

# Office Appliances

Thomas J. Bergin

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American University

# Other Information Appliances

- 1867: Christopher Latham Sholes invents the "**type writer**"
- 1875: Frank S. Baldwin: **adding machine**
- 1878: Willgodt Odhner: **adding machine**
- 1885 Dorr E. Felt builds a **comptometer** in his kitchen using a macaroni box
- 1900 Guglielmo Marconi develops a *wireless telegraph*, now called a **radio**

# Sholes & Glidden (18??)



# Type Writer developments (1868-1896)

- 1872 Spring-seated keys introduced
- 1874 First commercial machine: Remington
- 1876 Remington No.1 (capitals only)
- 1878 Remington No.2 (upper & lower case)
- 1890 First portable introduced by G.C. Blickensderfer
- source: Cortada, *Before the Computer*, Princeton University Press, 1993

# Collection of Anthony Casillo



# Underwood #5 (1901-1931)



# Corona #3 (1912)



# Multiplex Typewriter (1919)

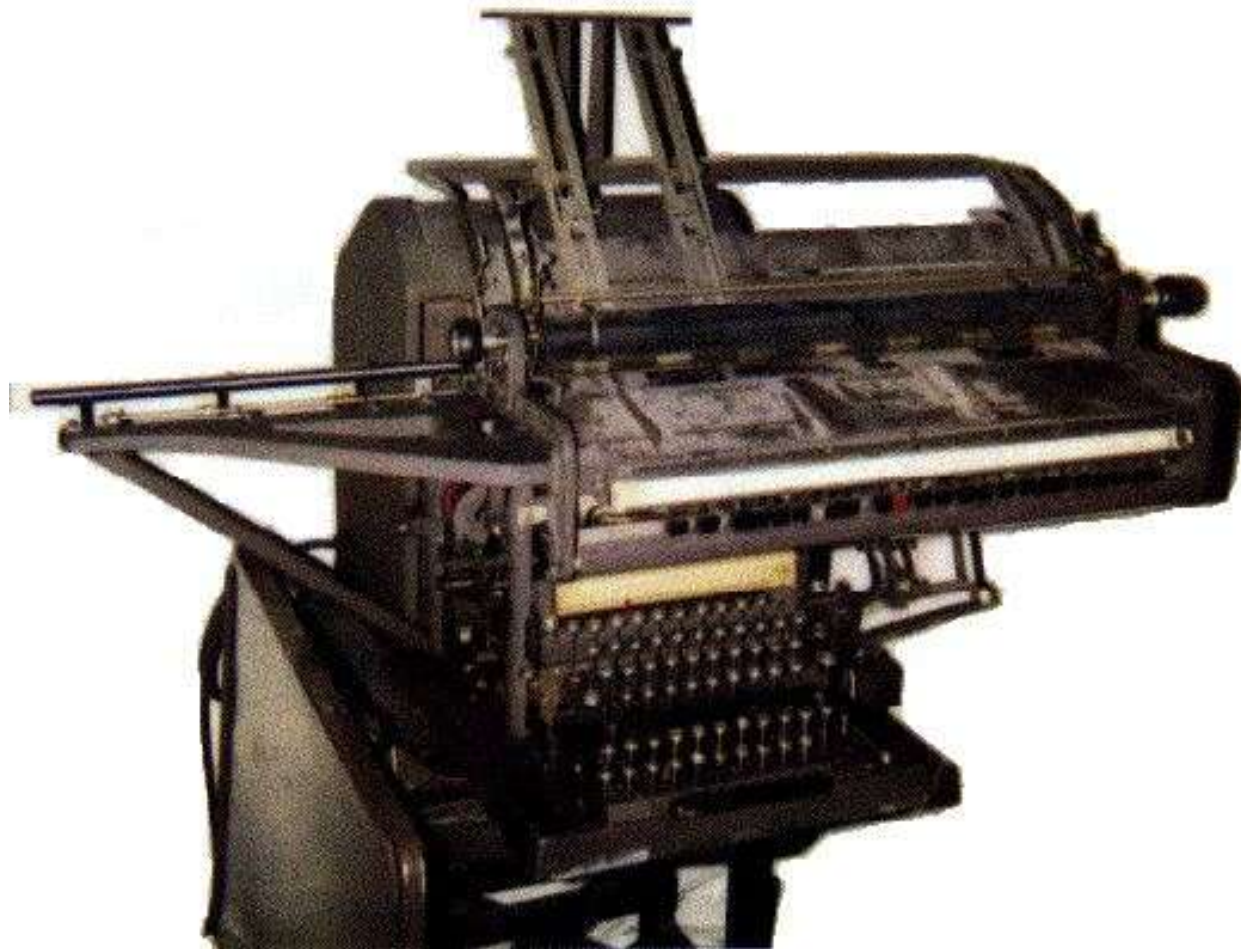


**Multiplex typewriter  
c. 1919  
#1994-73-4(M4)  
Cooper-Hewitt, National Design Museum  
© Smithsonian Institution**



# Moon Hopkins (1929)

Mike Campbell: in use at a car dealer until 1980



# Cash Register



# Innovations in Cash Registers (1879-1913)

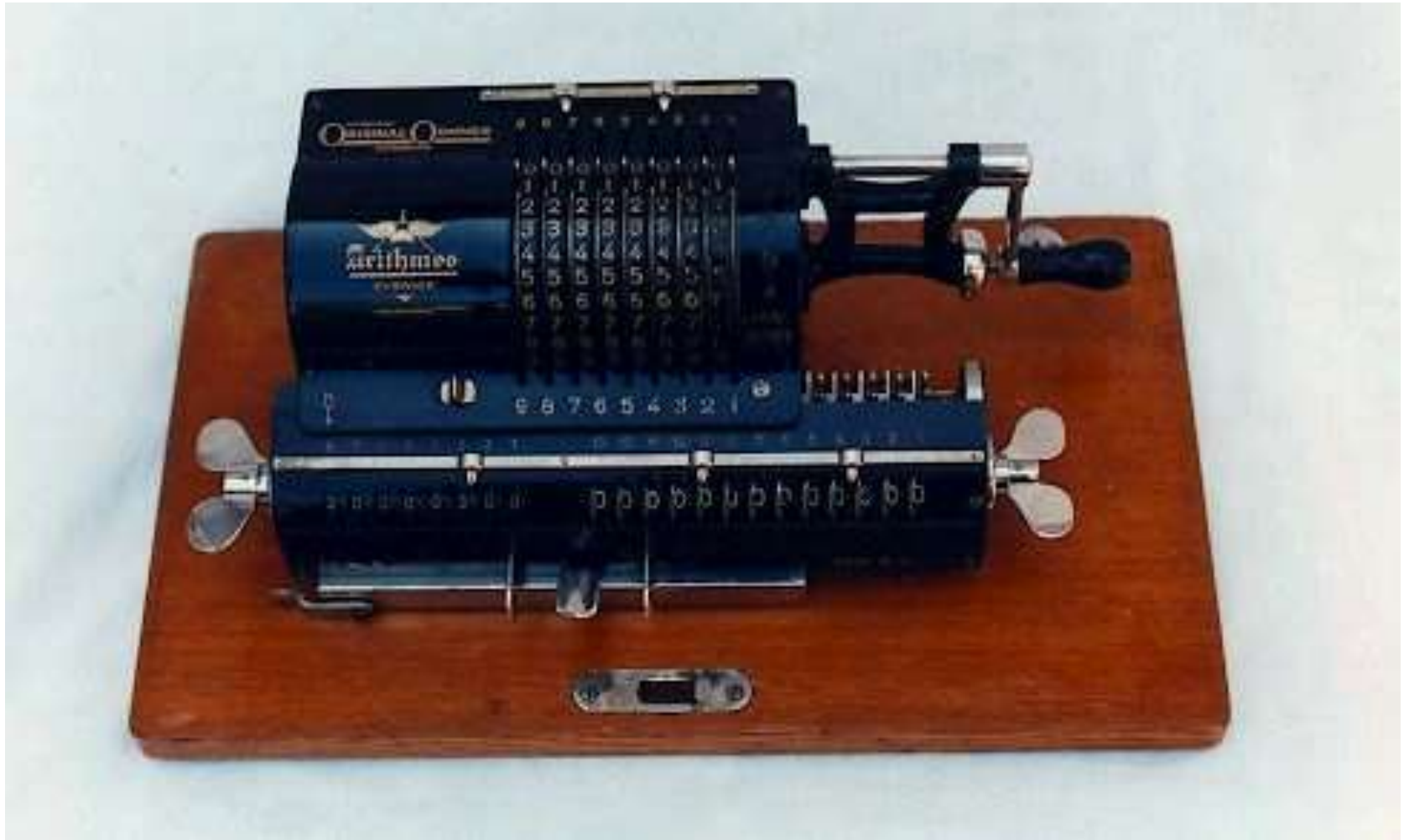
- 1879 First cash register patented
- 1881 Paper roll introduced
- 1884 Cash drawer added to NCR machine
- 1885 Detail adder introduced
- 1890 Receipt printout made standard feature
- 1902 Total adder and printer
- 1906 Electric cash register introduced

