SLOT CAM AND FOUR SLIDER MECHANISM

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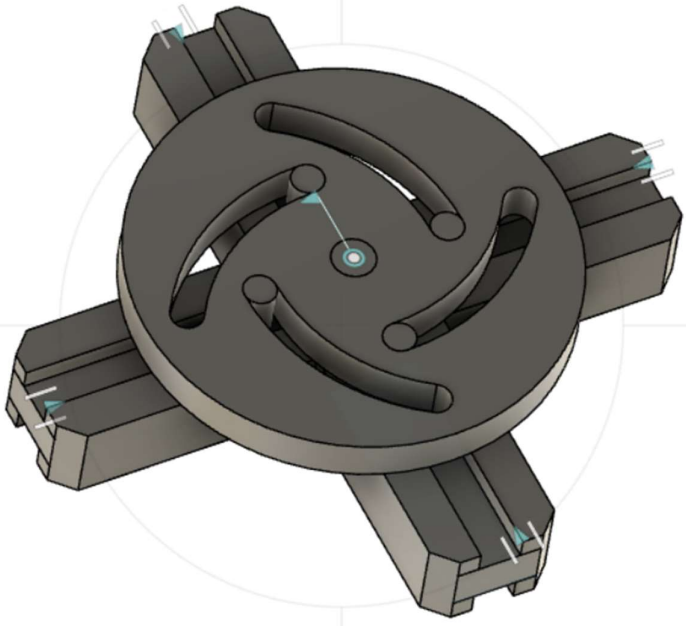
CAM MECHANISM :

Cams are used to convert rotatory motion into linear motion. There are different types of Cam mechanism ,one such is Slot Cam and Four slider mechanism.

- A cam and follower mechanism is a profiled shape mounted on a shaft that causes a lever or follower to move.
- As the cam rotates, the follower rises and falls in a process known as reciprocating motion.
- The motion of the follower is restricted to a pre-determined pattern by a guide.
- The follower maintains contact with the cam through the force of gravity or by a spring.
- The total range of movement produced by the cam is called the stroke.
- The range of movement of the follower will depend on the distance from the shaft supporting the
  cam to the upper and lower points of the rotation circle.
- Cams are commonly used in engines to control valves (in which the valve is the follower), sewing machines, children's toys and many other mechanical applications.

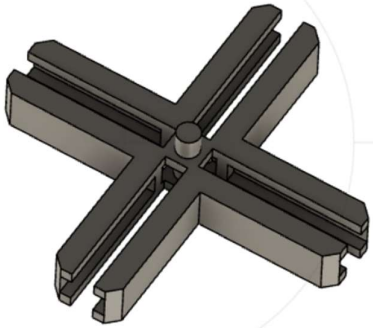


3D MODEL OF SLOT CAM MECHANISM AND FOUR SLIDER MODEL

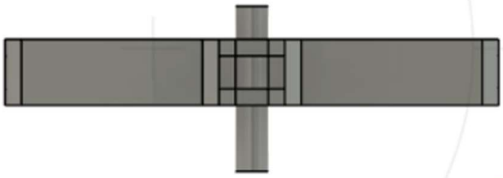
Three main parts of Cam Model :

1. The Base And Axis.
2. The Shaft (Or Rotating Wheel).
3. The Lever (Or Cam Follower).

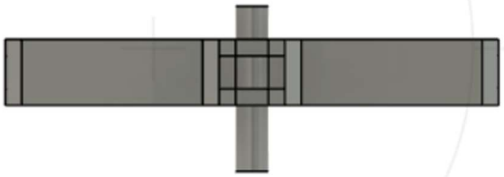
The Base And Axis :



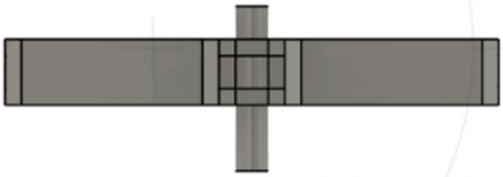
Front Side View :



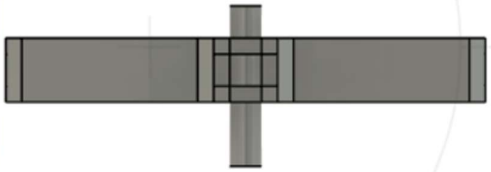
Back Side View:



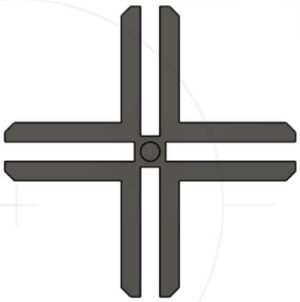
Right Side View:



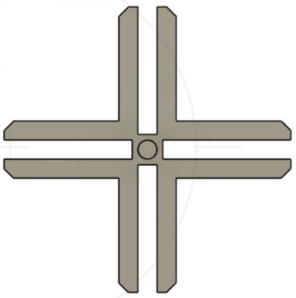
Left Side View:



Top View:



Bottom View:



Materials :

The Base and Axis of the Slot Cam model should be rigid enough to withstand the rotatory motion of the Shaft Wheel and linear motion of the followers.

