

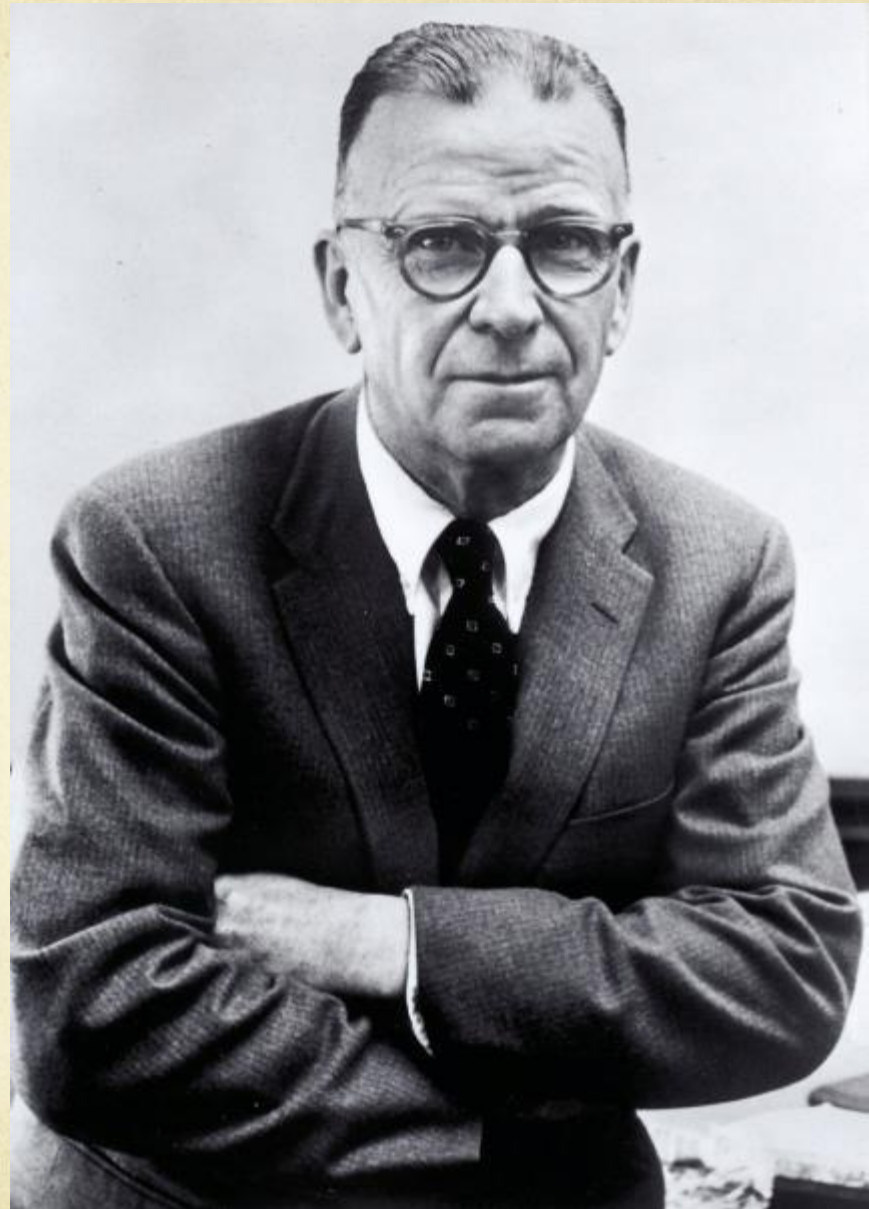


# THE IDEA FACTORY:

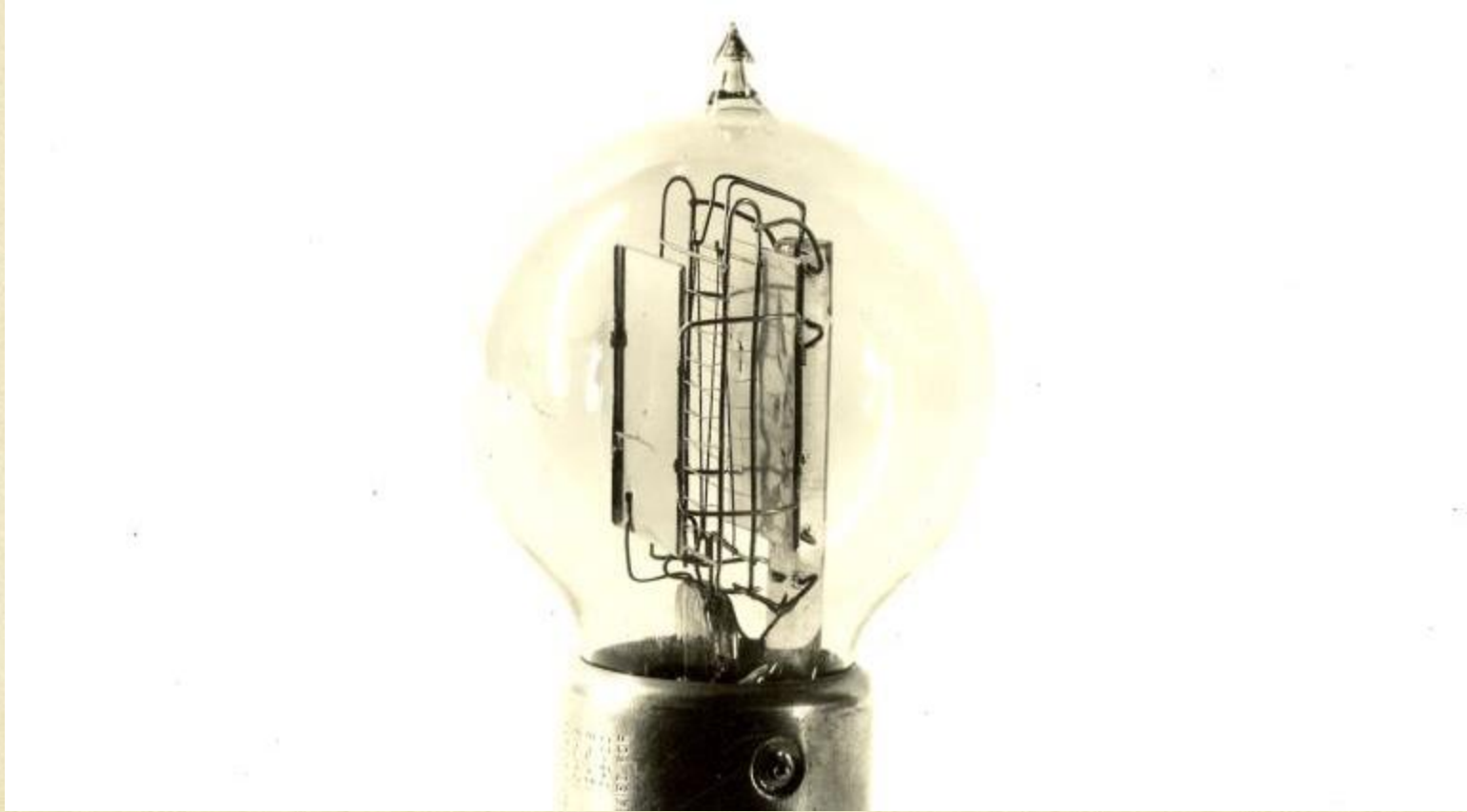
Bell Labs and the Great Age of  
American Innovation

By Jon Gertner, Penguin Press, 2012 / [jongertner@gmail.com](mailto:jongertner@gmail.com)

Mervin  
Kelly.



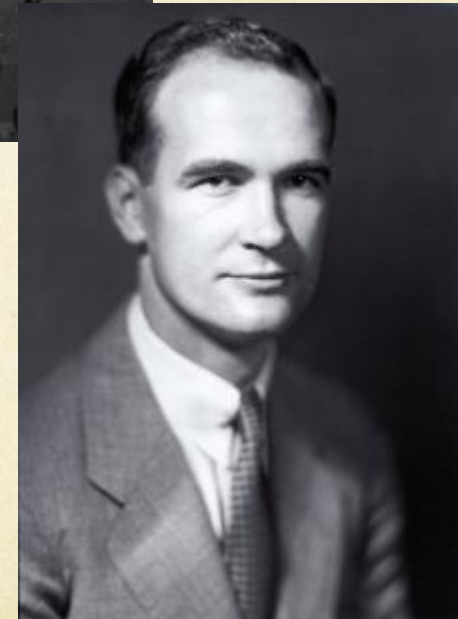
# The 101-D.



