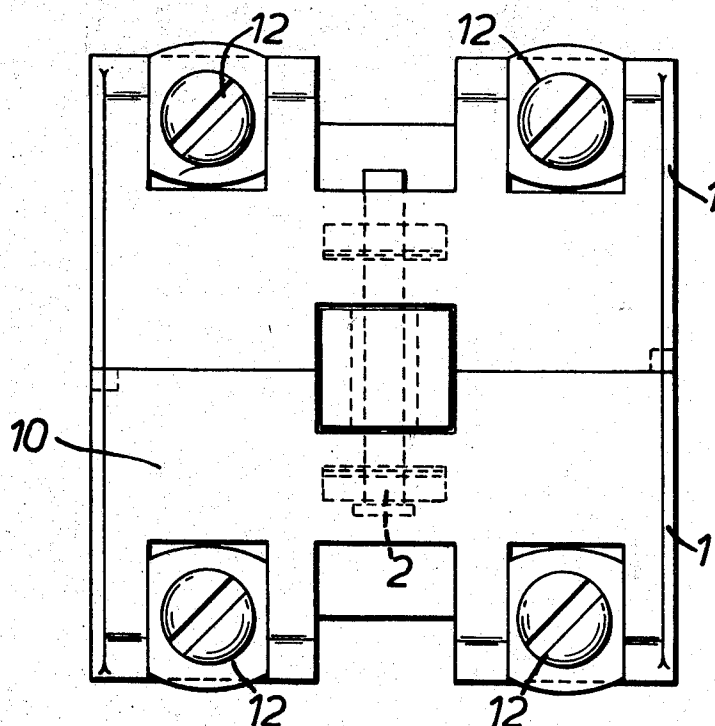
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[57] **ABSTRACT**

An electrical contact unit for attachment to an electromagnetically operated switch comprising a housing divided into two parts each having depending therefrom a leg with a hooked end for engagement of the contact unit with a complementary formation on the switch. The two housing parts are held together by resilient coupling means permitting partial separation of the housing parts against the resilience of the coupling means whereby the contact unit is snap-engageable with the complementary formation on the switch. The contact unit includes relatively movable contact members which are operated by an operating member which couples with an operating member in the switch.

6 Claims, 5 Drawing Figures



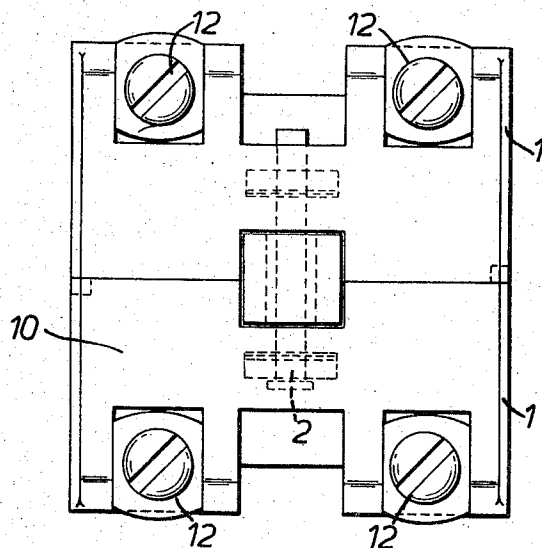


FIG. 1.

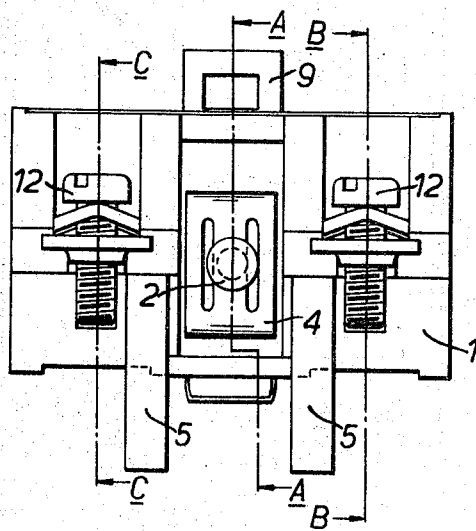
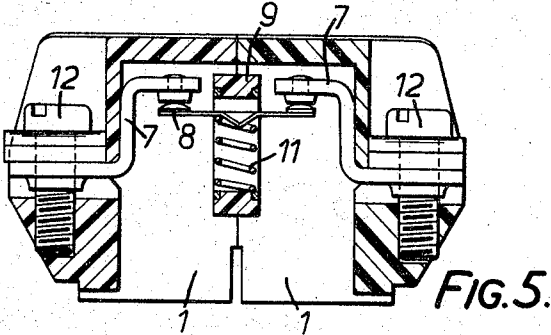
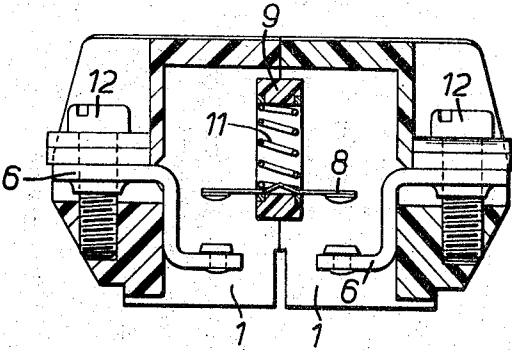
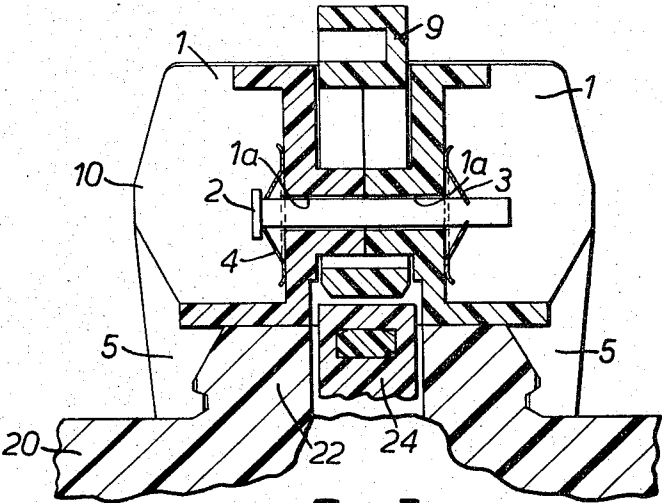


FIG. 2.



