

# Chapter 1 Basic Knowledge of gear

## 1.1 Gear history

There is no literature reference concerning the origin of Gears. Who was the first person to use it or pioneered gear development.

Ancient people probably fabricated gears by making notches or projection at external of wooden disk for farm work or to ladle water.

We are able to find literature on gears to its origin when the author, Aristotle (Before Christ 384-322) had written 「Subject on Machine」 about 2,300 years ago.

Approximately 500 years ago, Leonardo da Vinci (1422-1519) had left several gear sketches. He drew almost all of the variety of gear currently used. (Refer to Fig. 1)

Changing with the times, present demand for precision and high strength of the gears are popular. The general public today has a fairly wide usage of the gear. The demand for high quality is as follows:

- (1) Changing the module can provide a wide range of transfer power.
- (2) Rotation and angle can be transmitted securely.
- (3) Changing number of teeth can obtain more flexible gear ratios.
- (4) Different varieties of axes position such as Parallel, Crossed, Non-parallel and Non-intersecting can be used for different designs.
- (5) Conversion of rectilinear from the rotary motion or vice versa are simply.

The gear also has many other features.

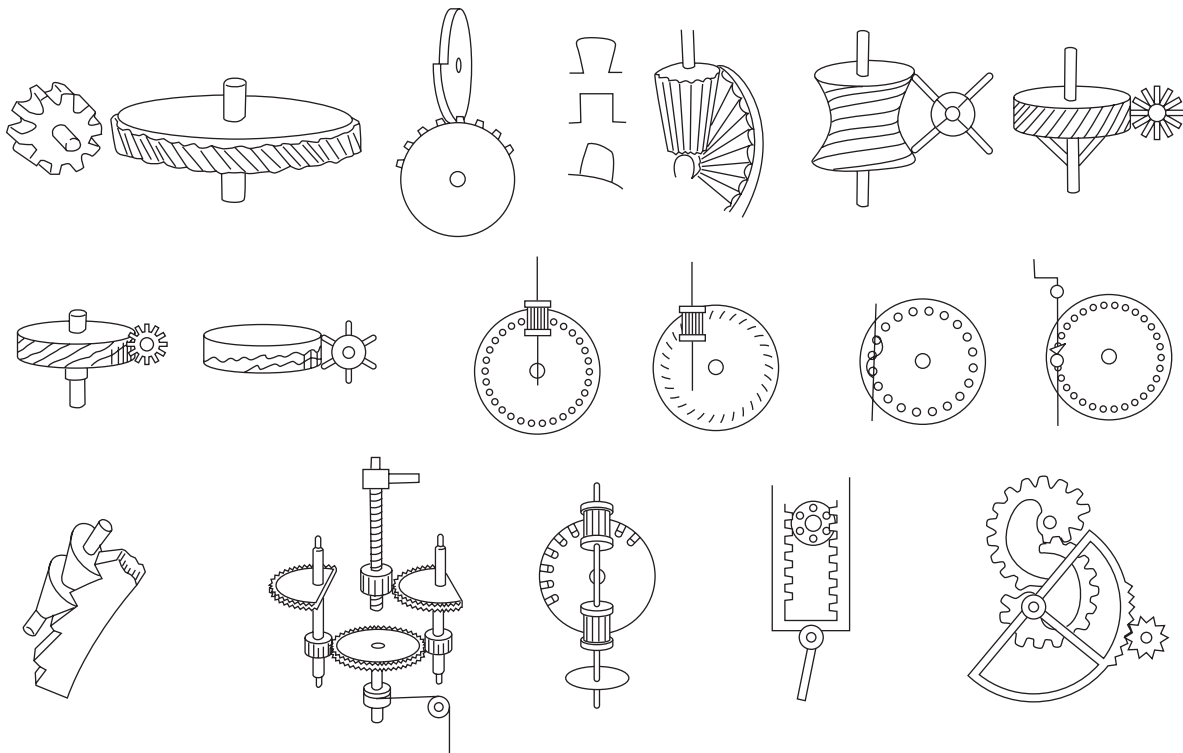


Fig. 1 Sketches of the gears by Leonardo da Vinci