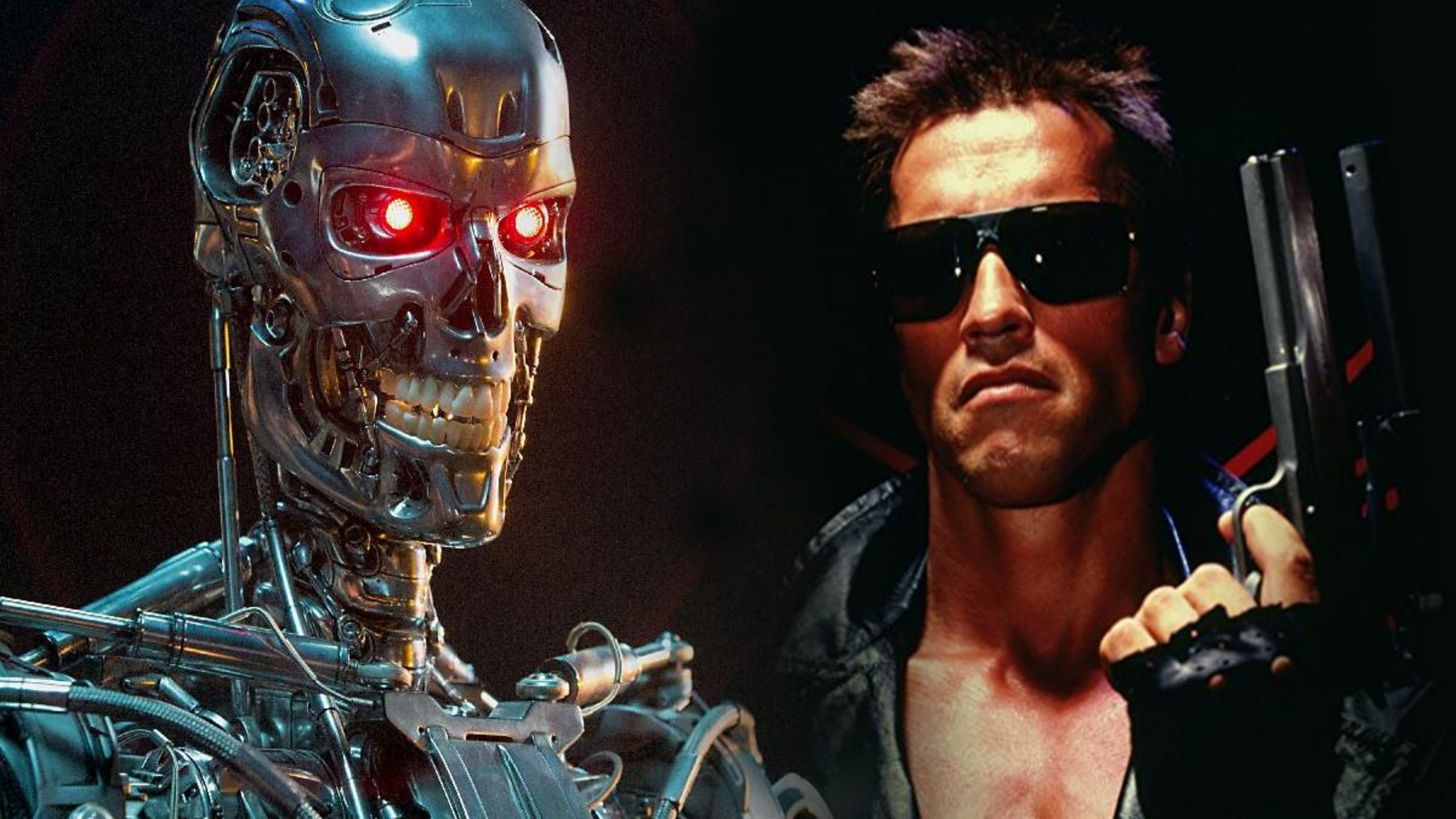
01. MECHANISM

M2U1P1

- In our everyday life we use many types of technologies
- Most of them use some type of mechanism to work
- For example:
  - Door handle
  - Can opener
  - Bicycle
- Some also use electronic parts
  - Fans
  - Electrical circuit
  - Traffic lights
- If we better understand how mechanisms and electric parts work it will help us to use them better and maybe fix them or make something

MECHANISM

- **Mechanism** is a device that transforms input forces and movements into a desired set of output forces and movement
- The mechanism in appliances must always be controlled
- Why do they need to be controlled?



