

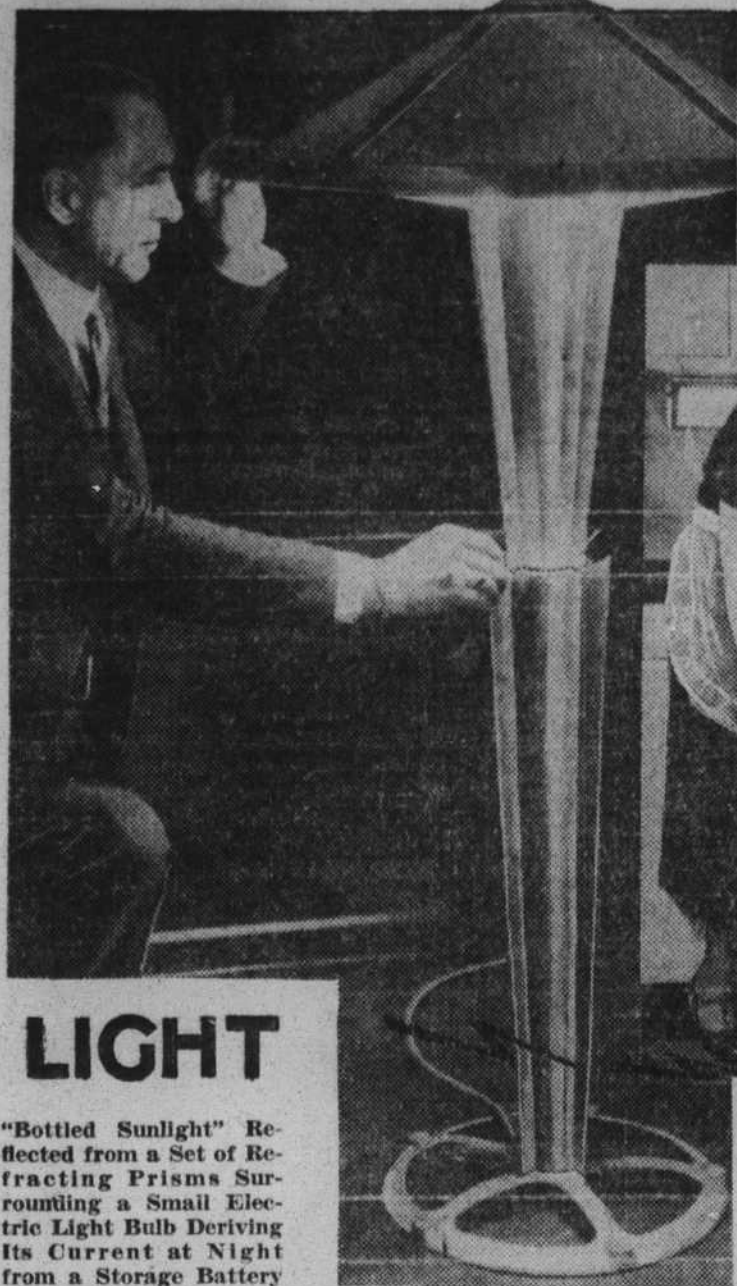
# QUEER THINGS THAT MAY HAPPEN WHEN WE PUT

