

Microprocessor Systems

Khaled Mohamed Ibraheem

01277377726

Khsoradi@eng.cu.edu.eg

<https://www.Facebook.com/Groups/CMP201>

Course Syllabus and Grading

- **Text:**

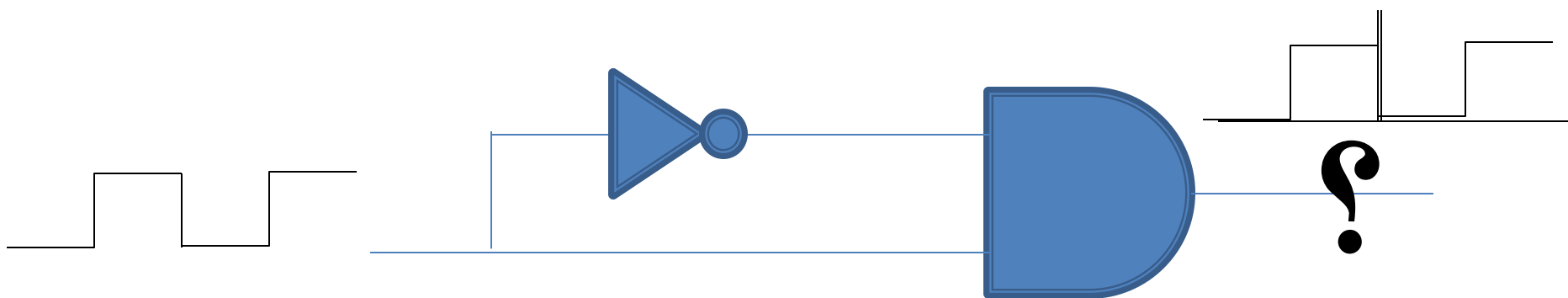
- **Barry B. Brey**, ``The Intel Microprocessors”.
- **M.A. Mazidi**, ``The 80x86 IBM PC and Compatible Computers”.

- **Grading: semester**

- Midterm 10
- Lab Work 10
- Assignments +Quiz 10
- Project 20
- Final Exam 75

- **Grading credit hours**

- Midterm 20
- Lab Work 10
- Assignments + Quiz 15
- Project 15
- Final Exam 40



Computer History

- Pre-mechanical Age
- Mechanical Age
- Electromechanical Age
- Electronic Age

Pre-Mechanical Age

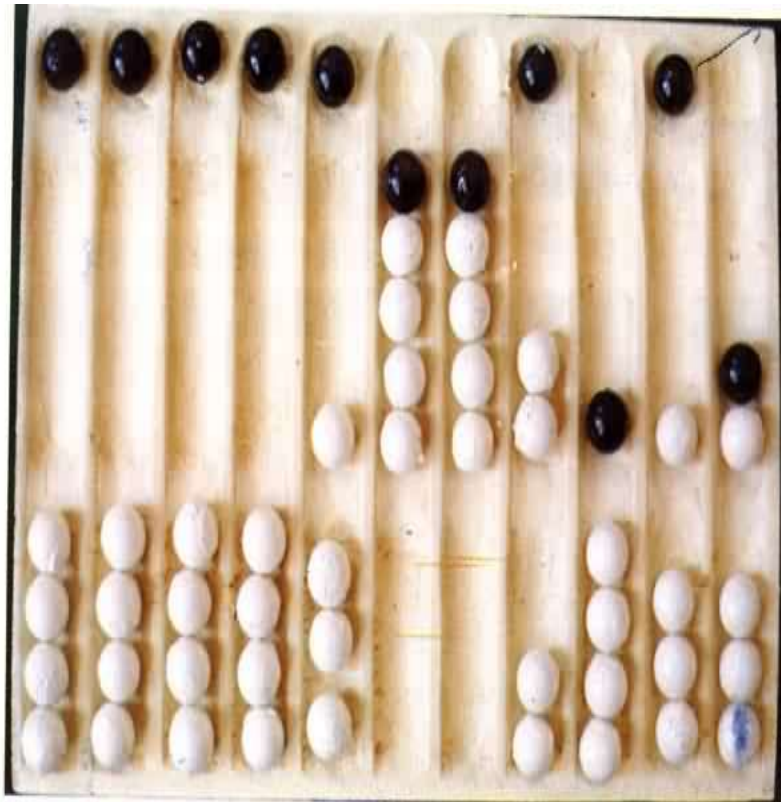
(5000B.C. - 1450 A.D.)

The Mechanical

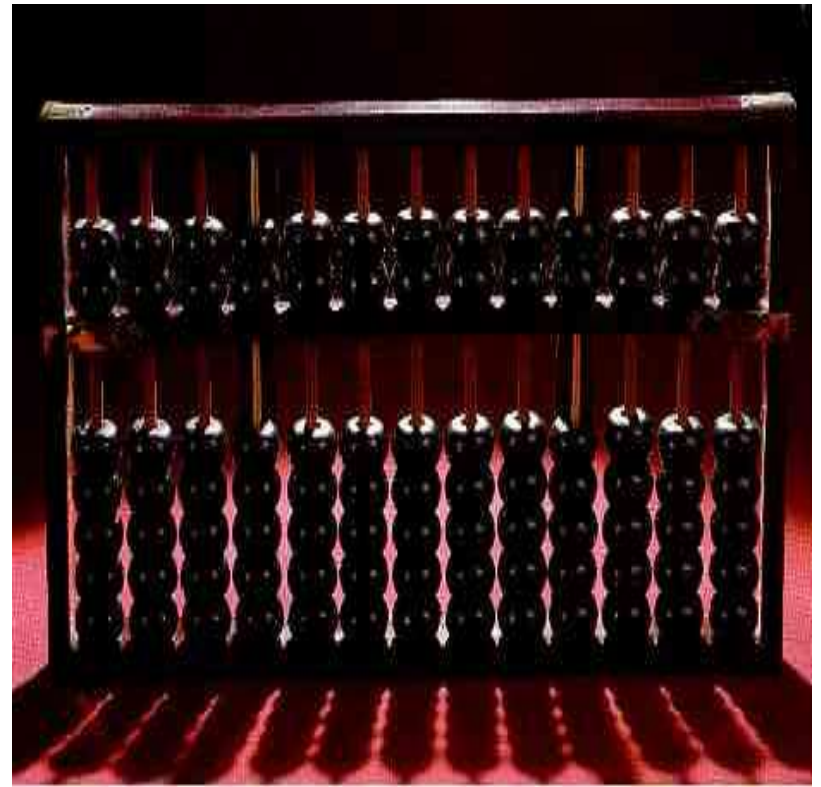
Computer (1623-1900)



