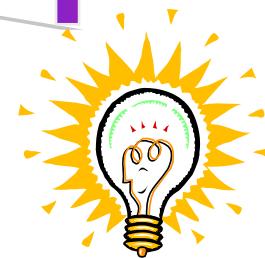
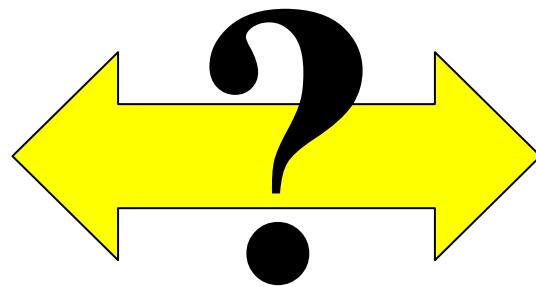


# Entrepreneurship

# IP



# Innovation

# Patents and Innovation: Two Parables

**makes copies on ordinary paper**

**NEW XEROX® 914**  
OFFICE COPIER

**Supplies cost about 1¢ per copy**  
with a Xerox® 914 Office Copier. No wet chemicals, nor expensive coated papers are needed, and there are no expensive adjustments. With this copier you make copies directly onto ordinary paper (plain or colored) or selected offset masters.

**Copies are as good as originals**  
So superior is the quality of reproduction that many people say copies are better than the originals. The Xerox 914 copies anything the eye can see; copies all colors—even red and blues—with sharp black-on-white fidelity. And without damage to originals.

**Versatile and fast**  
Copies in seconds anything written, typed, printed, stamped, or drawn. Business, industry, and government find it useful for letters, documents, drawings, financial statements, reports, freight bills, charts, articles, advertisements, even pages in bound books.

**What users like about the 914 ...**  
"Automatic, copies everything." "Super quality of copy." If you are considering buying a copier, now or in the future, a Xerox 914 can be of real benefit to you. Write to XEROX CORPORATION, DEPT. 9X-278, ROCHESTER 3, NEW YORK.

Xerox 914 ad  
1961  
Marshall collection, duplication devices box 1  
National Museum of American History Archives  
© Smithsonian Institution

**VISICALC™**

**Lotus 1-2-3**

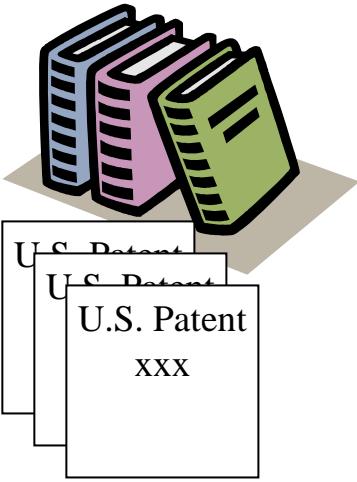
**QUATTRO PRO**

**Microsoft Excel**

The collage shows four historical spreadsheet interfaces side-by-side:

- VISICALC™**: An early version with a menu bar and a table with columns labeled HOME, MONTI, SALAR, OTHER, INCO, and FOOD.
- Lotus 1-2-3**: A later version with a menu bar and a table with columns labeled C, B, A, D, C, D, and E.
- QUATTRO PRO**: A version with a more complex interface, showing a table with columns labeled Adams, Allens, Barnes, Bennett, Cammett, Cressin, Dorn, Dong, Green, Green, H., Johnson, and Jones.
- Microsoft Excel**: The modern version, showing a detailed chart with green bars and a legend.

# XEROGRAPHY



**frustrated  
patent attorney**



1930



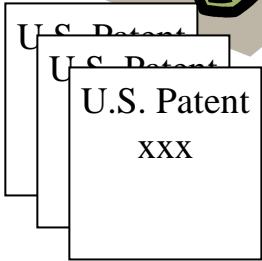




10.-22.-38  
ASTORIA

Astoria 10-22-38 (The first xerographic image)

