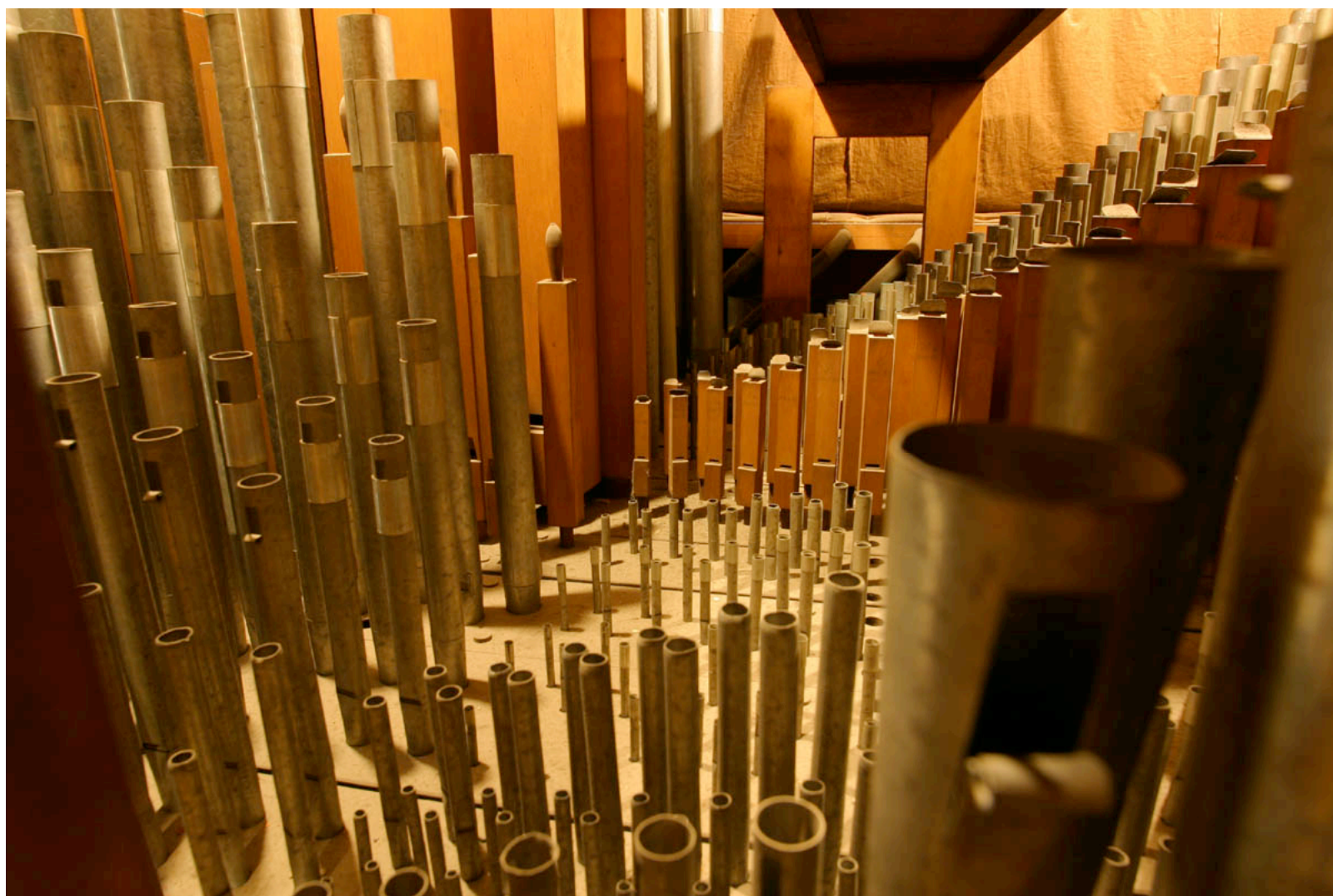


# Pipe Organs



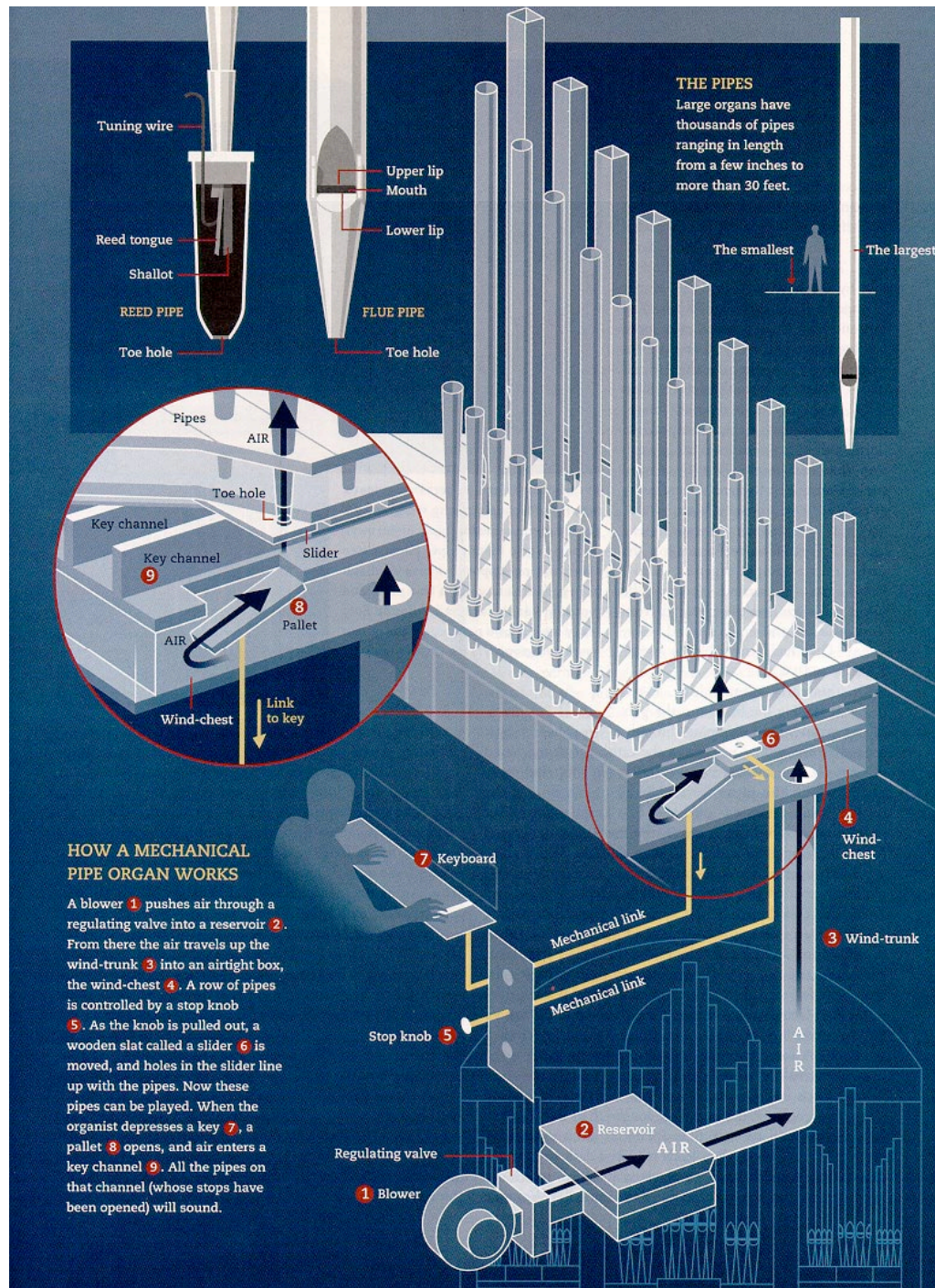
Basic concept circa 300 BC.  
User-operated mixing of ranks circa 1450.



Many pipes (thousands) behind façade.



