

Selected Topics  
in History of Science

*Machines and science: 14<sup>th</sup> and 15<sup>th</sup> century*

DE2B03

Lecture 5

13 March 2023

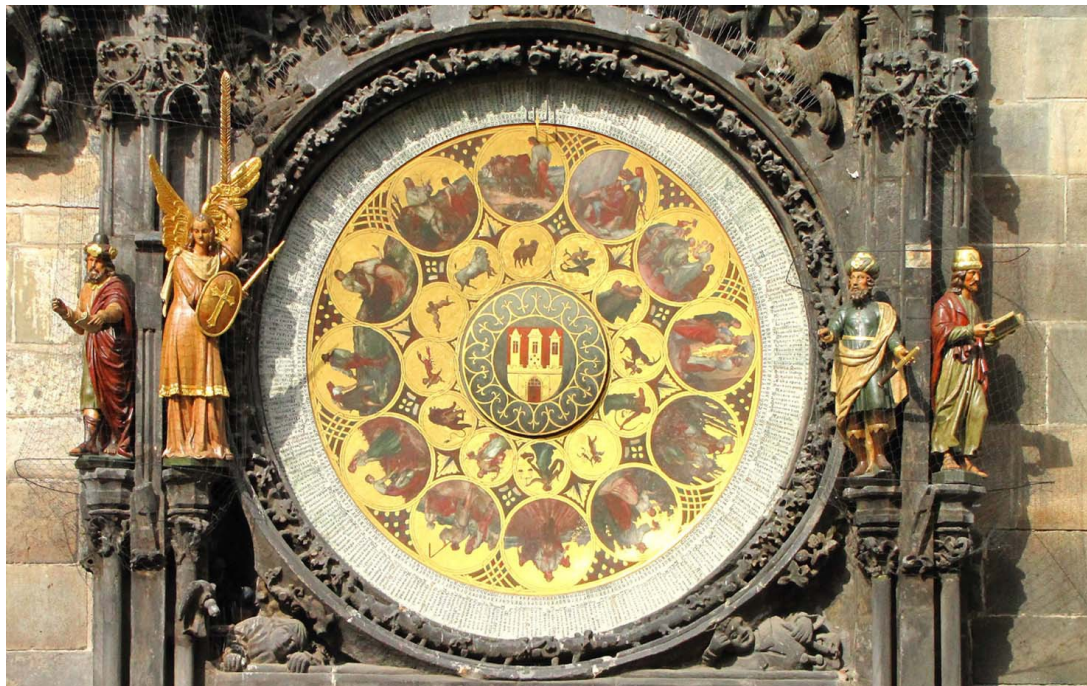
# Prague astronomical clock (courtesy Ant. Vrba)



