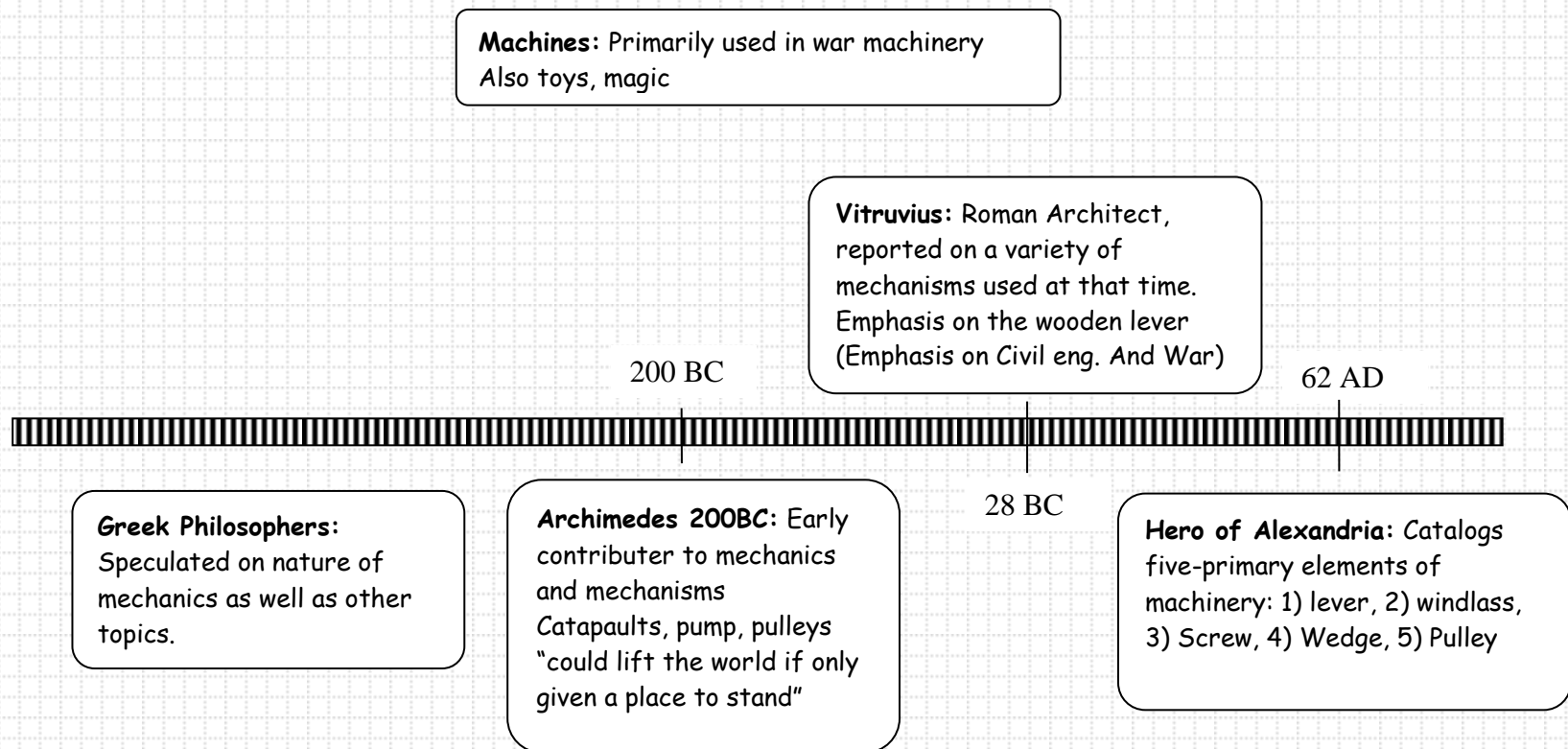
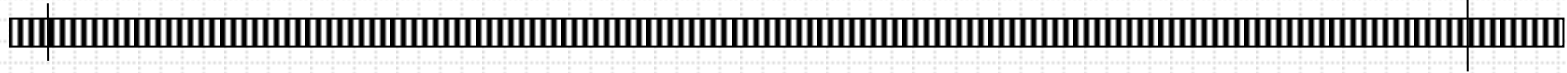