# XEROGRAPHY



frustrated  
patent attorney



1930

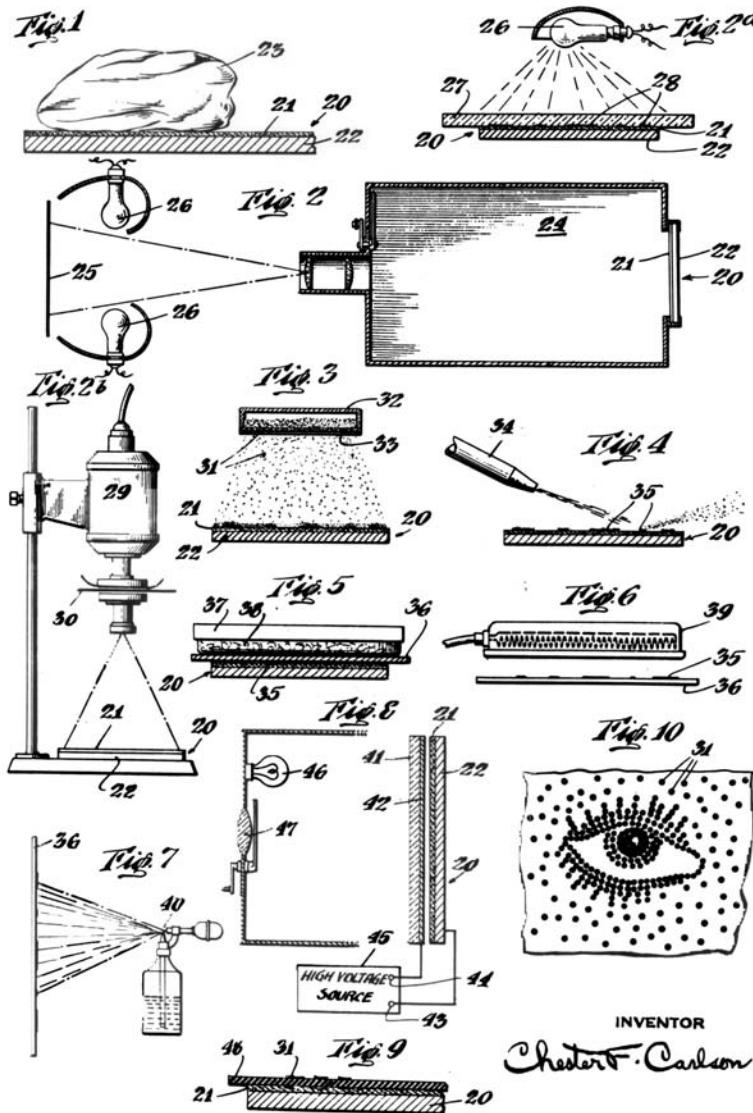
1938



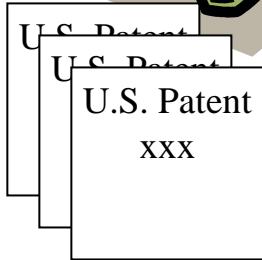
Oct. 6, 1942.

