

# ELEVATORS PART 1

# Dubai

The Burj khalifa is the world's tallest sky scraper







# Hong Kong



# Elevators

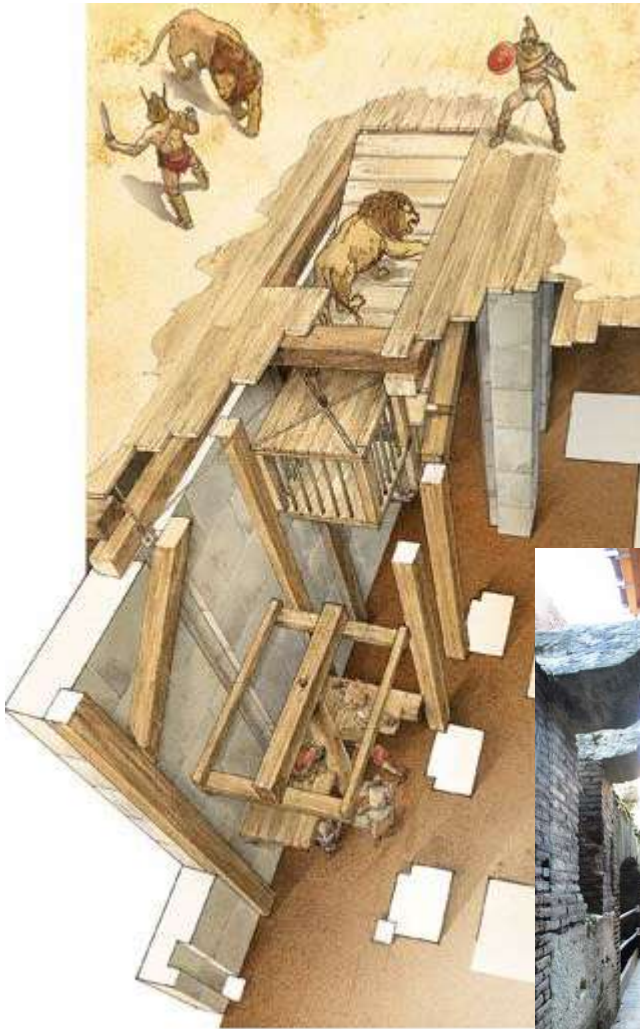


Archimedes, reported to have designed the first simple elevator in 236 BC.



# Roman Elevators:

Getting Animals into the Coliseum



Reconstruction of elevator. Slaves would have turned the wheels to raise and lower it.







An elevator in the Middle Ages.