MECHANISM

- **Mechanism** is a device that transforms input forces and movements into a desired set of output forces and movement
- The mechanism in appliances must always be controlled
- Because of that we often hear words mechanism and controls used together
- For example cars and bicycles require mechanisms to move and we also have controls that control the speed and movement according to the user

MECHANISM

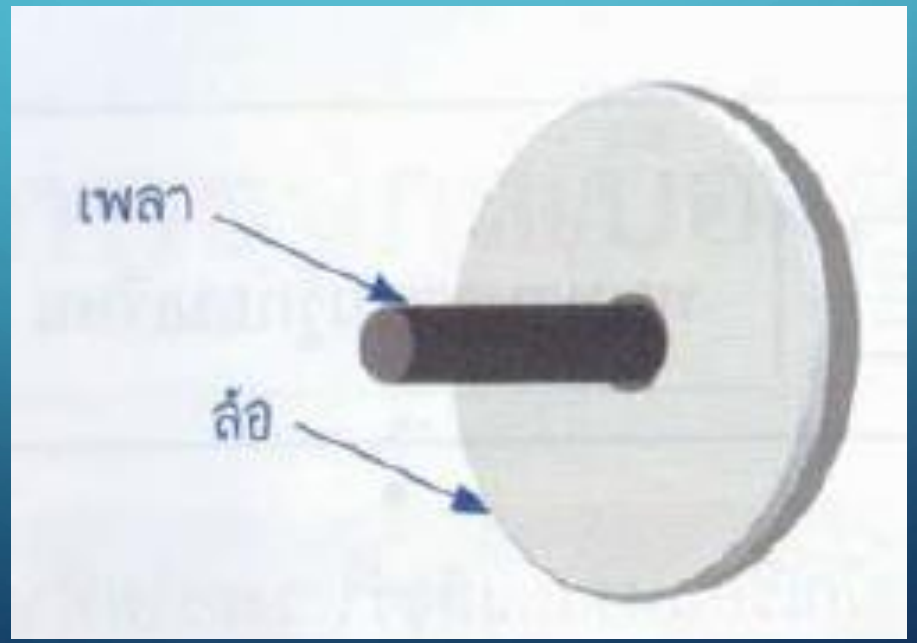
- The operation of the mechanism requires equipment or parts to make the work happen in different ways
- That equipment and parts have different functions and therefore give a different result
- It is necessary to control the operation of the mechanism in accordance with our needs and objectives

WHEEL AND AXLE

- The **wheel and axle** is a machine consisting of a wheel attached to a smaller axle so that these two parts rotate together in which a force is transferred from one to the other.
- The bigger part is called the wheel and smaller is an axle
- When one part rotates, the other one follows.
- We can use this mechanism in two ways
  - Spinning the wheel to make the axle rotate
  - Spinning the axle to make the wheel rotate