C. F. CARLSON  
ELECTROPHOTOGRAPHY  
Filed April 4, 1939

2,297,691



# XEROGRAPHY



frustrated  
patent attorney



Battelle



1930

1938

1944

1949

**Xerox Model A Copier (Ox Box)**  
**(first manually operated commercial xerographic printer)**



**1949**

**U.S. Patent 2,221,776 (11.19.40), Electron photography**

**U.S. Patent 2,277,013 (3.17.42), Electric recording and transmission of pictures**

**U.S. Patent 2,297,691 (10.06.42), Electrophotography**

**U.S. Patent 2,357,809 (9.12.44), Electra-photographic apparatus**

**U.S. Patent 2,374,979 (5.1.45), Welding electrode holder**

**U.S. Patent 2,391,457 (12.25.45), Spark plug electrode construction**

**U.S. Patent 2,540,863 (2.6.51), Slide wire permeability tuner**

**U.S. Patent 2,551,582 (5.08.51), Method of printing and developing solvent images**

**U.S. Patent 2,583,546 (1.29.52), Electrophotographic recording**

**U.S. Patent 2,588,699 (3.11.52), Electrophotographic apparatus**

**U.S. Patent 2,599,542 (6.10.52), Electrophotographic plate**

**U.S. Patent 2,624,652 (1.06.53), Graphic recording**

**U.S. Patent 2,681,473 (6.22.54), Manufacture of plaques and the like**

**U.S. Patent 2,690,394 (9.28.54), Improvements in electrophotography**

**U.S. Patent 2,701,764 (2.8.55), Electrophotographic apparatus and methods**

**U.S. Patent 2,761,416 (9.04.56), Development mechanism for electrostatic images**

**U.S. Patent 2,815,734 (12.10.57), Method of developing xerographic images and apparatus**

**U.S. Patent 2,830,114 (4.08.58), Transmission of electrostatic recordings**

**U.S. Patent 2,842,456 (7.8.58), Improved powder cloud xerographic image**

**U.S. Patent 2,862,472 (12.02.58), Electrostatic image development apparatus**

**U.S. Patent 2,876,737 (3.10.59), Electrostatic image development**

**U.S. Patent 2,918,900 (12.29.59), Apparatus for xerographic development**

**U.S. Patent 2,922,230 (1.26.60), Xerographic powder fixing apparatus**

**U.S. Patent 2,928,575 (3.15.60), Electrostatic image development**

**U.S. Patent 2,940,934 (6.14.60), Electrostatic developer composition and method therefor**

**U.S. Patent 2,955,052 (10.4.60), Xerographic relief image production and use**

**U.S. Patent 2,982,647 (5.2.61), Electrostatic image reproduction**

**U.S. Patent 2,990,278 (6.27.61), Method and apparatus for transferring and fixing xerographic images**

**U.S. Patent 3,015,304 (1.2.62), Electrostatic image reproduction**

**U.S. Patent 3,078,589 (2.26.63), Xerographic fusing apparatus**

Dec. 8, 1932

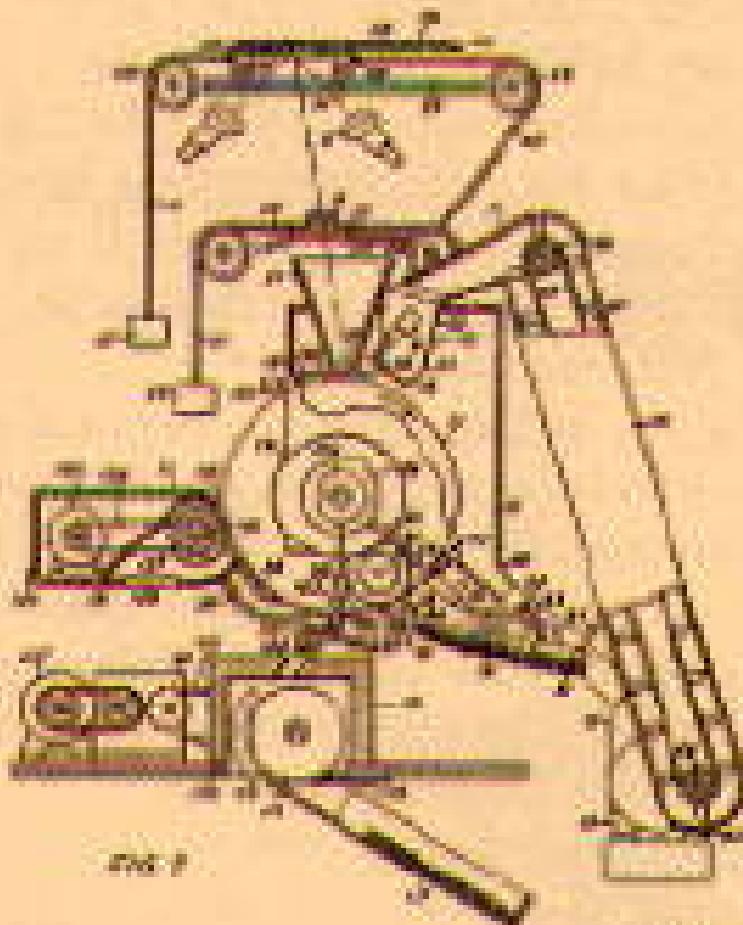
U. S. 1,675,200

1,675,200

IMPROVED COFFEE POT

Inventor: Frank E. Ladd

1 Dec. 1932.

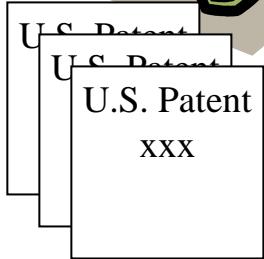
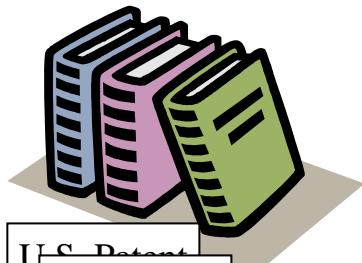