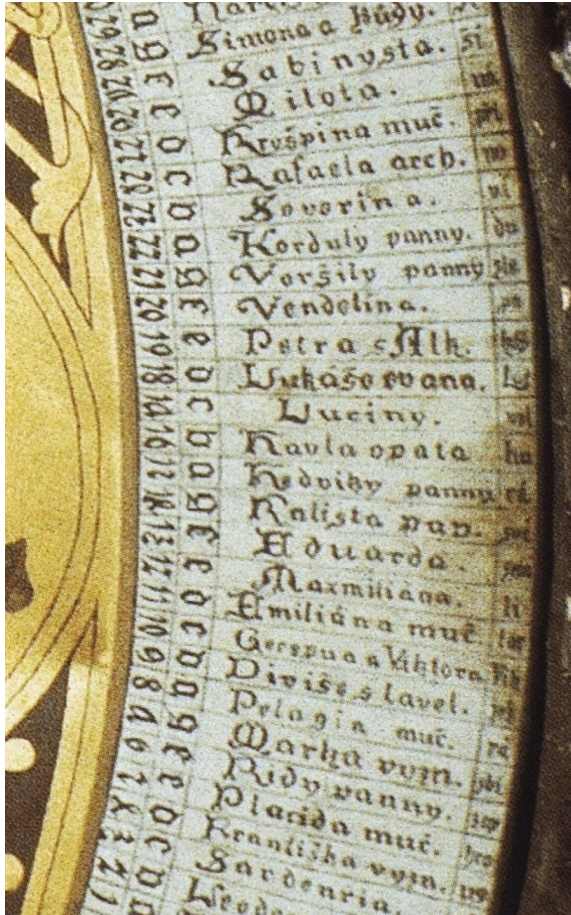
# Prague astronomical clock: the whole



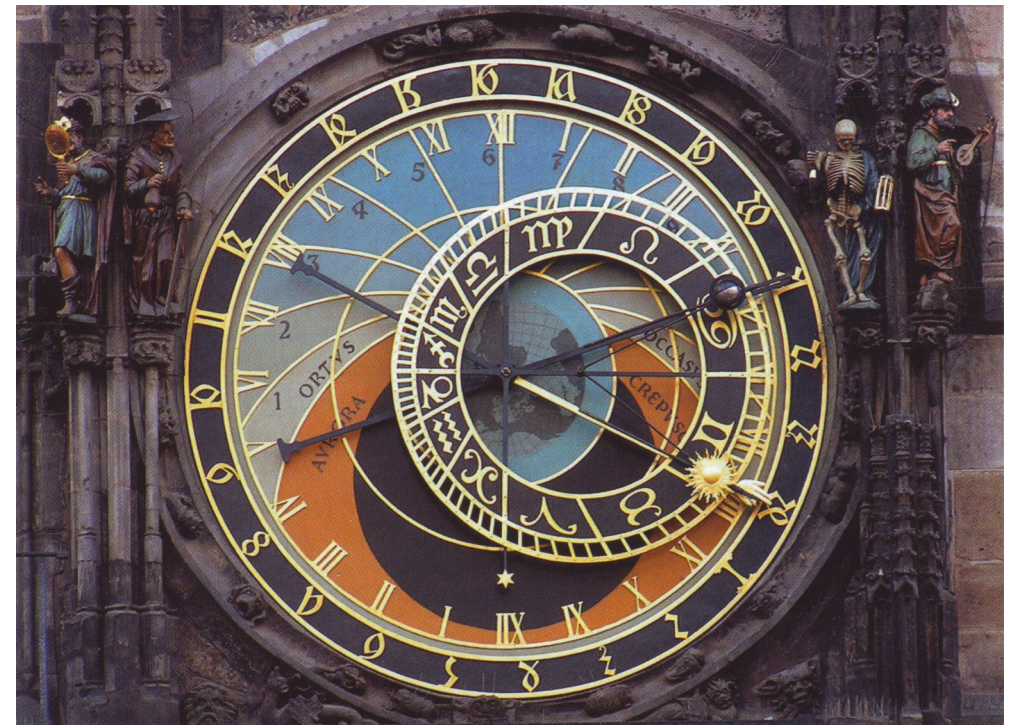
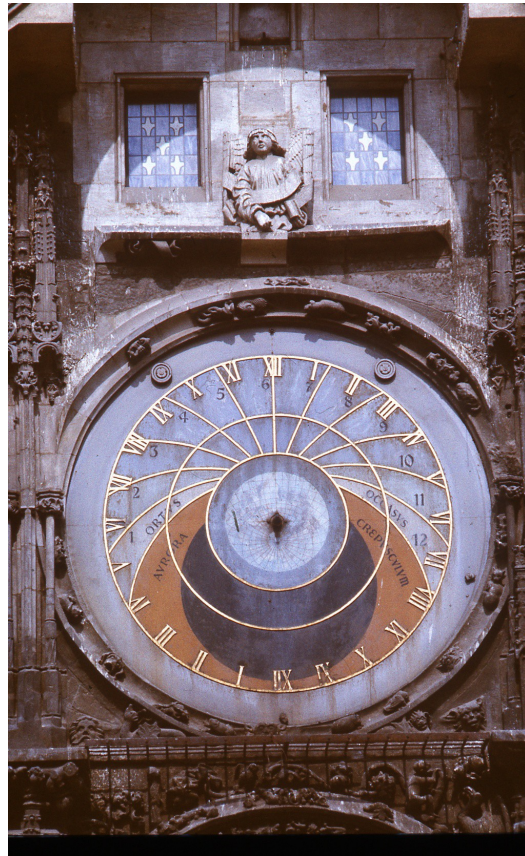
# Calendarium: pictorial representation (Oct.)