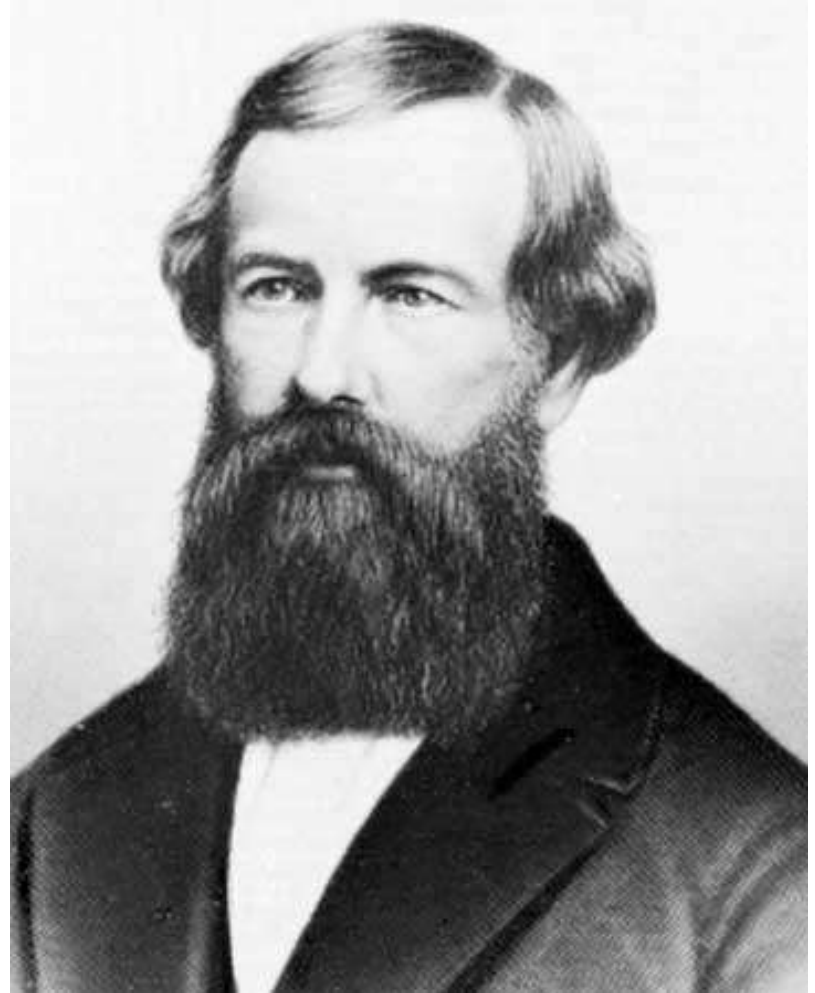


Humans walk in a wheel to raise the elevator.

# Elisha Otis

Inventor of the modern elevator

- Born in Vermont in 1811. Died in 1861 New York
- Inventions:
  - A robot turner while working as a doll maker
  - An automatic train brake
  - Automatic bread baking oven
  - **An elevator brake!**





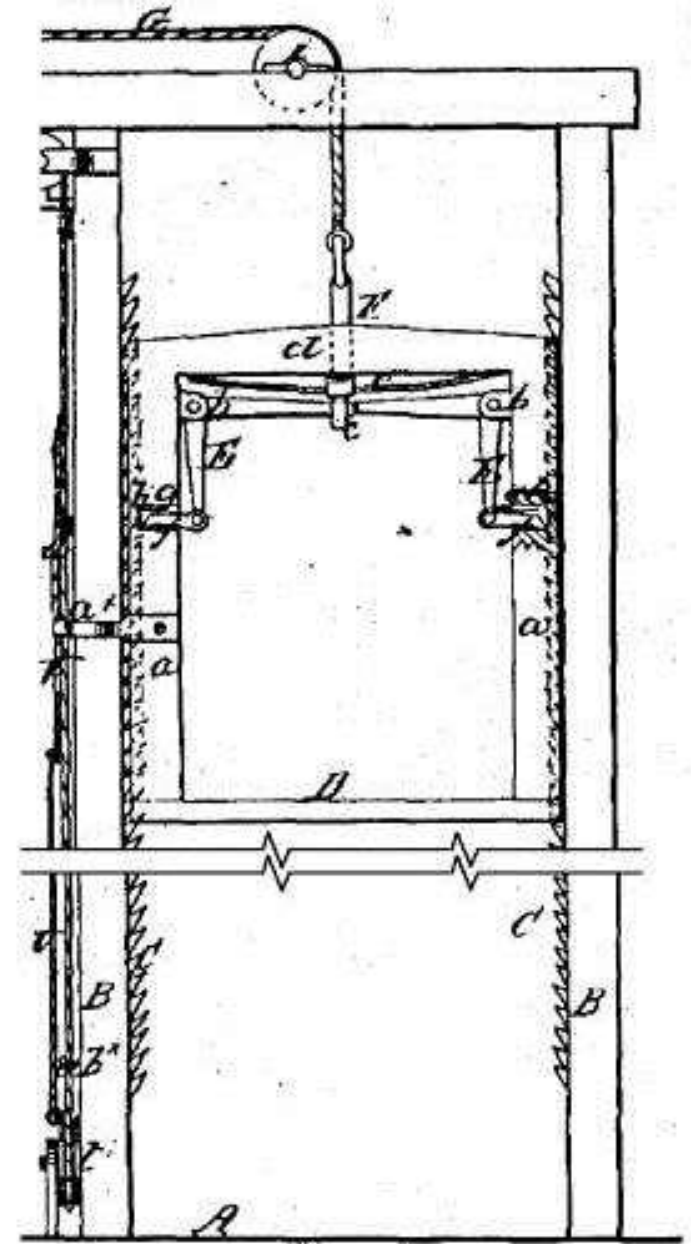
# Demonstration at 1854 New York World's Fair



Otis stands on the elevator as the rope is cut.