ABACUS



A very old abacus



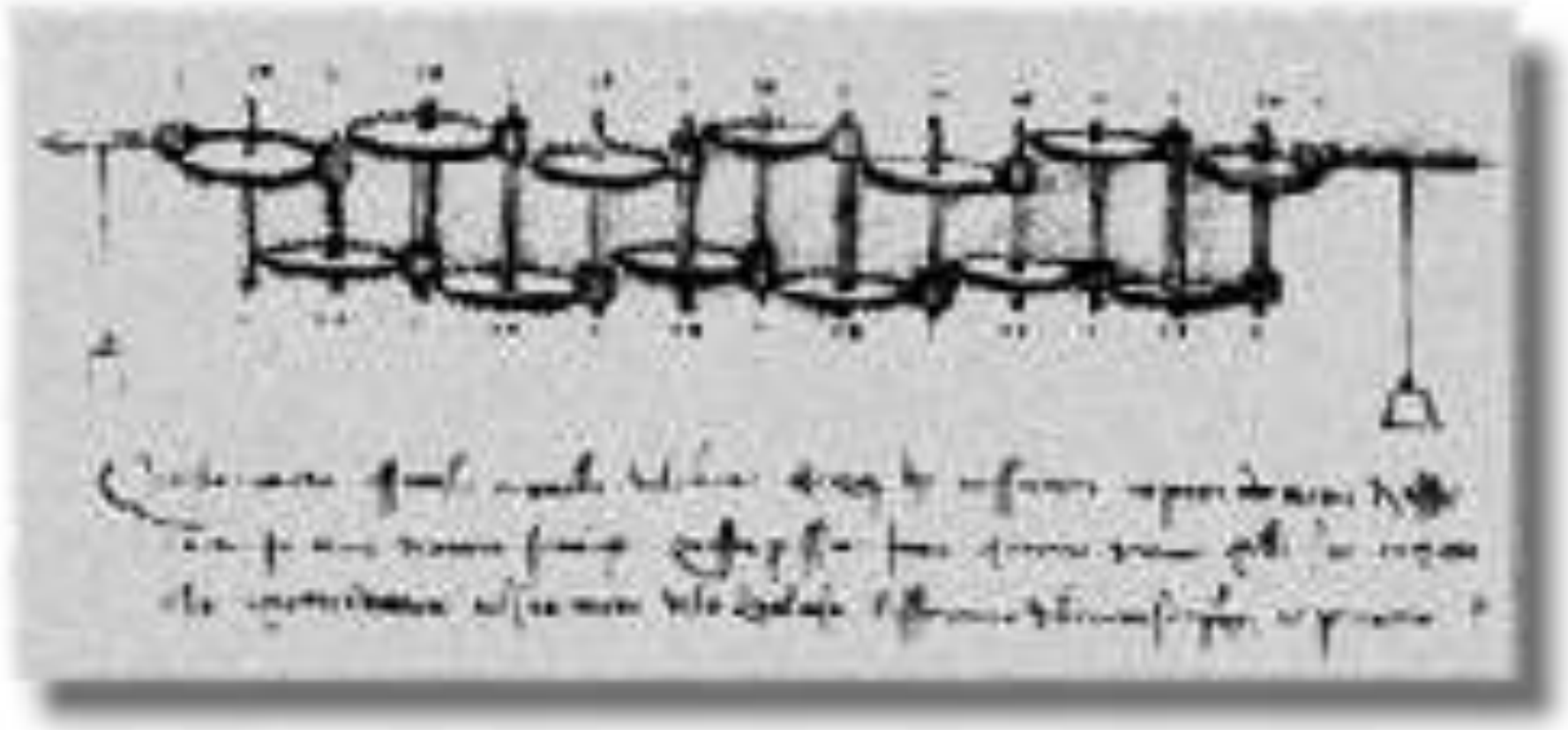
Modern abacus

Mechanical Age

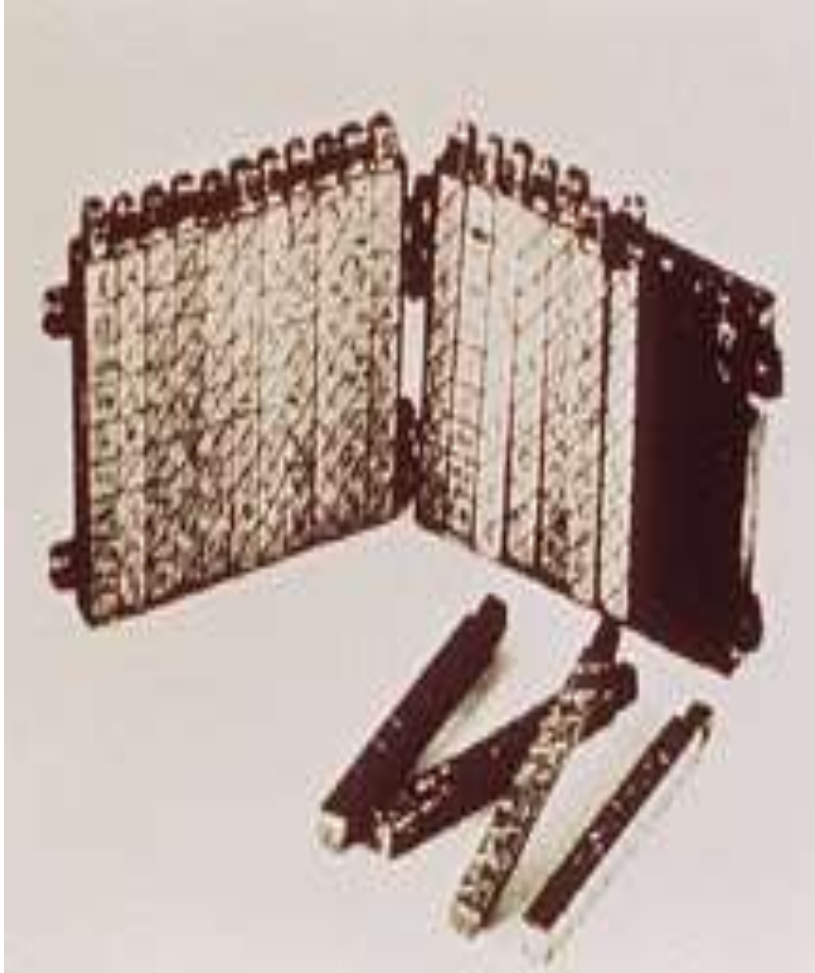
(1450 – 1840)