# Dates and astrolabium



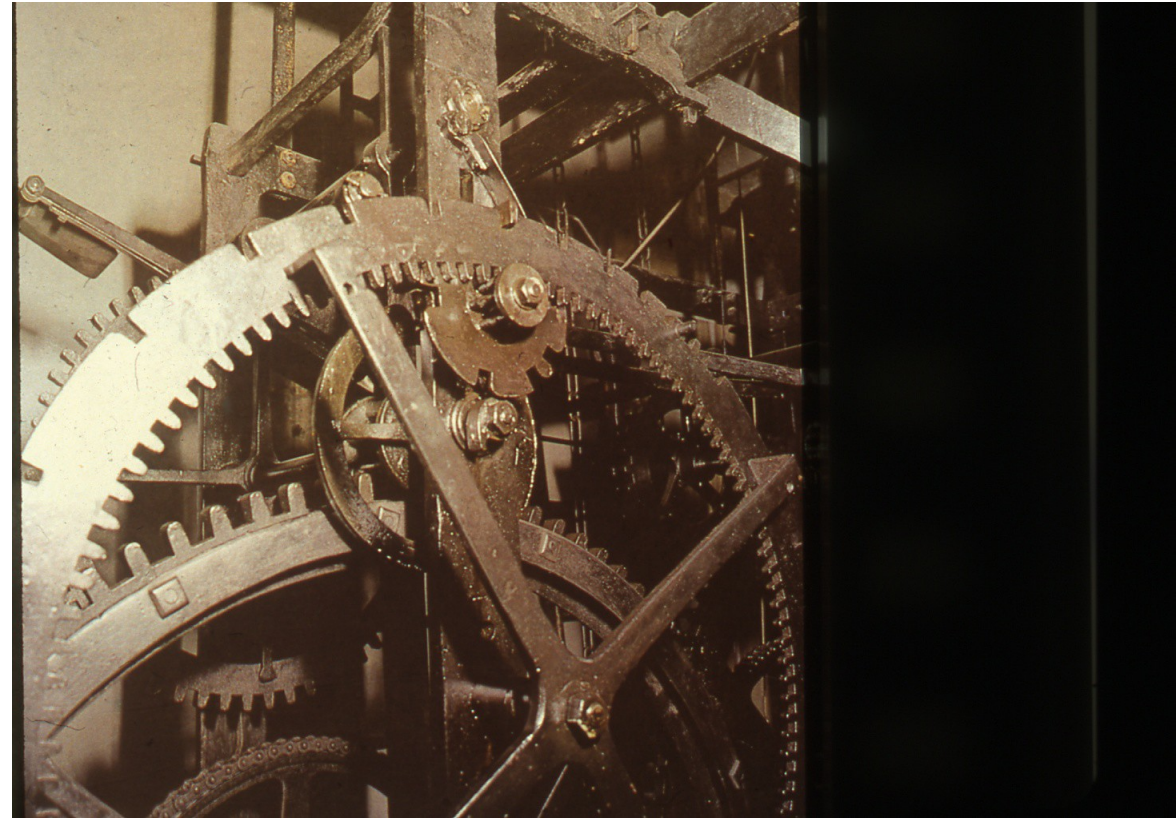
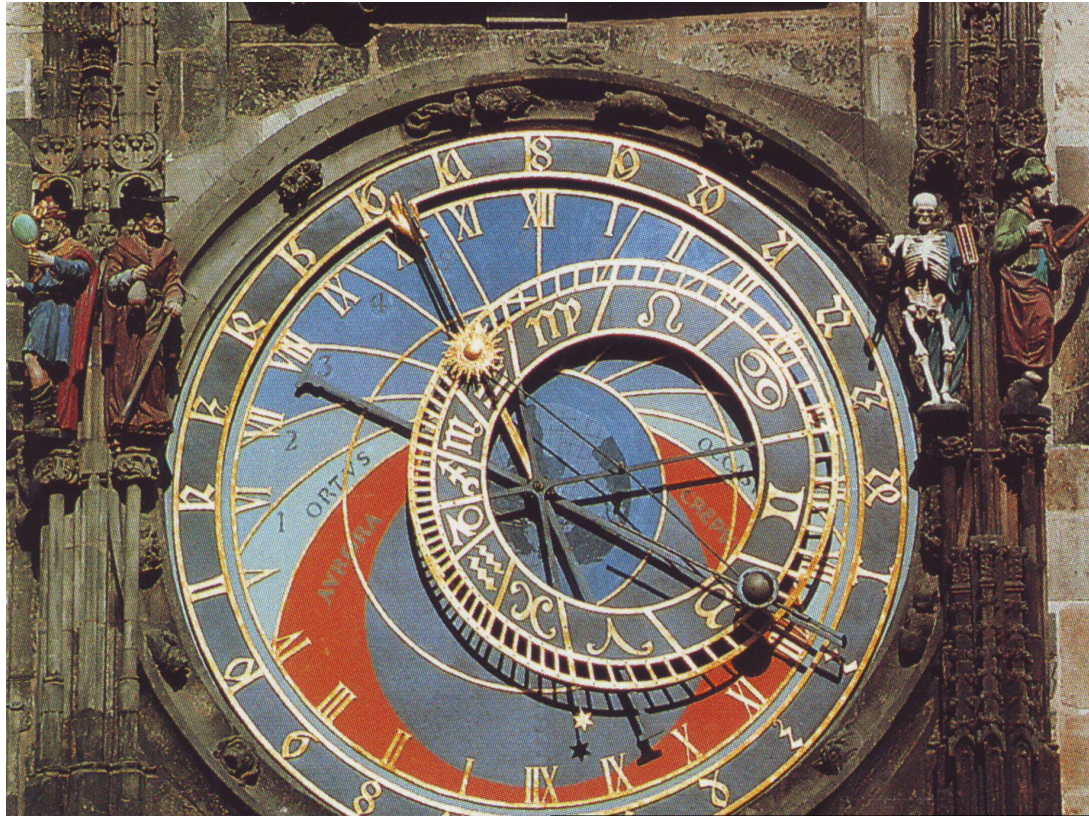
# New design - astrolabium



