

SOME MORE ELECTRICAL DEVICES FOR THE HOUSEHOLD.

In no discovery of the past few years has public interest been so centered and retained as in the application of electricity for domestic purposes. A year ago the first electrical house in Schenectady was the wonder of the world. To-day there are several homes in



Electric Chafing Dish.

the great Electrical City, and elsewhere, wherein all the heating, cooking, lighting, and power is supplied by electricity, and there are thousands of houses partially equipped with the electrical devices.

Invention and research have been constantly at work perfecting new devices to be installed in the electrical homes. The three very latest utensils are the electric corn popper, electric milk warmer, and the electric shaving mug.

Of the host of electrical household utensils, the new electric corn popper is the daintiest. Attach the connection with the electric light socket, and the children can pop corn on the parlor table all day without the slightest danger or harm. In a very few minutes after the switch is turned, the pan is hot enough for the corn. The device consists of a double aluminium vessel holding about a quart, with the heating units concealed underneath. A wire cover keeps the rapidly-popping kernels from flying out on the floor. The popper is mounted on two small rubber-tired wheels, making it easily shaken. The whole is vibrated with a short wooden handle. Nothing easier or simpler can be imagined in the line of a corn popper. The results are far better than the old way of building a red-hot fire in the kitchen range, and suffering from the heat while popping the corn. With the electric corn popper there can be no poor results if the corn is good.

The new electric shaving mug will be welcomed with delight by the traveling men. It is small enough to be readily carried, and where the hotel is equipped with electric lights it will supply all the hot suds and hot water a man wants to shave with. The soap disk is easily removed, which turns the vessel immediately into a half-pint water heater, to put the finishing touches on the shave.

Another invention which is destined to become a necessity in every household where baby rules supreme is the electric milk warmer. When baby wants something to eat in the night (and he or she usually does), some one must get up and warm milk on the stove, else there will be no rest in the house that night. Now all this is changed. A turn of a switch at the head of the bed, and the milk, made ready before retiring, is instantly heating, and by the time papa has his feet in his slippers, it is warm enough to be given the child.

The electric chafing dish has been wonderfully improved, and the new utensil is the result of careful study and experiment. Welsh rarebits *a la* electricity are now easy enough. The new dish is of handsome design, and once connected with the electric light socket, the simple throwing of a switch prepares it for immediate use. There is no flame, soot, useless heat, danger, or giving out of "alcohol" at the critical moment. A kindred utensil is the electric coffee percolator, which is a very simple device. The steam generated under the bell valve forces the water and steam up through the tube into the glass globe, where it falls in the form of a fine hot spray on the ground coffee, and percolates back into the reservoir. The



Coffee Percolator.

main features are its simplicity in operation and the perfect control of the heat. The coffee cannot boil or "cook." Consequently it retains its sweet aroma and its strength and color.

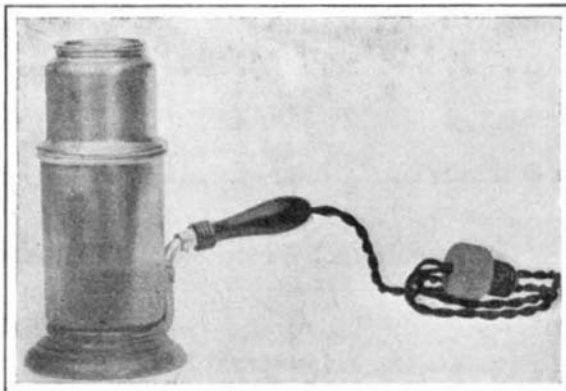
The Use of Wireless Telegraphy for Determining Longitude.

After special experiments made between Potsdam and Ober-Schöneweide (near Berlin) had shown that coherers used as wireless telegraphy detectors, really constitute instruments of precision, the Potsdam Geodetical Institute undertook investigations in order to test, on a large scale, a possible application of wireless telegraphy to the determination of longitudes. A convenient opportunity was afforded last summer by a determination of longitude between Potsdam and the Brocken (Hartz Mountains). These experiments in which a comparison as directly as possible between results secured by the ordinary method and wireless telegraphy respectively was to be obtained, were carried out by Prof. Th. Albrecht, in conjunction with some other scientists, and with the assistance of the German Postal Department. An exchange of signals was carried out both by means of ordinary and wireless telegraphy from June 21 to July 10 between Potsdam and the Brocken.

Wireless telegraphy signals were transmitted exclusively from the mammoth wireless telegraph station erected at Nauen, near Berlin, which is 32 kilometers (20 miles) distant from Potsdam and 183 kilometers (114 miles) from the Brocken Mountain. As in connection with these signals no compensation of current intensities (in opposition to ordinary telegraphic signals) could be obtained, such tests had to be extended to different current intensities (viz., full, half and one-quarter respectively of the energy of electric



Electrically-Heated Shaving Cup.