# Kelly & Davisson.



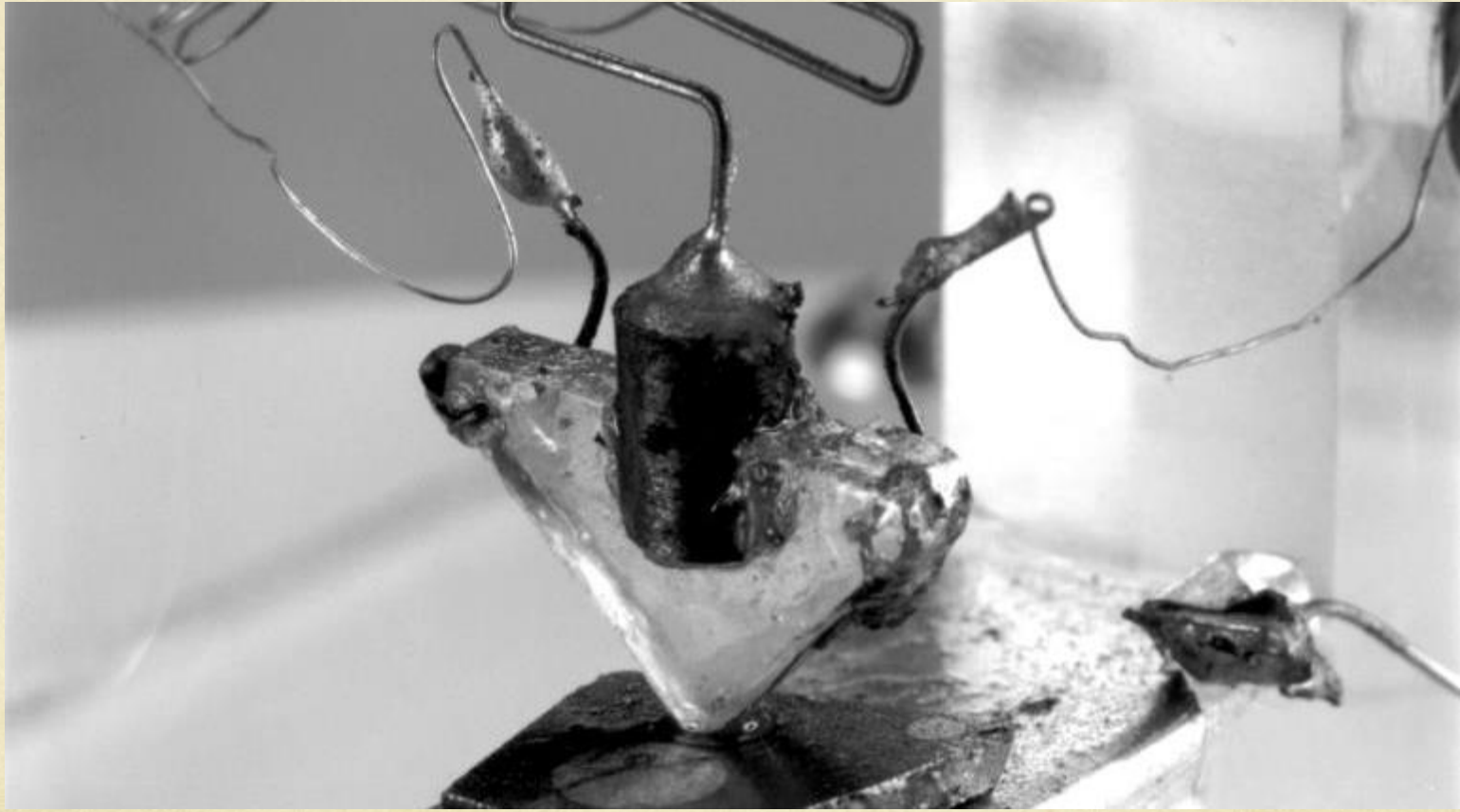
The Transistor Story  
Kelly, Davison, Shockley.



# Murray Hill, NJ (circa 1948)



# The first transistor.



The Solar Story  
Pearson, Chapin, Fuller.





