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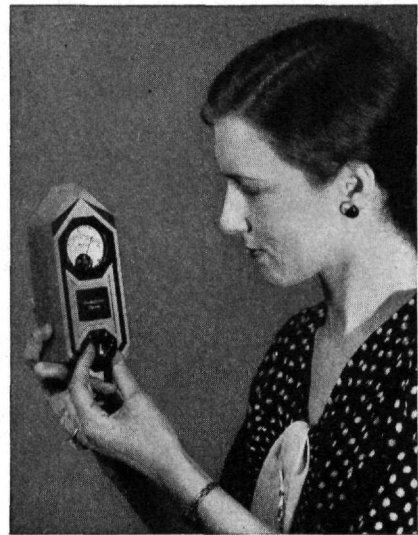
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Engineering Review

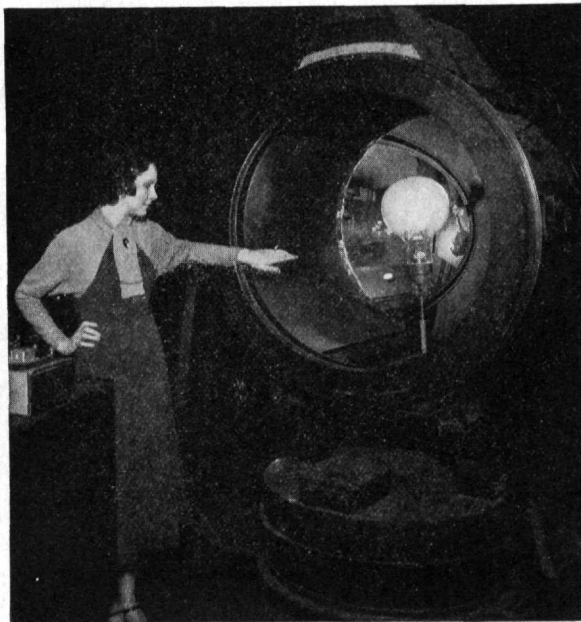


"Electrotemp" Eliminates
Temperature Guessing

World's Tiniest Mercury Switch

An electric sparkle from the tiniest mercury switch in the world, attached to the ring finger of a girl's hand, turned on a 10,000 watt incandescent lamp in the presence of a group from the American Institute of Electrical Engineers who were in winter convention at the Engineering Societies' Building, New York City, recently, and who visited the laboratories of the Westinghouse Lamp Company, Bloomfield, N. J., as part of a tour of Jersey industrial plants.

This tiniest of mercury switches consumes only five to ten milli-amperes and is far too weak to operate directly a powerful lamp which consumes 100 amperes of



Lighting a 10,000-Watt Lamp With a
Mercury Switch

electricity such as the 10 K.W. which is the largest incandescent lamp made for commercial use. Ordinarily a lamp of this wattage would require a mercury switch many times larger, but this tiny switch was made to operate a relay which stepped up the current and threw a large contact breaker that sent current through the powerful lamp, thus demonstrating the feasibility and simplicity of controlling electrical sources from a distance.

Mercury switches operate by means of a tiny globule of mercury which rolls back and forth in a tiny glass tube. As the tube is tilted, the mercury rolls to and from the end of a "live" wire and thereby makes or breaks the electric circuit silently, eliminating the usual click that accompanies the ordinary mechanical switches.

Used to control electric current automatically, the field of application of this tiny switch in industry is barely gaining foothold. This new tiny model of a mercury switch is designed especially for the low current uses of today and perhaps portends for the near future an extensive use of "silent" switches to operate many domestic electrical conveniences.

Multi-Temperature Indicator Plugs Into Light Socket

A temperature recorder which measures the entire range from ice point to steam point and enables the superintendent of a building to tell whether it is the lady or the room in Apartment D that is cold, is science's latest achievement.

Temperature control has been one of the chief worries of engineers for many years. With this new development it is possible to check temperatures at a central point from remote sections of the country. For instance,

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in mines, beds of rivers, refrigerated cars lying at isolated sidings, or in fact, revolutionize the world's most talked of subject—temperature control.

Another important angle in connection with this new device is with the rapid development of air-conditioning of buildings, it is important that the temperature of all parts of the structure be known at all times. The rapid increase of this new industry is responsible for the development of this new temperature control.

The apparatus required for the installation of the "Electrotemp" is very simple. All that is necessary is ordinary bell wire leads from the temperature control to the search coils located at different points throughout the building. After plugging into the regular house lighting circuit, the apparatus begins to work. The search coils which are sensitive detectors of temperature consist of pieces of copper wire in a small compact metal plate, provided with an artistic cover plate which can be screwed to the wall, mounted outdoors or even inserted into the hot water system or the electric refrigerator. Since more current flows in cold copper than in hot copper, the search coil is able to detect differences in temperature which are passed on to the "Electrotemp" instrument located at the central point.

A typical "Electrotemp" has nine different extensions on it, 1 outdoor, 2 bathroom, 2 hot-water heater, 4 garage, 5 nursery, 6 living-room, 7 refrigerator, 8 beer-barrel (?) and 9 which is used to check or adjust the accuracy of the temperature of the above mentioned places. To check the temperature at various points, all that is necessary is to adjust a setscrew on the side of the apparatus, bringing the indicator to zero which proves that the apparatus is working accurately. The "Electrotemp" then is ready to check the temperature at any of the points indicated on the dial.

Electric thermometers are not new but heretofore they required much auxiliary equipment and the assistance of a technically trained electrical engineer to operate them and, due to their delicate construction, uses were limited, while the "Electrotemp" is so designed and constructed that it is as simple to operate as turning on an electric light. It does not require any special care once it is set up and permits many temperature investigations that with the old apparatus was out of the question.

The installation in an apartment house of the "Electrotemp" will put the building manager in complete control as to the temperature throughout the building. The device which is very accurate, can be plugged into any electric light socket and wired up with ordinary bell wire to as many extensions or points that are necessary; therefore, when the janitor receives a complaint about the heat, all he has to do is to dial the apparatus to the apartment where the complaint comes from and then make his own decision.

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