Large portion of organ interface used for mixing partials

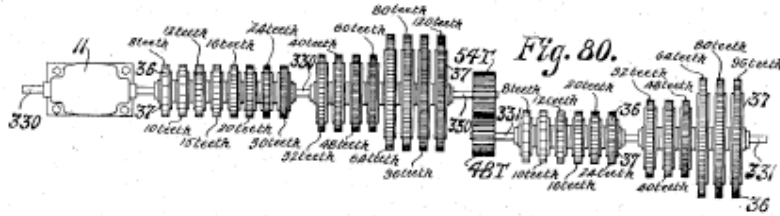


**HOW A MECHANICAL PIPE ORGAN WORKS**

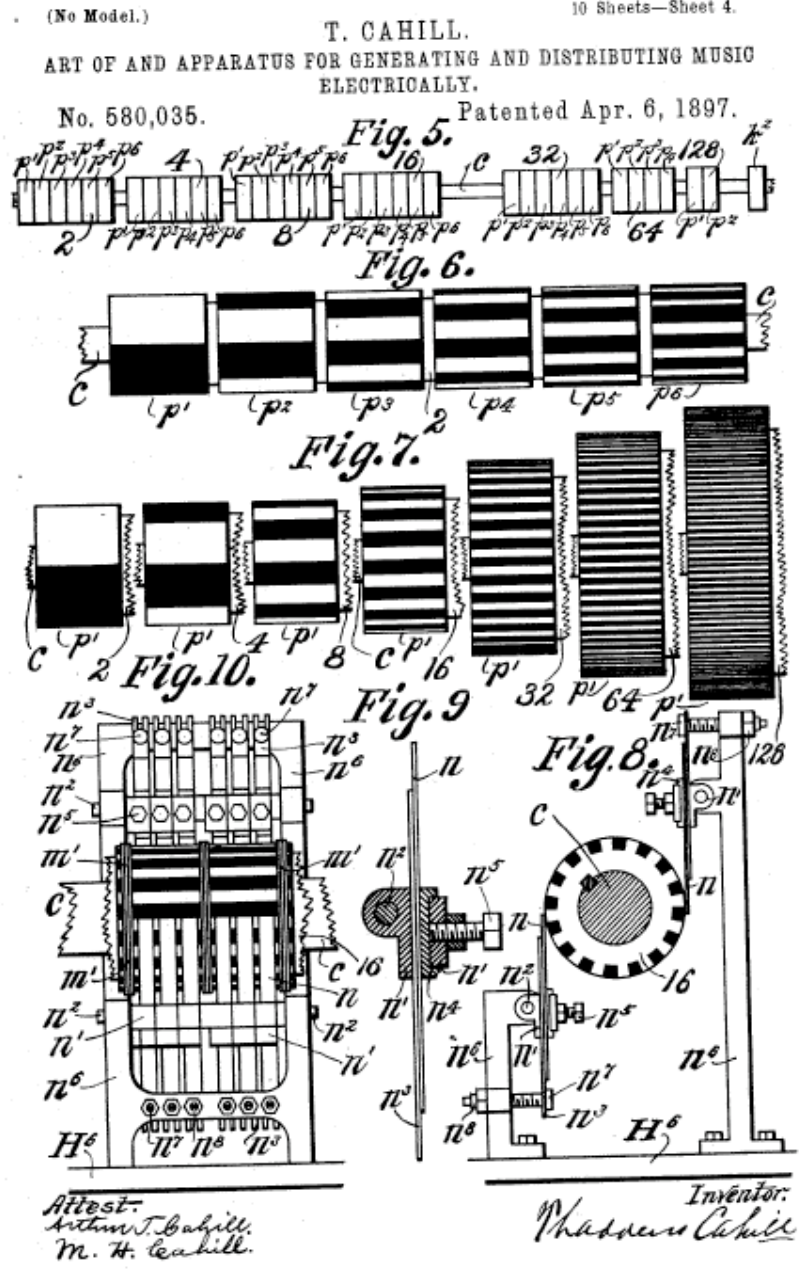
A blower **1** pushes air through a regulating valve into a reservoir **2**. From there the air travels up the wind-trunk **3** into an airtight box, the wind-chest **4**. A row of pipes is controlled by a stop knob **5**. As the knob is pulled out, a wooden slat called a slider **6** is moved, and holes in the slider line up with the pipes. Now these pipes can be played. When the organist depresses a key **7**, a pallet **8** opens, and air enters a key channel **9**. All the pipes on that channel (whose stops have been opened) will sound.