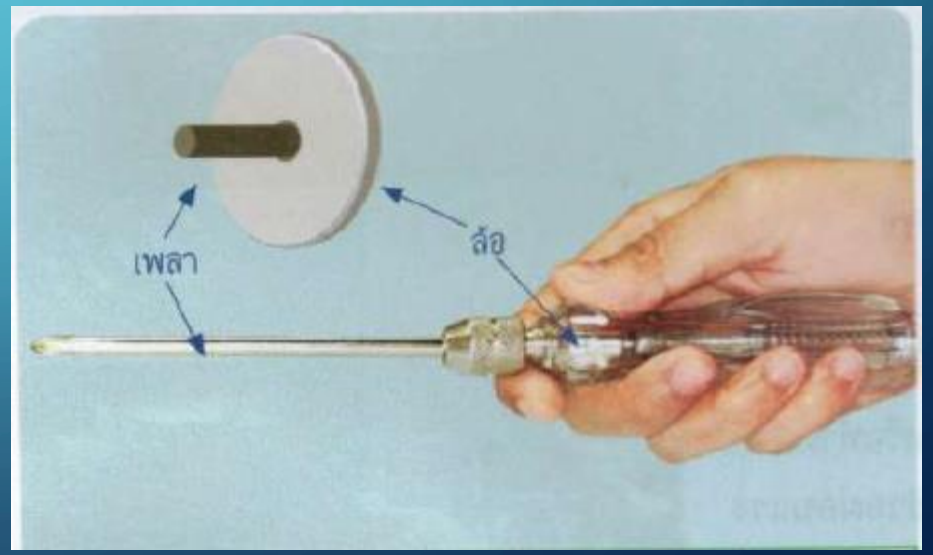
SPINNING THE WHEEL

- Spinning the wheel will make the axle rotate which gives us more force on it
- We use it for things like screwdriver, can opener, hand drill, water, door knob….



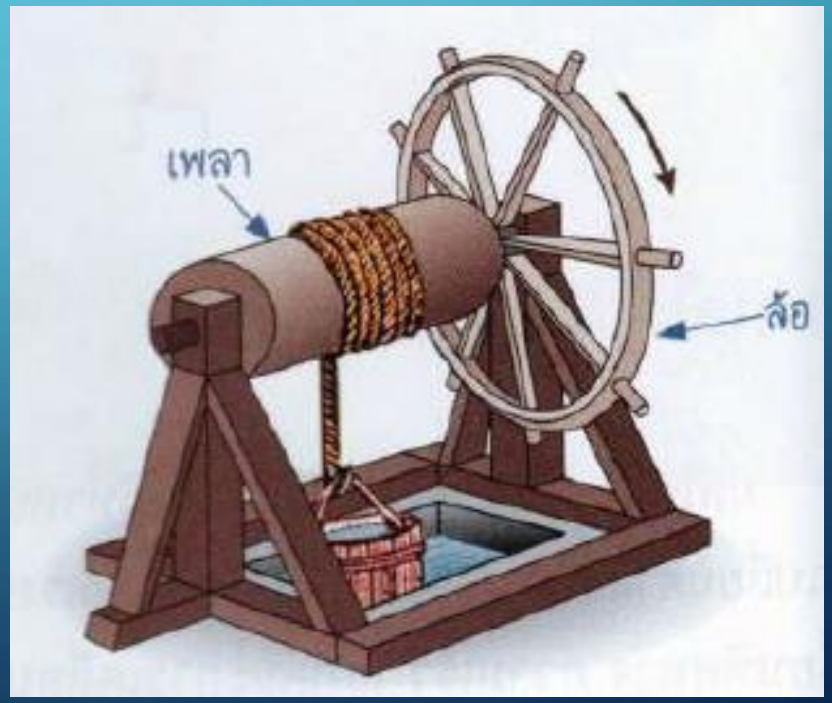
SCREWDRIVER

- Screwdrivers also work on the wheel and axle principle
- The handle works as a wheel and the longer part works as an axle
- This way we give more centrifugal force when we are spinning it



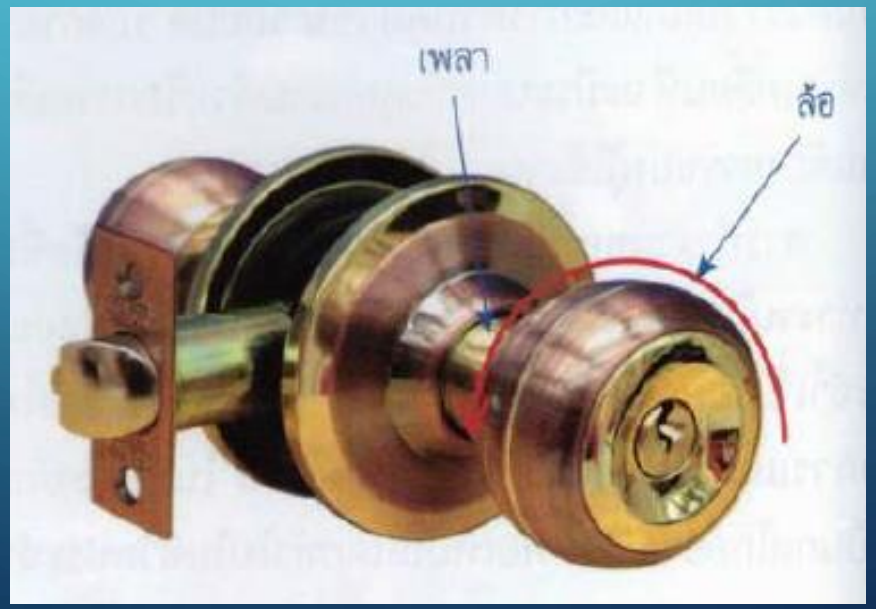
WATER WELL PULLEY SYSTEM

- The pulley system for the water well also works with wheel and axle principle
- When we spin the wheel the axle also spins and this way it is lowering or pulling up the water bucket



