

KRYPTOL.—A NEW SUBSTANCE FOR ELECTRIC HEATING.

In his report of September 17th to the Department of Commerce and Labor, U.S. Consul-General Mason, of Berlin, Germany, writes as follows with regard to an important innovation in the line of electric heating:—

Among the notable recent German inventions in the field of applied science is an electric resistance material for heating purposes, to which has been given the name "kryptol." The exact method of its preparation and the proportions of its ingredients employed are not disclosed by the specifications of its patent, but it is a mixture of graphite, carborundum, and clay so combined as to form a loose granular mass or powder of four grades or degrees of coarseness, which are severally best adapted to different heating operations.

Electric heat may be developed by two general methods: The electric circuit may be broken, so that a voltaic arc is formed, and the charge in the furnace is thus heated directly, or the current may be transmitted through a conductor that offers enough resistance to generate heat, which is imparted to other substances by contact. This is the indirect electrical heating system, of which kryptol offers the latest and most interesting example.

The two main difficulties inherent in voltaic-arc furnaces are: (1) Only very high temperatures are developed, which are difficult to modify and control, and (2) the arc consists largely of incandescent particles of (usually carbon) electrodes, which render the flame so impure as to preclude its use for many important purposes. Both of these defects are remedied by kryptol, which develops heat of any desired intensity from a gentle warmth up to 3,000° Cel., and is clean and free from dust and other impurities. Moreover, it avoids the use of platinum, nickel, and other metallic wires

and foils that have been hitherto used in resistance furnaces, thereby securing important economy and avoiding the danger of short circuiting and other accidents, which is always more or less present when metallic spirals in connection with crucibles are used.

The property of kryptol, upon which its efficiency depends, is the fact that it offers to an electric current the requisite degree of resistance to generate a high degree of heat without destruction to its own substance. Consul Mason illustrates the method of its operation by means of an earthenware plate inclosed at its edges in a wooden frame and bounded at two opposite sides by carbon electrodes which rest upon the plate and are connected by insulated wire conductors with a current supply, forming, when the break between the electrodes



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