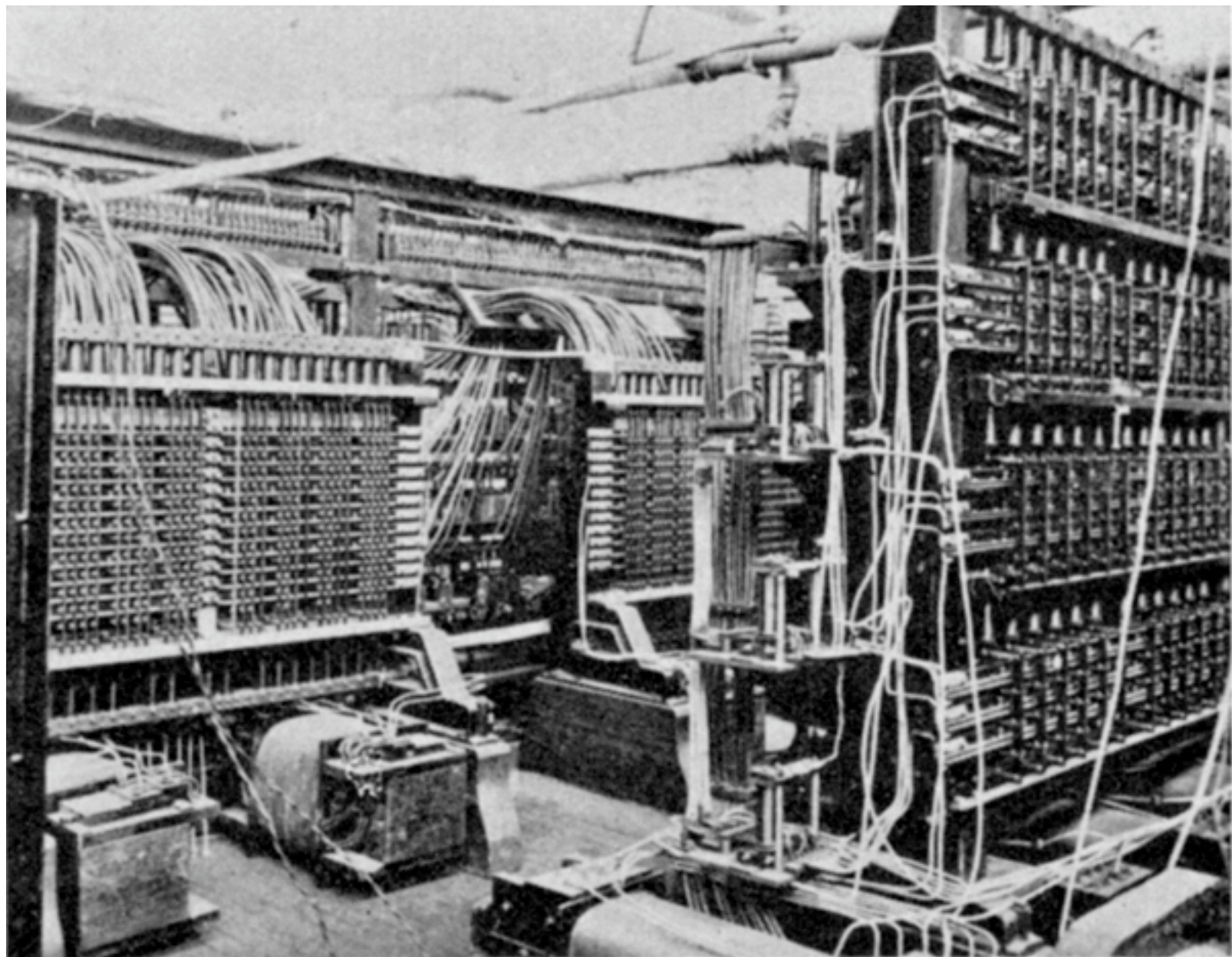
# Telharmonium

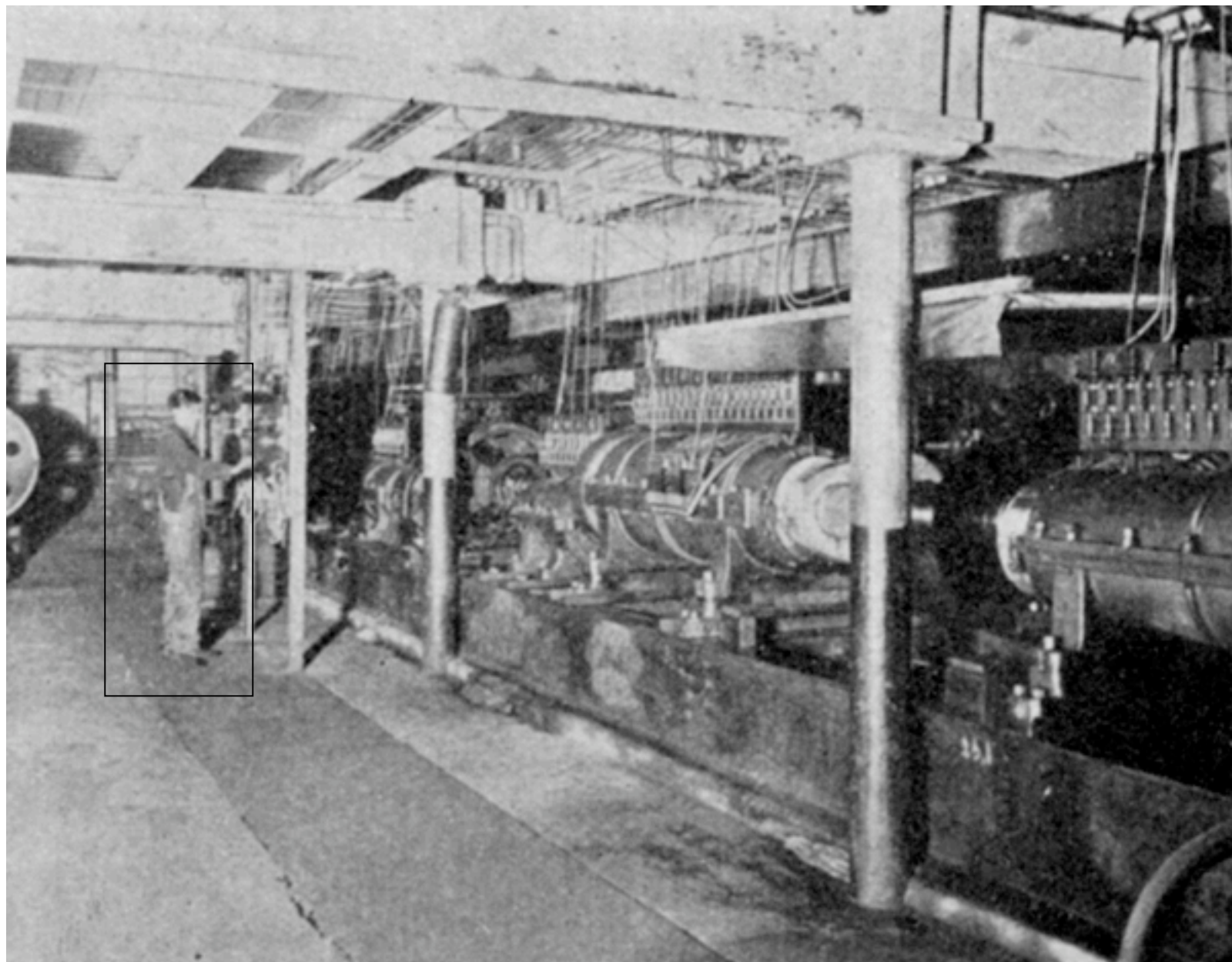
1898 – 1914, New York City  
Thaddeus Cahill



60 feet long  
200 tons  
2000 switches  
145 gear driven dynamos







# Hammond Organ

1935



MODEL A - AB



