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C. W. HEATH

2,822,529

ELECTRICAL CONTACT WITH RESILIENT ARMS

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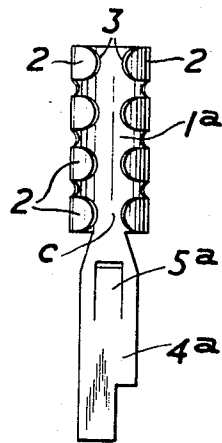


FIG. 1.

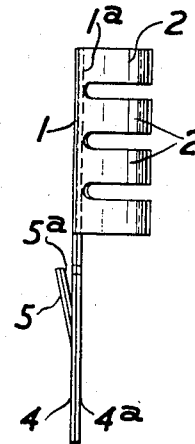


FIG. 2.

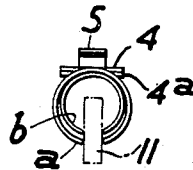


FIG. 3.

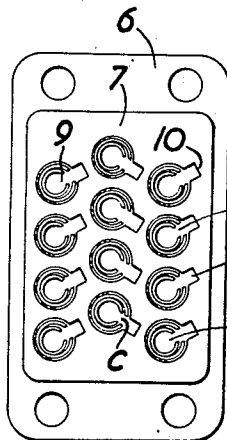


FIG. 4.

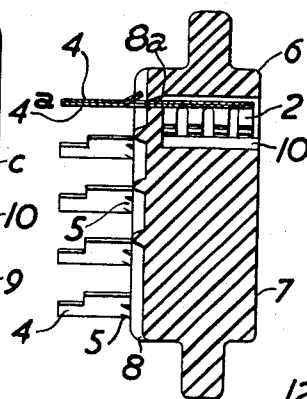


FIG. 5.

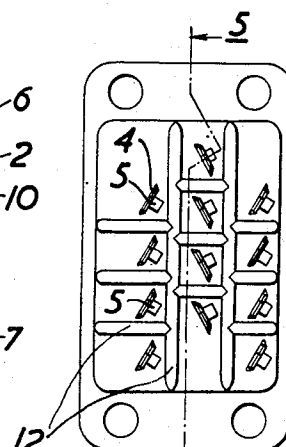


FIG. 6.

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ELECTRICAL CONTACT WITH RESILIENT ARMS

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2 Claims. (Cl. 339—258)

This invention relates to electrical contacts of the kind comprising a pair of nested members each having a series of resilient arms the free ends of which define a slot to receive a contact blade which is adapted to be resiliently engaged by the said free ends of the arms.

It is an object of the present invention to provide an improved form of contact of this kind.

According to the present invention an electrical contact comprises a pair of complementary sleeve like members each comprising a body having a series of longitudinally spaced resilient arms extending laterally from opposite sides, one of said sleeve like members being nested within the other in such a manner that the resilient arms of the two members are in overlapping alignment with their free ends defining a slot into which a contact blade is adapted to be inserted and resiliently engaged by the free ends of said arms, the said body of each member being provided with an axial extension, said extensions being arranged in overlapping abutment and being secured by upsetting the metal of said extension, for example, by punching, stamping or cutting operation.

To enable the invention to be fully understood it will now be described with reference to the accompanying drawing, in which:

Fig. 1 is a front view of an electrical contact according to one embodiment of the invention;

Fig. 2 is a side view thereof;

Fig. 3 is a plan view of Fig. 1, showing in dot dash lines a blade contact positioned between the free ends of the resilient arms;

Fig. 4 is a plan view of a contact assembly including contacts as illustrated in Figs. 1 to 3;

Fig. 5 is a section on the line 5—5 of Fig. 6, and

Fig. 6 is an underplan view of the assembly illustrated in Fig. 5.