Solar Stoves and House-Heaters

# THE SUN TO WORK

Already in Use Point to Amazing Potentialities

of New Engine of  
Dr. Charles G. Abbot  
For Which Nature  
Supplies Power



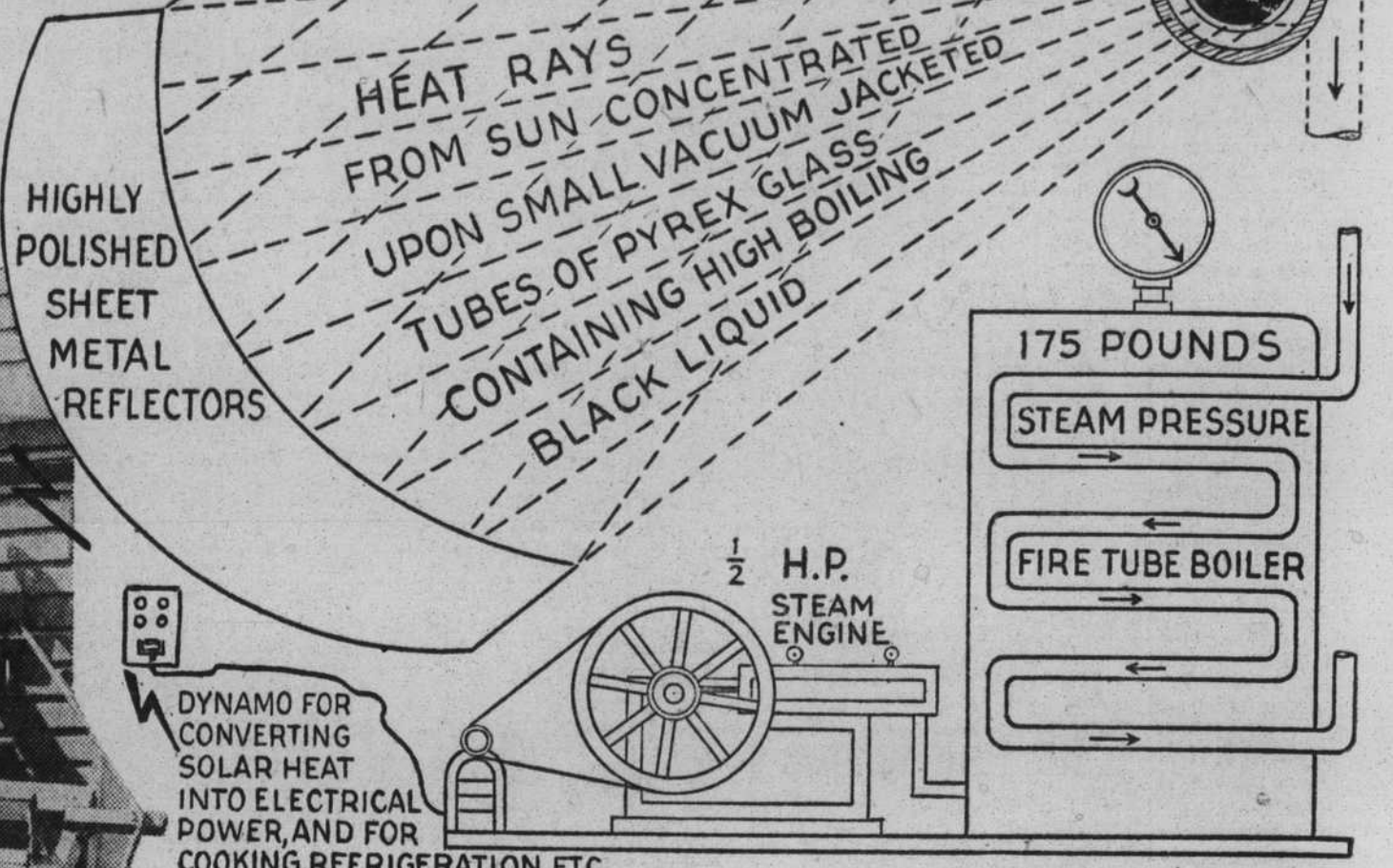
**LIGHT**

"Bottled Sunlight" Reflected from a Set of Reflecting Prisms Surrounding a Small Electric Light Bulb Deriving Its Current at Night from a Storage Battery Recharged by the Sun.



**HEAT**

In the Home Electric Ranges, Toasters, Curling Irons, Water Heaters, Radiators and Even Towel Driers Will Be "Fed" with Heat Converted from Sun Rays.



MY new solar engine, which gets all its power from the sun, may help the world to make the coming transition from the use of coal and oil, which some day will be rare luxuries.

When the supplies of coal and oil have been exhausted, water-power will be the only other widely used source of energy so far as is known today.

But if the inexhaustible energy of the sun's rays is called upon, the studies I have made may lead to an economic solution.

My present sun-power machine may seem crude a century hence, but it may help the world to make the transition, without much sacrifice.

In the meantime there are many applications to which sunpower may be put.