INVENTOR  
FRANK E. LADD

Frank E. Ladd  
1,675,200

# XEROGRAPHY

Over 300 Patents



frustrated  
patent attorney



Battelle

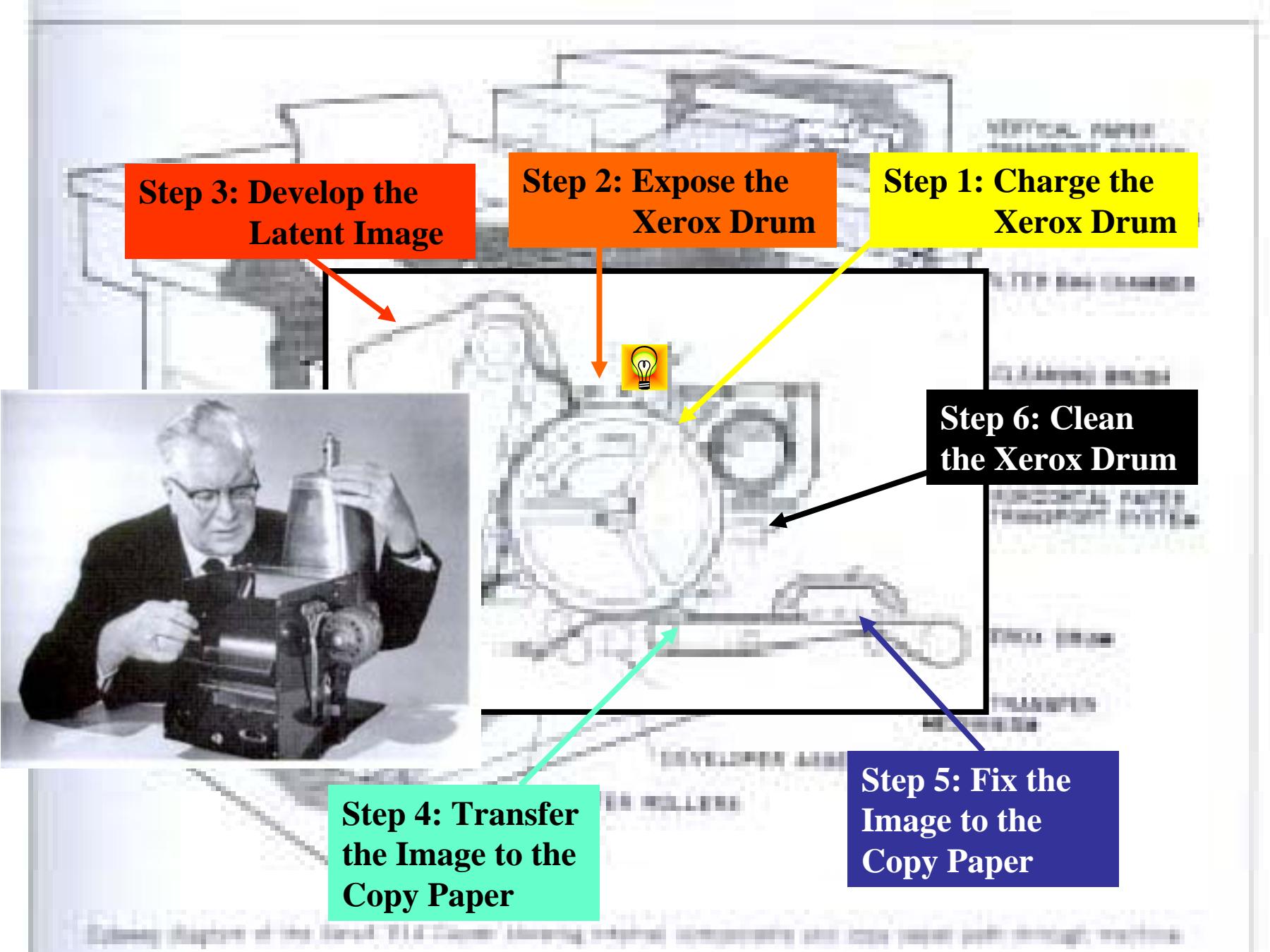


1930

1938

1944

1949



**Step 3: Develop the Latent Image**

**Step 2: Expose the Xerox Drum**

**Step 1: Charge the Xerox Drum**

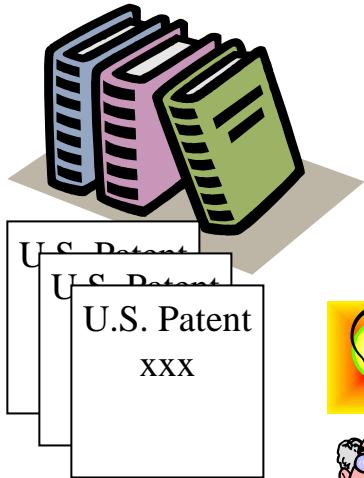
**Step 6: Clean the Xerox Drum**

**Step 4: Transfer the Image to the Copy Paper**

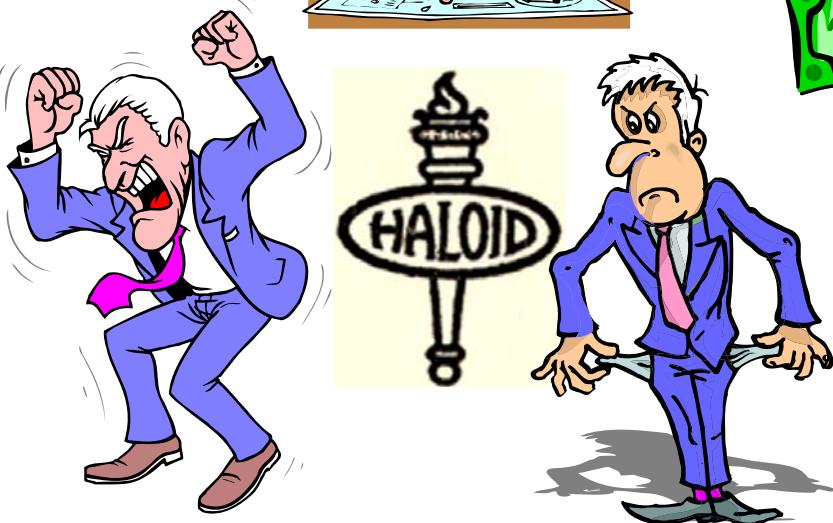
**Step 5: Fix the Image to the Copy Paper**