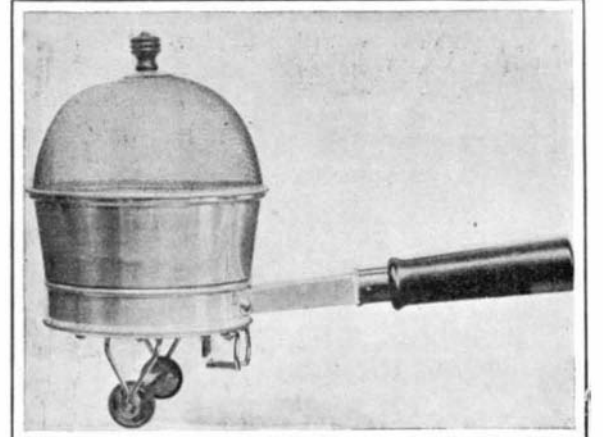


Baby Milk Warmer.

waves sent out from the station) while a considerable number of couples of coherers was used in order to eliminate any defects of individual apparatus. A number of more or less extensive series of observations was obtained on eleven evenings, five days being lost on account of outside disturbances, while the disturbance due to atmospheric electricity was so considerable

on four stormy days as to prevent any wireless telegraph service between the two stations.

From the extensive experimental material it is inferred that the degree of accuracy of the individual signals, both in the case of ordinary and wireless telegraphy is 0.02 second, and that of the definite clock difference in the case of ordinary telegraphy (120 signals



Parlor Corn Popper.

being given during each evening) 0.002 second, and 0.003 with wireless telegraphy in the case of 50 signals each time.

No differences in the working of the coherers could be noted, while departures between the two kinds of signals remain within the order of one-thousandth second. In any case the readings should be extended to several series of signals using different coherers.

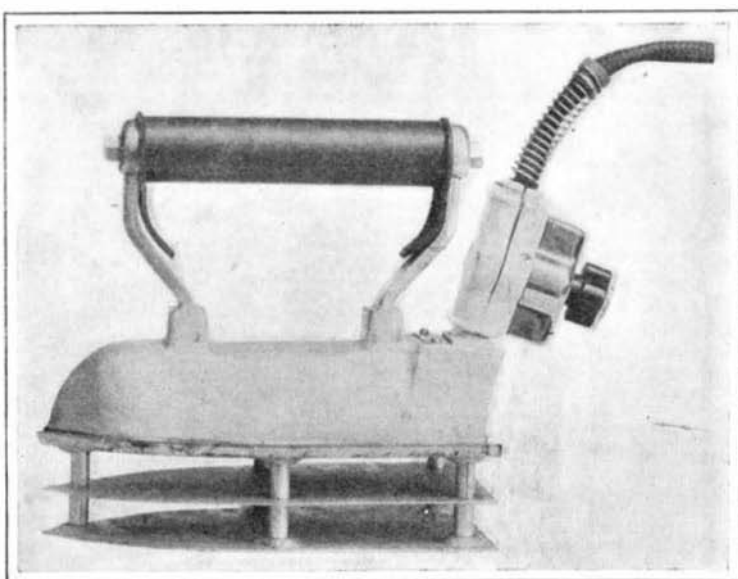
By comparing the results obtained by Prof. Albrecht in the case of full, half and one-fourth energy of the electric waves respectively, the very remarkable result is obtained that there is no variation of the resulting clock difference due to the current intensity.

In order to allow as many signals as possible to be recorded, Prof. Albrecht recommends using, in the case of such determinations of longitude, an excess of electrical energy in connection with fairly large antennæ. In order, on the other hand, to compensate the influence of atmospheric disturbance in the case of antennæ of greater capacity, the coupling between the primary and secondary coils should be as loose as possible.

In the case of the experiments referred to all conditions had been chosen rather unfavorable. The two stations were situated at rather unequal distances from the transmitting station—32 km. (19 miles) and 183 km. (114 miles) respectively; one being located on a mountain 1,141 meters (3,742 feet) in height which, owing to its isolated position and its marshy surroundings was rather subject to atmospheric disturbances, while the output of the transmitting station was only a fraction of the ultimate figure which will be obtained after its completion.

Furthermore, atmospheric conditions during these trials were by no means favorable, the summit of Brocken Mountain being surrounded by clouds during more than half of the days of observation.

An interesting point which has not so far been touched upon in the case of wireless telegraph signals, is the time of transmission of the current. It has been generally supposed that electric waves are propagated at the speed of light. If this be true, a difference in distance amounting to 151 kilometers (93 miles) would correspond with a time of current transmission of one two-thousandth part of a second. Now by comparing the results obtained with the aid of either wireless or ordinary telegraphic signals this figure is found to be actually true. From the above experiments it is inferred that wireless telegraphy is fully able to replace ordinary telegraphy for the practical determination of longitudes.



Electric Iron With Combination Switch and Plug.

The average daily supply of water delivered to London from the Thames River during August last was 138,599,861 gallons; from the Lea, 42,085,000 gallons; from springs and wells, 67,077,451 gallons; from ponds at Hampstead and Highgate, 3,000 gallons. The daily total was therefore, 247,765,312 gallons for a population estimated at 6,840,367, a daily consumption per head of 36.22 gallons.