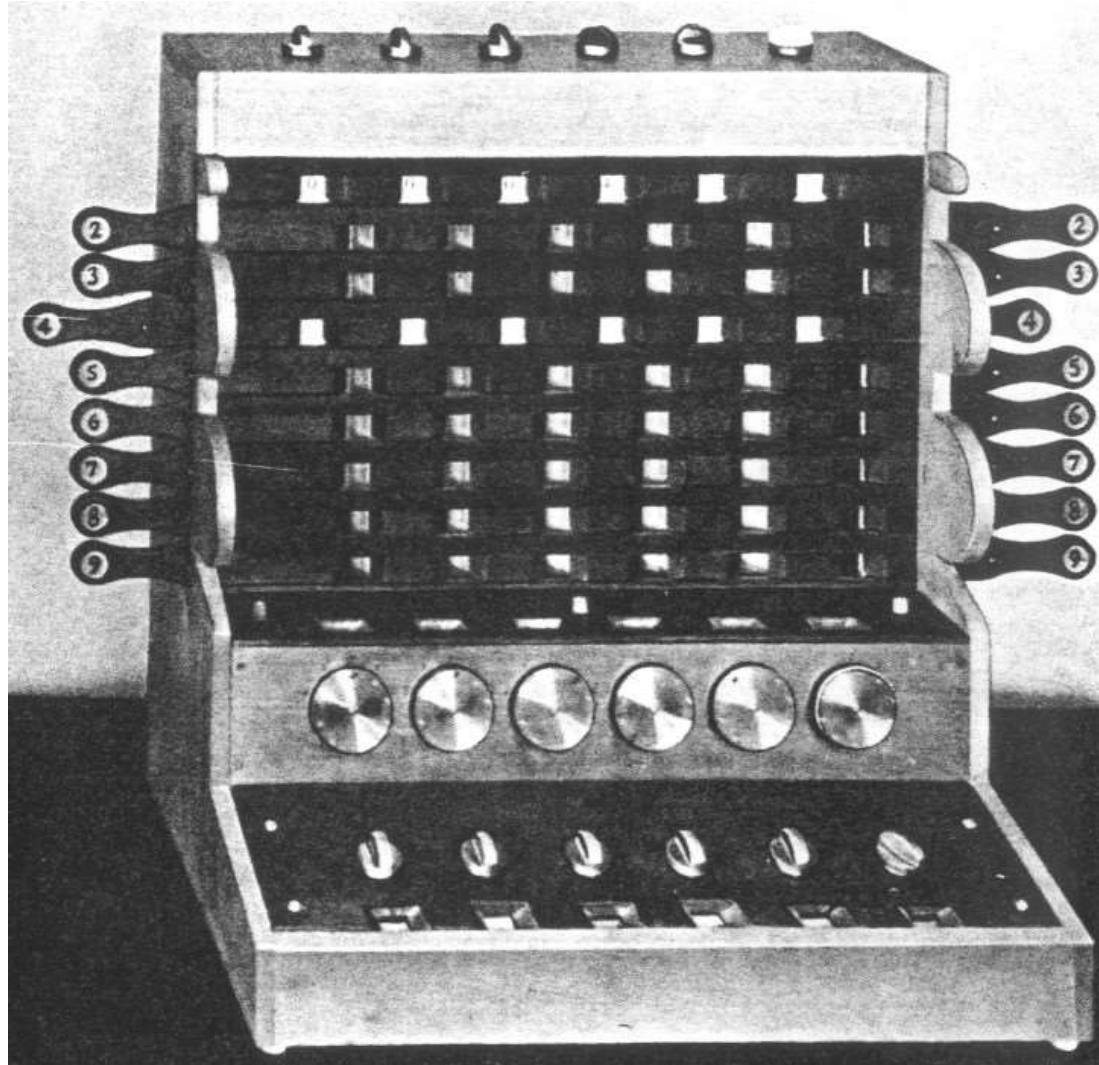
Leonardo da Vinci-1500-Drawings



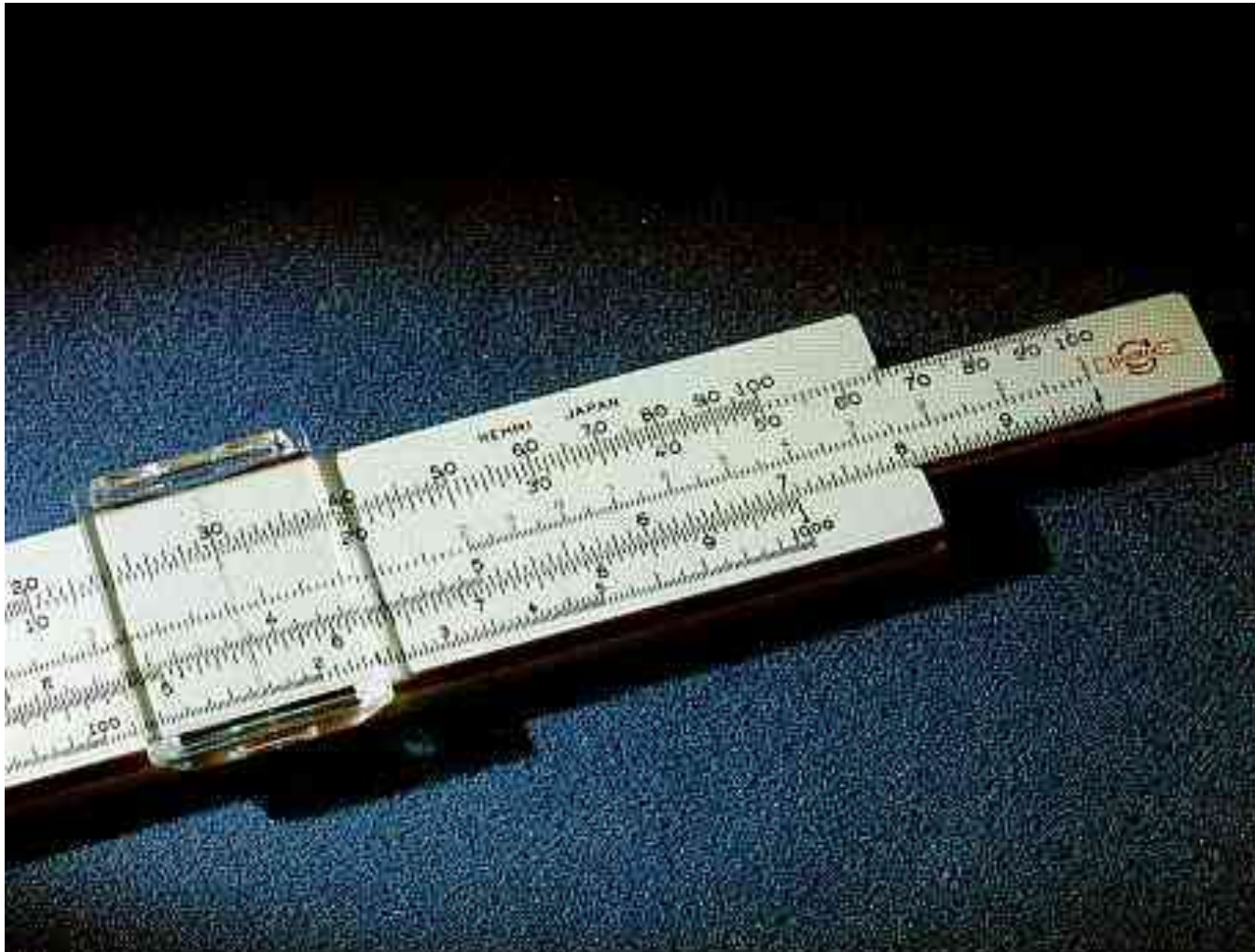
Napier's Bone-1614



Wilhelm Shickard – 1623-Calculating Clock



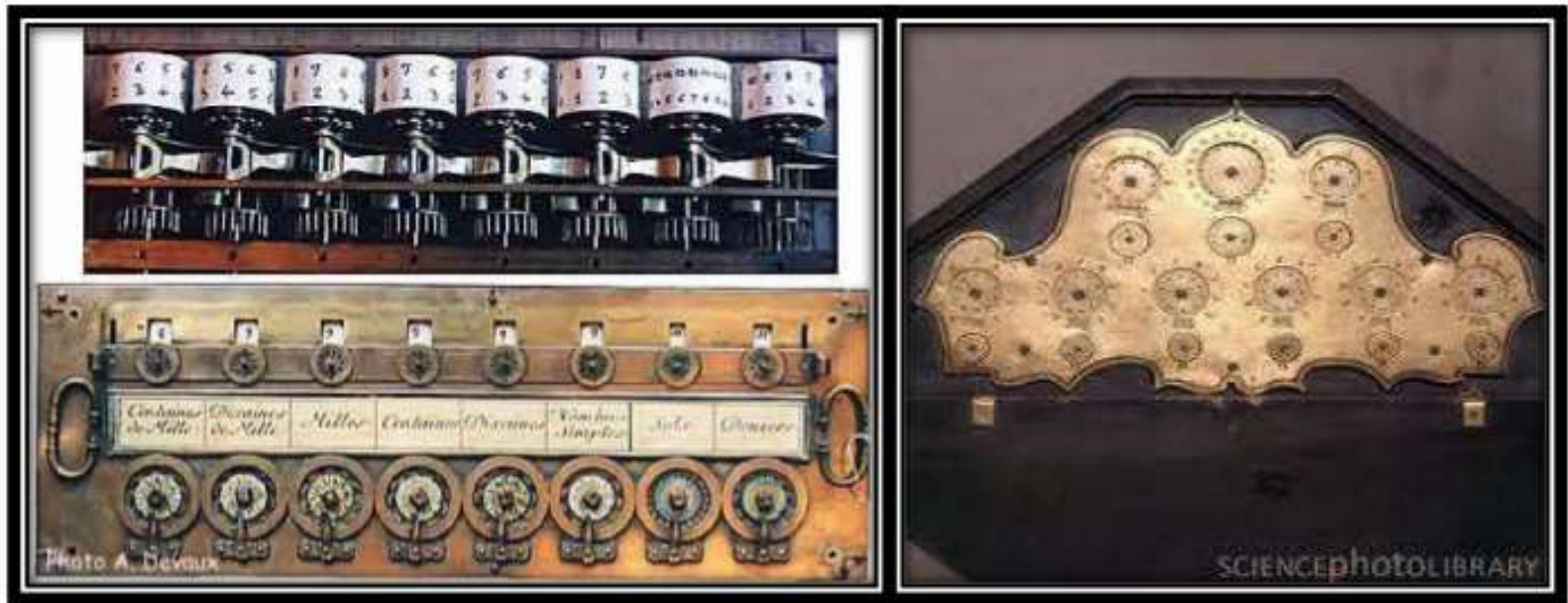
William Oughtred -SLIDE RULE-1625



II. MECHANICAL CALCULATING DEVICES

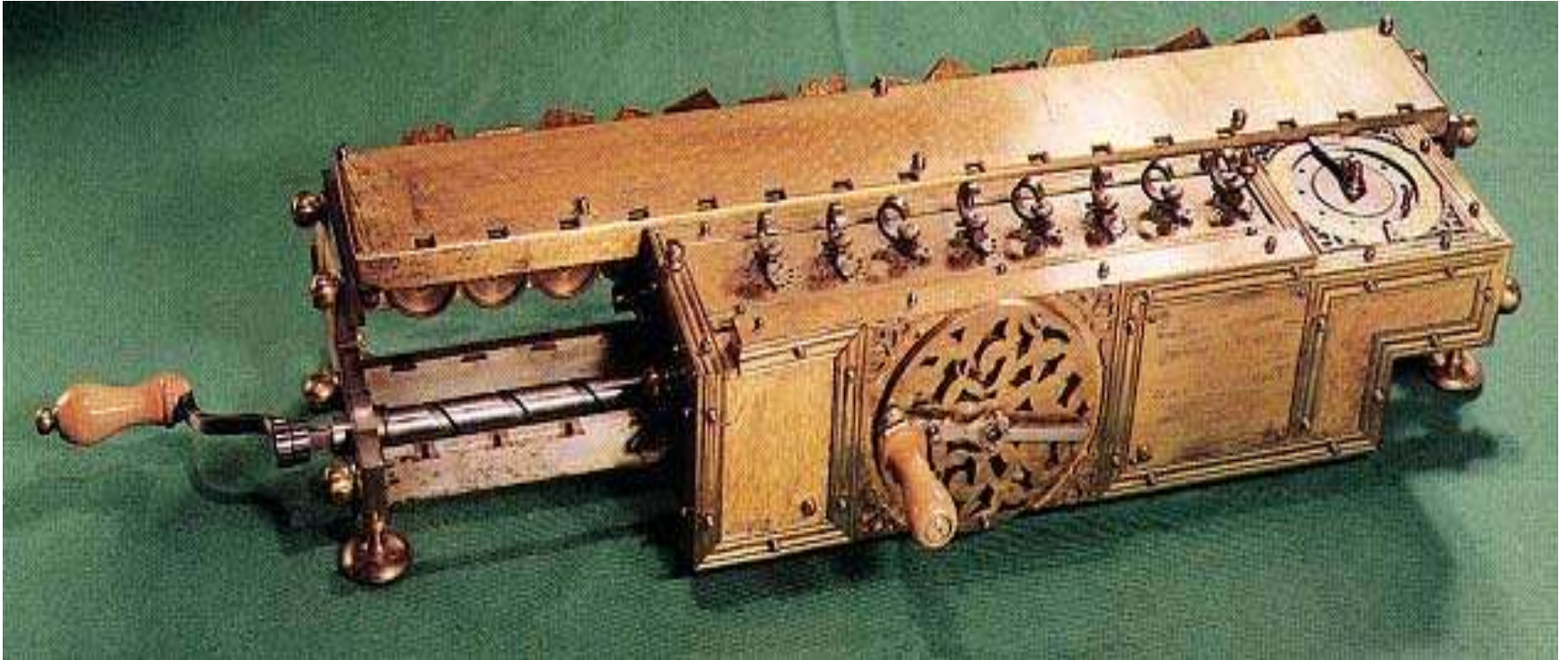
- **ARITHMETIC ENGINE- Pascaline**
- **STEPPED RECKONER**
- **MECHANICAL LOOM**
- **DIFFERENCE MACHINE (DIFFERENCE ENGINE)**
- **ANALYTICAL ENGINE**
- **SCHEUTZ DIFFERENCE ENGINE**

