

PATENT SPECIFICATION

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(54) AN IMPROVED ELECTRICAL SOCKET AND HOUSING ASSEMBLY FOR RECEIVING A FLAT-BLADED CONTACT

(71) We, PRESSAC LIMITED, a British Company of Leopold Street, Long Eaton, Nottinghamshire, NG10 4QL, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to an improved electrical socket and housing assembly for receiving a flat bladed contact and is more particularly, although not exclusively, concerned with arrangements wherein the blades of a bank or plurality of blade contacts are engaged simultaneously in a corresponding number of complementary sockets. It frequently happens that it is only with difficulty that the blades of a bank of blade contacts can be engaged simultaneously in an easy manner in a set of complementary sockets and it is the object of the present invention to provide an arrangement in which the foregoing drawback is overcome or minimised.

According to the invention there is provided an electrical socket and housing assembly for receiving at least one flat bladed contact, the socket comprising at least one socket contact member made of electrically conductive resilient material having a pair of closely related but slightly spaced apart acute-angled V-shaped portions defining therebetween a central space into which a blade contact can be engaged so that when in use the blade contact engages between the limbs of the V-shaped portions which face each other across the central space, the said limbs being disposed so as to yieldingly resist insertion of the blade due to their inherent resiliency and so be caused to exert pressure on opposite side faces of the blade when the latter is inserted and so ensure that a good electrical connection is effected and maintained, and the housing having at least one bore or cavity in which a respective socket contact member is fitted, the or each bore or cavity being provided

with a restricted mouth through which a blade contact can be inserted and guided between the springy limbs of a said socket contact member, the closed end of each of the V-shaped portions being located close to the restricted mouth so that the said closed ends combine to form a guide path for the blade contact, wherein each of the outer limbs of the V-shaped portions of the or each said socket contact member is provided with a laterally extending latch to engage a corresponding ledge in a lateral recess in the said bore or cavity and so prevent or inhibit withdrawal of the socket contact member from the said bore or cavity.

Preferably the limbs of a said socket contact member, which face each other across the central space, extend from a spine member adapted to receive a conductor wire. Expediently the closed ends of the V-portions of the said socket contact member(s) are rounded. The electrical socket and housing assembly may comprise a bank of socket contact members, each socket member being as defined by the invention.

Due to the springiness of the inverted V-shaped portions of the socket contact they will more readily yield and accept a blade contact than would a rigid socket contact and for this reason it will be readily appreciated that in the case of a plurality or bank of contacts this will result in the socket contacts more easily accepting the simultaneous insertion therein of respective and complementary blade members.

A preferred embodiment of the invention will now be described by way of example with reference to the drawings accompanying the Provisional Specification, wherein:—

Figures 1 and 1a are perspective views of the socket contact alone and as viewed from opposite sides thereof;

Figure 2 is a vertical section showing the contact engaged in a bore of a socket housing; and

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Figure 3 is a fragmentary perspective view of the socket in its housing.

Referring to said drawings, the contact is made of electrically conductive resilient material, e.g. copper strip, and is formed or fashioned to provide a pair of closely related but slightly spaced apart V-shaped portions 1 consisting of outer limbs 2 which are bent back towards the outer faces of inner limbs 3 which are formed integral with and extend upwardly from a spine member 4 which can be adapted in any suitable manner to receive a conductor wire. In the illustrated embodiment, said spine portion is adapted to be crimped to a cable but this part of the contact may be otherwise adapted, e.g. formed as a solder terminal.

The two V-shaped portions indicated generally at 1 are closely related but slightly spaced apart sufficiently to receive therebetween a flat bladed contact 5 indicated in Figure 3, the inner limbs 3 opening apart very slightly against the influence of their inherent resiliency and that of the V-shaped portions 1 generally so as to accept and bring pressure to bear on opposite side faces of the blade 5 when inserted and so ensure that a good electrical connection is effected and maintained.

In playing apart slightly the inner limbs 3 there is a tendency for the two V-shaped portions to be placed under compression so that when the blade is removed the two V-shaped portions move together again by what can be regarded as an imperceptible degree.

A fragment of the socket housing in which the socket contacts are engaged is indicated generally at 6 in Figures 2 and 3 and this housing is formed with a plurality of bores or cavities 7 in each of which a socket contact is housed. As shown, each bore or cavity is formed with a restricted mouth 7a through which a blade 5 can be inserted and guided to between the limbs 3 of the socket contact, the upper rounded closed ends of the V-shaped portions 1 being located close to said restricted mouth 7a so that the rounded end of each of the V-shaped portions combine to form a lead for the blade 5.

Each of the outer limbs 2 of each socket contact is formed with a pressed-out latch 8 which engages a ledge 9 in the cavity and so prevents unintentional withdrawal of the socket contact from the cavity.

It is to be appreciated that only one bore or cavity 7 is shown in Figures 2 and 3 and that in the case of a bank or plurality of flat-

bladed contacts which are to be inserted simultaneously in a corresponding number of and complementary socket contacts then said housing will be formed with a corresponding number of cavities each provided with a socket contact.