## Part I: Overview of the history of machines, mechanisms, kinematics



**Machines:** Began to find use in agriculture. Harnessing wind power

200 AD



1200 AD

**Machinery and Documentation comes into vogue**

**Leapold:** First to systematically classify machines according to motion components (modify motion)

15<sup>th</sup> Cent

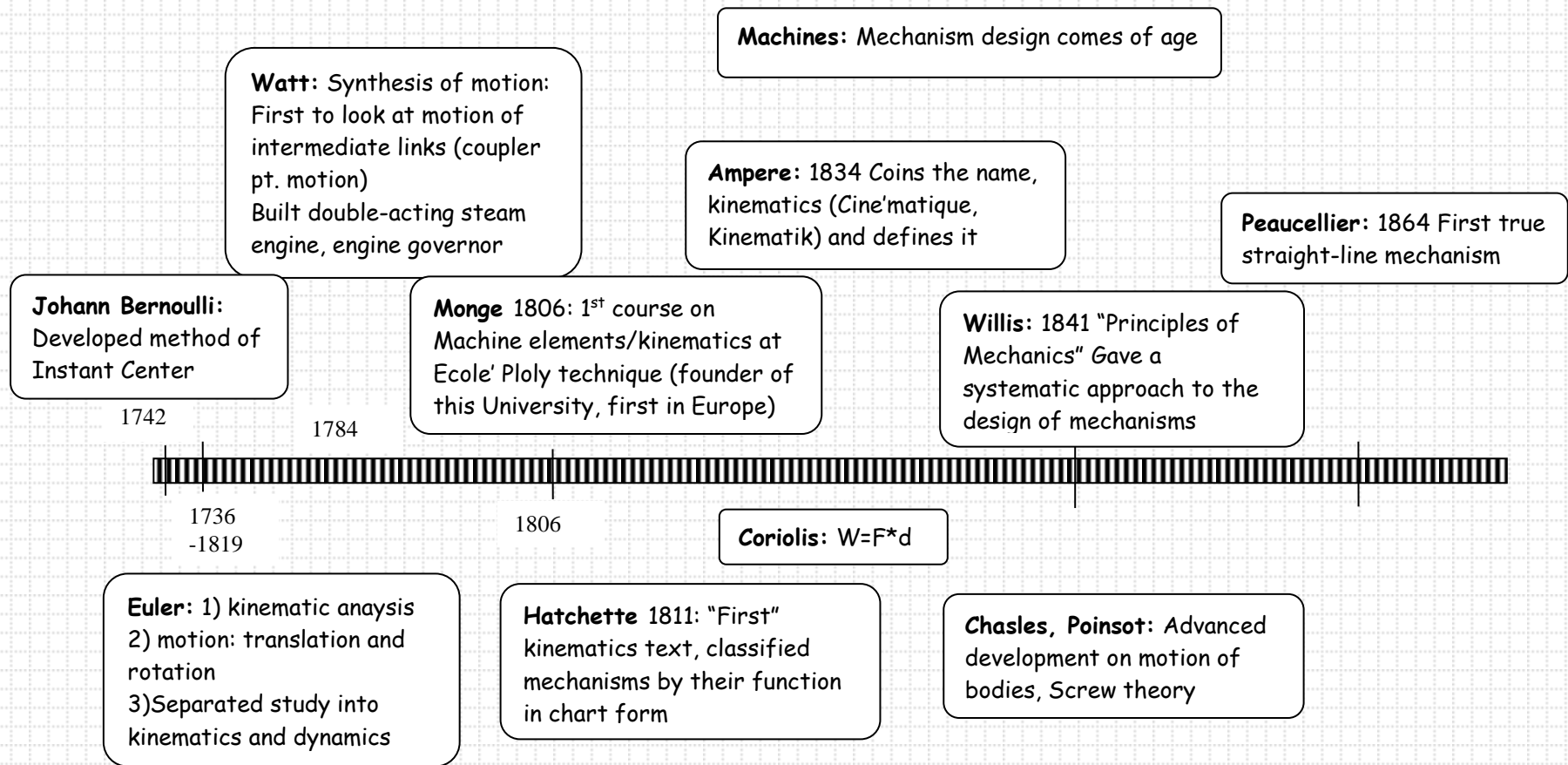
1670

1600

**Leonardo da Vinci:**  
Famed for invention and art

**Galileo:** Led to the understanding of motion  
Experimentalist and Thought experiments

**Newton:** Formalized laws of motion, gravity law



**Machines:** Machine design comes of age

**Franz Reuleaux:** 1875 "Theoretische Kinematik"  
Father of our current methods for kinematics  
Motion constraints, surfaces

**Grubler's Equation** 1883

**Chebyshev:** 1890 Russian kinematician



19<sup>th</sup>  
century

**Burmester, Mehmke, Mohr**  
1880's German kinematicians,  
develop synthesis and analysis  
techniques (V&A polygons, etc)

## Modern Kinematics