Blaise Pascal -1642- Pascaline



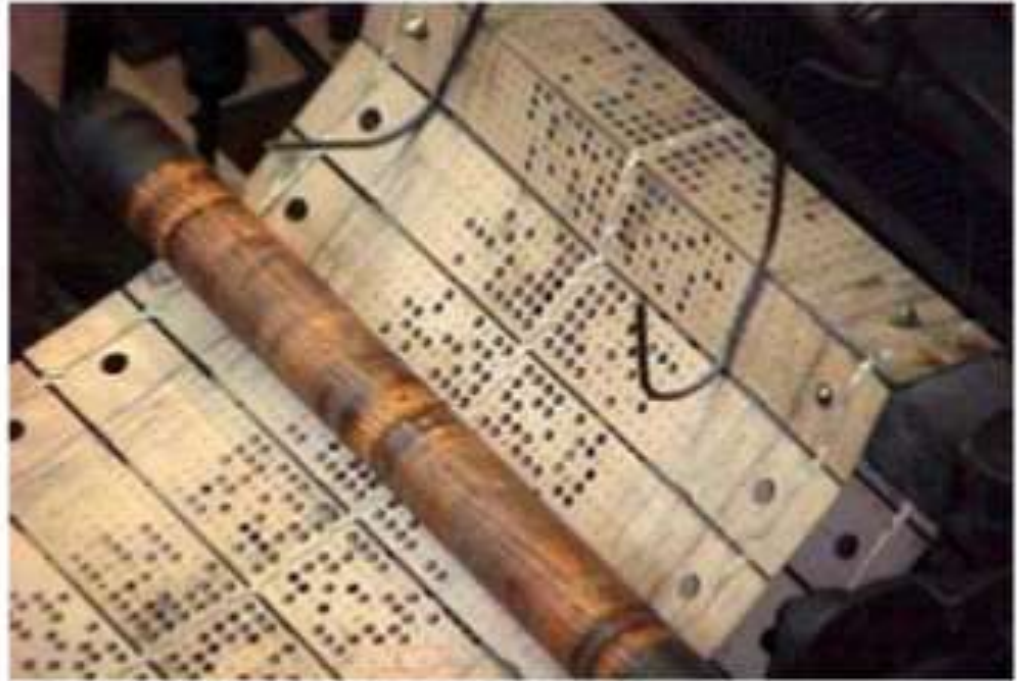
Pascal Calculator

Gottfried Wilhelm von Leibniz - 1671- stepped reckoner



Joseph-Marie Jacquard

-1801- Jacquard's loom



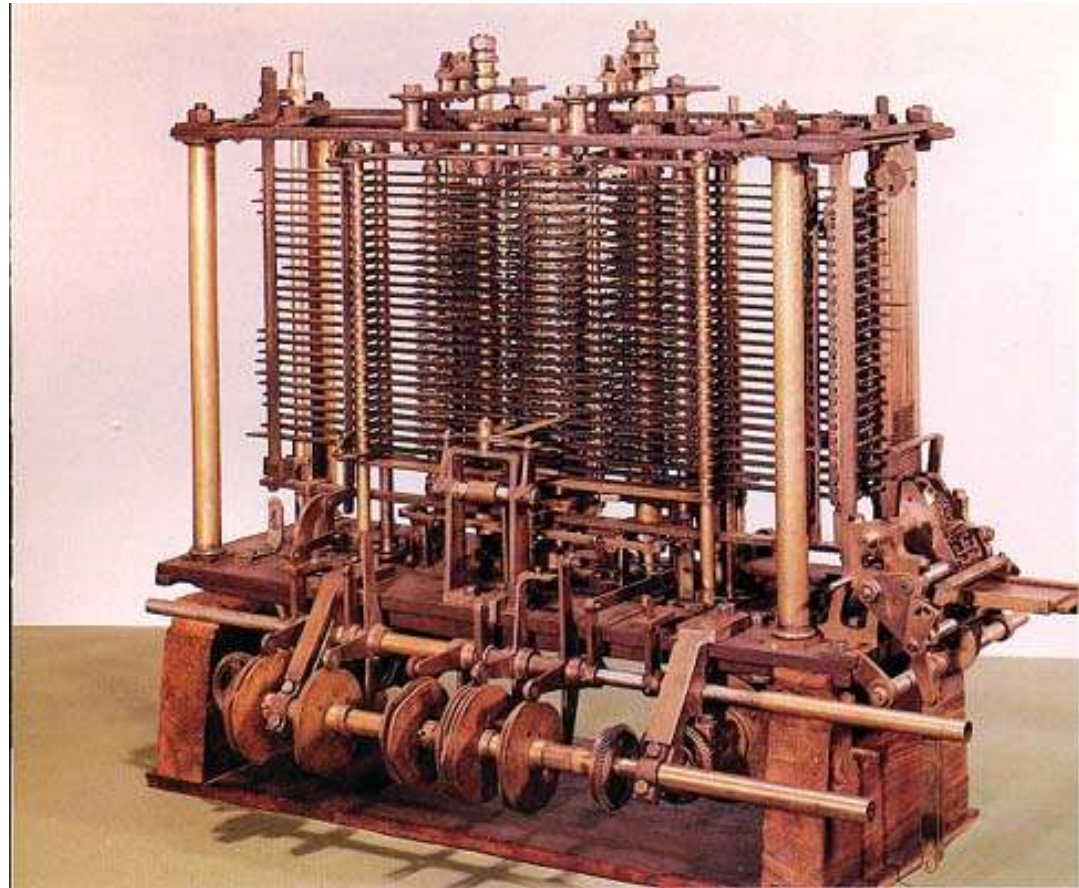
Charles Xavier -1820-
Arithmometer



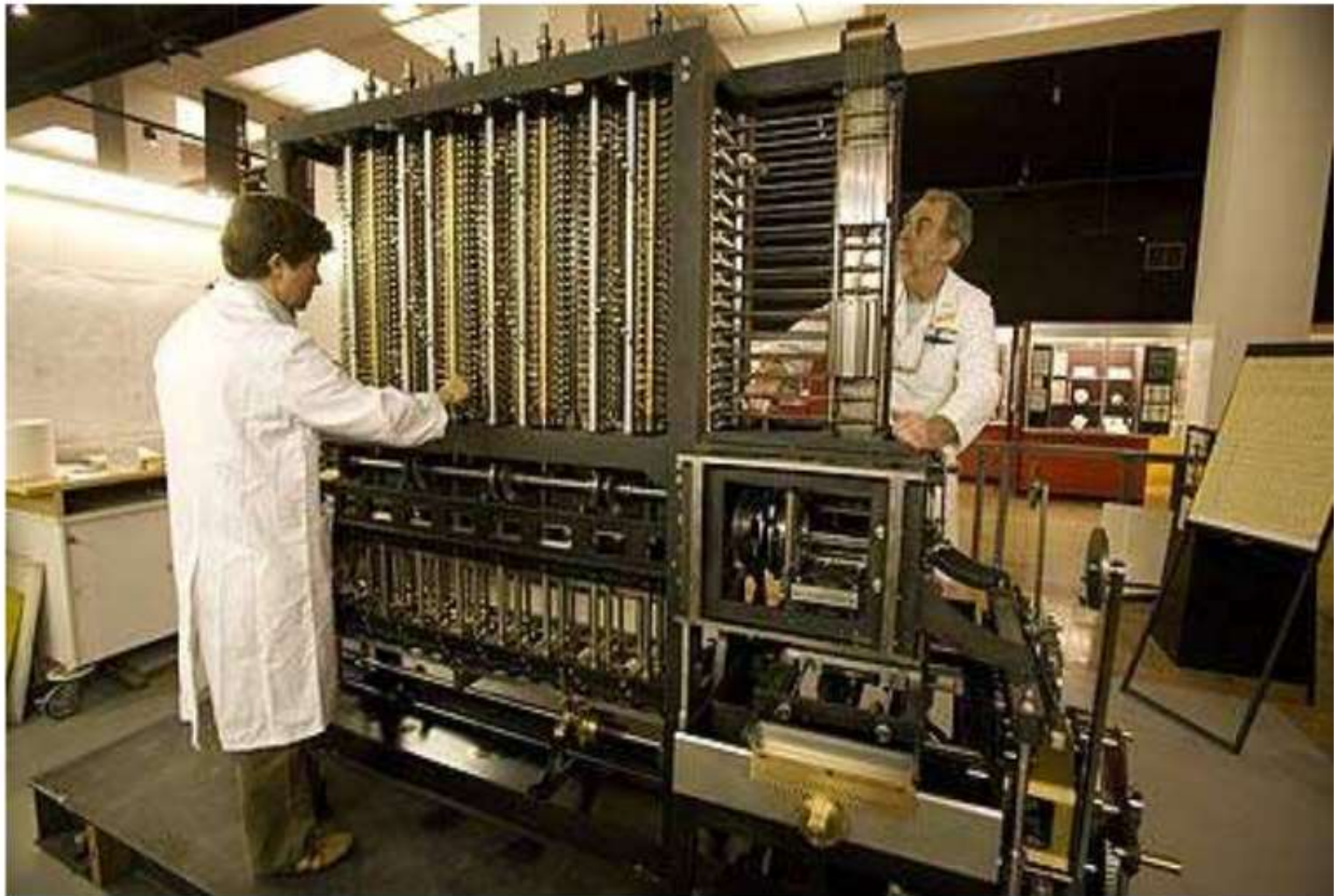
- **Charles Babbage** – **difference engine (1821)**
and analytical engine (1832).