source: Cortada, *Before the Computer*, Princeton University Press, 1993

# Innovations in Adding & Calculating Machinery (1820-1939)

- 1820 **Arithmometer** invented
- 1850 First key-driven adding machine
- 1875 Baldwin/Odhner variable tooth calculators
- 1885 **Brunsviga** calculator
- 1886 **Comptometer** by Dorr E. Felt
- 1887 Direct multiplication, Leon Bollee
- 1893 Millionaire, four function calculator

# Odhner (per Kevin Odhner)



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- The following slides are of machines in the Computing History Museum, American University

# Russian “Felix” (Odhner type)





# Lightning Adder



# Brunsviga (1885)

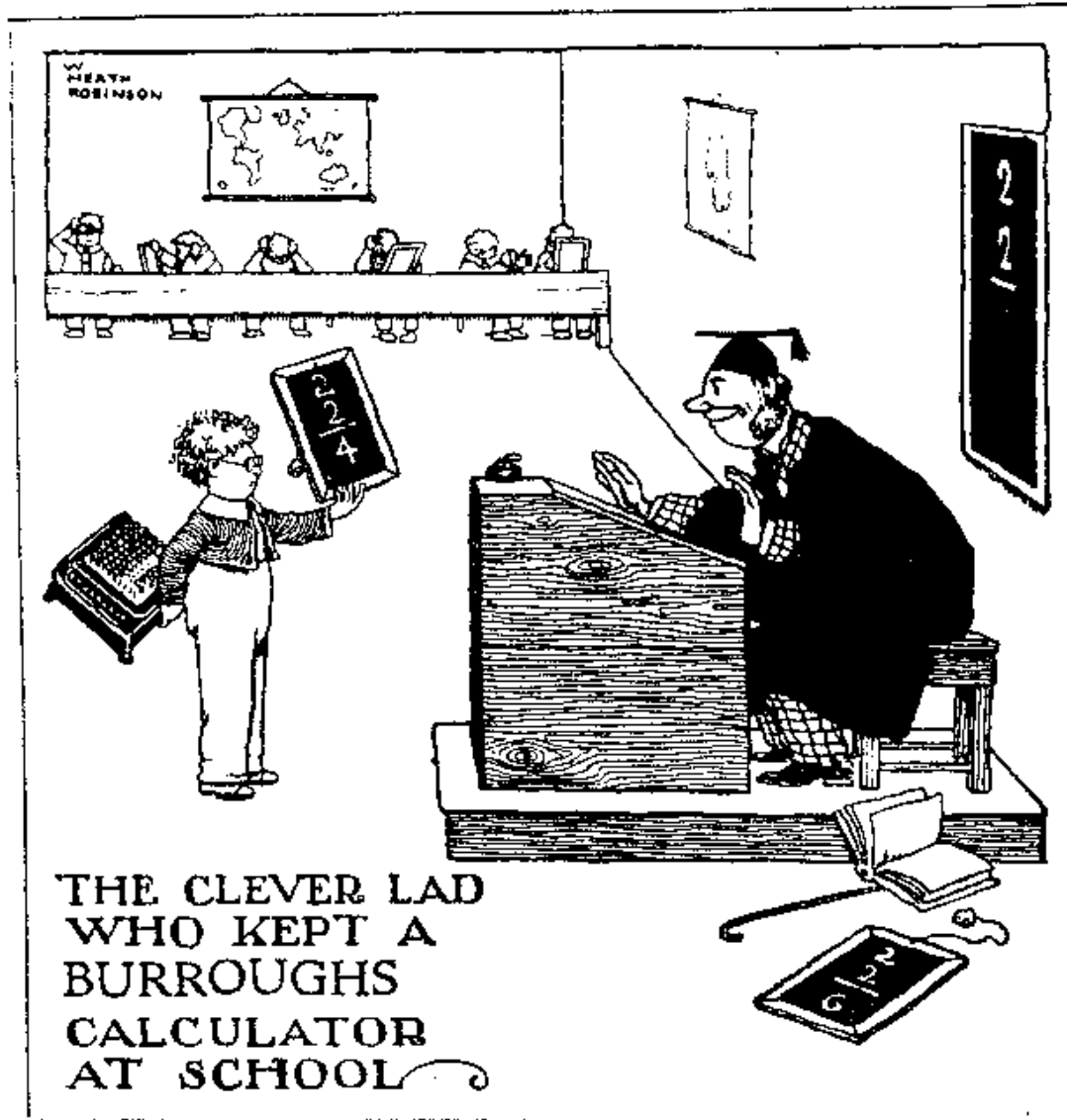




# Burroughs



# The Burroughs Calculator





# Burroughs Registering Accountant



Courtesy Smithsonian Institution

# American Can Company





# Todd Visible Adder



# Dalton Ten Key



# Two “portables”



# Office Workers



# References

- Steven Lubar, *Information Appliances*, 1994
- James W. Cortada, *Before the Computer*, Princeton University Press, 1993
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- Peggy Aldrich Kidwell, "The Adding Machine Fraternity at St. Louis: Creating a Center of Invention, 1880-1920," *IEEE Annals of the History of Computing*, Vol. 22, No. 2 (April-June 2000)
- John Brooks, *Telephone, The First Hundred Years*, Harper & Row, 1975