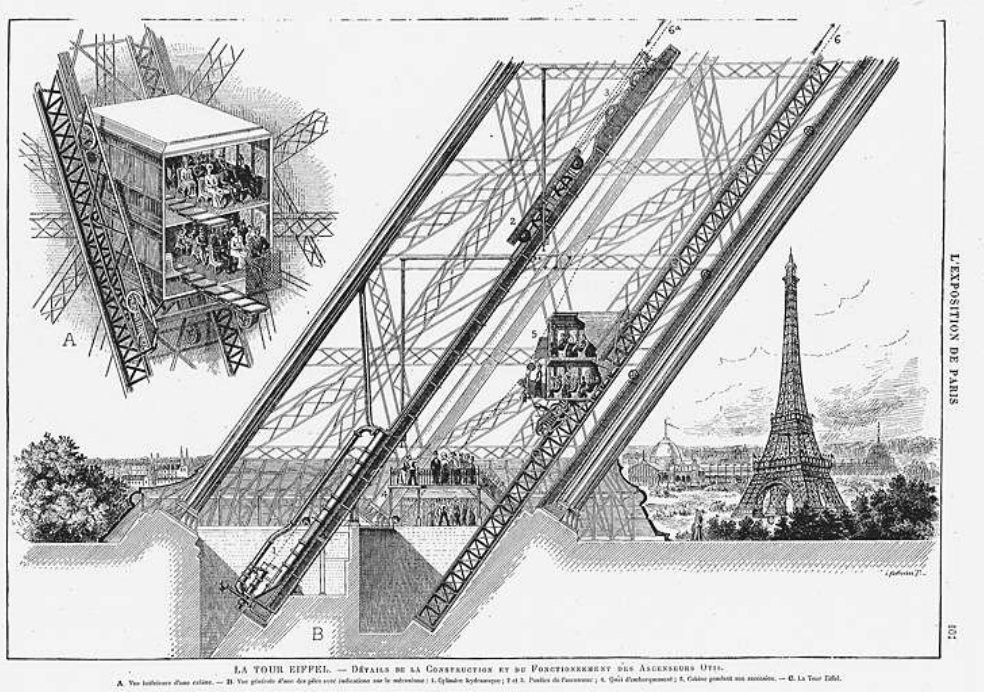
# The Otis Brake

- With tension on the cable, the brakes are pulled in.
- If the cable breaks and tension is gone, then the brakes slam into the side of the elevator shaft.
- Elevator stops almost immediately!

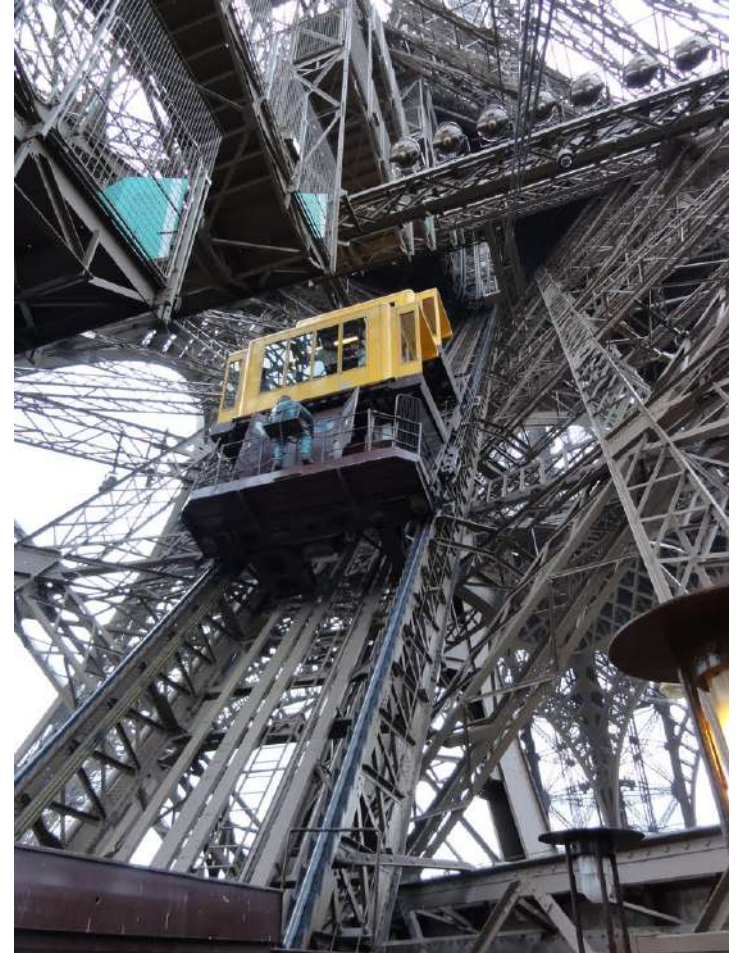




# Elevators take off!



Eifel Tower elevator, 1889







CN Tower,  
Toronto,  
Ontario



Mine cage.  
Built in  
Sudbury,  
Ontario.

Zhangjiajie  
Bailong  
Elevator, China.  
Tallest outdoor  
elevator.