# Positions of the clock hands on the clock face



# What time is it?





# European horologia

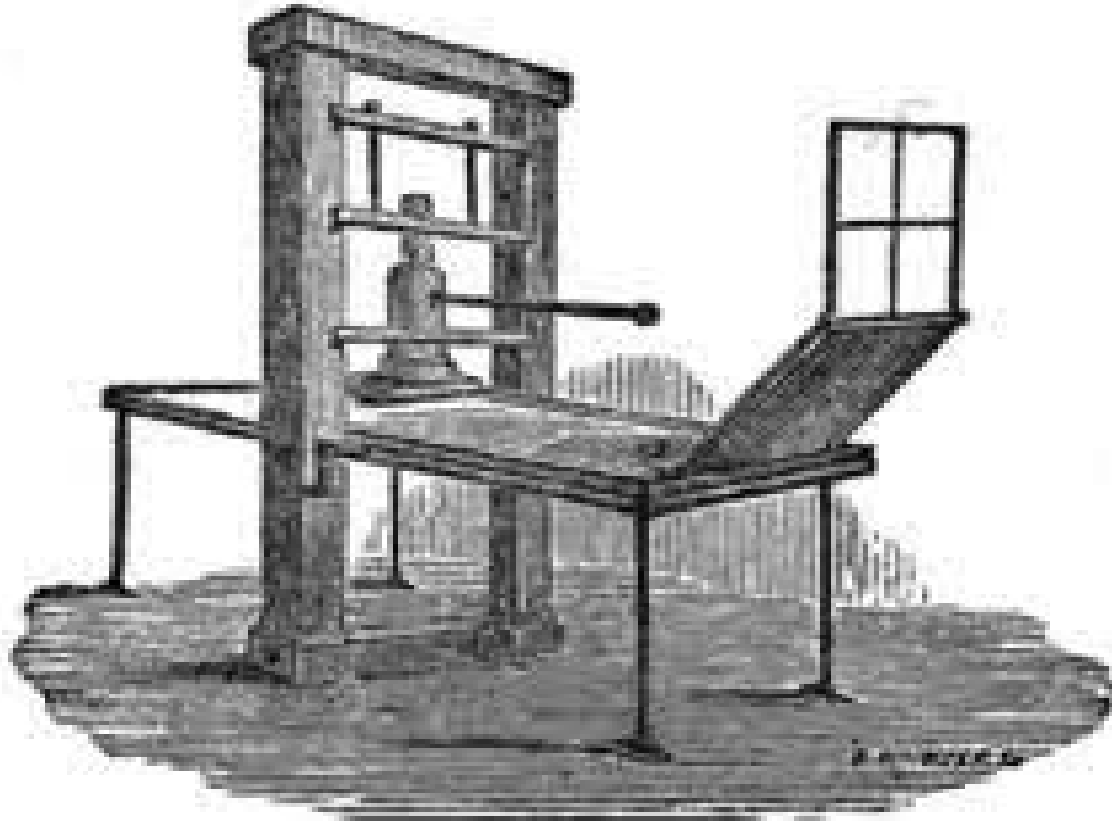


Padua, 1344 (1571)

(Jacopo de'Dondi)

Missing: the sign Libra in the Zodiac  
(perhaps he was not paid enough?)

# **Johannes Gutenberg (c. 1400- 1468)** **the invention of the printing press**



# Gutenberg: statue in Mainz





- Roman origins of the town:
- Römersteine
- (Roman stones)
- - Remnants of a Roman aqueduct, northmost from Rome



- Römischer Theater
- Roman theatre
- (10 thousand people)
- Discovered 1914-1916