# XEROGRAPHY

Over 300 Patents



frustrated  
patent attorney



1930

1938

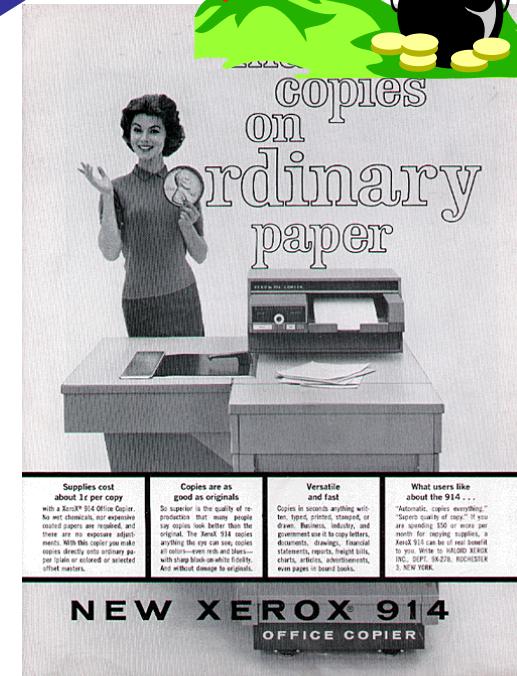
1944

1949

1959



Battelle



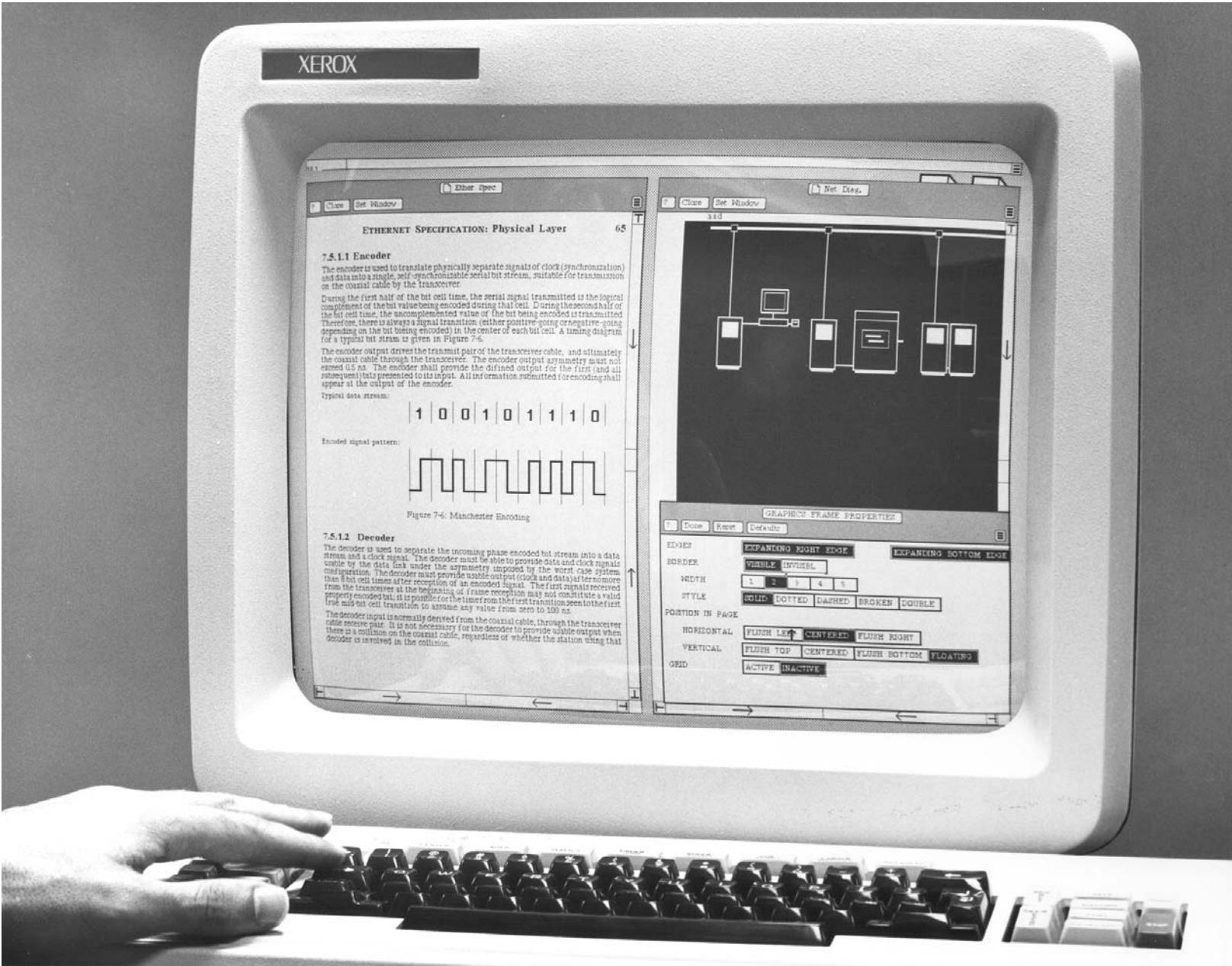
Over 300 Patents



# Prototype Workstation (the world's first personal computer)

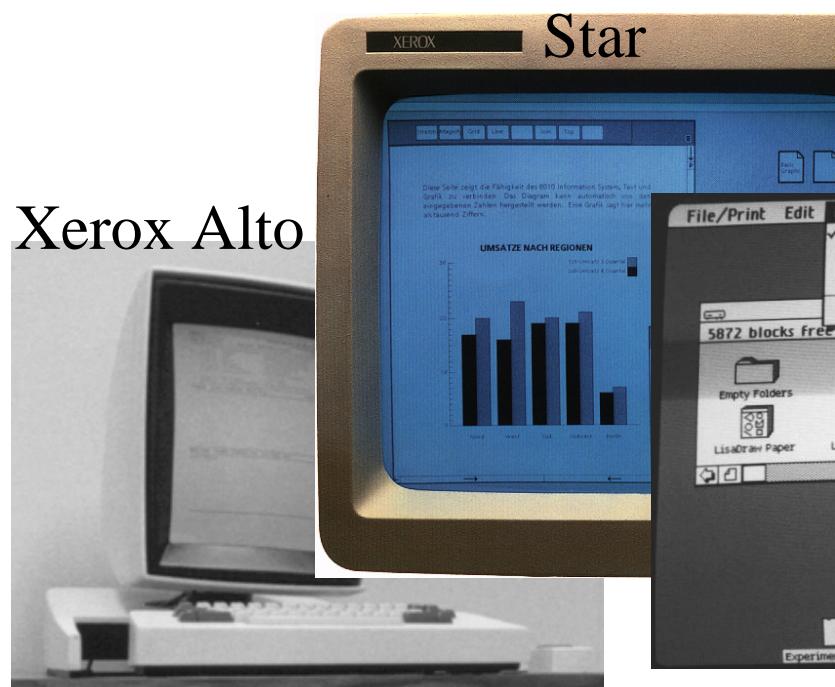
Xerox Alto (1973)