*Chas. G. Abbot*

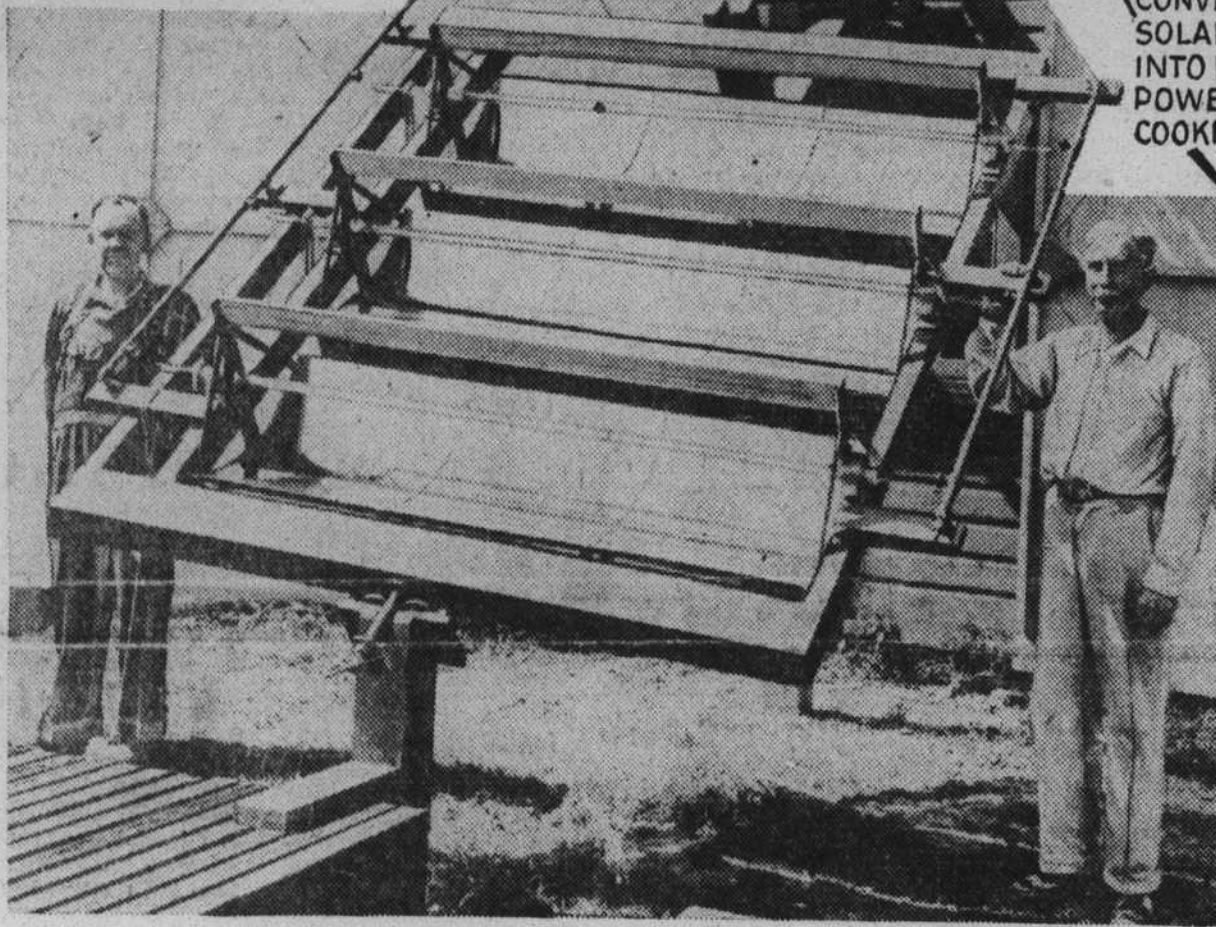
By Lou Wedemar

RAYS of the Sun have been harnessed in one way or another by man ever since it was discovered, hundreds of thousands of years ago, that radiations from a shiny surface could be made to start a fire. But only now, after centuries of worship of the Sun, and a comparatively few years of scientific investigation of solar emanations, has mankind been able to develop ways to draw upon the biggest powerhouse in Creation at will for inexpensive energy, as conveniently as it dams rivers or burns coal for power.

And having, at last, been able to find methods of tapping the supreme powerhouse, scientists and engineers now look forward to the use of sunpower in generating electricity for thousands of uses not even guessed today.

Among the concrete instances of the use of sunpower which suggest future possibilities are Florida's sunpower machines which heat water to provide warmth in apartment houses after sundown, and California's sunpower machines, used for cooking hot-dogs and toasting rolls at roadside stands. In both cases there is not a cent expended for fuel. Some other applications

Below, the Solar Heater Put to Work in a California Roadside "Rest," Toasting Hamburgers and Hot Dogs. Right, This Small Solar Motor of Four Photo-Electric Cells Creates Sufficient Energy to Operate a Motor Rated at Four Tenth-millionths of One Horse-Power.



