图 北京典型四合院住宅鸟瞰、平面图

第七节 明、清一般城镇、住宅、园林及家具陈设
Climax Solar-Water Heater

Utilizing one of nature's generous forces

The Sun's Heat

Stored up in hot water for baths, domestic and other purposes.

Gives hot water at all hours of the day and night.

No delay.

Flows instantly.

No care. No worry.

Always charged.

Always ready.

The water at times almost boils.

Price, No. 1, $25.00

This size will supply sufficient for 3 to 8 baths.

Clarence M. Kemp, Baltimore, MD.
Vue générale de mon grand appareil exposé au Trocadéro, en 1878, (Annexe de l'Exposition Algérienne).
Discovery of the Effect of Light upon the Electrical Properties of Selenium
By Willoughby Smith in 1873.
Original Bars of Selenium used in his Experiments.
A solar battery—the first successful device to convert useful amounts of the sun's energy directly and efficiently into electricity—was demonstrated today at Bell Telephone Laboratories.

Scientists there, with an amazingly simple-looking apparatus made of strips of silicon, showed how the sun's rays could be used to power the transmission of voices over telephone wires. The Bell solar battery also used energy from the sun to power a transistor radio transmitter carrying both speech and music.

Bell Laboratories reported that it was able to achieve a 6 per cent efficiency in converting sunlight directly into electricity. This compares favorably with the efficiency of steam and gasoline engines, in contrast with other photoelectric devices which have never been rated higher than 1 per cent.

With improved techniques the Bell Laboratories scientists said they expected to increase this efficiency substantially. Nothing is consumed or destroyed in the energy conversion process and there are no moving parts, so the Bell solar battery should theoretically last indefinitely.

(more)
Conversion efficiencies of various devices for converting solar radiation directly into electrical energy:

- Thermopile: 1%
- Photogalvanic Cell: <0.5%
- Se: <0.6%
- Si: 11%
THE SUN'S ENERGY: FUEL UNLIMITED

The three men worked as a team at Bell Telephone Laboratories, where all went from college a quarter century ago. Mr. Fuller found how to make the strips, Mr. Pearson put in electronics knowledge, Mr. Chapin put the pieces together.

Secret of the Bell solar battery is electronic activity much like that in a photographer's light meter, but much more powerful. The sun's energy causes rapid movements of electrons in the silicon strips. The movements create voltage, become direct-current electricity that can be kept in storage batteries.

A pocket-size sun battery will send radio signals several miles. The Bell company foresees first uses as power for mobile radio telephones and to charge batteries for rural telephone systems. The Defense Department is highly interested. Engineers are dreaming of silicon-strip powerhouses. The future: limitless.

THREE INVENTORS exhibited last week a small metal box slatted with black, glassy strips. Raw materials for the strips come from sand and borax. But the strips—silicon thinly seeded with boron—turn sunlight into electricity, may provide more power than all the world's coal, oil, uranium. The inventors:

Calvin S. Fuller, 52, chemist.
Daryl M. Chapin, 47, engineer.
Gerald L. Pearson, 49, physicist.

Photos: Bell Laboratories
ENERGY FROM THE SUN

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