WHAT WE CLAIM IS:—

1. An electrical socket and housing assembly for receiving at least one flat bladed contact, the socket comprising at least one socket contact member made of electrically conductive resilient material having a pair of closely related but slightly spaced apart acute-angled V-shaped portions defining therebetween a central space into which a blade contact can be engaged so that when in use the blade contact engages between the limbs of the V-shaped portions which face each other across the central space, the said limbs being disposed so as to yieldingly resist insertion of the blade due to their inherent resiliency and so be caused to exert pressure on opposite side faces of the blade when the latter is inserted and so ensure that a good electrical connection is effected and maintained, and the housing having at least one bore or cavity in which a respective socket contact member is fitted, the or each bore or cavity being provided with a restricted mouth through which a blade contact can be inserted and guided between the springy limbs of said socket contact member, the closed end of each of the V-shaped portions being located close to the restricted mouth so that the said closed ends combine to form a guide path for the blade contact, wherein each of the outer limbs of the V-shaped portions of the or each said socket contact member is provided with a laterally extending latch to engage a corresponding ledge in a lateral recess in the said bore or cavity and so prevent or inhibit withdrawal of the socket contact member from the said bore or cavity.

2. An electrical socket and housing assembly according to Claim 1, wherein the limbs of a said socket contact member, which face each other across the central space, extend from a spine member adapted to receive a conductor wire.

3. An electrical socket and housing assembly according to claim 1 or claim 2, wherein the closed end of each of the V-shaped portions of the said socket contact member(s) are rounded.

4. An electrical socket and housing



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Figure 3 is a fragmentary perspective view of the socket in its housing.

Referring to said drawings, the contact is made of electrically conductive resilient material, e.g. copper strip, and is formed or fashioned to provide a pair of closely related but slightly spaced apart V-shaped portions 1 consisting of outer limbs 2 which are bent back towards the outer faces of inner limbs 3 which are formed integral with and extend upwardly from a spine member 4 which can be adapted in any suitable manner to receive a conductor wire. In the illustrated embodiment, said spine portion is adapted to be crimped to a cable but this part of the contact may be otherwise adapted, e.g. formed as a solder terminal.

The two V-shaped portions indicated generally at 1 are closely related but slightly spaced apart sufficiently to receive therebetween a flat bladed contact 5 indicated in Figure 3, the inner limbs 3 opening apart very slightly against the influence of their inherent resiliency and that of the V-shaped portions 1 generally so as to accept and bring pressure to bear on opposite side faces of the blade 5 when inserted and so ensure that a good electrical connection is effected and maintained.

In splaying apart slightly the inner limbs 3 there is a tendency for the two V-shaped portions to be placed under compression so that when the blade is removed the two V-shaped portions move together again by what can be regarded as an imperceptible degree.

A fragment of the socket housing in which the socket contacts are engaged is indicated generally at 6 in Figures 2 and 3 and this housing is formed with a plurality of bores or cavities 7 in each of which a socket contact is housed. As shown, each bore or cavity is formed with a restricted mouth 7a through which a blade 5 can be inserted and guided to between the limbs 3 of the socket contact, the upper rounded closed ends of the V-shaped portions 1 being located close to said restricted mouth 7a so that the rounded end of each of the V-shaped portions combine to form a lead for the blade 5.

Each of the outer limbs 2 of each socket contact is formed with a pressed-out latch 8 which engages a ledge 9 in the cavity and so prevents unintentional withdrawal of the socket contact from the cavity.

It is to be appreciated that only one bore or cavity 7 is shown in Figures 2 and 3 and that in the case of a bank or plurality of flat-

bladed contacts which are to be inserted simultaneously in a corresponding number of and complementary socket contacts then said housing will be formed with a corresponding number of cavities each provided with a socket contact.

WHAT WE CLAIM IS:—

1. An electrical socket and housing assembly for receiving at least one flat bladed contact, the socket comprising at least one socket contact member made of electrically conductive resilient material having a pair of closely related but slightly spaced apart acute-angled V-shaped portions defining therebetween a central space into which a blade contact can be engaged so that when in use the blade contact engages between the limbs of the V-shaped portions which face each other across the central space, the said limbs being disposed so as to yieldingly resist insertion of the blade due to their inherent resiliency and so be caused to exert pressure on opposite side faces of the blade when the latter is inserted and so ensure that a good electrical connection is effected and maintained, and the housing having at least one bore or cavity in which a respective socket contact member is fitted, the or each bore or cavity being provided with a restricted mouth through which a blade contact can be inserted and guided between the springy limbs of said socket contact member, the closed end of each of the V-shaped portions being located close to the restricted mouth so that the said closed ends combine to form a guide path for the blade contact, wherein each of the outer limbs of the V-shaped portions of the or each said socket contact member is provided with a laterally extending latch to engage a corresponding ledge in a lateral recess in the said bore or cavity and so prevent or inhibit withdrawal of the socket contact member from the said bore or cavity.

2. An electrical socket and housing assembly according to Claim 1, wherein the limbs of a said socket contact member, which face each other across the central space, extend from a spine member adapted to receive a conductor wire.

3. An electrical socket and housing assembly according to claim 1 or claim 2, wherein the closed end of each of the V-shaped portions of the said socket contact member(s) are rounded.

4. An electrical socket and housing

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assembly which comprises a bank of socket contact members, each socket member being as defined in any preceding claim.

accompanying the Provisional Specification.

5. An electrical socket and housing assembly constructed substantially as hereinbefore described with reference to and as illustrated by the drawings

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