- Edwin Darby, *It All Adds Up, the Growth of the Victor Comptometer Company*, Victor Comptometer Company, 1968

- Stanley C. Allyn, *My half century with NCR*, McGraw-Hill, 1967
- Bryan Morgan, *Total to Date*, Burroughs Adding Machine London, 1953

# Show & Tell

- Frieden Automatic Calculator Booklet
- Comptometer Booklet
- Telegraph, key and battery charger
- Teletype
- Typewriter(s)



# Laboratory: Information Appliances

- **Addometer** and **Lightning Adder** (modern equivalent of Pascaline)
- Felt and Tarant **Comptometer**
- Dalton 10 Key **Adding Machine**
- Burroughs and Wales **Printing Adding Machines**
- Brunsviga and Russian **Calculators**
- Todd **Visible Adder**
- 1930's other **inexpensive adding devices** for home or office use!

# Mechanical Calculating Machines

- Schickard 1592-1635
- Pascal's *Pascaline* 1642
- Lepine 1725
- de Colmar's *Arithmometer* 1820s
- Shilt's *Key-driven Adder* 1851
- Webb *Adder* 1868
- Baldwin's *Adding Machines* 1875
- Felt and Tarrant's *Comptometer* 1886
- Steiger's *Millionaire* 1890s

# Mechanical Calculating Machines

- **Set-up** mechanism: *number entry*
- **Selector** mechanism: *mechanical motion*
- **Registering** mechanism: *wheels, disks, slides to store the number*
- **Carry** mechanism *speed and propagation*
- **Control** mechanism: *proper position of gears*
- **Erasing** mechanism
- **Printing** mechanism (additional)