Some of the Rigid Materials includes :

- Aluminium.
- Wood .
- Coroplast.
- Duraplast.
- PlexiGlass.
- Polycarbonate .

These materials have a great resistance towards bending and hence can be used as a material for base and the axis.

The Shaft (Or Rotating Wheel):

Front Side View:	Back Side View:
Right Side View:	Left Side View:
Top View:	Bottom View:

Materials:

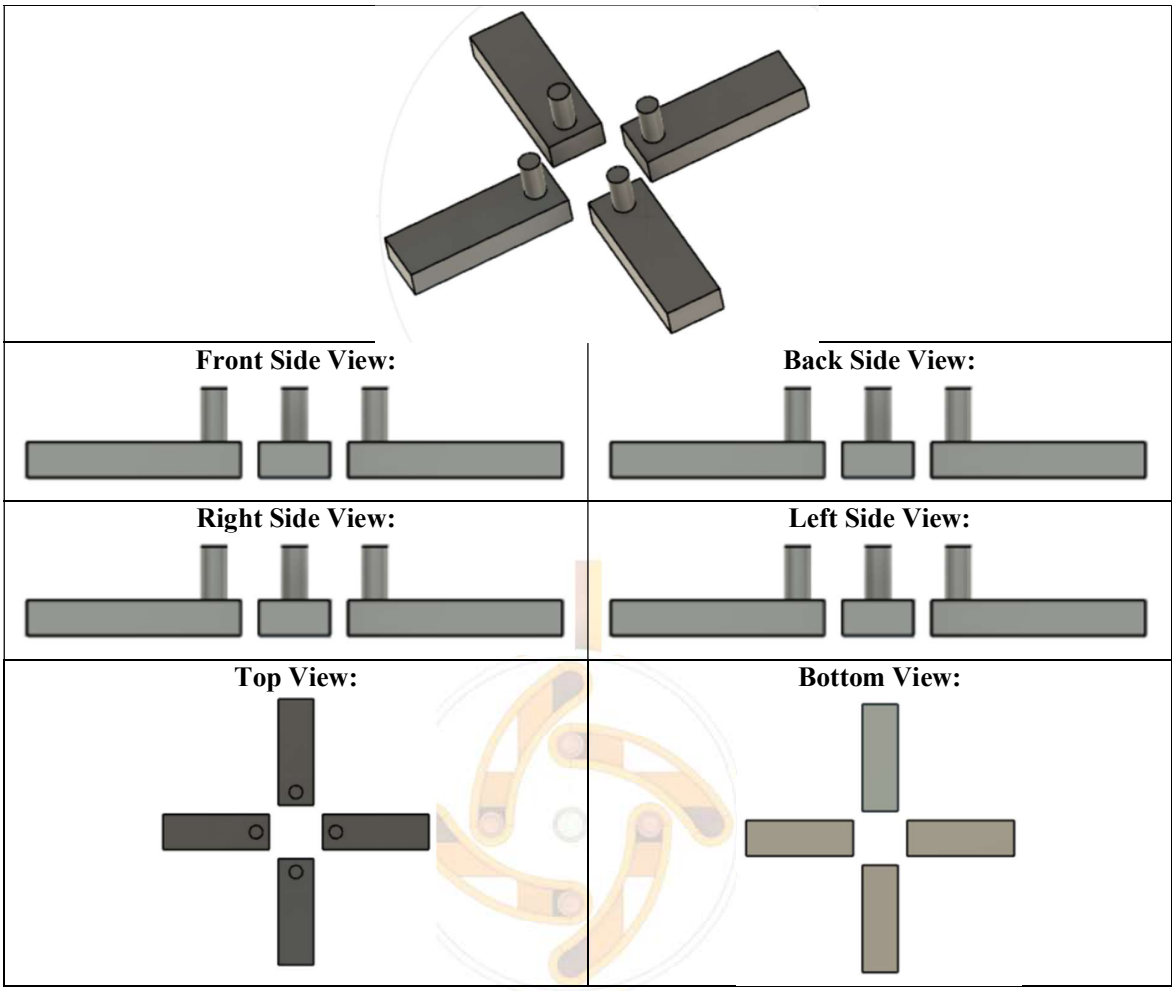
The Shaft (Or Rotating Wheel) should be light-weighted and they should have a good resistance over the base and axis supporting the linear motion.

Some of the materials that can be used are as follows:

- Cast Iron.
- Plastic.
- Alloy Metals.
- Brass.
- Aluminium.
- Carbon Fibre.

The above mentioned materials provide good rotatory motions over the axis.

The Lever (Or Cam Follower):



Materials :

The Lever(Or Cam Followers) should be light-weighted and they should provide a good resistance over the base. The followers are responsible for providing linear motion.

Some Materials that can provide Linear motion are as follows,

- Aluminium.
- Alloy steel.
- Carbon steel.
- Stainless steel.
- Composite materials.
- Plastics.

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Cams can be used in application of sewing machines and children's toys and other mechanical products. Based on the Product being created the materials can be selected according to the preferences and used in manufacturing of the products. For manufacturing products for industrial usage , materials like steel , aluminium ,wood can be used as it provides durability and rigidity .When it comes to manufacturing of toys and small scale products its good to choose plastic and other carbon fibres.