**Difference
Engine**



**Analytical
Engine**



Analytical Engine

Ada Augusta Lovelace(Ada Byron) - 1842-First Programmer

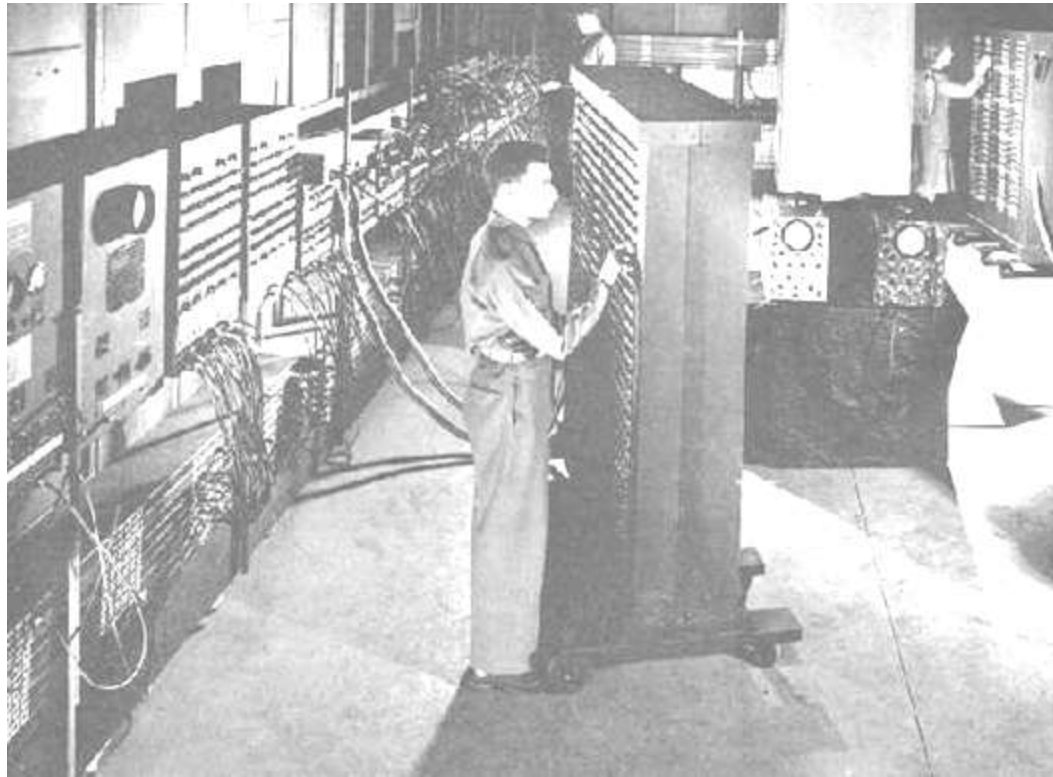


PEHR GEORG SCHEUTZ

1853-SCHEUTZ DIFFERENCE ENGINE



Electromechanical Age



Dorr Felt – 1885 –comptometer and Comptograph



Comptometer



**Comptogra
ph**

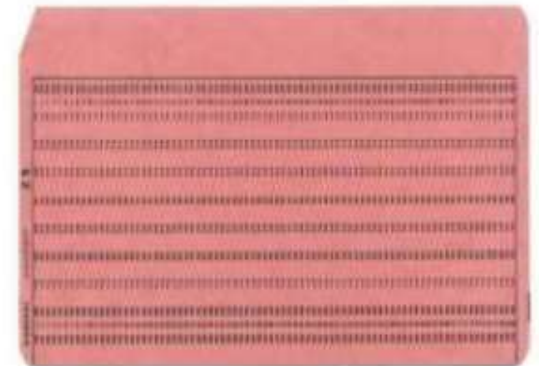
Herman Hollerith-1886- PUNCHED CARD



Punch Card Machine

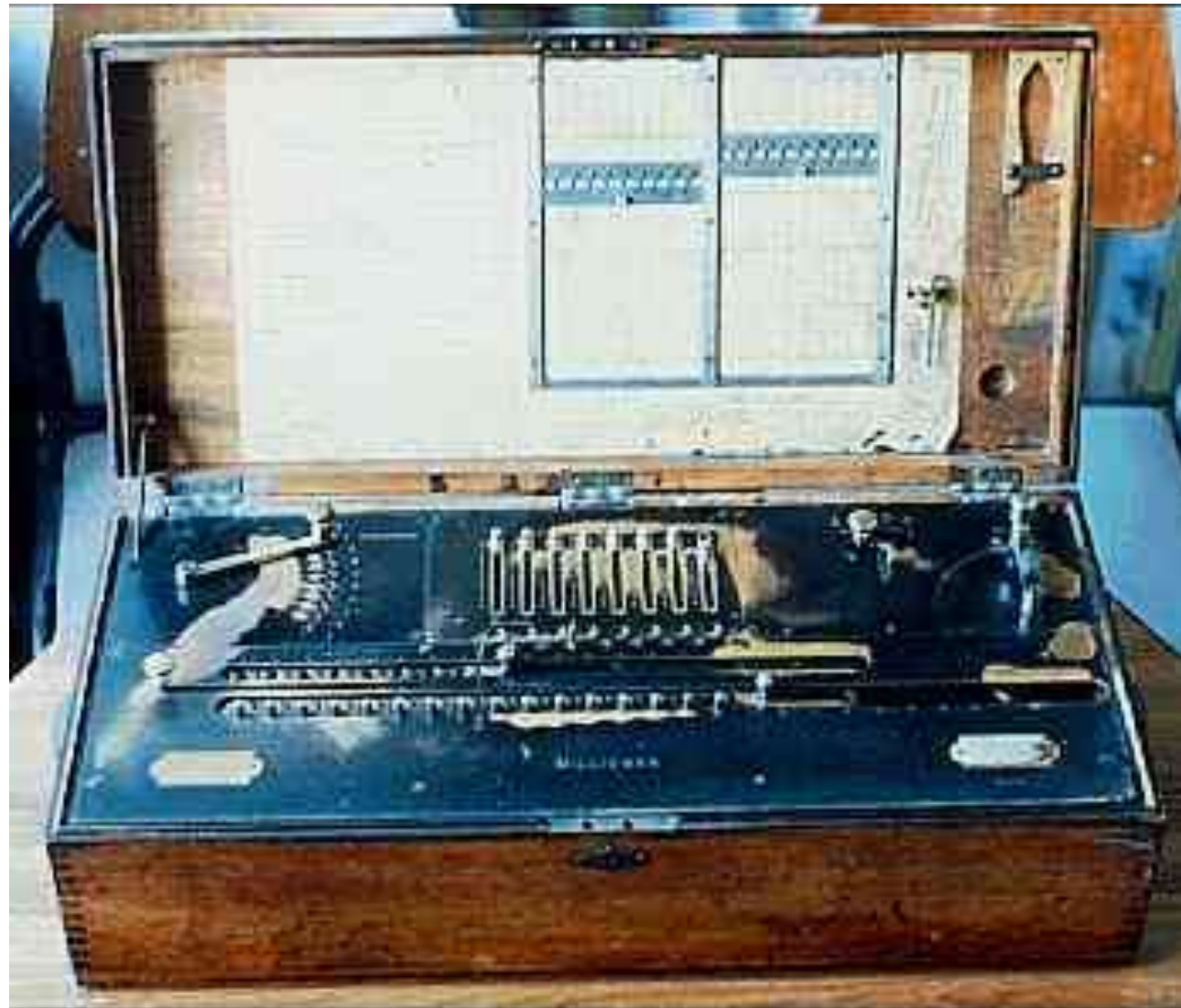


Herman Hollerith



Punch Card

Otto Shweiger – 1893 – Millionaire.



Millionaire Calculator, Dept. of Computer Science, Monash University
Photo L. Allison (c) 1995