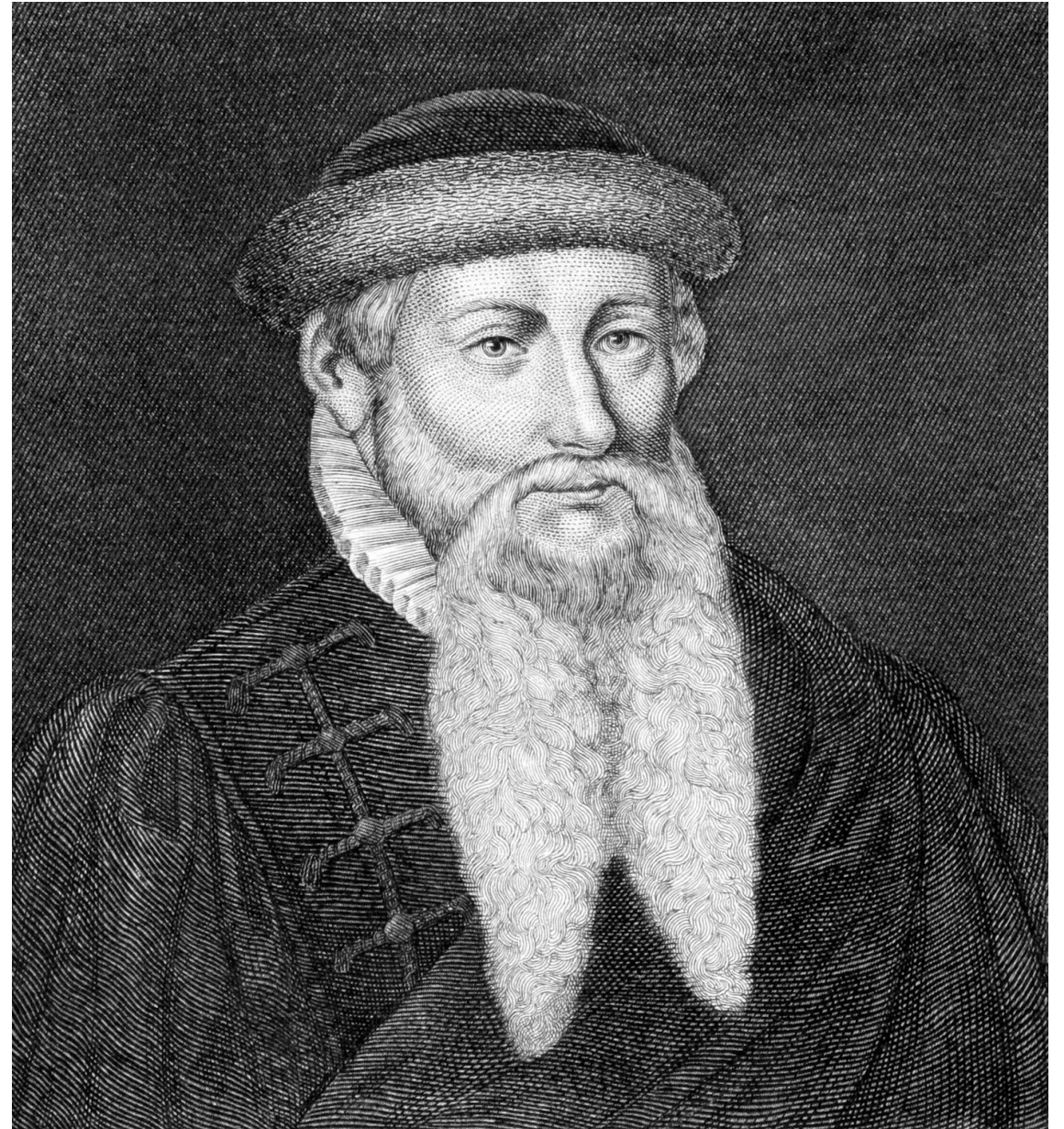
# Mainz (Mohuč) up to Gutenberg's lifetime

- Port on Rhine
- Opposite Wiesbaden
- - Celtic settlement
- - Romans: 14-9 BC, until 451 AD
- 1244 - free imperial city
- „Golden Mainz“, Center of Rhenish towns
- 14th century - archbishops of M. chancellors and electors of Holy Roman E.
- 1440- book printing
- 1460s - economic decline, citizens deprived of privileges



# Johannes Gutenberg

- Born:
- Between 1394 and 1404
  
- Johannes Night:
- 24 June
- (summer solstice)
  