ELECTRICAL CONTACT ATTACHMENT

BACKGROUND OF THE INVENTION

This invention relates to an electrical contact unit for attachment to a contactor or other electromagnetically operated switch. Such a contact unit can be used for switching indicator or control apparatus, for example to provide an electrical interlock between two contactors.

Contact units are known which are snap-engageable with the electromagnetically operated switch. These contact units suffer from various disadvantages as regards ease of assembly, ease of snap-engagement with the switch and reliably secure attachment to the switch after engagement.

An object of the present invention is to provide a contact unit which is free of these disadvantages.

SUMMARY OF THE INVENTION

This invention provides an electrical contact unit for attachment to an electromagnetically operated switch, said contact unit comprising a housing divided into two parts, a leg depending from each housing part and formed with a hooked end for engagement of the contact unit with a complementary formation on the switch, the two housing parts being held together by resilient coupling means permitting partial separation of the two housing parts against the resilience of said coupling means whereby the contact unit is snap-engageable with said complementary formation, relatively movable contact members in the housing and an operating member for said contact members.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the invention will now be described by way of example with reference to the accompanying drawings, in which:

FIG. 1 is a plan view of an electrical contact unit in accordance with the invention;

FIG. 2 is an elevational view of the contact unit; and

FIGS. 3, 4 and 5 are sectional views on the lines A—A, B—B and C—C respectively.

Referring to the drawings, there is shown an electrical contact unit 10 for attachment to an electromagnetically operated switch 20, and FIG. 3 shows the contact unit actually attached to such a switch. The contact unit 10 comprises a housing divided into two identical parts 1, held together by a resilient coupling means or coupling 2, 3, 4. Specifically, a flat head pin 2, of a kind commonly used for rivetting, passes through apertures 1a in the two housing parts and the free end of the pin is secured by a push fitting resilient clip 3 of the kind commonly known as a "spire" clip. A similar but larger sized clip 4 is provided between the head of the pin 2 and the adjacent housing part 1 to provide resilience in the coupling of the two parts and is chosen too large to grip the stem of the pin. The clip 4 may be replaced by a leaf or helical spring. The resilient coupling permits partial separation of the two housing parts 1 against the resilience of the clip 4.

Each housing part is formed with two depending legs 5 each formed with a hooked end for engagement of the contact unit with a complementary formation 22 on the switch 20. Because the resilient coupling of the two housing parts permits partial separation thereof, the

contact unit is snap-engageable with the formation 22.

The housing encloses a normally open pair of contact members, provided by stationary contact members 6, and a normally closed pair of contact members, provided by stationary contact members 7. Respective bridging contact members 8 are carried by an operating member 9 and biased towards the respective stationary contacts by springs 11. The stationary contact members 6 and 7 are secured on the housing by respective terminal screws and conductor clamps shown at 12, which also provide terminals for reception of lead conductors (not shown). The operating member 9 is located by the two housing parts 1, is slidable up and down (as shown in FIGS. 2 and 3) and is engageable at its lower end with a slidable operating member 24 in the switch 20, for example as shown by means of a key-hole on the switch operating member 24 and in interlocking key on the operating member 9 of the contact unit.

To assemble the contact unit, the two parts 1 of the housing, with the stationary contacts 6 and 7 mounted thereon, are first assembled round the contact unit operating member 9. The pin 2, with the resilient element 4 on it, is then inserted through the two parts 1 and the clip 3 pushed on to the free end of the pin 2 to secure the housing parts together. The contact unit is then clipped onto the switch 20, the operating member 9 of the contact unit being connected to the switch operating member 24, and the depending legs 5 on the housing parts 1 snap-engaging the complementary formation 22 on the switch, the clip 4 providing the necessary resilience.

I claim:

1. An electrical contact unit for attachment to an electromagnetically operated switch, said contact unit comprising:

- a. a housing divided into parts;
- b. at least one leg depending from each housing part;

- c. a hooked end formed on each leg, for engagement of the contact unit with a complementary formation on the switch;

- d. resilient means holding the two housing parts together and permitting partial separation of the two housing parts against the resilience of said means whereby the contact unit is snap-engageable with said complementary formation;

- e. relatively movable contact members in the housing; and

- f. an operating member for said contact members.

2. An electrical contact unit as claimed in claim 1, in which said resilient means comprises:

- a. an elongate member;
- b. an abutment on said elongate member; and
- c. a spring acting between said abutment and one housing part to hold said elongate member under tension.

3. An electrical contact unit as claimed in claim 1, comprising means in which said operating member is mounted for reciprocal sliding movement in the direction of snap-engagement of the contact unit with said complementary formation.

4. An electrical contact unit as claimed in claim 3, comprising means formed on said operating member and engageable with an operating member in said switch.

5. An electrical contact unit as claimed in claim 1, comprising at least one pair of contact members and a bridging contact member for bridging said pair of contact members.

6. An electrical contact unit as claimed in claim 1, in which the two housing parts are identical.

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