# Graphical User Interface

Xerox Alto



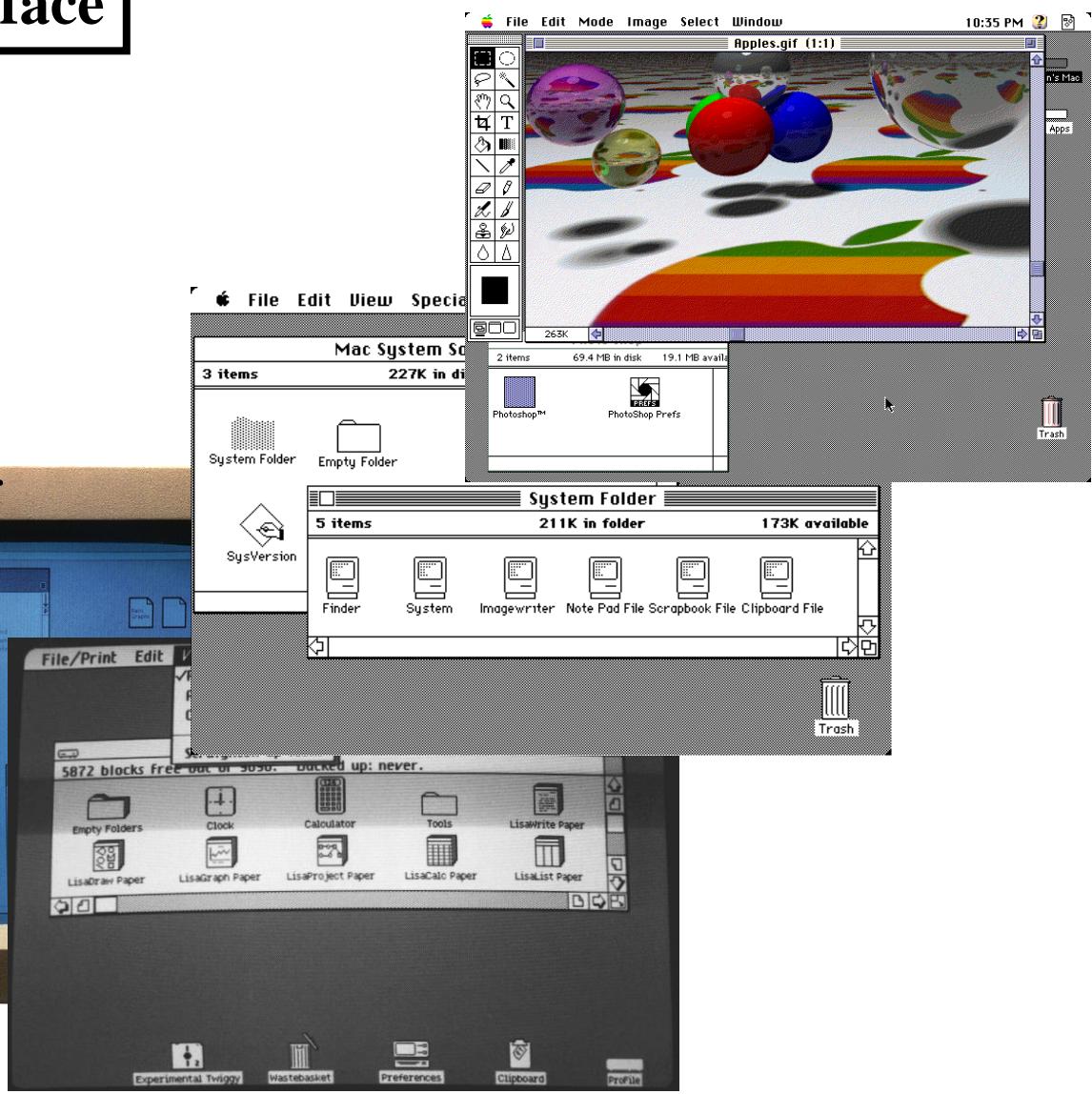
1973

1981

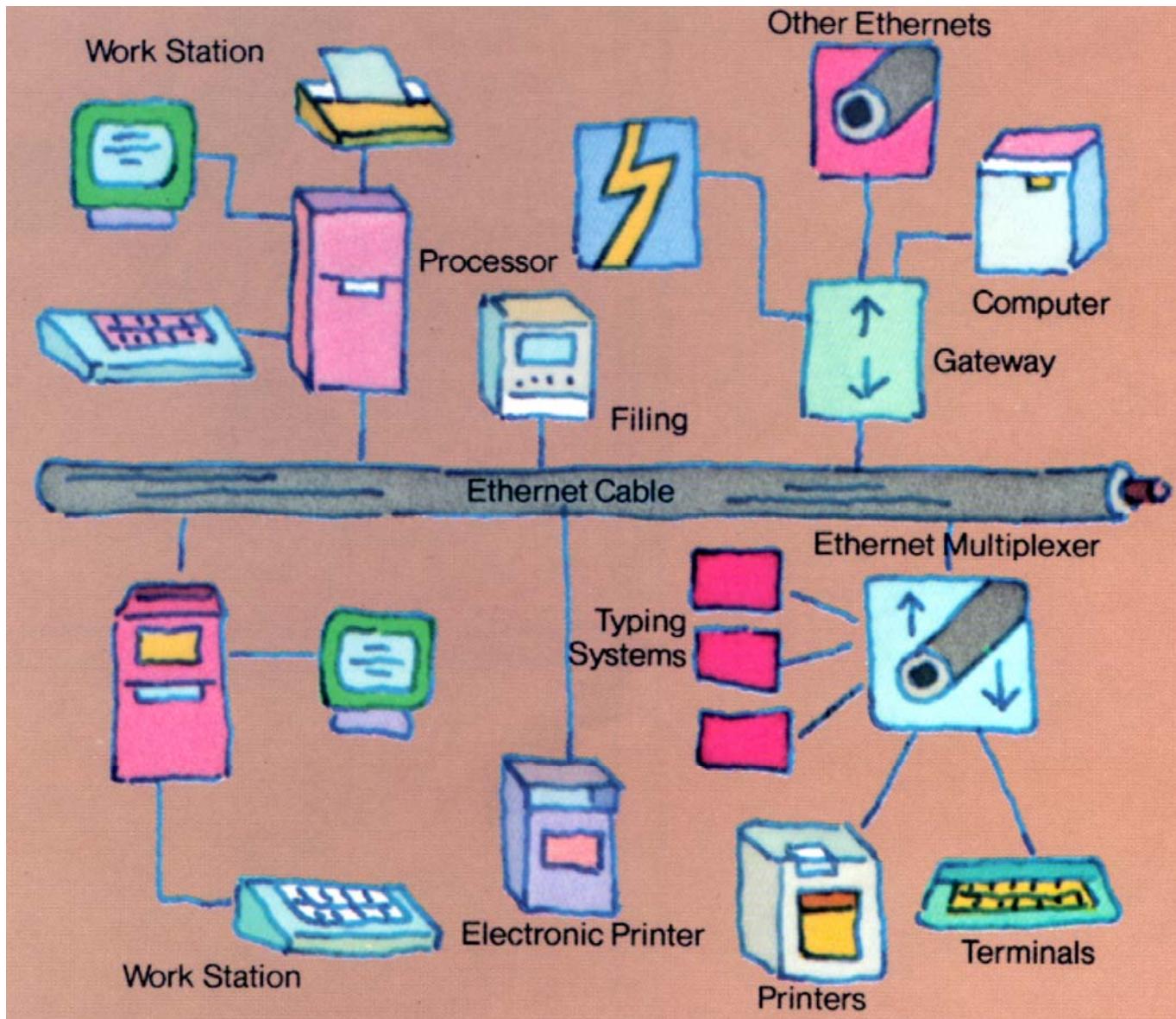
1983

1984

1987

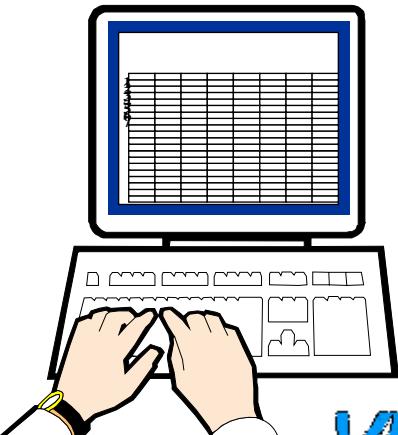


# 1979 - Xerox Ethernet Illustration



# SPREADSHEETS

Microsoft Excel

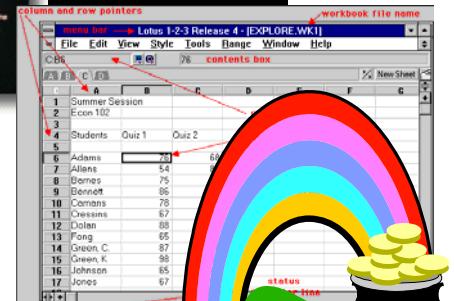


