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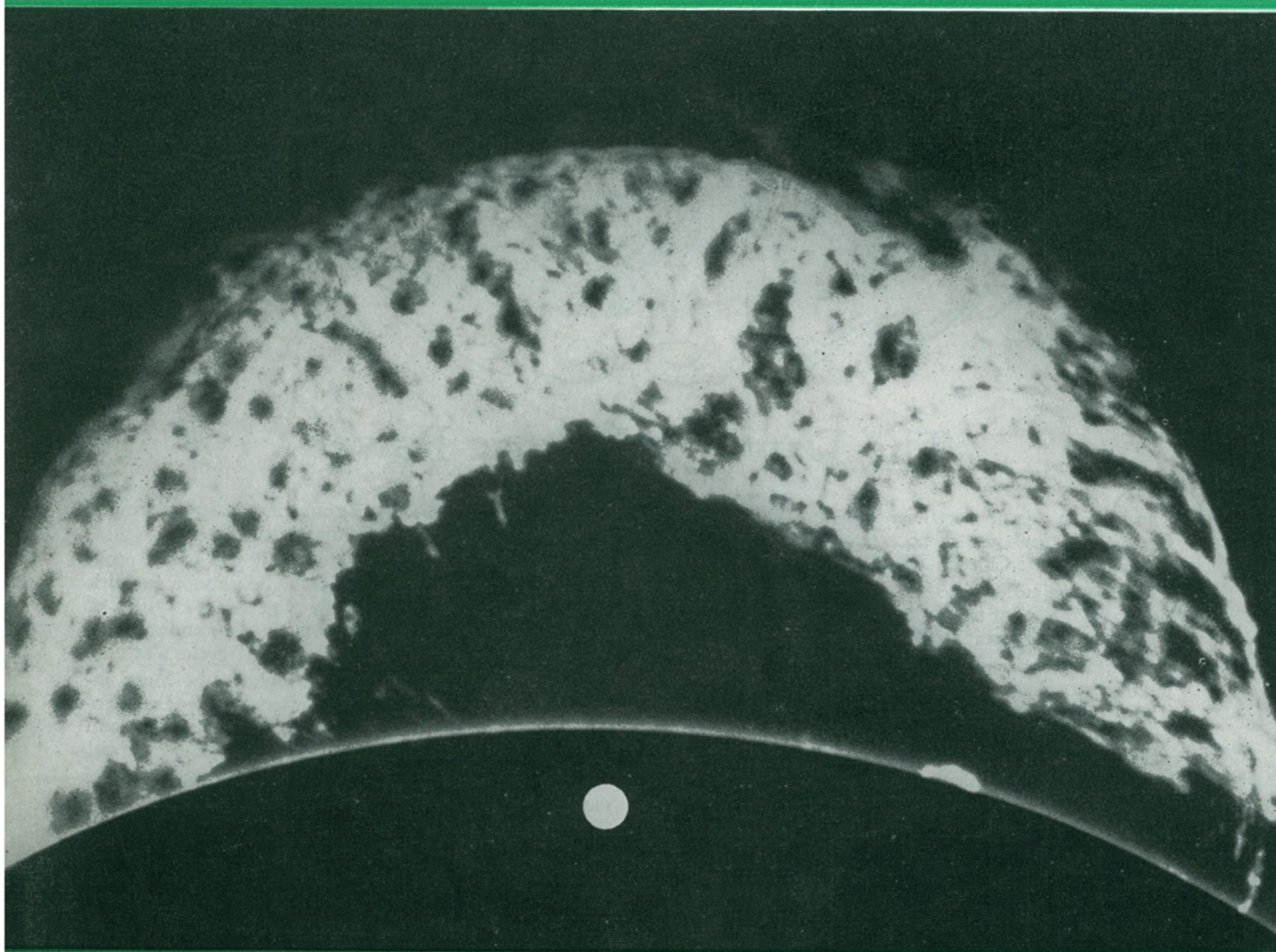


SCIENCE NEWS LETTER



Vol. 50, No. 11

THE WEEKLY SUMMARY OF CURRENT SCIENCE • SEPTEMBER 14, 1946



Sun Prominence

See Page 170

A SCIENCE SERVICE PUBLICATION

1921

TWENTY-FIFTH ANNIVERSARY

1946



The Dawn of Electric Power

The modern age of electricity was born in 1893, when George Westinghouse demonstrated the *first integrated a-c system* at the Chicago World's Fair.

Some years earlier, in 1886, Westinghouse had proved the *practicability* of transmitting alternating current *over a distance* . . . at Great Barrington, Massachusetts.

However, a critical problem had yet to be solved before electricity could become the universal servant of mankind. The first step—sending alternating current over considerable distances—immediately spotlighted the need for the next step . . . devising a means to utilize a-c current as an economical power source at the point of use.

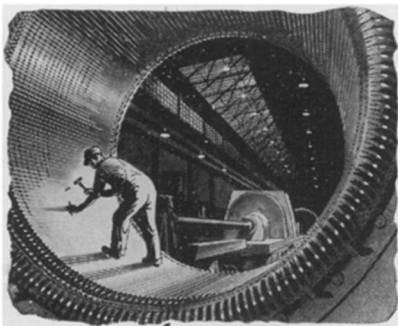
George Westinghouse tackled this problem with characteristic energy. With the help of Nikola Tesla, he devel-

oped the *induction motor*—the only practical power source for driving machinery by alternating current.

But the induction motor solved only part of the problem. For efficient operation, Westinghouse soon found it necessary to *redesign completely* the crude a-c system of that day . . . to perfect a *polyphase generator* and to establish our present frequency standard of 60 cycles a second.

Culminating these efforts, Westinghouse built and installed induction motors, transformers, a polyphase generator and a completely integrated a-c transmission system—in a sensational exhibit at the Chicago World's Fair!

