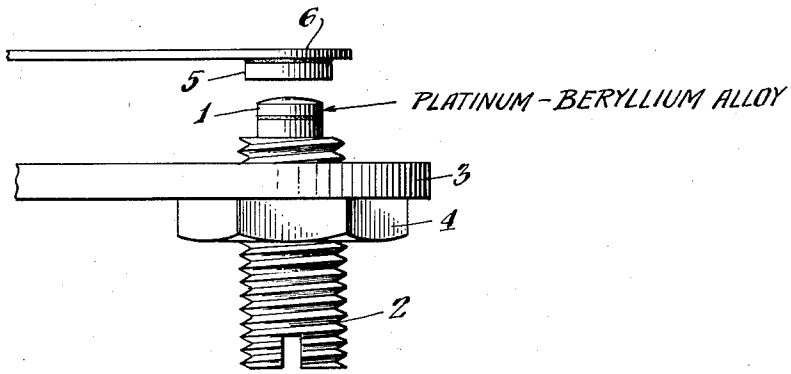
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ELECTRIC CONTACT

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ELECTRIC CONTACT

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2 Claims. (Cl. 200—166)

This invention relates to electric contacts.

An object of the invention is to improve electric contacts and the composition thereof.

Other objects of the invention will be apparent from the description and claims.

The drawing illustrates an electric contact assembly embodying features of the present invention.

Platinum electric contacts have long been used because of their low contact resistance and other good electrical properties and their ability to maintain a clean low resistance surface in corrosive atmospheres and under long periods of infrequent use. For this reason they are especially suitable for applications where the contact pressure is low, such as in sensitive relays.

Under heavy use, however, platinum contacts have a tendency to deform under mechanical forces such as repeated making and breaking of the contacts.

The present invention contemplates an electric contact formed of a platinum alloy containing beryllium.

Small amounts of beryllium have an extraordinarily good hardening effect on platinum. As little as 0.05% beryllium imparts a hardness to platinum equal to that imparted by 10% of iridium and 0.25 beryllium gives a hardness equal to that of a 25% iridium-platinum alloy. These platinum-beryllium alloys have a very fine grain and undergo a much smaller loss in weight on prolonged heating than does pure platinum.

According to the preferred embodiment of the present invention an electric contact may be formed of an alloy of

	Percent
Beryllium	0.025 to 2
Platinum	Balance

Small proportions of other ingredients which do not adversely affect the contact characteristics or the hardening effect of the beryllium may be present in some cases, such as the metals of the platinum and palladium group, metals of the iron group, refractory metals and the high conductivity metals of the first group such as copper, silver and gold.

A specific contact material which is very suitable is formed of

	Percent
Beryllium	0.15
Platinum	Balance

The alloy is made by conventional methods, such as melting in high frequency induction furnace using zircon or beryllium oxide crucibles, casting, forging, rolling and heat treating.

Contacts of the present invention have a higher hardness and resistance to deformation than platinum contacts, combined with low contact resistance. They also have less tendency to creep or deform when operated at high temperatures or where overheated in operation. The contacts withstand material transfer particularly in D. C. circuits. The contacts of platinum beryllium alloy may be used on either polarity or in differential combinations working against refractory metals, refractory compound metals such as Elkonites, carbidic materials, silver alloys or other precious metals and alloys.

The drawing illustrates a contact combination suitable for use in relays or interrupters comprising a contact disc 1 formed of the platinum beryllium alloy of the invention brazed or welded to the end of a threaded backing screw 2 threaded into an opening in the support arm 3 and locked in position by lock nut 4. A cooperating contact disc 5 is supported on a movable contact arm 6 for make and break operation with contact 1. Contact 5 may also be formed of the platinum beryllium alloy or may be of a different composition such as those mentioned in the preceding paragraph.

While specific embodiments of the invention have been described, it is intended to cover the invention broadly within the spirit and scope of the appended claims.

What is claimed is:

1. An electric contact formed of 0.025 to 2% beryllium, balance substantially all platinum, said contact being characterized by higher hardness than pure platinum.

2. An electric contact formed of an alloy of 0.025 to 2% beryllium, balance platinum.

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