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A Precise Method for Determining the Efficiency of Electric Range Units (Abstract)

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It was shown in the main report that a compensating resistor with the following characteristics would solve the problem, namely,

$$R_x = \frac{R_1^2}{R_2 - R_1}$$

in which R_1 is the resistance operating in the first slide wire, R_2 is the *total* resistance of the second slide wire, and is therefore, a constant, and R_x is the value of the required compensator.

A suitable manner of constructing R_x was devised, with the result that when the two slide wires described are manipulated independently of each other, the output potential of the circuit varies directly as the product of the operating resistances in the slide wires.

With this relationship it is possible to apply appropriate scales to the slide wire resistors, balance the output potential using a suitable measuring instrument, and hence to adapt the circuit to the type of mathematical operations involving multiplication and division.

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A PRECISE METHOD FOR DETERMINING THE EFFICIENCY OF ELECTRIC RANGE UNITS

(ABSTRACT)

MARGARET WOODROW

The methods generally employed for determining the efficiency of electric range units do not account for the heat losses through the sides of the testing utensil and, sometimes, that lost through evaporation. Consequently, these determinations give too low a value for the efficiency of the units. By designing and using a vessel for which the heat losses could be accurately measured, the efficiencies of different types of units were determined. The efficiencies obtained by this method were considerably higher and more uniform than those determined by the usual methods.

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