

UNITED STATES PATENT OFFICE.

WILLIAM H. WRIGHT AND JOSEPH HOFFMAN, OF SCHENECTADY, NEW YORK, ASSIGNORS TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

REFRACTORY WATERPROOF INSULATING COMPOUND.

956,870.

Specification of Letters Patent.

Patented May 3, 1910.

No Drawing.

Application filed September 4, 1903. Serial No. 172,009.

To all whom it may concern:

Be it known that we, WILLIAM H. WRIGHT and JOSEPH HOFFMAN, citizens of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Refractory Waterproof Insulating Compounds, of which the following is a specification.

This invention relates to compounds for insulating electric conductors, protecting portions of electrical apparatus from heat, supporting electrical instruments, and the like.

The object of the invention is to provide for these purposes a cheap and efficient composition of matter which is easily machined, has good insulating properties, is capable of resisting a high degree of heat, and is non-hygrosopic. The composition which we have invented to meet these requirements is made of soapstone and a refractory adulterant, such as clay, ground to a powder and bonded with a flux having a relatively low melting point, such as cryolite. The ingredients are mixed, moistened, molded under pressure, dried and fired.

Entering more into details, it should be stated that the preferred proportions are as follows: soapstone sixty-four parts by weight, clay or other refractory adulterant thirty-four parts, and cryolite four parts, but these figures can be considerably varied to suit requirements. These ingredients are finely ground and mixed together in a moist condition, filled into molds, and subjected to heavy pressure by a hydraulic press or otherwise. The formed article is then removed from the mold, dried, and fired at a temperature of from 900 to 1100 degrees centigrade, preferably 950 degrees C. At this heat the cryolite fuses slightly and bonds together the soapstone and clay. It is essential to use a temperature low enough to preserve in an unchanged condition the original properties of the soapstone, so that it will remain in a condition soft enough to be drilled or machined.

In place of the clay we may use any suitable refractory substance, and as a substitute for the cryolite we may use any binder having a melting point so low that the soapstone

remains unchanged, such as sodium carbonate, or fluor spar. The cryolite is preferred, however, because it is less hygrosopic than the carbonate and gives a better fluxing effect than fluor spar, the essential point being to use a substance which will satisfactorily bond the soapstone and clay at a low heat and leave the product moderately hard, tough, and proof against ordinary hygrosopic moisture.

The compound can be used for arc-chutes in controllers, panels for switches, insulators for electric conductors, and in many other places where a fire-proof, non-hygrosopic insulator is wanted. It can be drilled and machined with the same ease as pure soapstone, and its non-hygrosopic qualities make it especially useful for instrument-supporting panels in damp locations.

In accordance with the patent statutes, we have described the principle of operation of our invention together with what we consider to represent the best embodiment thereof; but we desire to have it understood that the invention can be carried out in other ways, and we do not limit ourselves to the precise ingredients or the exact proportions hereinbefore stated.

What we claim as new and desire to secure by Letters Patent of the United States, is:—

1. An insulating compound, consisting of soapstone, a refractory adulterant, and slightly fused cryolite.

2. An insulating compound, consisting of soapstone, clay and slightly fused cryolite.

3. An insulating compound, consisting of soapstone, clay and cryolite, ground, moistened, mixed, compressed and fired sufficiently to slightly fuse the cryolite.

4. An artificial stone consisting of ground soapstone, a refractory adulterant, and cryolite fused sufficiently to bind the ingredients together but without destroying the physical characteristics of the soapstone.

In witness whereof, we have hereunto set our hands this 3rd day of September, 1903.

WILLIAM H. WRIGHT.
JOSEPH HOFFMAN.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.