- Arbitrary day of birth:
- 24 June 1400



# Johannes de Altavilla (Eltville)

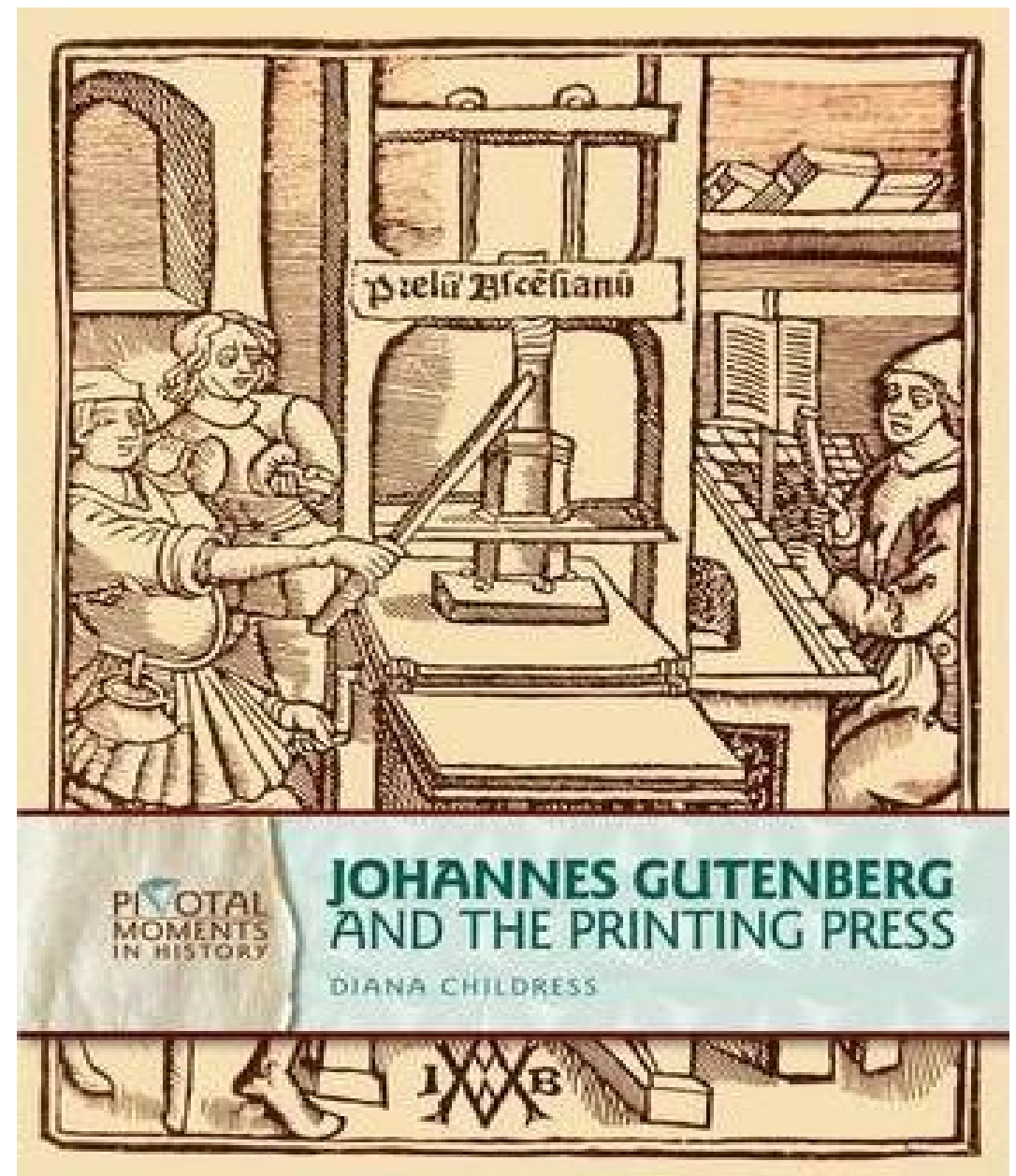
- studied in Erfurt
- Was it the same person?
- (no portrait of him from his time is preserved, anyway)
- Father died 1418
- Mother died 1433
- Strassbourg
- Holland:
- wooden block printing?
- Not durable





Book by  
Diana Childress  
**(Twenty-First Century  
Books, MN, 2008)**

- Interesting:
- American perspective
- What do we need to explain?
- Where Germany is
- The notion of Central Europe
- (universities: Charles U.)
- Pilgrimage badges
- (tourist bumpers)