Lee de Forest – 1906 –vacuum tubes



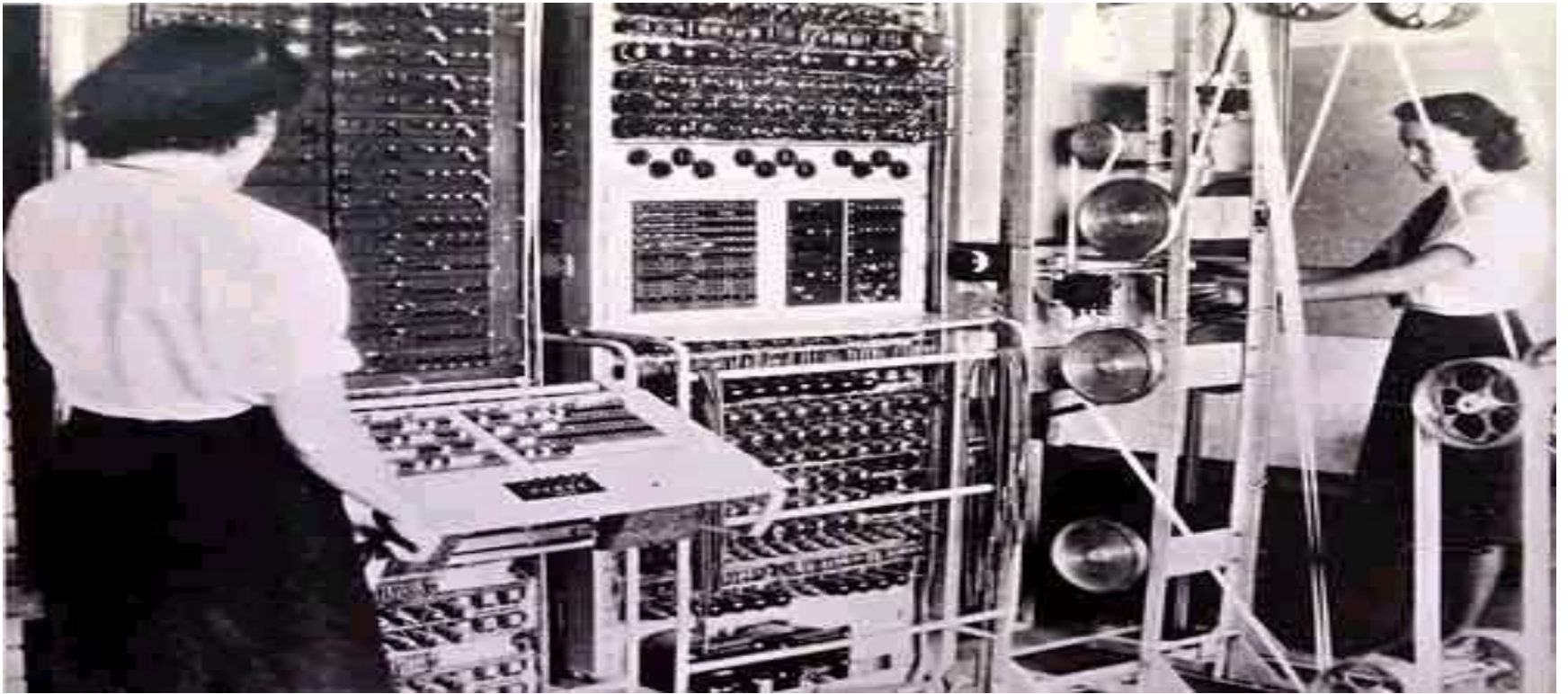
Electronic Age

(1941 – present)

Konrad Zuse – 1938->1941 –Z1 -> Z4.

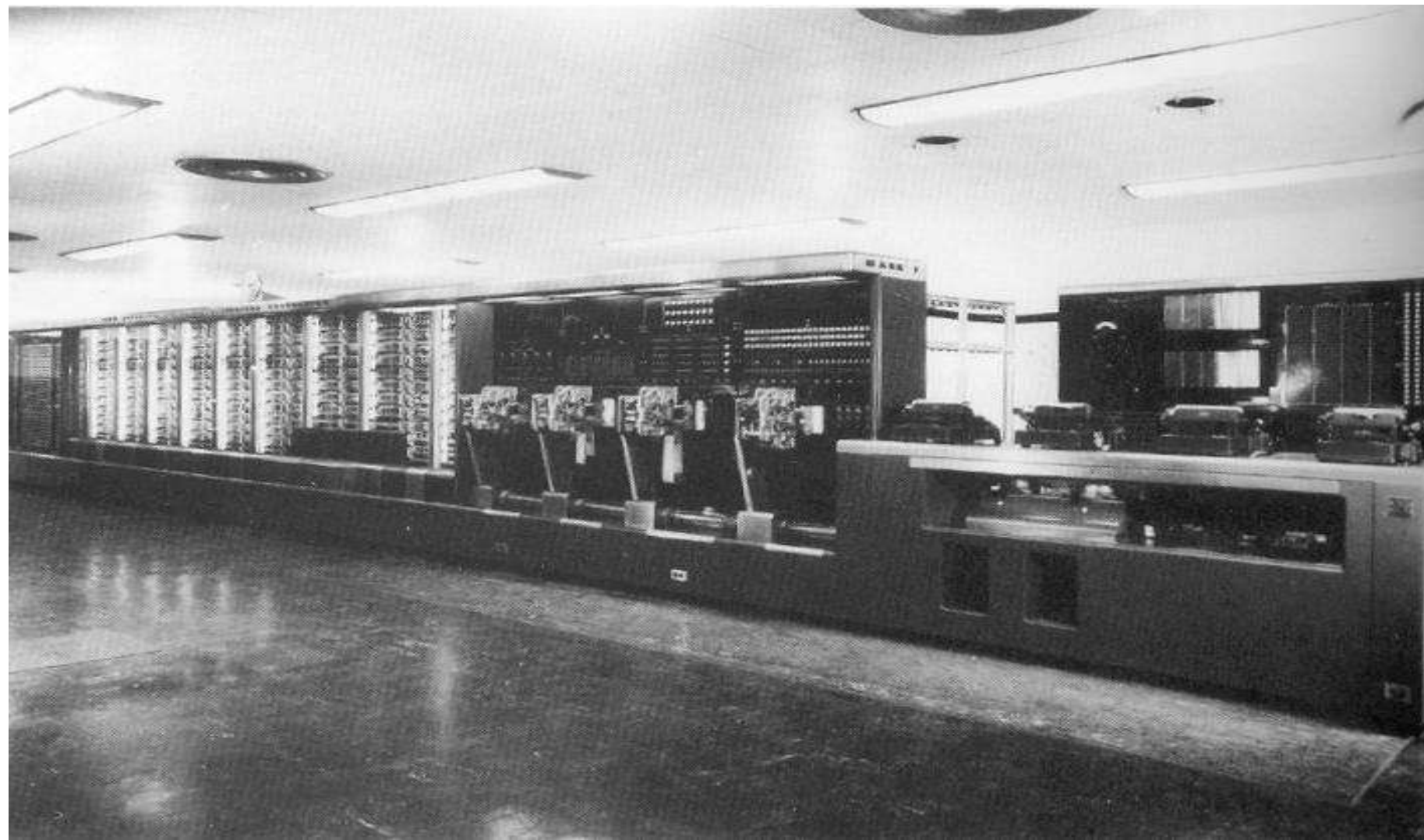


Colossus- WW II



Howard Aiken – 1944 –Mark I





Grace Hopper - The First Bug-

92

9/9

0800 Antan started

1000 " stopped - antan ✓

1300 (032) MP - MC { 1.2700 9.037 847 025
~~1.30476415~~ 9.037 846 995 correct
 (032) PRO 2 2.130476415
 correct 2.130676415

Relays 6-2 on 033 failed special speed test
 in relay 11,000 test.

Relays changed

1100 Started Cosine Tape (Sine check)

1525 Started Multi-Adder Test.

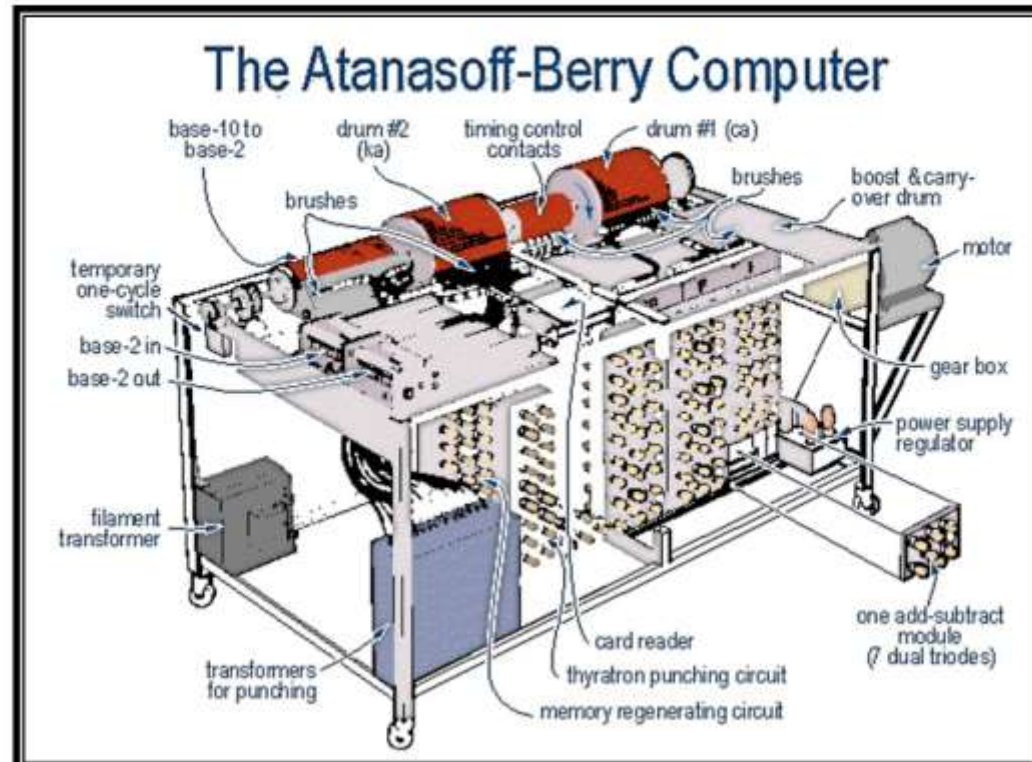
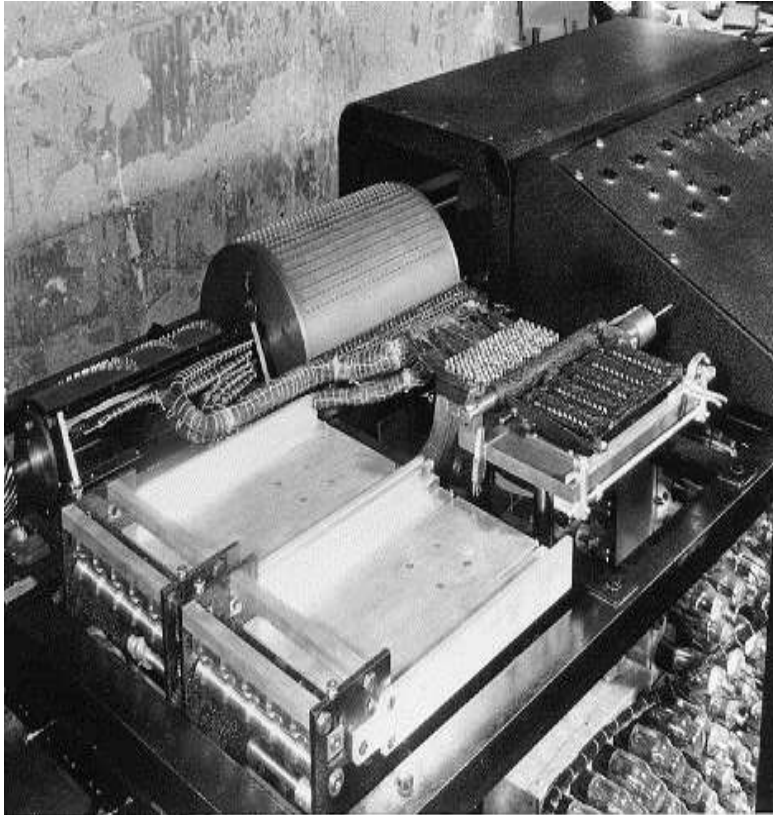
1545  Relay #70 Panel F
 (moth) in relay.

