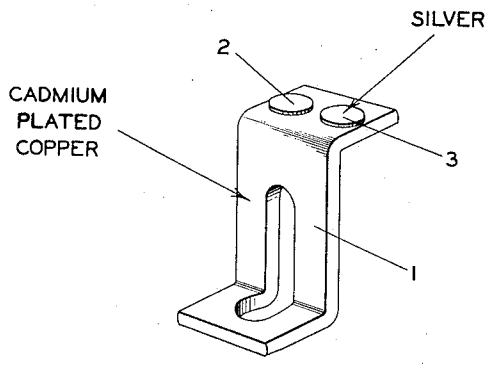
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ELECTRIC SWITCH CONTACT

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ELECTRIC SWITCH CONTACT

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This invention relates to electric switch contacts. More particularly it relates to contact members having the properties of resistance to corrosion as well as arc prevention and extinguishing.

It is an object of my invention to provide an electric switch contact member which will afford maximum conductivity between the engaging surface of cooperating contact structures and will present minimum resistance to current flow through the whole contact structure, commensurate with low cost, and which will at the same time possess the properties of arc limitation and quenching.

Another object is to provide a contact structure of low cost which will stand up under conditions of hard use while carrying its maximum rated current or more, and will arc less and show less wear from pitting and melting than other prior contact structures for similar usage.

Other objects and advantages of my invention will become apparent as it is described in connection with the accompanying drawing.

In the drawing the single figure shows in perspective an electric switch contact member.

Heretofore many attempts have been made to provide electric switch contacts which would tend to reduce the arcing and hence eliminate or limit pitting, scarring and burning. In these attempts contact buttons or engaging contact surfaces have been made of various metals and alloys, or metals plated with other metals. Most frequently copper and silver have been used because of their known high conductivity to electric current. In some cases these metals have been alloyed with or plated with cadmium for the purpose of reducing arcing. But in the case of alloys the addition of cadmium increased the resistance as well as the expense of the contact. In the case of plated contacts the friction of the contact surfaces in normal use caused the plating to rub off, or arcing caused it to be burned off, thus destroying the value of the plated contact. In all these prior uses, however, the cadmium was a part of the engaging surface, either as plating or within the alloy.

My invention avoids the defects of the prior constructions while retaining their advantages. According to my invention a contact support 1, of any suitable form is made of copper of as high purity as usual in electric work, or it may be made of brass, phosphor bronze or other materials used for such purposes, if the size is sufficient to permit passage of the required current without substantial loss or overheating. This support is then plated with pure cadmium, after which one or more contact silver buttons, 2, 3 are attached to the support in any suitable manner, as by forming the button in the shape of a rivet and upsetting the end of it which passes through the support or preferably by welding to the support. These buttons may be made of fine silver, coin silver, or any silver alloy having the proper degree of conductivity of electric current so that the buttons will not overheat nor become pitted in use. The contact buttons will engage with similar fixed or movable contact buttons on another support in the usual manner in switches.

It has been found by comparative tests that when the support is plated with cadmium the arcing between the stationary contacts of the switch is greatly reduced, so that whereas prior to the plating of the support, the switch might fail to perform satisfactorily on overload, it will not fail when the support is plated with cadmium.

Some of the outstanding advantages of my invention are—

1. The cadmium plating is not on any engaging or contact surface and hence it will not rub off nor is it likely to be burned off.

2. The contact buttons may be made of the best conducting material at present known, i. e., silver, or of any metal or alloy of high current conductivity.

3. The support may be made of the best and most commonly used material for ordinary current conduction in electric work, i. e., copper, or of any suitable conductive material of lower cost than the contact buttons.

4. The use of the materials in the manner described results in less arcing than any other prior construction having as simple structure and as low relative cost.

I have found that superior results are also obtained when the plating is of aluminum instead of cadmium. The aluminum proved to have the properties of arc quenching or reduction similar to cadmium.

I have also found that good results may be obtained when the plating is of zinc instead of cadmium, though the arc reduction and quenching properties of cadmium and aluminum are superior to zinc, as used according to the principles of my invention. Therefore, I do not limit myself to the specific form of the contact member as described but,

I claim—

1. An electric switch contact member comprising a supporting member of copper, a silver contact button mounted on said support and form-

ing the contact surface of said contact member, and a plating of cadmium on said support at least on the area around said button.

2. An electric switch contact member comprising a supporting member of material having high electric conductivity, and a contact button mounted on said support and forming the contacting surface of said contact member, a plating of cadmium on said support at least on the area around said button, said button being of metal having high electric conductivity and high resistance to pitting or welding.

3. An electric switch contact member comprising a supporting member of material having high electric conductivity, contact buttons mounted on said support and forming the contacting surface of said contact member, a plating of cadmium on said support at least on the area around said button, said button being of the class of metals including silver and its alloys which possess high electric conductivity and resistance to pitting or welding.

4. An electric switch contact member comprising a supporting member of copper, a contact button mounted on said support and forming the contacting surface of said contact member, a plating of cadmium on said support at least on the area around said button, said button being of the class of metals including silver and its alloys which possess high electric conductivity and resistance to pitting or welding.

5. An electric switch contact member having a support whose area around the contacting surface is plated with cadmium, said area being free of engagement with any other contact member in normal use.

6. An electric switch contact member having a conducting support, a contact button of material having good electric conductivity, and a plating of material having property of arc reduction or quenching on said support on the area around said button.

7. An electric switch contact member having a support whose area around the contacting surface is plated with aluminum, said area being free of engagement with any other contact member in normal use.

WILLIAM F. SEUBERT.