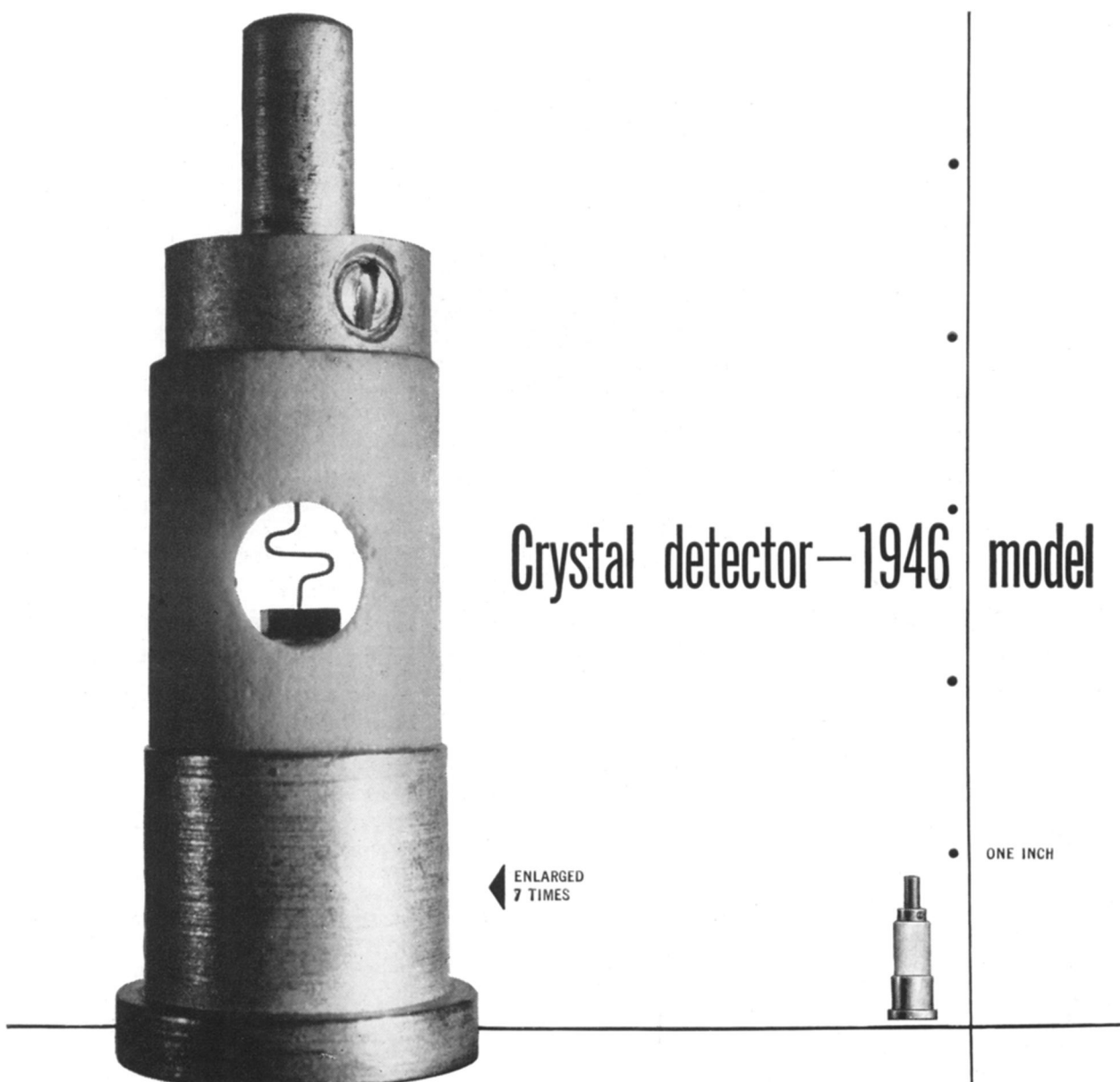
It was the *dawn of electric power* . . . the forerunner of electrical equipment that is today serving mankind—in industry, in our homes and on our farms.



Westinghouse
PLANTS IN 25 CITIES OFFICES EVERYWHERE

TODAY... The Westinghouse Electric Corporation makes hundreds of types of electric motors for thousands of uses. They range in size from tiny, fractional hp motors to the mammoth 40,000 hp unit that powers the 400-mile-an-hour wind tunnel at Wright Field . . . *the largest rotor-wound induction motor ever built.*

Tune in: TED MALONE — Monday, Wednesday, Friday, 11:45 am, EDT, American Network



Remember the crystal detector in the first radios—hunting for the right spot with a cat's whisker? For years the detector lay discarded in favor of the vacuum tube. But when microwaves came, and with them the need to convert minute energy to amplifiable frequencies, a Bell Laboratories scientist thought back to the old crystal.

Silicon of controlled composition, he discovered, excelled as a microwave detector. Unlike the old-style natural crystals, it was predictable in performance, stable in service. From 1934 to Pearl Harbor, the Laboratories developed silicon units to serve microwave research.

Then Radar arrived. The silicon crystal came into its own, and found application in long-distance microwave Radar. Working with American and British colleagues, the Laboratories rapidly perfected a unit which the Western Electric Company produced in thousands. It became the standard microwave detector.

Crystal detectors are destined to play a big role in electric circuits of the future. They will have an important part in Bell System microwave radio relay systems. In various forms, they may reappear in radio sets. Here again Bell Laboratories' research has furthered the communication art.

BELL TELEPHONE LABORATORIES



EXPLORING AND INVENTING, DEVISING AND PERFECTING FOR CONTINUED ECONOMIES AND IMPROVEMENTS IN TELEPHONE SERVICE