First actual case of bug being found.

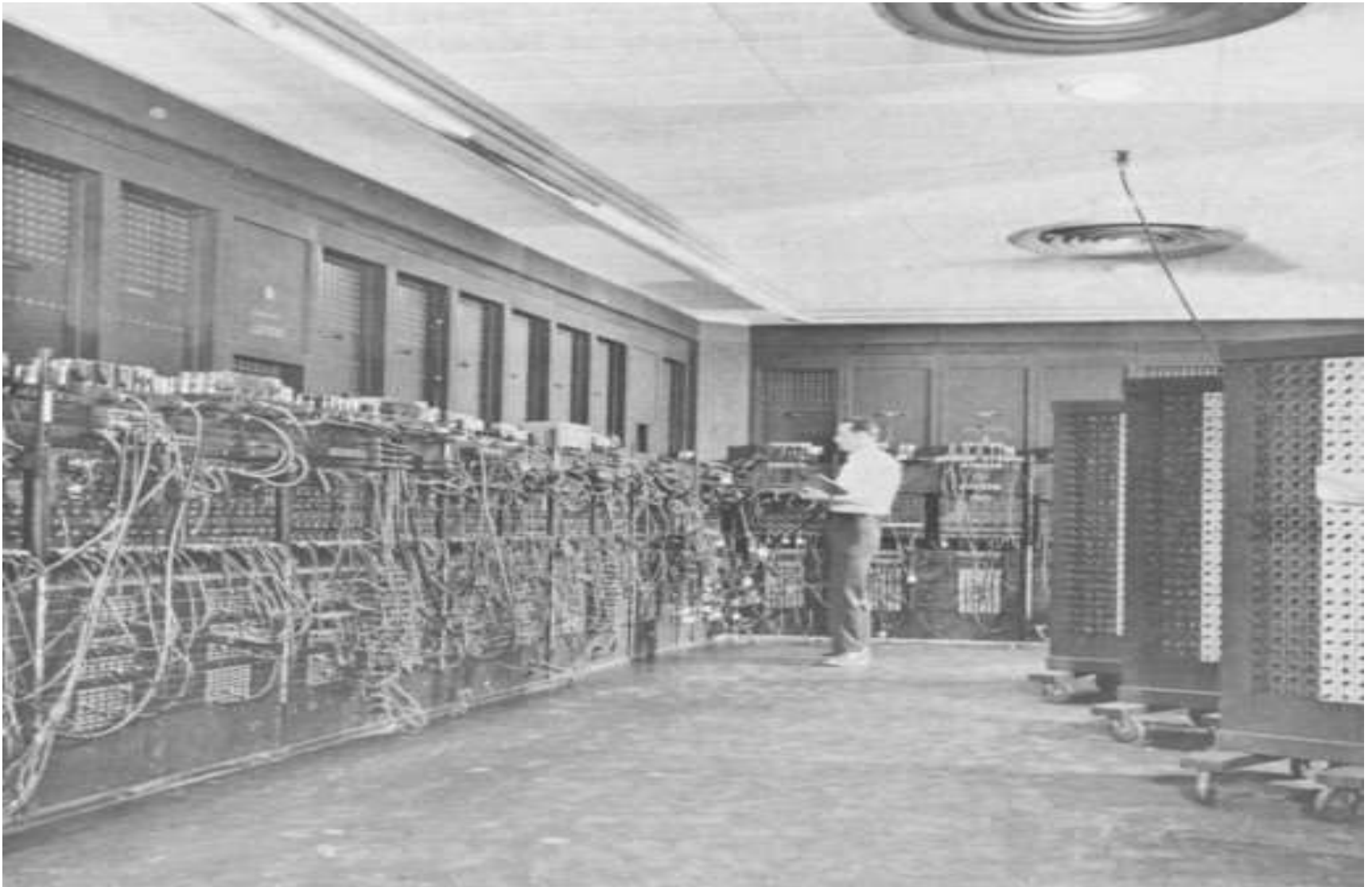
1630 Antan started.

1700 closed down.