Dr. C. G. Abbot, at Right, Photographed with His Solar Heater, Which Harnesses the Sun's Rays and Makes Them Operate the One-Half Horse-Power Steam Engine Shown Above the Top Reflector.

of sunpower are graphically illustrated in this page.

Star of the infant sunpower industry is a learned scientist, Dr. Charles G. Abbot of the Smithsonian Institution. For many years he has studied the sun and the action of its rays, until he knows perhaps more about them than any other living man.

Dr. Abbot calculates that the amount of sunlight falling in one day, on an area of one square yard, would provide one full horsepower of energy if it could be utilized. Sunpower could be made to supply electricity, water and air-conditioning to make healthful desert land a good place to live.

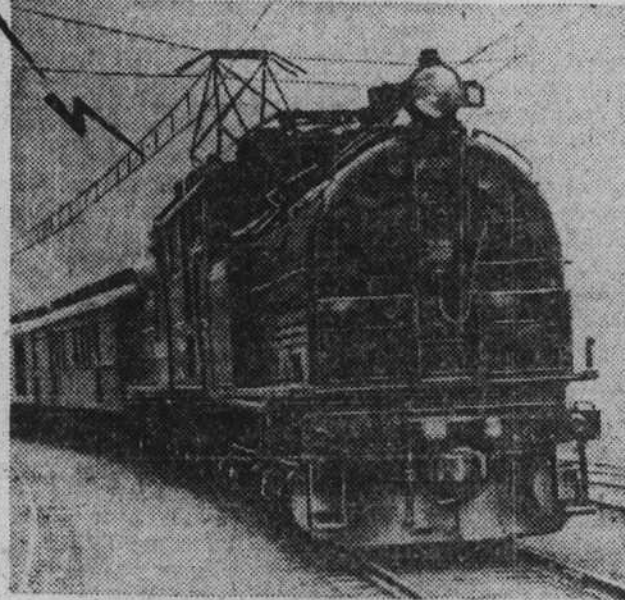
An amazing new machine, which Dr. Abbot calls a "solar engine," is actually in experimental use today. With it Dr. Abbot solved the problem of transmitting sunlight into electrical energy which can be stored, the biggest stumbling-block of earlier experimenters.

The solar engine consists of large, shiny aluminum mirrors, which concentrate the sunlight on a pyrex glass tube, much as a magnifying glass does in a high school physics test. And in the same way as the magnifying glass will make the sunlight set fire to paper or cloth, the aluminum mirrors provide intense heat in the pyrex tubes. These tubes are full of a black

liquid, which has a capacity for retaining heat. This liquid runs into a boiler, heating water in the boiler until it turns to steam. The steam runs a steam engine, which in turn runs a dynamo. And the dynamo provides electricity for power.

The quality of power provided by the solar engine is just the same as if coal were used to heat the boiler—and the operating cost of the sunpower machine is figured by Dr. Abbot to be about the same as it would be for steampower houses using fuel costing \$3 a ton.

There is no immediate danger, however, that coal miners will be put out



A 260-Ton Gearless Passenger Locomotive on the G. M. and St. P. Railroad, Taking Its Power from an Overhead Trolley Wire.

A Working Diagram of Dr. Abbot's Solar Heater, Recently Demonstrated Before a Group of Distinguished Scientists and Engineers at Washington, D. C. The Abbot Solar Engine Transforms Heat from the Rays of the Sun into Electric Energy.

of work by the solar engine. In fact, there is no ground for wild prophecy that solar-controlled dynamos will make either water and steam generating plants obsolete in the near future.

In working on sunpower, Dr. Abbot is looking far into the future rather than to present needs. He believes that some day the world's coal reserves will be exhausted, and oil, which also is used for heat and power, will be unavailable. When that day comes—possibly hundreds of years from now—mankind must turn to the sun, the winds and the tides for assistance.

And his experiments seem to justify the assertion that some day the sun will heat and light the world, day and night, summer and winter.



Students at the California Institute of Technology Inspecting a New Type of Sun Furnace Designed by One of Their Number.



**HAMBURGER**

On the Farm the Sun's Energy Can Be Put to Work Operating Motors for Milking, Threshing, Mowing, Pumping and Hoisting, in Addition to Providing Illumination at Night.

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