VISICALC

HOME BUDGET, 1979			
	NOV	DEC	TOTAL
SALARY	2500.00	2500.00	30000.00
OTHER			
INCOME	2500.00	2500.00	30000.00
FOOD	400.00	400.00	4800.00
GENT	350.00	350.00	4200.00
HEAT	110.00	120.00	1200.00
REC	100.00	100.00	1000.00
BUSES	100.00	100.00	1000.00
MISC	100.00	100.00	1000.00
CAR	300.00	300.00	3000.00
EXPENSES	2460.00	2470.00	2877.00
REMAINDER	40.00	40.00	122.00
SAVINGS	38.00	38.00	66.00

MICROSOFT  
MULTIPLAN.

Lotus.  
1-2-3



frustrated MBA  
student

1978

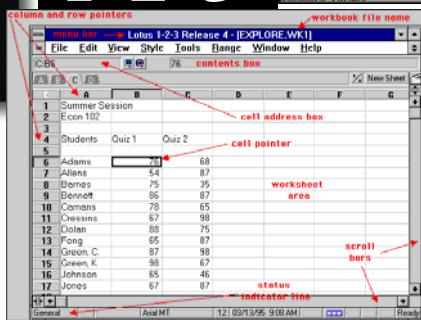
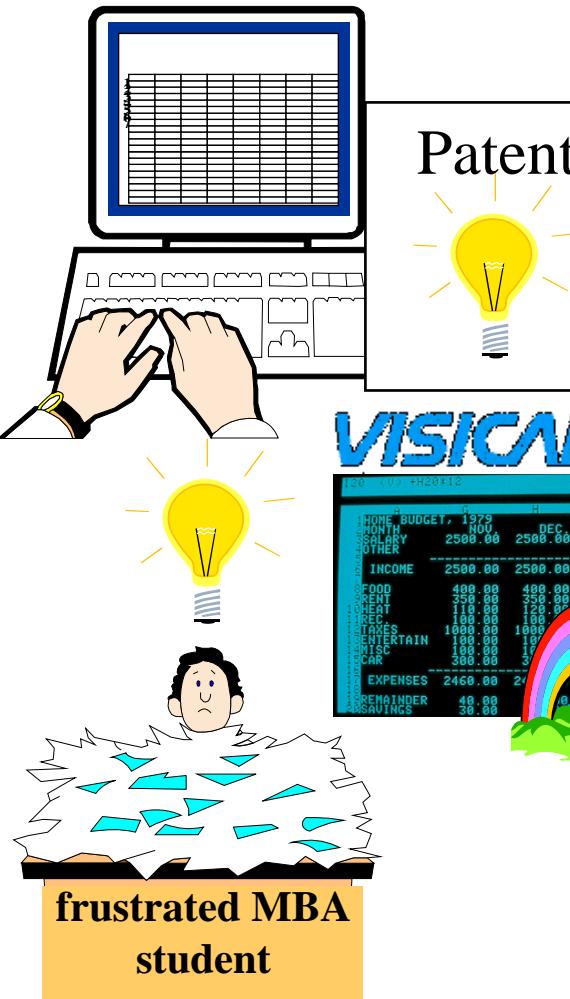
1979

1980

1983

1989

# SPREADSHEETS



1978

1979

1980

1983

1989