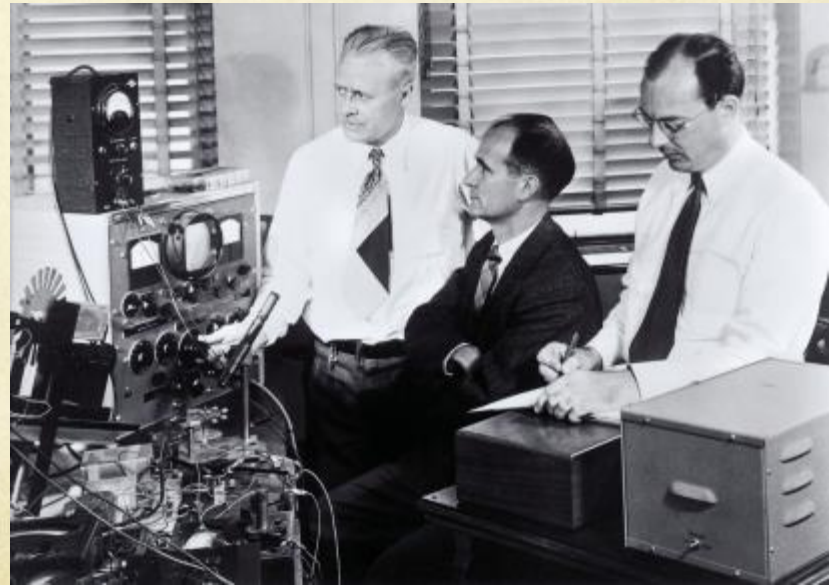
First solar  
installation:

Americus,  
Georgia



## What can we learn? #1

“It was a problem-rich environment.”  
-Arno Penzias



What can we learn? #2

We're just not very good at perceiving **the future value** of today's breakthroughs. . .

# New York Times, July 1, 1948 (page 46)

## The News of Radio

### Two New Shows on CBS Will Replace 'Radio Theatre' During the Summer

Two new shows are announced by CBS to serve as summer replacements for the hour-long "Radio Theatre" on Monday evenings. The first, to be heard at 9:30 P. M., will be "Mr. Tutt," based on the stories of the late Arthur Train. Willard Wright will have the title role and Arnold Perl will do the adaptations. It will make its debut next week.

The second, to open on July 12, will be "Our Miss Brooks," with Eve Arden playing the role of a school teacher who encounters a variety of adventures. It will be written by Al Lewis and Lee Loeb, with Larry Byrne serving as di-

Beginning tomorrow, "Waltz Time" will be heard for a full hour for three successive Friday evenings at 9 o'clock over NBC.

A memorial tribute to Col. David Marcus, who died in action while commanding the Israeli forces on the Jerusalem front, will be presented at 10:03 this evening over WMCA. Gov. Thomas E. Dewey and Mayor O'Dwyer will be among the speakers to be heard by means of transcriptions.

Station WNEW will transmit reports on traffic conditions on the

It's a  
miracle!

(The Bell Solar  
Battery.)



**SIMPLE AND EFFICIENT**—The *Bell Solar Battery* is made of thin, specially treated strips of silicon, an ingredient of common sand. It needs no fuel other than the light from the sun itself. Since it has no moving parts and nothing is consumed or destroyed, the *Bell Solar Battery* should theoretically last indefinitely.

### New Bell Solar Battery Converts Sun's Rays Into Electricity

#### **Bell Telephone Laboratories demonstrate new device for using power from the sun**

Scientists have long reached for the secret of the sun. For they have known that it sends us nearly as much energy daily as is contained in all known reserves of coal, oil and uranium.

If this energy could be put to use there would be enough to turn every wheel and light every lamp that mankind would ever need.

Now the dream of the ages is closer to realization. For out of the Bell Telephone Laboratories has come the *Bell Solar Battery*—a device to convert energy from the sun directly and efficiently into usable amounts of electricity.

Though much development remains to be done, this new battery gives a glimpse of future progress in many fields. Its use with transistors (also invented at Bell Laboratories) offers many opportunities for improvements and economies in telephone service.

A small *Bell Solar Battery* has shown that it can send voices over telephone wires and operate low-power radio transmitters. Made to cover a square yard, it can deliver enough power from the sun to light an ordinary reading lamp.

Great benefits for telephone users and for all mankind will come from this forward step in harnessing the limitless power of the sun.

BELL TELEPHONE SYSTEM



What can we learn? #3

Even when we *\*think\** we understand the value of a breakthrough . . . we probably don't.

## What can we learn? #4

The **integration** of today's science and engineering will enable a product and/or process that is unforeseeable.



## What can we learn? #5

The future will look different than you think . . . .