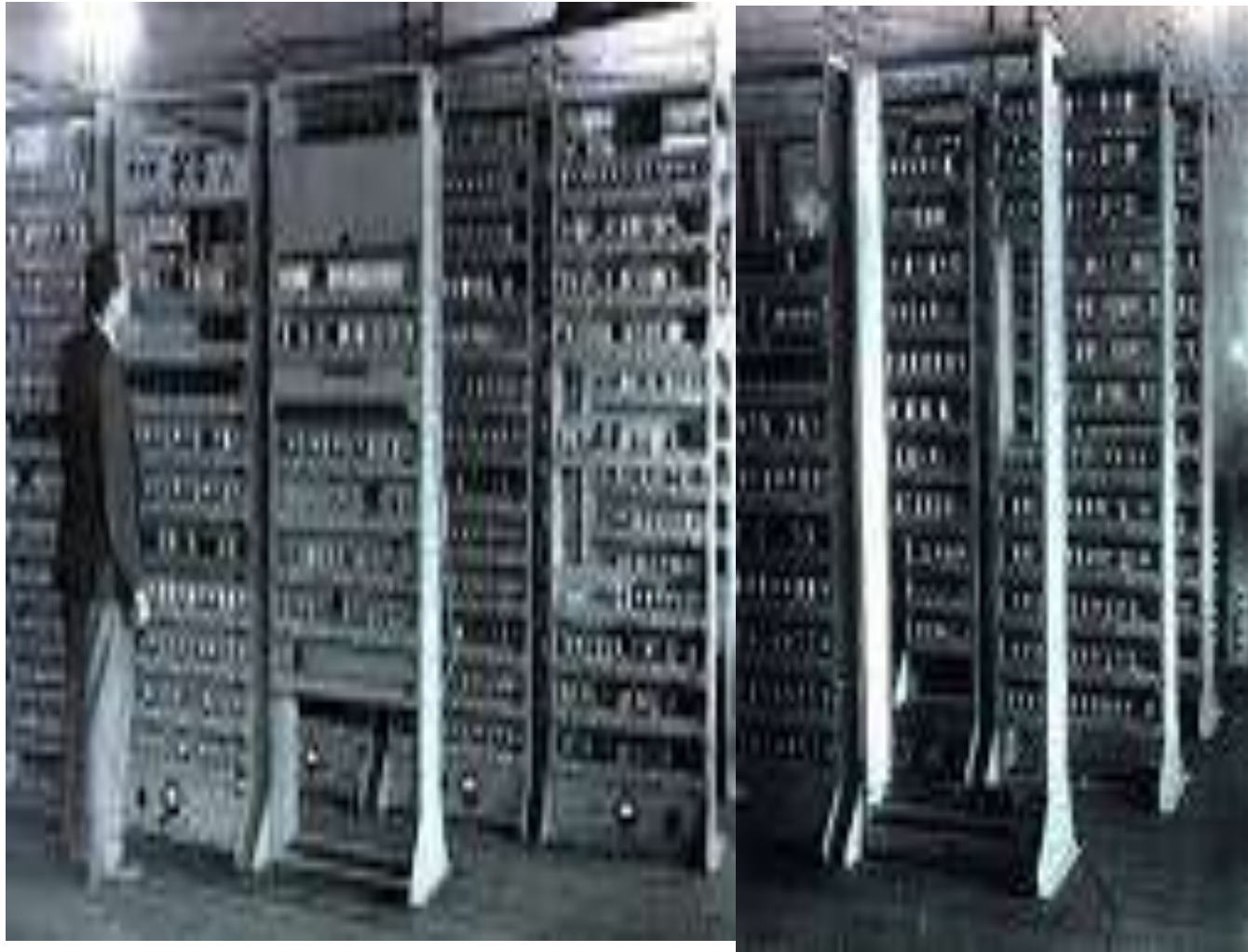
Atanasoff-Berry Computer (ABC)- 1942



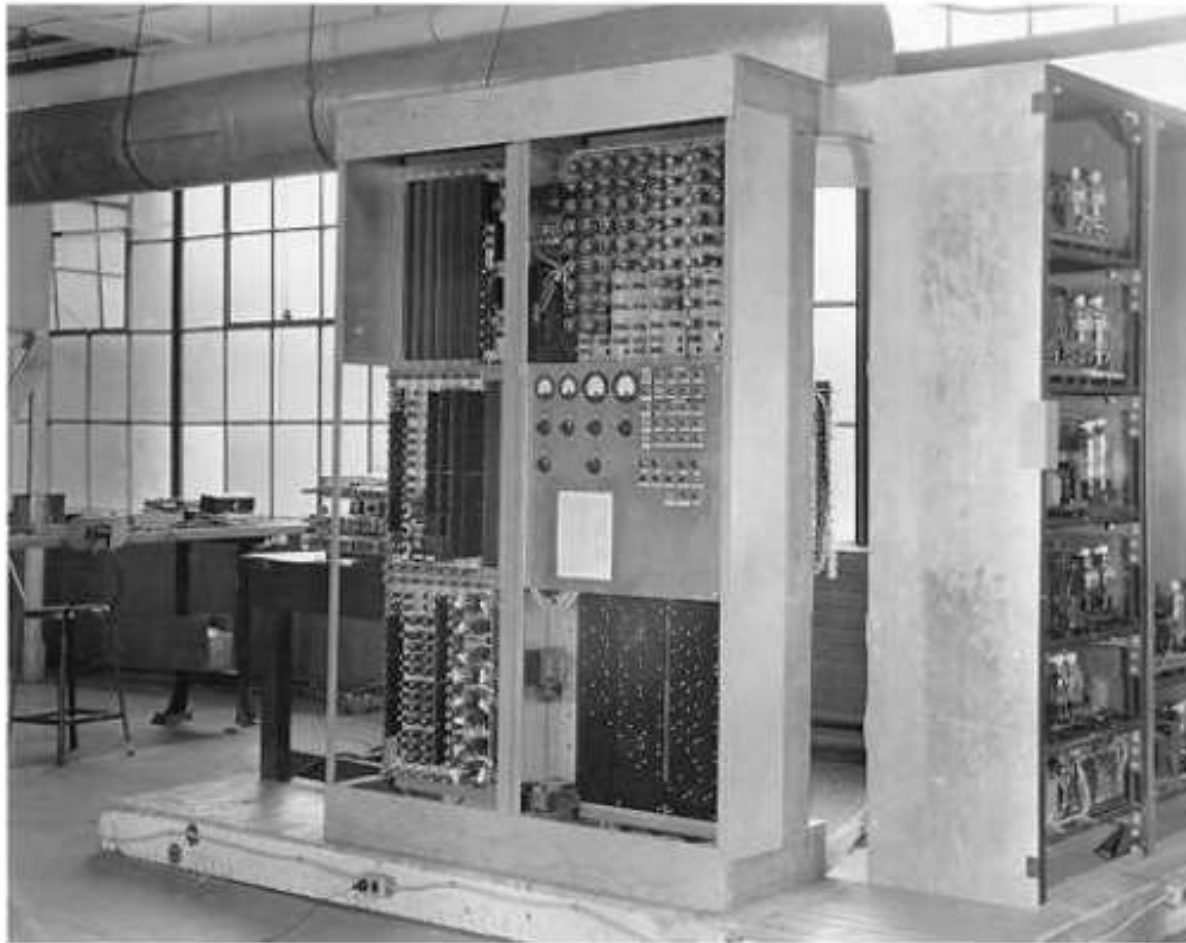
ENIAC-1946-John Mauchly



EDSAC-1949-JOHN VON NEUMANN



EDVAC-1952- University of Pennsylvania



EDVAC (Electronic Discrete Variable Automatic Computer)

TRADIC-1955-Bell Labs

TRADIC (Transistor Digital Computer)

Transistors



IBM 704-1956-IBM

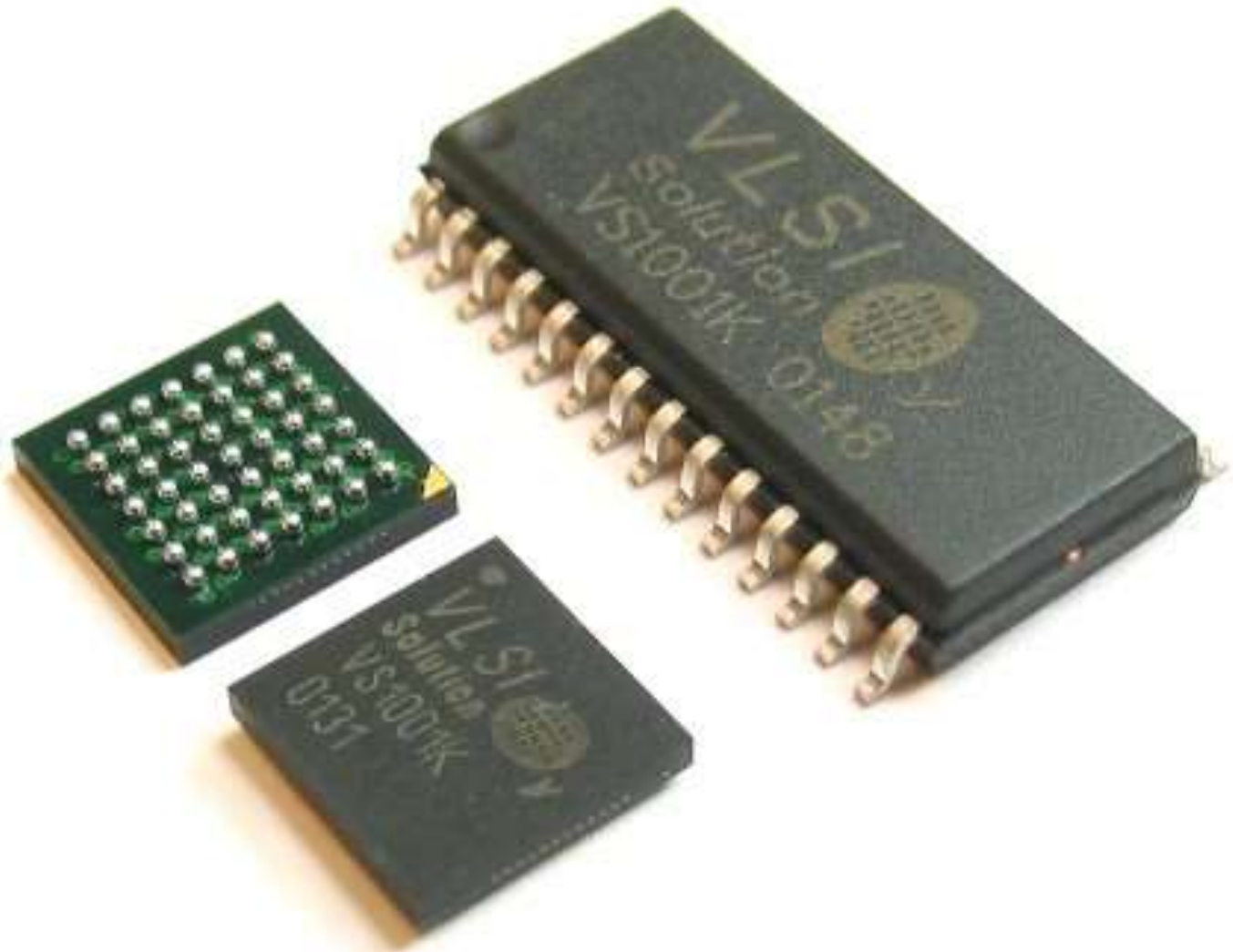


Integrated Circuits-1964-Jack Kilby

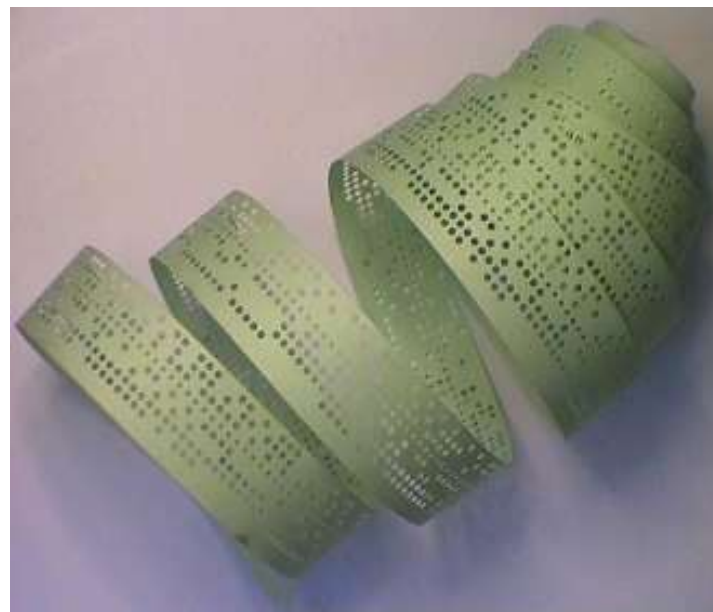


Integrated Circuits (IC)

Microprocessor-1970-Intel



Programming



Apple 1 Computer - 1976

