

is closed, an electric current. Upon the earthenware plate is loosely strewn the granulated kryptol to a depth of about an inch. This, when the kryptol is laid continuously across the plate, forms the electrical connection between the two electrodes and closes the circuit. When, however, the kryptol is brushed or scraped aside so that an open, uncovered space is formed through the layer across the plate, the circuit is broken and the apparatus remains, so to speak, dead. If now the kryptol is brushed into the open space, so as to form a connection between the two masses lying against the electrodes on either side, the circuit is at once restored, and the kryptol forming this thin connecting layer begins to sparkle and glow, becoming in a few moments incandescent and generating a heat that will raise cold water to boiling in three or four minutes.

A peculiarity is that the incandescent action takes place only at the places where the layer of kryptol on the plate is thinnest, and it is therefore easily possible to create heat just in the place where it is wanted and not elsewhere, for in this case the thick bed of granular material on other portions of the plate remains cool and impassive and may be touched or stirred by the naked hand with entire impunity. The finer the grains of kryptol the less active is the incandescence, and it is for this reason that the four different grades or numbers of the material are made, to be used as may be required in generating different temperatures.

This extreme tractability, by which the temperature can be absolutely regulated by increasing or diminishing the strength of the current or by altering the thickness of the kryptol layer, one or both, renders it applicable to a large variety of practical uses, among which

some of the more important are as follows: For heating street cars, hallways, sleeping and other rooms, and laboratories where a continuous uniform warmth is essential. The apparatus includes a simple cast-iron flanged radiator, the interior lining of which is glazed so as to insulate the kryptol mass with which it is filled. At each end is an electrode, usually of gas carbon, connected with wires carrying a current of 4 to 5 amperes and about 120 volts. Such a heater, which can be put under a car seat or beneath the floor, where it is out of sight, can easily be managed by the conductor or motorman, can generate and maintain indefinitely any desired temperature, and can be used without refilling for weeks together, would seem to solve, technically, at least, the problem of street-car heating in cold climates. The radiator is made with a close-fitting cover, for it is found that the kryptol endures unimpaired much longer in a closed chamber than in the open air. A radiator in daily use requires filling with fresh kryptol once in about three months.

This process lends itself with great convenience to all the finer smelting operations in scientific and industrial metallurgy. These operations may be carried on by means of a small crucible furnace, which consists of an iron shell with an enamel lining filled with coarse-grained kryptol, in the centre of which is hung a movable graphite crucible, in which any temperature up to 2,000° C. (3,632° F.) may be generated. With a current of 15 amperes, nickel, the smelting point of which is about 1,600° C., may be fused in about six minutes.

Some of the steel and cutlery manufacturers in Westphalia are experimenting with kryptol with a view to its employment for tempering, annealing, and case-hardening steel and iron bars, knives, scissors, and

THE GILMOUR DOOR COMPANY, LIMITED

VENEERED
HARDWOOD
DOORS

TRENTON, ONT.



We have Agents
in the principal cities
and towns in Canada,
and our Doors are car-
ried by Lumber Deal-
ers and Manufacturers
of Interior Finish, etc.

Write for Illustrated Catalogue.