As shown in the accompanying drawing the contact includes two complementary metal members assembled in nested relation. The outer member *a* includes a body portion 1 formed with a series of resilient arms 2 extending laterally from opposite side edges, the arms being arranged in aligned pairs, the pairs being parallel to one another and spaced longitudinally of the body. The arms are curved to arcuate shape so that the series of arms form in effect a substantially cylindrical sleeve like member having an axially extending slot *c* defined by the free ends 3 of the arms. The body 1 is also formed with an integral extension or tail 4, cut to form a tongue 5 of rectangular shape which is adapted to be bent out of the plane of the extension as indicated in Fig. 2.

The inner member *b* of the contact is of substantially similar shape to the member *a*, but is of slightly smaller

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all round dimensions and includes a body portion 1*a*, laterally extending resilient arms 2*a* bent to arcuate shape to form a substantially cylindrical sleeve like portion which is eccentrically disposed within the sleeve like portion of the outer member *a*. As shown the inner member has an integral extension or tail piece 4*a* similar to the tail piece 4 of the outer member and is also cut to provide a tongue 5*a*.

It will be noted that the two complementary members are nested together in such a manner that the body portions 1, 1*a* and the arms 2, 2*a* are positioned in parallel relation so that in the view illustrated in Figs. 1 and 2 the arms of the inner member are disposed behind the arms of the outer member. Further as illustrated more particularly in Fig. 2 the tongue 5*a* of the inner member extends through the hole from which the tongue 5 of the outer member is formed and accordingly the parts of the two members constituting the tongues 5, 5*a* are engaged in the slots of the tail pieces to secure the two members *a*, *b* to one another.

It will be understood that the members *a*, *b* may be secured by other means, for example, by punching or stamping the overlapping portions of the tail pieces 4, 4*a*. If desired, the said extensions may be subjected to an embossing or like operation, whereby part of the surface of one of the tail pieces is pressed into an indentation in the other.

In Figs. 4 to 6 the electrical contact is shown mounted in a base of insulating material 6 having a series of bores whose opposite ends open on to the opposite surfaces 7, 8 of the base. As shown each bore includes a substantially cylindrical portion 9 in which the nested sleeve like portions of the members are positioned, and an offset slot-like lateral extension 10 which opens into the portion 9 adjacent to the slot *c* defined by the free ends of the arms 2, 2*a*. A blade like contact such as indicated by 11 in Fig. 3 is adapted to be inserted into the lateral extension 10 so as to extend into the slot *c*, and to be engaged by the ends of the resilient arms 2, 2*a*. The ends of the bores which open on to the face 8 of the base member 6 comprise narrow openings 8*a* through which the extensions or tail pieces 4, 4*a* project, the tongues 5, 5*a* which have their free ends directed towards the arms 2, 2*a* are sufficiently resilient to snap behind the portion of the face 8 adjacent to the end of the bore so as to secure the contacts in assembly.

As shown the contacts are arranged in three rows with the bores in one row staggered relatively to the bores in the adjacent rows. It will be noted that the lateral extensions 10 of the bores in each row are parallel but are angularly disposed with respect to the extensions in the adjacent rows. This provides a staggered arrangement which spaces the blade contacts when these are assembled with the contact members.

As more particularly illustrated in Fig. 6 the face 8 of the base 6 is formed with a series of intersecting upstanding integral ribs 12 which serves to isolate the adjacent ends of the bores and also to isolate part of the tail pieces which project therethrough.

I claim:

1. An electrical contact comprising a pair of complementary sleeve-like members, each comprising a body having a series of longitudinally spaced resilient arms extending laterally from opposite side edges, one of said sleeve-like portions being nested within the other in such a manner that the resilient arms of the two members are

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in overlapping alignment with their free ends defining a slot into which a contact blade is adapted to be inserted and resiliently engaged by said arms, the body of each member being provided with an axially disposed extension, said extensions being arranged in overlapping abutment and having inter-engaging portions for securing said extensions in assembly.

2. An electrical contact according to claim 1 wherein said extensions have overlapping tongue elements which are bent out of the plane of the extensions to secure said extensions in assembly.

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