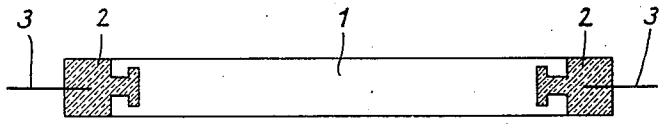
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ELECTRIC RESISTANCE

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ELECTRIC RESISTANCE

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1 Claim. (Cl. 201—63)

It is not easy to provide electric resistances made from sintered material with readily adhering contacts that do not yield an undesired contact resistance. For this purpose various methods have been proposed, particularly for electric resistances having a negative temperature coefficient and being made from lower oxides of chromium or uranium, while pointing out that sintering together of metal and carbon leads to an undesired result due to the formation of carbide.

The invention has for its object to provide a resistance having a negative temperature coefficient and being made by sintering a mixture containing silicon or a silicon alloy, preferably a mixture to be sintered in which the content of silicon is greater than the remaining part.

Now, it has been found that such electric resistances can be satisfactorily provided with contacts by means of a carbon material, for example graphite, by sintering this carbon material and the resistance material together.

In order that the invention may be clearly understood and readily carried into effect it will now be set out more fully, by way of example with reference to the accompanying drawing.

50 grs. of ferrosilicon having a high content of silicon, for example 98%, is reduced to the form of a powder, bolted and then mixed with 10 grs. of clay and 50 mgrs. of tragacanth, also in the form of a powder, mixed with the addition of 7 c. c. of water until a uniform paste is obtained which is pressed into the shape of small rods 1; during this treatment the rods have simultaneously pressed to them small graphite blocks 2. The rods 1 thus provided with graphite contacts 2 are then dried in air for a few hours and subsequently heated for about 60 minutes at a temperature of 1300° C. in a reducing gas atmosphere so that the material sinters. The graphite contacts are thus rigidly connected to the silicon-containing resistance material and do not exhibit a harmful contact resistance. They may in addition be provided with small rods 3, for example of nickel, for the supply of current.

In further explanation we may mention that an excess of silicon in the resistance material ensures that the resistance value is high at ordinary temperatures but low at the operating temperature so that a negative coefficient of temperature of high value is obtained.

What I claim is:

The process of adhering contact pieces to a resistance strip of the type which is made up of a composition of materials sintered together after the resistance strip is shaped as desired which process consists in partially embedding into different points of the unsintered but formed resistance strip, key shaped pieces of carbon material and sintering the resistance material and the key shaped pieces to the resistance material at the same time.

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