# Medieval scribes (monasteries)



# Paper- making: handmade paper



# Printing

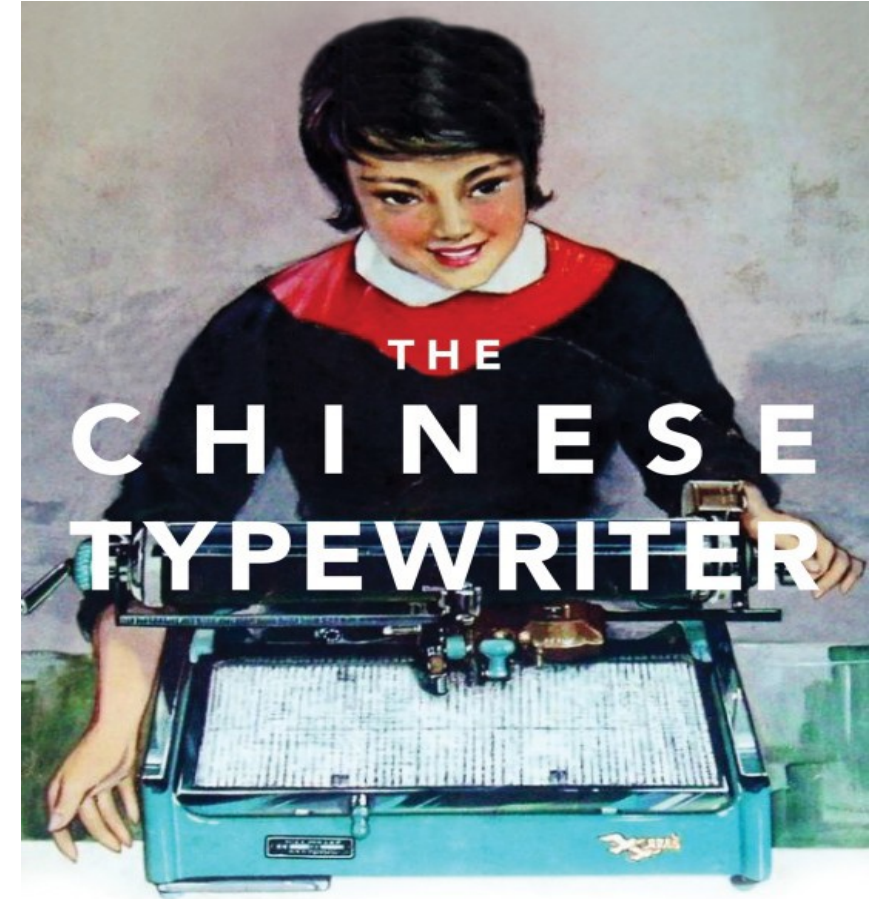
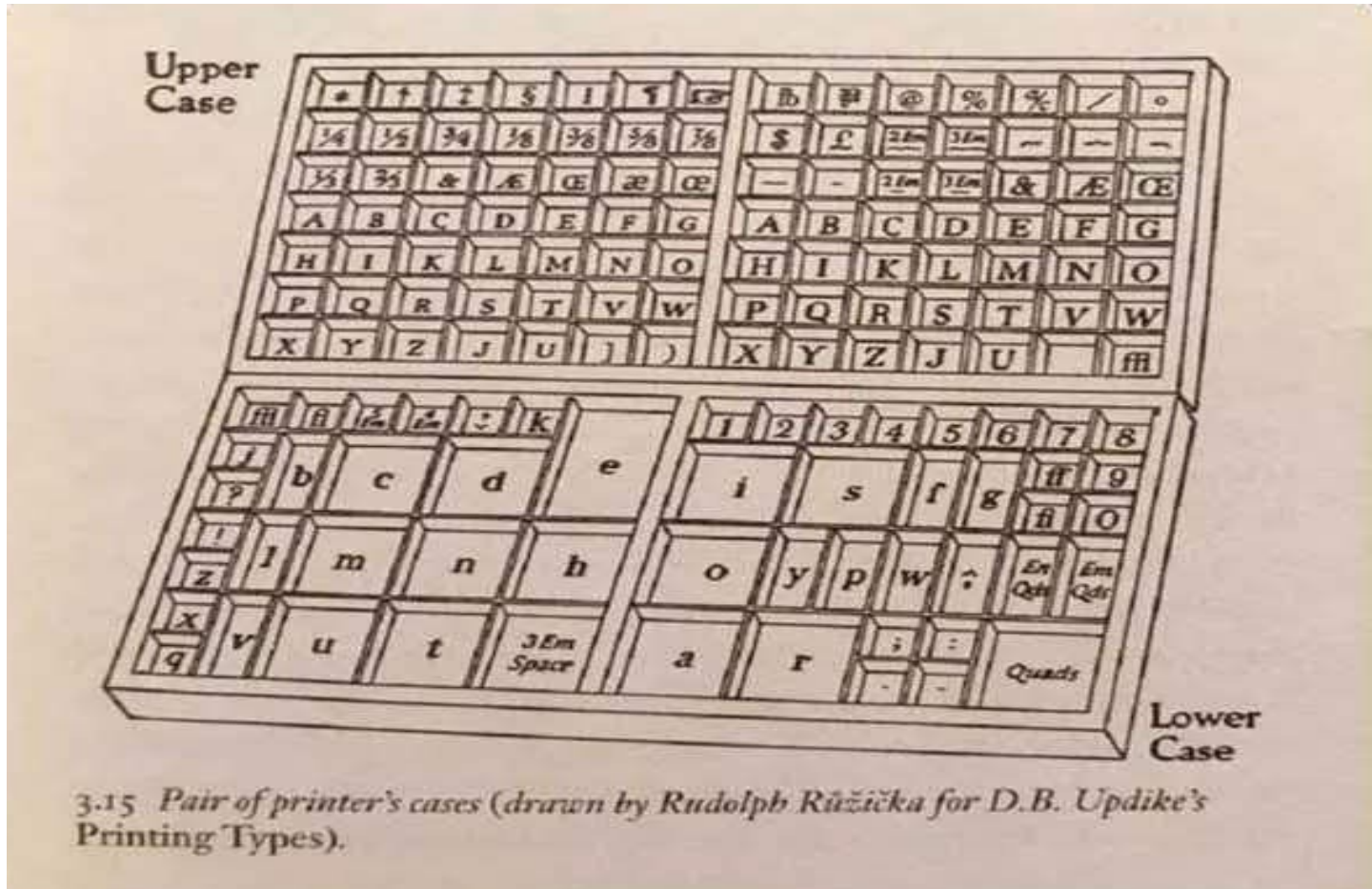
- Vellum
- Durable, reusable material
- Stamping – known
- How else / Where else do we press?
- Wine press
- Oil press
- Did he also invent punch-matrix system for casting metal type?

