

Pulleys or Gears

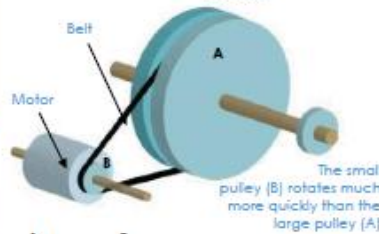
Developing understanding of gears and pulleys



Pulleys rotate in the same direction



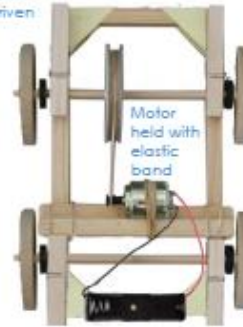
Pulleys rotate in different directions



Building gears or pulleys into children's products

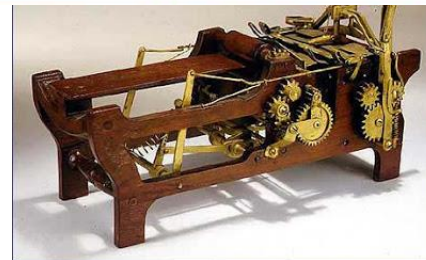
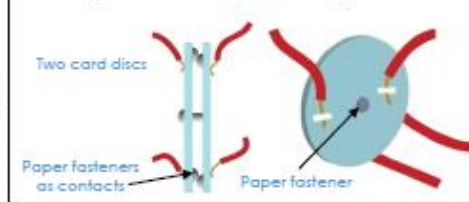


Pulley driven vehicle



Construct a chassis using wooden strips (frame) or corrugated plastic. Add a pulley and/or wheels and an electric motor with battery housing. The chassis can be used for a vehicle or to drive machines such as fairground rides.

An example of a handmade reversing switch



Engineer Study

Margaret E. Knight

- ✓ When she was twelve, she saw an accident in a cloth factory. She invented a device that would automatically stop a machine if something were caught in it. The factories began using the device soon after.
- ✓ Later, Margaret worked in a paper bag factory. At that time, paper bags weren't flat on the bottom. Margaret thought about how much easier they'd be to use if they were flat and she went to work creating a machine that would make the bags.
- ✓ Margaret is most famous for her bag machine, but she went on to make 100 inventions and receive 20 patents.



Vocabulary

Mechanical system: a set of related parts or components used to create movement.

Gear: a wheel with teeth around its circumference.

Pulley: a grooved wheel (gear) over which a drive belt can run.

Drive belt: the belt which connects and transfers movement between two pulleys.

Gearing up or down: changing the rotational speed of a product by the use of pulleys or gears.

Driver: the gear or pulley that provides the input movement to the system.

Follower: the gear or pulley that provides the output movement to the system.