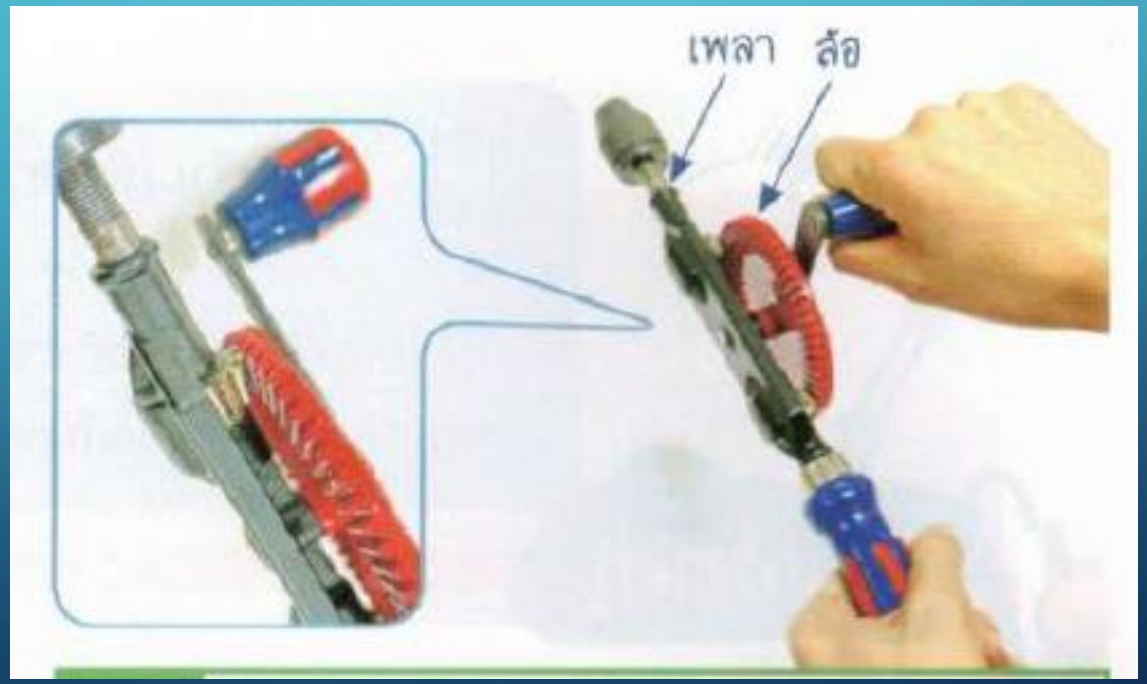
DOOR KNOB

- The door knob mechanism also works on wheel and axle principle
- The knob is the wheel and inside mechanism is an axle
- If we had only the axle inside without the knob it would be difficult to open the door



HAND DRILL

- On the hand drill the rotating handle is the wheel and when we spin it it spins the axle, the axle is the part that holds the drill bit



ROTATING THE AXLE WHICH WILL ROTATE THE WHEEL

- In this principle we apply force to the axle and with that force we start spinning the wheel
- Example:
  - Fan
  - Car wheels
  - Electrical drill

ELECTRIC FAN

- The electric fan starts to spin the axle when we turn it on
- How the axle spins it also makes the fan blades spin which is the wheel

CAR WHEEL SYSTEM

- The engine of the car causes the axle to spin
- How the axle spins that is how also the car wheels spin
- Therefore, the car starts to move

ELECTRIC DRILL

- When we turn on the switch the drill starts to spin
- The motor inside starts to spin the axle and that axle starts to spin the wheel which in this example is the drill bit at the end

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THE END