Artist's interpretation: first prints by JG





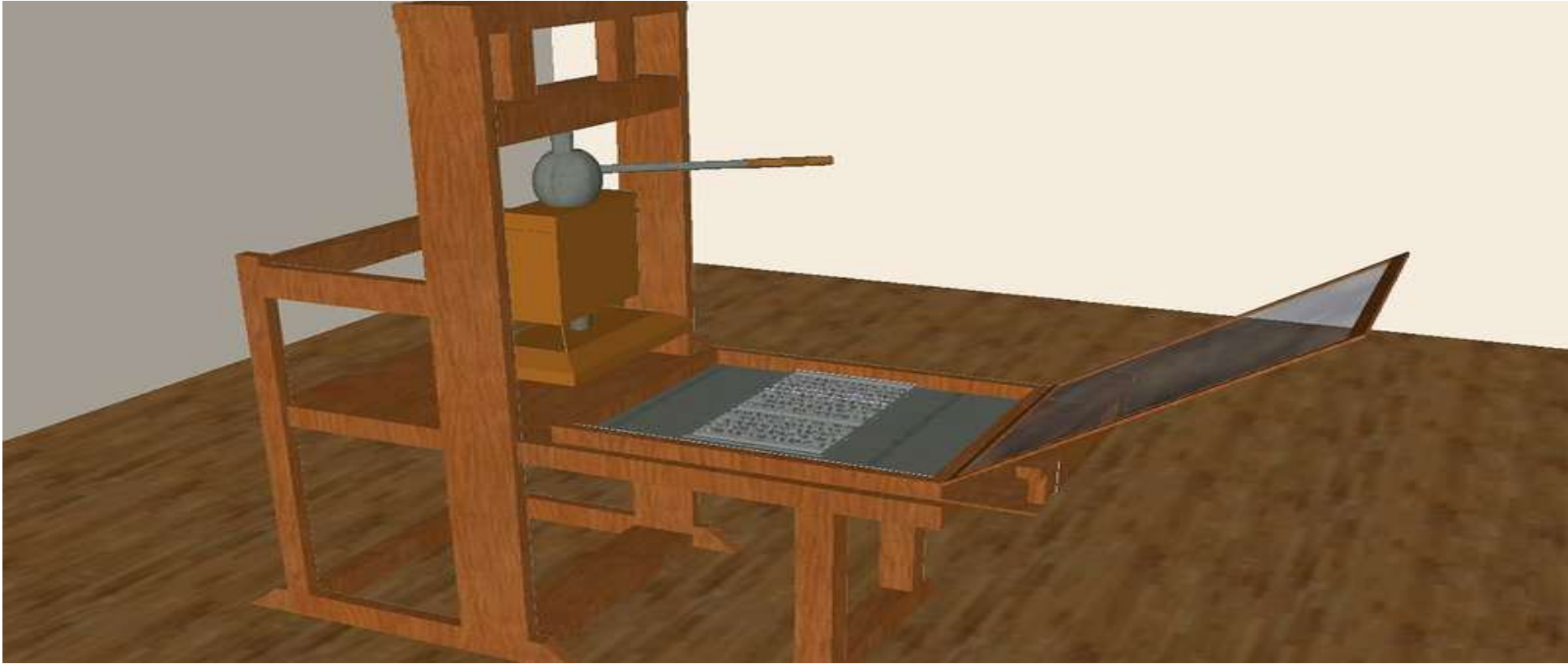
# Upper Case and Lower Case



**A HISTORY**

**THOMAS S. MULLANEY**

<https://www.britannica.com/biography/Johannes-Gutenberg/images-videos>



and a demonstration of the operation, live:  
<https://www.youtube.com/watch?v=DLctAw4JZXE>